



# Utah Retirement Systems

A Component Unit  
of the State of Utah

## 2018 Comprehensive Annual Financial Report

*For the Year Ended  
December 31, 2018*

Noncontributory  
Retirement System

Contributory  
Retirement System

Public Safety  
Retirement System

Firefighters  
Retirement System

Judges  
Retirement System

Utah Governors  
and Legislators  
Retirement Plan

Tier 2 Public  
Employees  
Contributory  
Retirement System

Tier 2 Public Safety  
and Firefighter  
Contributory  
Retirement System

401(k) and 457 Plans

Roth and  
Traditional IRAs



Government Finance Officers Association

**Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting**

Presented to

**Utah Retirement Systems**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**December 31, 2017**

*Christopher P. Merrill*

Executive Director/CEO



Public Pension Coordinating Council

**Public Pension Standards Award  
For Funding and Administration  
2018**

Presented to

**Utah Retirement Systems**

In recognition of meeting professional standards for plan funding  
and administration as set forth in the Public Pension Standards.

*Presented by the Public Pension Coordinating Council, a confederation of*

National Association of State Retirement Administrators (NASRA)

National Conference on Public Employee Retirement Systems (NCPERS)

National Council on Teacher Retirement (NCTR)

*Alan H. Winkle*

Alan H. Winkle  
Program Administrator



# Utah Retirement Systems

A Component Unit of the State of Utah

## 2018 Comprehensive Annual Financial Report

*For the Year Ended December 31, 2018*



Noncontributory Retirement System  
Contributory Retirement System  
Public Safety Retirement System  
Firefighters Retirement System  
Judges Retirement System  
Utah Governors and Legislators Retirement Plan  
Tier 2 Public Employees Contributory Retirement System  
Tier 2 Public Safety and Firefighter  
Contributory Retirement System  
401(k) and 457 Plans  
Roth and Traditional IRAs

Prepared by: Finance Department • Utah Retirement Systems  
560 East 200 South • Salt Lake City, Utah 84102-2044 • [www.urs.org](http://www.urs.org)  
Daniel D. Andersen, Executive Director  
Robert D. Dolphin, Chief Financial Officer

Utah Retirement Systems  
2018 Annual Report

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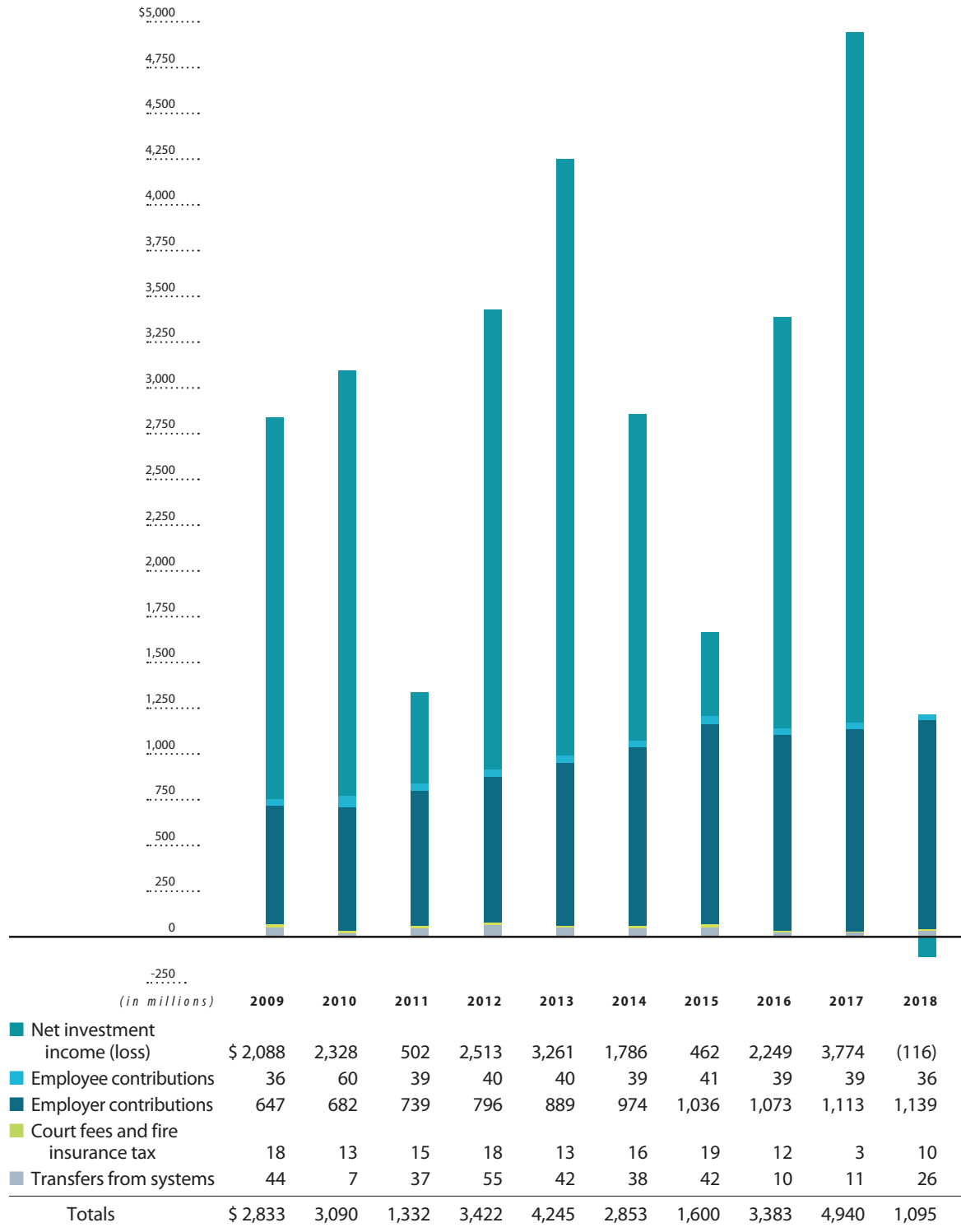
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## Utah Retirement Systems

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(in millions)





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## Utah Retirement Systems

# Letter of Transmittal

UTAH STATE RETIREMENT BOARD  
**UTAH RETIREMENT SYSTEMS**  
560 East 200 South  
Salt Lake City, Utah 84102-2044  
801-366-7700  
800-365-8772  
801-366-7734 FAX

DANIEL D. ANDERSEN  
EXECUTIVE DIRECTOR

April 30, 2019

Utah State Retirement Board  
560 East 200 South  
Salt Lake City, UT 84102-2044

Dear Board Members:

We are pleased to present the 2018 Comprehensive Annual Financial Report of the Utah Retirement Systems (Systems), including the 401(k), 457, and Roth and Traditional IRAs (Plans). Together, the Systems and Plans constitute a component unit of the State of Utah, administered by the Utah State Retirement Board (Board) for calendar year 2018.

The financial reporting entity of the Systems and Plans include the Public Employees Noncontributory and Contributory Retirement Systems, for both government and public education employees, the Public Safety, Firefighters, and Judges Retirement Systems, the Utah Governors and Legislators Retirement Plan, the Tier 2 Public Employees Contributory, and Tier 2 Public Safety and Firefighter Contributory Retirement Systems, and the 401(k), 457, and Roth and Traditional IRA Savings Plans.

Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the management of the Systems and Plans. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the fiduciary funds.

For financial reporting purposes, the Systems and Plans adhere to accounting principles generally accepted in the United States of America. The Systems and Plans apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB). Investments of the Systems and Plans are presented at fair value.

The Utah Retirement Systems and 401(k), 457, Roth and Traditional IRAs were established by legislation and authorized as indicated in the notes to the basic financial statements on page 56. The Summaries of Plan Provisions are presented on pages 178 through 195. The number of active and retired members and beneficiaries for each system is presented in the Systems' Highlights on pages 14 through 30. The purpose of the Systems and Plans is to provide benefits for all eligible State, local government, and most public education employees whose employers have elected to participate. Services provided by the staff are performed to meet that objective.

### Management's Discussion and Analysis

The Management's Discussion and Analysis (MD&A) beginning on page 36 provides an overview and analysis of the Systems and Plans Basic Financial Statements. This letter of transmittal is intended to complement the MD&A and should be read in conjunction with it.

### Financial Information

Management is responsible for maintaining a system of adequate internal accounting controls designed to provide reasonable assurance transactions are executed in accordance with management's general or specific authorization, and are recorded as necessary to maintain accountability for assets and to permit preparation of financial statements in accordance with generally accepted accounting principles. The concept of reasonable assurance recognizes the cost of a control should not exceed the benefits likely to be derived. This system includes written policies and procedures and an internal audit department that reports to the Board. Discussion and analysis of net position and related additions and deductions are presented in the MD&A beginning on page 36.



## Actuarial

The actuarial assumptions and contribution rates were based on the recommendations of our actuary. See the Actuarial Section of this report and the notes to the basic financial statements for explanations of these rates. Rate changes resulted from actuarial assumption modifications, economic conditions, actuarial experience gains and losses, and benefit enhancements in the Systems.

The Utah Retirement Systems are maintained on an actuarially sound basis as certified in this report by our actuary, thus protecting participants' future benefits. We anticipate investment earnings on a long-term basis will continue to meet or exceed the actuarially assumed earning rate. We expect all systems to continue towards fully funded positions in accordance with actuarial assumptions.

An actuarial valuation of the Systems is performed annually. An assumption experience study is performed at least every third year. The actuarial firm Gabriel, Roeder, Smith & Company completed the actuarial reviews and valuations and served as technical advisor to the Systems. Actuarial certification and supporting statistics are included in the Actuarial and Statistical Sections of this report.

## Investments

The economic condition of the Systems is based primarily upon investment earnings. For 2018, the Systems experienced a (0.22)% rate of return. The Systems' investments were evaluated at year end by Callan Associates Inc., Investment Measurement Service. A comparative analysis of rates of return is presented on page 144 of this report.

The investment portfolio mix at fair value as of the end of 2018 was 17% debt securities, 35% equities, 12% private equity, 16% real assets, 5% short-term, and 15% absolute return. See MD&A and Investment Section for more detailed analysis and information. The Systems' investment outlook is long term, allowing the portfolio to take advantage of the favorable risk-return characteristics of equities by placing more emphasis on this category.

The Board utilizes internal and external portfolio managers employing both passive (indexed) and active strategies. The portfolio is broadly diversified among equities, debt securities, real assets, absolute return, and private equity with additional diversification achieved through domestic and international investing.

The investment policy is to minimize credit and market risks while maintaining a competitive yield on its portfolio. Accordingly, deposits are either insured by federal depository insurance or collateralized. All collateral on deposits is held in the counterparties' joint custody accounts at the Federal Reserve Bank. On occasion, deposits may be significantly greater than collateral due to investment purchase "fails," receipt of interest earnings on the 15th of each month, and proceeds from investment sales and maturities. Of approximately \$36.9 billion in both the Defined Benefit and Defined Contribution investments at fair value as of December 31, 2018, none of the investments were in the category of highest custodial credit risk as defined by GASB.

## Funding

In setting contribution rates, the Board's principal objectives are to set rates so the unfunded actuarial accrued liability (UAAL) will be amortized over a reasonable period of time from the most recent valuation date and set rates so they remain relatively level over time. The Board's funding policy requires the employer contribution rate be at least equal to the sum of the employer normal cost rate (which pays the current year's cost) and an amortization rate that results in the amortization of the UAAL. Under this policy, the objective of maintaining a relatively level contribution rate over time is achieved in normal conditions such as consistent financial markets.

## Letter of Transmittal *(Continued)*

In determining the contribution rates, the actuary uses an actuarial value of assets that is based on a 5-year smoothed expected rate of return, wherein the excess or shortfall of investment income over or under the actuarial assumed income rate (currently 6.95%) is recognized over a 5-year period.

Funds are derived from the excess of additions, which include contributions and investment earnings, over deductions that are comprised of benefits and administrative expenses. Funds are accumulated to meet future benefit obligations to retirees and beneficiaries. This accumulated balance is referred to as the “net position restricted for pensions” in the Combined Statements of Fiduciary Net Position in the Financial Section of the report. The total pension liability is not reported in the basic financial statements, but is disclosed in Note 5 to the basic financial statements and in the required supplementary information. The total pension liability is determined by the actuary and is a measure of the present value of actuarial accrued liabilities estimated to be payable in the future to current retirees, beneficiaries, and employees for service earned to date. The net pension liability is measured as the total pension liability less the amount of the pension plan’s fiduciary net position. The net pension liability is an accounting measurement for financial statement purposes.

### Independent Audit

An annual audit of the Systems and Plans was conducted by the independent accounting firm of Eide Bailly. The auditors’ report on the basic financial statements is included in the Financial Section of this report.

### Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Utah Retirement Systems for its Comprehensive Annual Financial Report for the fiscal year ended December 31, 2017. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports.

In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized comprehensive annual financial report, whose contents conform to program standards. Such financial reports must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. The Utah Retirement Systems has received a Certificate of Achievement for the last 34 years. We believe our current report continues to conform to the Certificate of Achievement Program requirements, and we are submitting it to the GFOA.

In addition, the Utah Retirement Systems was awarded the Public Pension Coordinating Council Public Pension Standards 2018 Award. This award is in recognition of meeting professional standards for plan design and administration as set forth in the Public Pension Standards.

### Acknowledgments

The compilation of this report reflects the combined efforts of the staff under the leadership of the Utah State Retirement Board. The report is intended to provide extensive and reliable information for making management decisions, determining compliance with legal provisions, and determining responsible stewardship for the assets contributed by the Systems’ members and their employers.

We would like to take this opportunity to express our gratitude to the Board, the staff, the advisors, and the many people who have worked so diligently to ensure the successful operation and financial soundness of the Utah Retirement Systems.

Sincerely yours,



Robert D. Dolphin  
Chief Financial Officer



Daniel D. Andersen  
Executive Director

## Utah Retirement Systems

# Board President's Letter

UTAH STATE RETIREMENT BOARD

### UTAH RETIREMENT SYSTEMS

560 East 200 South  
Salt Lake City, Utah 84102-2044  
801-366-7700  
800-365-8772  
801-366-7734 FAX

DANIEL D. ANDERSEN  
EXECUTIVE DIRECTOR

April 30, 2019  
Utah State Retirement Board  
560 East 200 South  
Salt Lake City, UT 84102-2044

Dear Members of the Retirement Systems:

I'm proud of the URS mission to provide retirement security to Utah's public employees and retirees. This annual report provides a comprehensive look at the condition of the pension fund that makes this mission possible.

It's a story of a conservatively run fund designed to withstand market volatility and provide a stable return for the long term. The objective is to maximize long-term returns over market cycles, with an emphasis on downside protection in unfavorable market conditions.

That last part, "downside protection," was put to the test in 2018, a year when U.S. investors suffered losses in practically every category except cash. For example, the Dow Jones Industrial Average was down 3.5% for the year, while the S&P 500 shed nearly 4.4% of its value.

Our peers, other very large pension funds across the nation, lost an average of 3.29% in 2018. URS, meanwhile, performed in the top 1 percentile, with an overall loss of just 0.22%. This is not atypical. In the negative global equity markets experienced in 2008, 2011, and 2015, our yearly returns were at or near the top 10% compared to our peers. This demonstrates the value of the lower-risk, more-diversified portfolio that URS maintains. While we might not get the same lofty returns when the markets are flying high, we generally lose less ground in years such as 2018.

Focusing on the investment performance of just a single year is like examining a single frame of a movie reel – it doesn't begin to tell the entire story. The URS pension has nearly doubled in value since 2008, growing from \$15.9 billion to \$31.2 billion by the end of 2018.

So, the big-picture story is this: Your pension is healthy and remains on solid footing. We're committed to providing peace of mind and retirement security for Utah's public employees and retirees and will never waiver in that mission.

Sincerely,



Laura Houston  
President, Utah State Retirement Board

# Retirement Board

As of December 31, 2018



*Pictured Left to Right*

*Vice President*

**Ryan G. Hessenthaler**  
Appointed August 19, 2015  
Term Expires July 1, 2019  
Represents Investment Community

*President*

**Laura O. Houston**  
Appointed July 2, 2014  
Term Expires July 1, 2022  
Represents Investment Community

*Board Members*

**Roger G. Donohoe**  
Appointed December 17, 2014  
Term Expires July 1, 2020  
Represents Education Employees

**Sheri K. Nelson**  
Appointed September 15, 2010  
Term Expires July 1, 2019  
Represents Public Employees

**Edward T. Alter**  
Appointed February 2, 2012  
Term Expires July 1, 2019  
Represents Investment Community

**David C. Damschen**  
State Treasurer  
Member Since December 10, 2015  
Ex-officio Member

**William W. Wallace**  
Appointed September 18, 2013  
Term Expires July 1, 2021  
Represents Investment Community

## Executive Director



Daniel D. Andersen

## Membership Council

### Executive Committee Members:

#### *Chairperson*

**Mr. Marty Peterson** ..... Represents Professional Firefighters of Utah

#### *Vice Chairperson*

**Mr. Richard Petersen** ..... Represents Utah Public Employees' Association

**Mr. Stuart Bailey** ..... Represents Utah Education Association

**Ms. Amy Ehresman** ..... Represents Utah School Employees' Association

**Ms. Brandy Grace** ..... Represents Utah Association of Counties

### Council Members:

**Mr. Brandon Baca** ..... Represents Utah Education Association

**Mr. Jamie Davidson** ..... Represents Utah League of Cities and Towns

**Mr. Larry Evans** ..... Represents Utah Public Employees' Association

**Senior Trooper Arlow Hancock** ..... Represents Utah Peace Officers' Association

**Mr. Michael Harman** ..... Represents Utah Education Association

**Ms. Debra McBride** ..... Represents Utah Association of Retired Public Employees

**Mr. Larry Millward** ..... Represents Utah Retired School Employees' Association

**Honorable Kara Pettit** ..... Represents Utah Judicial Council

# Organization Chart

As of December 31, 2018

**Membership Council**

## Administrative Staff

**Daniel D. Andersen**  
Executive Director

**Todd W Rupp**  
Deputy Executive Director

**Steven M. West**  
Director, Internal Audit

**Dee S Larsen**  
General Counsel

**Bruce H. Cundick**  
Chief Investment Officer

**Jeff J. Allen**  
Shared Services Director

**Robert D. Dolphin**  
Chief Financial Officer

**Jayne R. Knecht**  
Director, Human Resources

**W. Kendall Rima**  
Chief Information Officer

**Matthew K. Judd**  
Director, Employer Services

**Craige D. Stone**  
Director, Defined Contribution Savings Plans

**Mark M. Cain**  
Director, Retirement Benefits

**David J. Bjarnason**  
Chief Compliance Officer — Investments

**Ryan C. Ashcraft**  
Director, Retirement Planning

**Tiffany G. Lund**  
Project Manager

## Professional Service Providers

### Actuary


**Gabriel, Roeder, Smith & Company**  
5605 N. MacArthur Blvd., Suite 870  
Irving, TX 75038-2631

### Auditor

**Eide Bailly**  
Certified Public Accountants  
5 Triad Center, Suite 600  
Salt Lake City, UT 84180

Additional professional service providers are presented on pages 146 and 152.

A schedule of investment fees and commissions are presented on pages 145 and 151.



**General Counsel**

.....  
*Dee S Larsen*


- Legal Services
- Member Appeals and Litigation
- Investment Transactions
- Government Relations and Legislation
- Outside Counsel



**Chief Investment Officer**

.....  
*Bruce H. Cundick*

- Equity Investments
- Debt Securities
- Real Assets
- Private Equity
- Absolute Return



**Shared Services Director**

.....  
*Jeff J. Allen*

- IT Functions
- Internal Audit
- General Services
- Purchasing



**Director Human Resources**

.....  
*Jayne R. Knecht*

- Human Resources
- Safety/Security



**Chief Information Officer**

.....  
*W. Kendall Rima*

- Server Hardware and Software
- Applications Development
- Helpdesk/ Workstation Support
- Process Automation Workflow
- Networking and Telecommunications
- Web Service
- Information Security

**Utah State Retirement Board**




**Executive Director**  
.....  
*Daniel D. Andersen*



**Deputy Executive Director**  
.....  
*Todd W. Rupp*



**Chief Financial Officer**  
.....  
*Robert D. Dolphin*



**Director Internal Audit**  
.....  
*Steven M. West*

- Financial Reporting and Accounting
- Budgets
- Tax Reporting
- Cash Management
- Payroll
- Risk Management



**Director Employer Services**  
.....  
*Matthew K. Judd*



**Director Defined Contribution Savings Plans**  
.....  
*Craig D. Stone*




**Director Retirement Benefits**  
.....  
*Mark M. Cain*



**Chief Compliance Officer Investments**  
.....  
*David J. Bjarnason*



**Director Retirement Planning**  
.....  
*Ryan C. Ashcraft*



**Project Manager**  
.....  
*Tiffany G. Lund*

- Records Management
- Employer Contributions Reporting
- Member Account Management
- Defined Contribution Daily Trade Reconciliation
- Employer Compliance and Auditing

- 401(k) Plan
- 457 Plan
- Traditional IRA
- Roth IRA

- Retirement Benefits
- Death Benefits
- Redeposits and Purchases
- Refunds
- Branch Office

- Investment Compliance
- Proxy Voting

- Member Education
- Retirement Planning
- Seminars
- Stakeholder Relations

- Project Management Office
- Business Requirements
- Project Scope Implementation



Utah Retirement Systems

## Noncontributory Retirement System Highlights

The Public Employees Noncontributory Retirement System includes eligible public employees of the State of Utah and its political subdivisions and public education employees of those entities covered by the System.

### Composite Picture

**Total Membership . . . . . 159,459**

Active . . . . . 56,299

Terminated vested . . . . . 46,756

Retired . . . . . 56,404

**2018 Active Members . . . . . 56,299**

Average age . . . . . 49.1

Average years of service . . . . . 16.6

Average annual salary . . . . . \$57,971

**2018 Retirees . . . . . 3,445**

Average age . . . . . 64.4

Average years of service . . . . . 20.8

Final average annual salary . . . . . \$50,763

Average annual benefit . . . . . \$21,618

Average annual benefit

— all retirees . . . . . \$22,921



## Noncontributory Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction              |
|---------|------------------|----------------------------------|
| Any age | ... 30           | .....None                        |
| Any age | ... 25           | ... Full actuarial before age 60 |
| 60-61   | ... 20           | ...3% each year before age 65    |
| 62-64   | ... 10           | ...3% each year before age 65    |
| 65      | ... 4            | .....None                        |

### Service Benefit Formula

Number of years of service x 2.00% x FAS.\*

\*FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

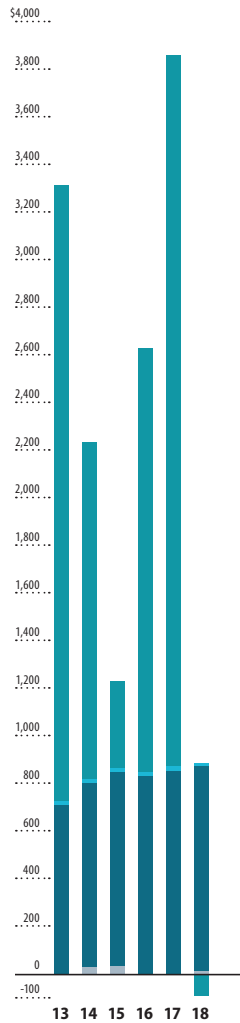
Up to 4% annually on original retirement benefit.

### Contribution Rates *(as of 12-31-2018)*

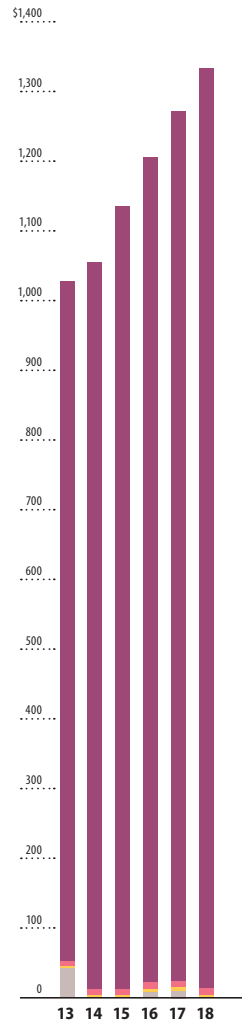
Employer rate for the State and School Division (Level A) is 22.19% of covered salary and 18.47% for the Local Government Division (Level B).

For more detail see Summary of Plan Provisions on page 178.

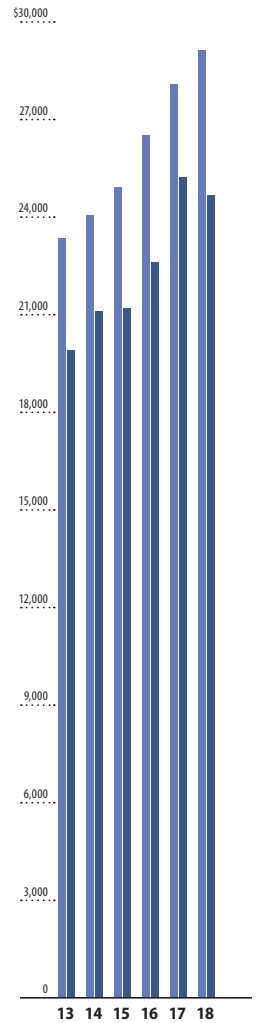
**Additions by Source**  
*(in millions)*



**Deductions by Type**  
*(in millions)*



**Schedule of Employers Net Pension Liability**  
*(in millions)*



|  |                                | 2013              | 2014           | 2015           | 2016           | 2017           | 2018           |
|--|--------------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|
| <b>Additions by Source</b><br><i>(in millions)</i>                         | Investment income (loss)       | \$ 2,589.0        | 1,419.1        | 366.7          | 1,783.9        | 2,987.3        | (92.2)         |
|  | Member contributions           | 14.2              | 13.6           | 17.0           | 16.3           | 17.3           | 14.6           |
|  | Employer contributions         | 710.9             | 772.4          | 813.5          | 831.6          | 854.3          | 858.4          |
|  | Transfers from systems         | —                 | 30.5           | 33.7           | —              | —              | 13.0           |
|  | <b>Totals</b>                  | <b>\$ 3,314.1</b> | <b>2,235.6</b> | <b>1,230.9</b> | <b>2,631.8</b> | <b>3,858.9</b> | <b>793.8</b>   |
| <b>Deductions by Type</b><br><i>(in millions)</i>                          | Benefit payments               | \$ 974.7          | 1,043.8        | 1,123.6        | 1,184.3        | 1,248.0        | 1,320.2        |
|  | Administrative expense         | 8.3               | 8.8            | 8.8            | 8.9            | 9.6            | 10.0           |
|  | Refunds                        | 2.5               | 2.2            | 2.5            | 4.4            | 4.6            | 2.8            |
|  | Transfers to systems           | 42.3              | —              | —              | 8.0            | 10.2           | —              |
|  | <b>Totals</b>                  | <b>\$ 1,027.8</b> | <b>1,054.8</b> | <b>1,134.9</b> | <b>1,205.6</b> | <b>1,272.4</b> | <b>1,333.0</b> |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in millions)</i> | Total pension liability        | \$ 23,344.3       | 24,043.3       | 24,899.5       | 26,501.8       | 28,088.6       | 29,122.9       |
|  | Statement of plan net position | 19,915.8          | 21,096.5       | 21,192.4       | 22,618.7       | 25,205.1       | 24,666.1       |
|  | <b>Net pension liability</b>   | <b>\$ 3,428.5</b> | <b>2,946.8</b> | <b>3,707.1</b> | <b>3,883.1</b> | <b>2,883.5</b> | <b>4,456.8</b> |

Pictured: Carmen Thompson, Registered Nurse, Davis County Health Department



Utah Retirement Systems

## Contributory Retirement System Highlights

The Public Employees Contributory Retirement System includes eligible public employees of the State of Utah and its political subdivisions and public education employees of those entities covered by the System.

### Composite Picture

**Total Membership** ..... 5,622

Active..... 519

Terminated vested..... 1,186

Retired..... 3,917

**2018 Active Members**..... 519

Average age ..... 57.1

Average years of service ..... 30.2

Average annual salary..... \$64,824

**2018 Retirees** ..... 110

Average age ..... 62.4

Average years of service ..... 31.8

Final average annual salary ..... \$55,750

Average annual benefit ..... \$32,915

Average annual benefit

— all retirees..... \$21,028

## Contributory Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction        |
|---------|------------------|----------------------------|
| Any age | 30               | None                       |
| 60-61   | 20               | 3% each year before age 65 |
| 62-64   | 10               | 3% each year before age 65 |
| 65      | 4                | None                       |

### Service Benefit Formula

- Number of years of service before 7-1-75 x 1.25% x FAS.\*
- Number of years of service after 6-30-75 x 2.00% x FAS.\*
- Plan 1 allowance = total of 1 and 2.

\*FAS (Final Average Salary) = highest five years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

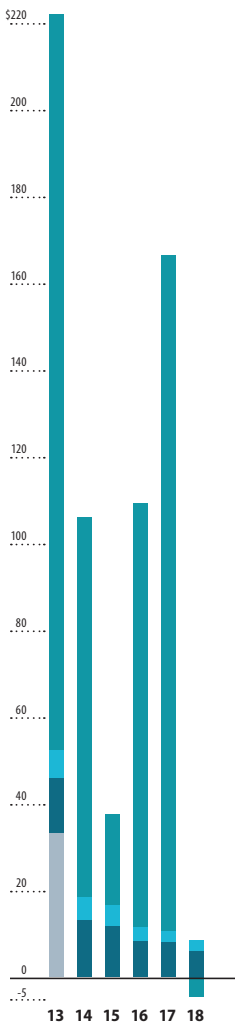
Up to 4% annually on original retirement benefit.

### Contribution Rates *(as of 12-31-2018)*

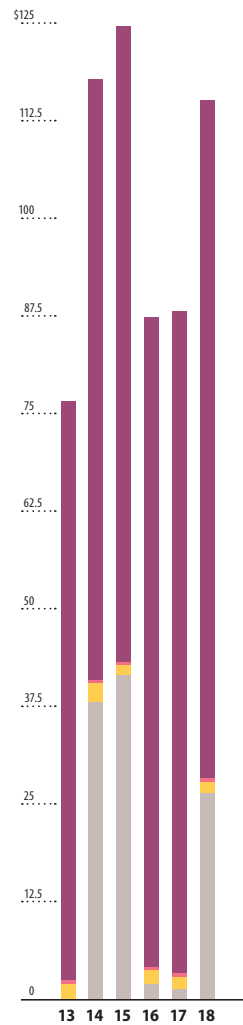
Member rate is 6.00% of covered salary. Employer rate for State and School Division (Level A) is 17.70% of covered salary and 14.46% for the Local Government Division (Level B).

For more detail see Summary of Plan Provisions on page 179.

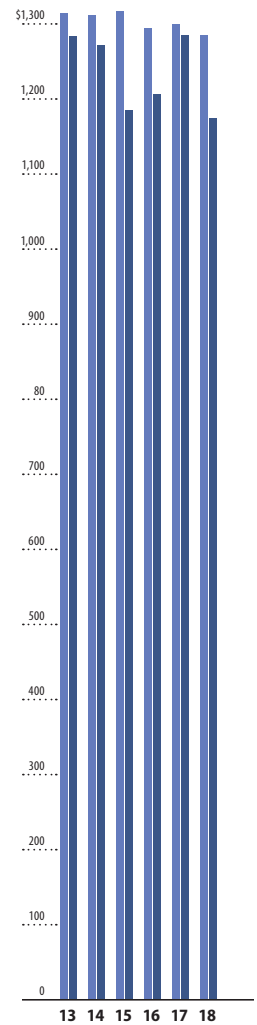
**Additions by Source**  
*(in millions)*



**Deductions by Type**  
*(in millions)*



**Schedule of Employers Net Pension Liability**  
*(in millions)*



|  |                                | 2013       | 2014    | 2015    | 2016    | 2017    | 2018    |
|--|--------------------------------|------------|---------|---------|---------|---------|---------|
| <b>Additions by Source</b><br><i>(in millions)</i>                         | Investment income (loss)       | \$ 169.5   | 87.6    | 21.2    | 97.7    | 155.9   | (4.5)   |
|  | Member contributions           | 6.4        | 5.4     | 4.8     | 3.4     | 2.7     | 2.5     |
|  | Employer contributions         | 12.9       | 13.0    | 11.7    | 8.2     | 7.9     | 6.0     |
|  | Transfers from systems         | 33.1       | —       | —       | —       | —       | —       |
|  | <b>Totals</b>                  | \$ 221.9   | 106.0   | 37.7    | 109.3   | 166.5   | 4.0     |
| <b>Deductions by Type</b><br><i>(in millions)</i>                          | Benefit payments               | \$ 74.2    | 77.0    | 81.4    | 83.4    | 84.8    | 86.8    |
|  | Administrative expense         | 0.5        | 0.5     | 0.5     | 0.4     | 0.5     | 0.5     |
|  | Refunds                        | 1.9        | 2.4     | 1.2     | 1.7     | 1.6     | 1.5     |
|  | Transfers to systems           | —          | 38.0    | 41.5    | 1.9     | 1.2     | 26.3    |
|  | <b>Totals</b>                  | \$ 76.6    | 117.9   | 124.6   | 87.4    | 88.1    | 115.1   |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in millions)</i> | Total pension liability        | \$ 1,312.9 | 1,309.8 | 1,316.0 | 1,292.5 | 1,298.2 | 1,284.0 |
|  | Statement of plan net position | 1,281.9    | 1,270.0 | 1,183.1 | 1,204.9 | 1,283.5 | 1,172.4 |
|  | <b>Net pension liability</b>   | \$ 31.0    | 39.8    | 132.9   | 87.6    | 14.7    | 111.6   |

Pictured: Dusty Bills, Airfield Roads and Grounds Manager, Salt Lake City Airport



Utah Retirement Systems

# Public Safety

## Retirement System Highlights

The Public Safety Retirement Systems includes eligible state and local government employees directly involved in law enforcement. The Public Safety System consists of the Noncontributory and Contributory divisions.

### Composite Picture

**Total Membership . . . . . 16,193**

Active . . . . . 5,305

Terminated vested . . . . . 4,921

Retired . . . . . 5,967

**2018 Active Members . . . . . 5,305**

Average age . . . . . 42.8

Average years of service . . . . . 16.4

Average annual salary . . . . . \$62,721

**2018 Retirees . . . . . 372**

Average age . . . . . 52.2

Average years of service . . . . . 22.4

Final average annual salary . . . . . \$65,895

Average annual benefit . . . . . \$35,358

Average annual benefit

— all retirees . . . . . \$30,193

**Public Safety Retirement System Highlights** (Concluded)

**Service Retirement**

| Age     | Years of Service | Allowance Reduction |
|---------|------------------|---------------------|
| Any age | 20               | None                |
| 60      | 10               | None                |
| 65      | 4                | None                |

**Service Benefit Formula**

- 2.5% x FAS\* x years of service up to 20 years.
- 2.0% x FAS\* x years of service over 20 years.
- Monthly benefit = total of 1 and 2.

\*FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

**Cost-of-Living Allowance**

Up to 2.5% or 4% (depending on employer) annually on original retirement benefit.

**Contribution Rates** (as of 12-31-2018)

**Noncontributory**

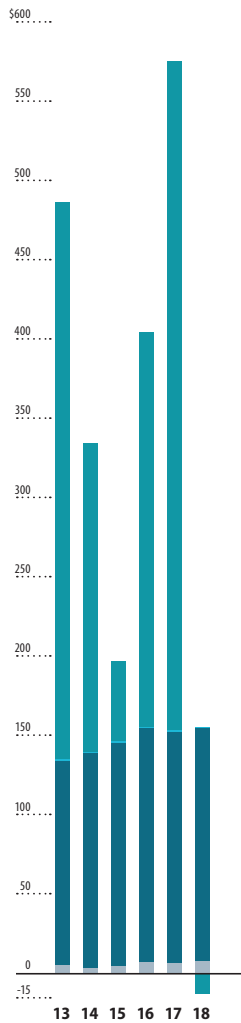
Employer rates range from 32.28% to 50.38% of covered salary.

**Contributory**

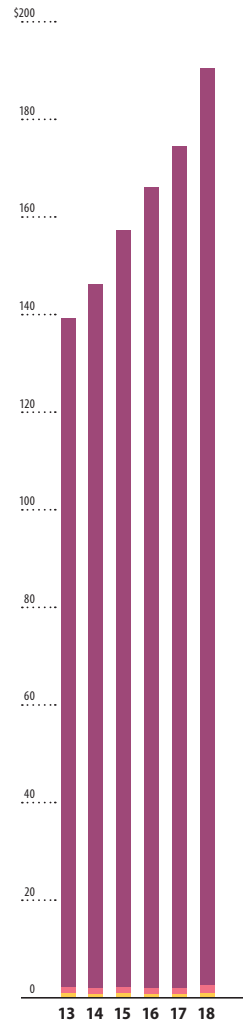
Member rates range from 10.50% to 12.29% of covered salary. Employer rates range from 22.79% to 28.98% of covered salary.

For more detail see Summary of Plan Provisions on page 180.

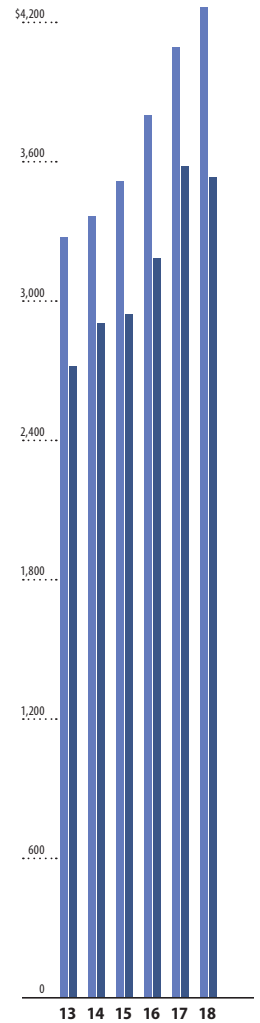
**Additions by Source**  
(in millions)



**Deductions by Type**  
(in millions)



**Schedule of Employers Net Pension Liability**  
(in millions)



|   |                                | 2013            | 2014         | 2015         | 2016         | 2017         | 2018         |
|---|--------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|
| <b>Additions by Source</b><br>(in millions)                         | Investment income (loss)       | \$ 350.6        | 194.2        | 50.7         | 249.0        | 421.9        | (13.1)       |
|   | Member contributions           | 1.3             | 0.8          | 0.9          | 0.8          | 0.8          | 0.9          |
|   | Employer contributions         | 128.7           | 135.6        | 141.0        | 147.1        | 145.8        | 147.1        |
|   | Transfers from systems         | 4.7             | 2.7          | 4.0          | 6.7          | 5.9          | 7.0          |
|   | <b>Totals</b>                  | <b>\$ 485.3</b> | <b>333.3</b> | <b>196.6</b> | <b>403.6</b> | <b>574.4</b> | <b>141.9</b> |
| <b>Deductions by Type</b><br>(in millions)                          | Benefit payments               | \$ 137.5        | 144.8        | 155.4        | 164.5        | 172.9        | 188.4        |
|   | Administrative expense         | 1.2             | 1.2          | 1.2          | 1.3          | 1.4          | 1.5          |
|   | Refunds                        | 0.5             | 0.2          | 0.5          | 0.2          | 0.2          | 0.4          |
|   | <b>Totals</b>                  | <b>\$ 139.2</b> | <b>146.2</b> | <b>157.1</b> | <b>166.0</b> | <b>174.5</b> | <b>190.3</b> |
| <b>Schedule of Employers Net Pension Liability</b><br>(in millions) | Total pension liability        | \$ 3,269.1      | 3,360.0      | 3,511.2      | 3,794.9      | 4,085.2      | 4,258.2      |
|   | Statement of plan net position | 2,712.2         | 2,899.4      | 2,938.8      | 3,176.5      | 3,576.5      | 3,528.1      |
|   | <b>Net pension liability</b>   | <b>\$ 556.9</b> | <b>460.6</b> | <b>572.4</b> | <b>618.4</b> | <b>508.7</b> | <b>730.1</b> |

Pictured: Lieutenant Alex Davis, Layton City Police Department



Utah Retirement Systems

# Firefighters

## Retirement System Highlights

The Firefighters Retirement System includes eligible state and local government employees directly involved in fire fighting and whose duties are classified as hazardous.

### Composite Picture

**Total Membership** ..... **3,444**  
 Active..... 1,540  
 Terminated vested..... 440  
 Retired..... 1,464

**2018 Active Members**..... **1,540**  
 Average age .....43.2  
 Average years of service .....16.4  
 Average annual salary.....\$71,914

**2018 Retirees** ..... **61**  
 Average age .....53.6  
 Average years of service .....23.2  
 Final average annual salary ..... \$77,913  
 Average annual benefit ..... \$43,976

Average annual benefit  
 — all retirees.....\$37,777

## Firefighters Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction |
|---------|------------------|---------------------|
| Any age | 20               | None                |
| 60      | 10               | None                |
| 65      | 4                | None                |

### Service Benefit Formula

- 2.5% x FAS\* x years of service up to 20 years.
- 2.0% x FAS\* x years of service over 20 years.
- Monthly benefit = total of 1 and 2.

\*FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

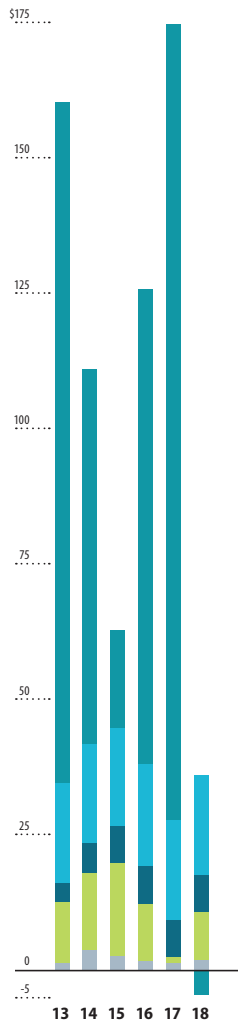
Up to 4% (depending on employer) on original retirement benefit.

### Contribution Rates *(as of 12-31-2018)*

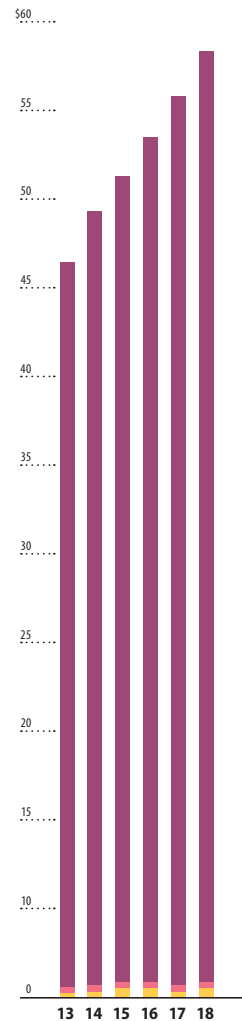
Member rate for Division A (with Social Security) is 15.05% of covered salary and for Division B (without Social Security) is 16.71% of covered salary. Employer rate for Division A is 4.61% of covered salary and 7.24% for Division B.

For more detail see Summary of Plan Provisions on page 182.

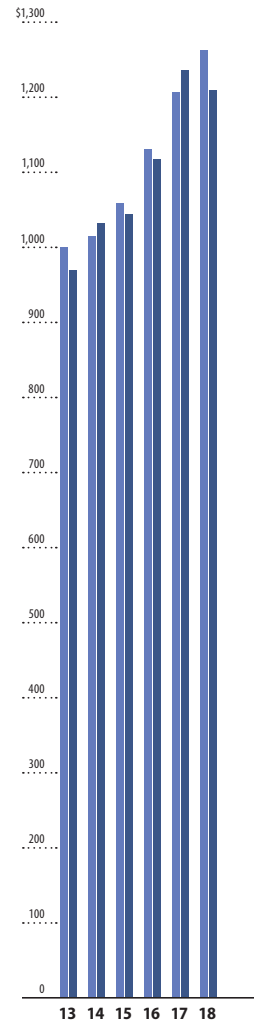
**Additions by Source**  
*(in millions)*



**Deductions by Type**  
*(in millions)*



**Schedule of Employers Net Pension Liability**  
*(in millions)*



|  |                                      | 2013      | 2014         | 2015          | 2016        | 2017         | 2018          |
|--|--------------------------------------|-----------|--------------|---------------|-------------|--------------|---------------|
| <b>Additions by Source</b><br><i>(in millions)</i>                         | Investment income (loss)             | \$ 125.7  | 69.1         | 17.9          | 87.7        | 146.7        | (4.5)         |
|  | Member contributions                 | 18.3      | 18.3         | 18.2          | 18.7        | 18.5         | 18.3          |
|  | Employer contributions               | 3.5       | 5.5          | 6.7           | 7.0         | 6.7          | 7.0           |
|  | Fire insurance tax                   | 11.3      | 14.2         | 17.2          | 10.6        | 1.2          | 8.7           |
|  | Transfers from systems               | 1.3       | 3.7          | 2.6           | 1.6         | 1.3          | 1.9           |
|  | <b>Totals</b>                        | <b>\$</b> | <b>160.1</b> | <b>110.8</b>  | <b>62.6</b> | <b>125.6</b> | <b>174.4</b>  |
| <b>Deductions by Type</b><br><i>(in millions)</i>                          | Benefit payments                     | \$ 44.7   | 47.7         | 49.7          | 52.1        | 54.8         | 57.4          |
|  | Administrative expense               | 0.4       | 0.4          | 0.4           | 0.4         | 0.4          | 0.4           |
|  | Refunds                              | 0.1       | 0.2          | 0.5           | 0.4         | 0.2          | 0.4           |
|  | <b>Totals</b>                        | <b>\$</b> | <b>45.2</b>  | <b>48.3</b>   | <b>50.6</b> | <b>52.9</b>  | <b>55.4</b>   |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in millions)</i> | Total pension liability              | \$ 999.0  | 1,014.3      | 1,058.2       | 1,129.7     | 1,205.7      | 1,261.3       |
|  | Statement of plan net position       | 968.7     | 1,031.0      | 1,043.0       | 1,115.7     | 1,234.4      | 1,207.9       |
|  | <b>Net pension liability/(asset)</b> | <b>\$</b> | <b>30.3</b>  | <b>(16.7)</b> | <b>15.2</b> | <b>14.0</b>  | <b>(28.7)</b> |

Pictured: Bob Fitzgerald, Battalion Chief, West Valley City Fire Department



Utah Retirement Systems

# Judges

## Retirement System Highlights

The Judges Retirement System includes justices and judges of the courts of record as authorized in state statutes.

### Composite Picture

**Total Membership** ..... **279**

Active..... 116

Terminated vested.....8

Retired..... 155

**2018 Active Members**..... **116**

Average age .....53.8

Average years of service .....14.5

Average annual salary.....\$166,280

**2018 Retirees** ..... **10**

Average age .....66.3

Average years of service .....34.0

Final average annual salary .....\$159,652

Average annual benefit .....\$128,017

Average annual benefit

— all retirees.....\$92,753



## Judges Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction      |
|---------|------------------|--------------------------|
| Any age | 25               | None                     |
| 55      | 20               | Full actuarial reduction |
| 62      | 10               | None                     |
| 70      | 6                | None                     |

### Service Benefit Formula

- 5.00% x FAS\* x years of service up to 10 years.
- 2.25% x FAS\* x years of service between 10 and 20 years.
- 1.00% x FAS\* x years of service over 20 years.
- Monthly benefit = total of 1, 2, and 3.

\*FAS (Final Average Salary) = highest two years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

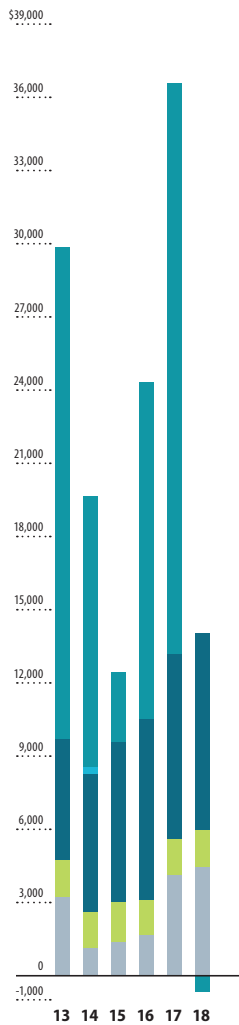
Up to 4% compounded annually.

### Contribution Rates *(as of 12-31-2018)*

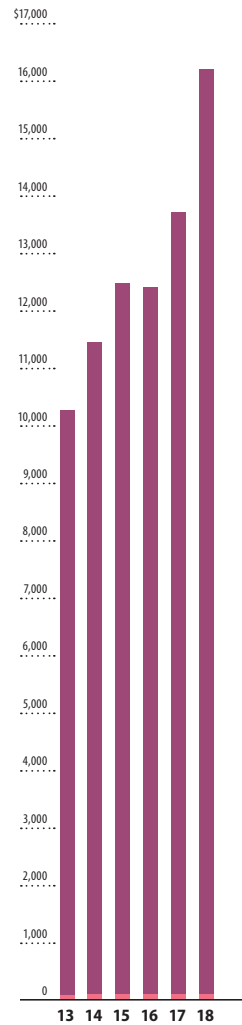
Employer rate is 43.68% of covered salary.

For more detail see Summary of Plan Provisions on page 184.

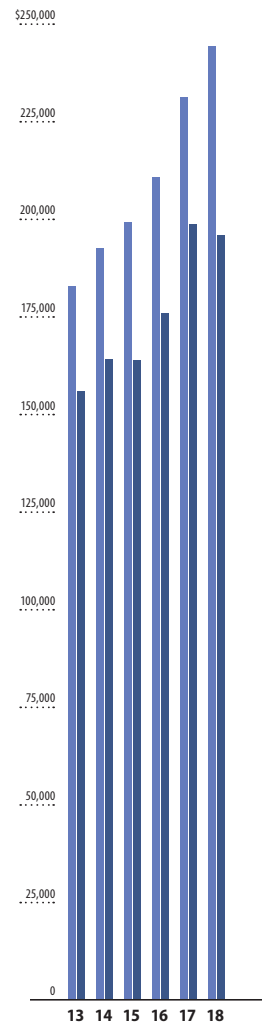
**Additions by Source**  
*(in thousands)*



**Deductions by Type**  
*(in thousands)*



**Schedule of Employers Net Pension Liability**  
*(in thousands)*



|   |                                | 2013             | 2014          | 2015          | 2016          | 2017          | 2018          |
|---|--------------------------------|------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Additions by Source</b><br><i>(in thousands)</i>                         | Investment income (loss)       | \$ 20,130        | 11,068        | 2,842         | 13,820        | 23,435        | (730)         |
|   | Member contributions           | —                | 317           | —             | —             | —             | —             |
|   | Employer contributions         | 4,990            | 5,627         | 6,555         | 7,382         | 7,563         | 8,091         |
|   | Court fees                     | 1,498            | 1,486         | 1,653         | 1,470         | 1,477         | 1,518         |
|   | Transfers from systems         | 3,186            | 1,092         | 1,334         | 1,600         | 4,090         | 4,403         |
|   | <b>Totals</b>                  | <b>\$ 29,804</b> | <b>19,590</b> | <b>12,384</b> | <b>24,272</b> | <b>36,565</b> | <b>13,282</b> |
| <b>Deductions by Type</b><br><i>(in thousands)</i>                          | Benefit payments               | \$ 10,189        | 11,361        | 12,400        | 12,330        | 13,621        | 16,111        |
|   | Administrative expense         | 66               | 71            | 71            | 71            | 79            | 84            |
|   | <b>Totals</b>                  | <b>\$ 10,255</b> | <b>11,432</b> | <b>12,471</b> | <b>12,401</b> | <b>13,700</b> | <b>16,195</b> |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in thousands)</i> | Total pension liability        | \$ 182,638       | 192,285       | 198,986       | 210,623       | 231,069       | 244,209       |
|   | Statement of plan net position | 155,676          | 163,834       | 163,747       | 175,618       | 198,483       | 195,570       |
|   | <b>Net pension liability</b>   | <b>\$ 26,962</b> | <b>28,451</b> | <b>35,239</b> | <b>35,005</b> | <b>32,586</b> | <b>48,639</b> |

Pictured: Justice Paige Petersen, Utah Supreme Court



Utah Retirement Systems

# Utah Governors and Legislators Retirement Plan Highlights

The Utah Governors and Legislators Retirement Plan includes governors and legislators of the State of Utah.

## Composite Picture

**Total Membership** ..... **387**

Active..... .52

Terminated vested..... .85

Retired..... 250

**2018 Active Members**..... **52**

Average age .....57.0

Average years of service .....13.6

Average annual salary..... N/A

**2018 Retirees**..... **7**

Average age .....68.6

Average years of service .....10.8

Final average annual salary ..... N/A

Average annual benefit ..... \$4,048

Average annual benefit

— all retirees..... \$3,860

## Utah Governors and Legislators Retirement Plan Highlights *(Concluded)*

### Service Retirement for Governors

| Age | Service | Allowance Reduction        |
|-----|---------|----------------------------|
| 65  | 1 Term  | None                       |
| 62  | 10 yrs  | 3% each year before age 65 |

### Service Retirement for Legislators

| Age | Years of Service | Allowance Reduction        |
|-----|------------------|----------------------------|
| 65  | 4                | None                       |
| 62  | 10               | 3% each year before age 65 |

### Service Benefit Formula

**Governors**  
\$500\* per month per term.

\*Increased semi annually up to 2% based on the Consumer Price Index. The amount as of 12-31-18 is \$1,400.

#### Legislators

\$10\*\* per month each year of service as a legislator.

\*\*Increased semi annually up to 2% based on the Consumer Price Index. The amount as of 12-31-18 is \$30.40.

### Cost-of-Living Allowance

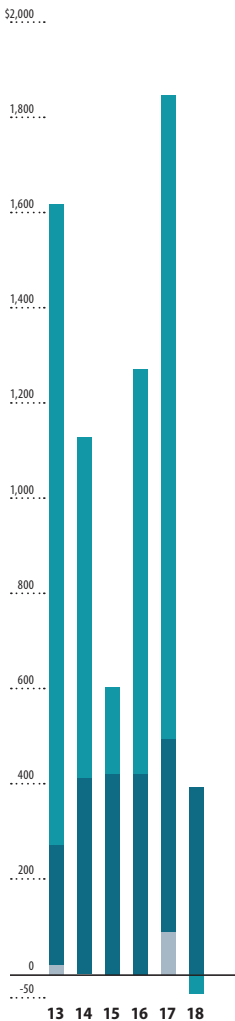
Up to 4% annually on original retirement benefit.

### Contribution Rates *(as of 12-31-2018)*

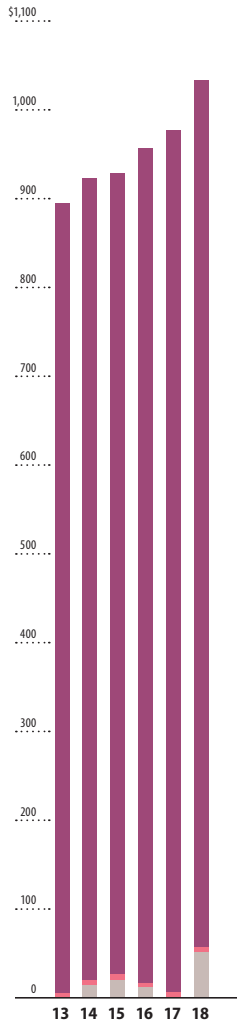
There was a 2018-19 appropriation payable by June 30, 2019, to the Utah Governors and Legislators Retirement Plan of \$384,103.

For more detail see Summary of Plan Provisions on page 185.

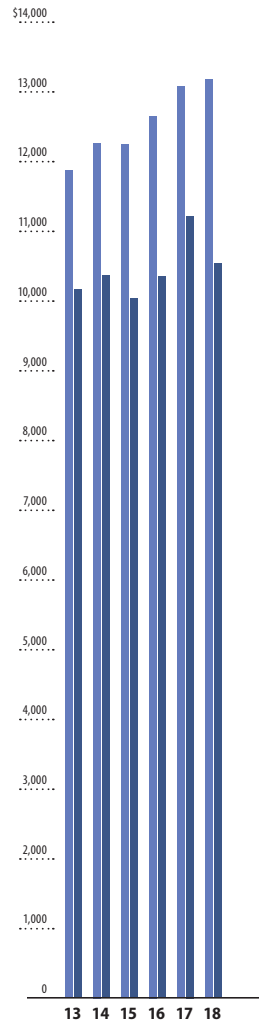
**Additions by Source**  
*(in thousands)*



**Deductions by Type**  
*(in thousands)*



**Schedule of Employers Net Pension Liability**  
*(in thousands)*



|   |                                | 2013            | 2014         | 2015         | 2016         | 2017         | 2018         |
|---|--------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|
| <b>Additions by Source</b><br><i>(in thousands)</i>                         | Investment income (loss)       | \$ 1,346        | 717          | 181          | 849          | 1,353        | (41)         |
|   | Employer contributions         | 252             | 411          | 421          | 421          | 404          | 392          |
|   | Transfers from systems         | 19              | —            | —            | —            | 89           | —            |
|   | <b>Totals</b>                  | <b>\$ 1,617</b> | <b>1,128</b> | <b>602</b>   | <b>1,270</b> | <b>1,846</b> | <b>351</b>   |
| <b>Deductions by Type</b><br><i>(in thousands)</i>                          | Benefit payments               | \$ 892          | 909          | 904          | 941          | 973          | 978          |
|   | Administrative expense         | 4               | 5            | 5            | 4            | 5            | 5            |
|   | Transfers to systems           | —               | 14           | 20           | 12           | —            | 51           |
|   | <b>Totals</b>                  | <b>\$ 896</b>   | <b>928</b>   | <b>929</b>   | <b>957</b>   | <b>978</b>   | <b>1,034</b> |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in thousands)</i> | Total pension liability        | \$ 11,879       | 12,267       | 12,247       | 12,654       | 13,074       | 13,177       |
|   | Statement of plan net position | 10,166          | 10,366       | 10,039       | 10,352       | 11,220       | 10,537       |
|   | <b>Net pension liability</b>   | <b>\$ 1,713</b> | <b>1,901</b> | <b>2,208</b> | <b>2,302</b> | <b>1,854</b> | <b>2,640</b> |

Pictured: Senator Wayne A. Harper, District 6, Salt Lake County



Utah Retirement Systems

# Tier 2 Public Employees Contributory Retirement System Highlights

The Tier 2 Public Employees Retirement System includes eligible employees of the State of Utah and its political subdivisions and public education employees of those entities covered by the System.

## Composite Picture

**Total Membership** ..... **32,326**  
 Active..... 30,291  
 Terminated vested..... 1,971  
 Retired..... 64

**2018 Active Members**..... **30,291**  
 Average age ..... 36.0  
 Average years of service ..... 2.9  
 Average annual salary..... \$41,840

**2018 Retirees** ..... **38**  
 Average age ..... 67.6  
 Average years of service ..... 5.4  
 Final average annual salary ..... \$33,954  
 Average annual benefit ..... \$2,875

Average annual benefit  
 — all retirees..... \$2,505

## Tier 2 Public Employees Contributory Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction          |
|---------|------------------|------------------------------|
| Any age | 35               | None                         |
| 60-61   | 20               | Full actuarial before age 65 |
| 62-64   | 10               | Full actuarial before age 65 |
| 65      | 4                | None                         |

### Service Benefit Formula

Number of years of service x 1.50% x FAS.\*

\*FAS (Final Average Salary) = highest five years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

Up to 2.5% annually on original retirement benefit.

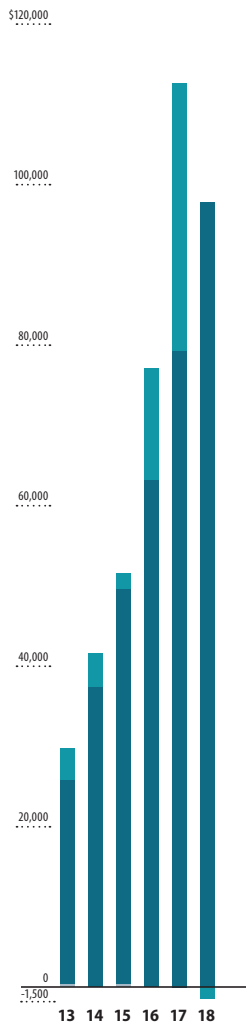
### Contribution Rates *(as of 12-31-2018)*

Employer rate range from 15.54% to 18.87% of covered salary.

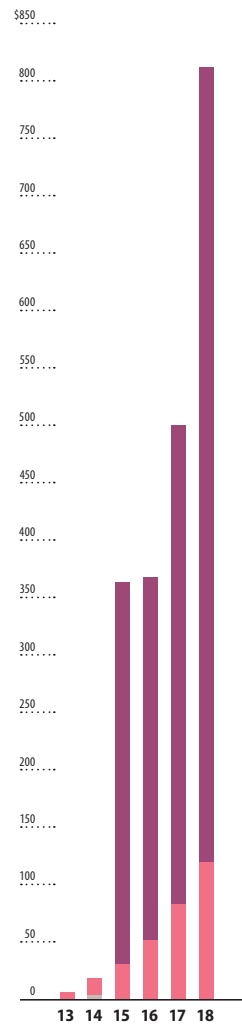
*(Includes active member death benefit and Tier 1 amortization rate.)*

For more detail see Summary of Plan Provisions on page 186.

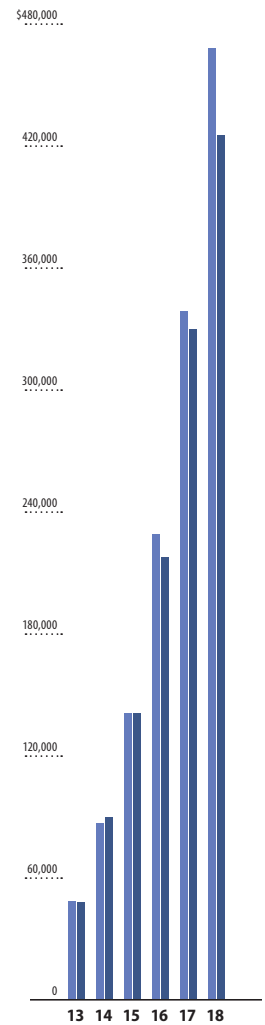
**Additions by Source**  
*(in thousands)*



**Deductions by Type**  
*(in thousands)*



**Schedule of Employers Net Pension Liability**  
*(in thousands)*



|   |                                      | 2013             | 2014           | 2015          | 2016          | 2017           | 2018          |
|---|--------------------------------------|------------------|----------------|---------------|---------------|----------------|---------------|
| <b>Additions by Source</b><br><i>(in thousands)</i>                         | Investment income (loss)             | \$ 4,017         | 4,320          | 1,963         | 14,059        | 33,249         | (1,454)       |
|   | Employer contributions               | 25,743           | 37,299         | 49,645        | 63,062        | 79,175         | 97,680        |
|   | Transfers from systems               | 3                | —              | 3             | —             | —              | —             |
|   | <b>Totals</b>                        | <b>\$ 29,763</b> | <b>41,619</b>  | <b>51,611</b> | <b>77,121</b> | <b>112,424</b> | <b>96,226</b> |
| <b>Deductions by Type</b><br><i>(in thousands)</i>                          | Benefit payments                     | \$ —             | —              | 333           | 316           | 417            | 692           |
|   | Administrative expense               | 6                | 16             | 30            | 51            | 82             | 119           |
|   | Transfers to systems                 | —                | 2              | —             | —             | —              | —             |
|   | <b>Totals</b>                        | <b>\$ 6</b>      | <b>18</b>      | <b>363</b>    | <b>367</b>    | <b>499</b>     | <b>811</b>    |
| <b>Schedule of Employers Net Pension Liability</b><br><i>(in thousands)</i> | Total pension liability              | \$ 48,292        | 86,261         | 140,321       | 228,450       | 338,035        | 467,461       |
|   | Statement of plan net position       | 47,690           | 89,291         | 140,539       | 217,293       | 329,218        | 424,633       |
|   | <b>Net pension liability/(asset)</b> | <b>\$ 602</b>    | <b>(3,030)</b> | <b>(218)</b>  | <b>11,157</b> | <b>8,817</b>   | <b>42,828</b> |

Pictured: Jenessa Carvajal, Teacher, Freedom Elementary, Highland, Utah



Utah Retirement Systems

# Tier 2 Public Safety and Firefighter Contributory Retirement System Highlights

The Tier 2 Public Safety and Firefighter Contributory Retirement System includes eligible state and local government employees directly involved in law enforcement or directly involved in fire fighting and whose duties are classified as hazardous.

## Composite Picture

**Total Membership** ..... 3,431

Active..... 3,301

Terminated vested..... 130

Retired..... —

**2018 Active Members**..... 3,301

Average age .....29.5

Average years of service ..... 3.0

Average annual salary..... \$44,030

**2018 Retirees** ..... —

Average age ..... —

Average years of service ..... —

Final average annual salary ..... —

Average annual benefit ..... —

Average annual benefit

— all retirees..... —

## Tier 2 Public Safety and Firefighter Contributory Retirement System Highlights *(Concluded)*

### Service Retirement

| Age     | Years of Service | Allowance Reduction          |
|---------|------------------|------------------------------|
| Any age | 25               | None                         |
| 60-61   | 20               | Full actuarial before age 65 |
| 62-64   | 10               | Full actuarial before age 65 |
| 65      | 4                | None                         |

### Service Benefit Formula

Number of years of service x 1.50% x FAS.\*

\*FAS (Final Average Salary) = highest five years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

Up to 2.5% annually on original retirement benefit.

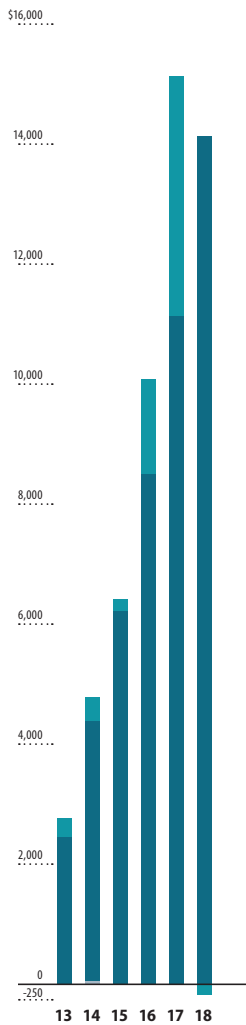
### Contribution Rates *(as of 12-31-2018)*

Employer rate range from 11.34% to 38.23% of covered salary.

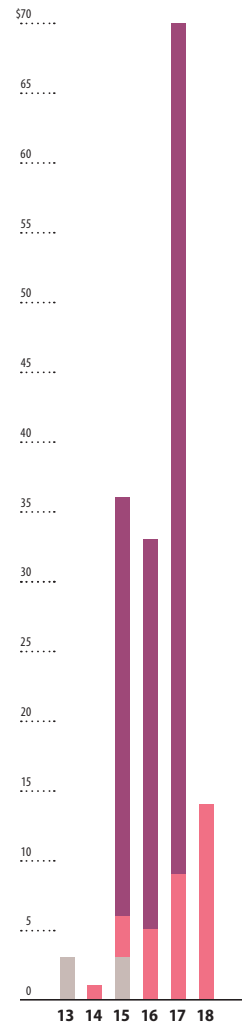
*(Includes active member death benefit and Tier 1 amortization rate.)*

For more detail see Summary of Plan Provisions on page 188.

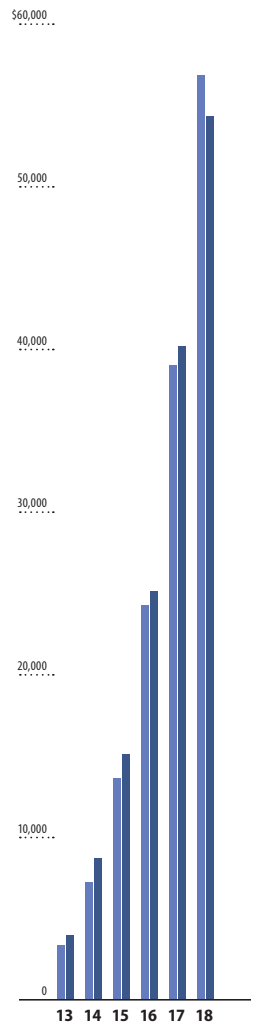
**Additions by Source**  
*(in thousands)*



**Deductions by Type**  
*(in thousands)*



**Schedule of Employers  
Net Pension Liability**  
*(in thousands)*



|   |                                      | 2013            | 2014           | 2015           | 2016          | 2017           | 2018          |
|---|--------------------------------------|-----------------|----------------|----------------|---------------|----------------|---------------|
| <b>Additions by Source</b><br><i>(in thousands)</i>                             | Investment income (loss)             | \$ 316          | 404            | 199            | 1,591         | 3,989          | (180)         |
|   | Employer contributions               | 2,451           | 4,365          | 6,221          | 8,488         | 11,126         | 14,295        |
|   | Transfers from systems               | —               | 2              | —              | —             | —              | —             |
|   | <b>Totals</b>                        | <b>\$ 2,767</b> | <b>4,771</b>   | <b>6,420</b>   | <b>10,079</b> | <b>15,115</b>  | <b>14,115</b> |
| <b>Deductions by Type</b><br><i>(in thousands)</i>                              | Benefit payments                     | \$ —            | —              | 30             | 28            | 61             | —             |
|   | Administrative expense               | —               | 1              | 3              | 5             | 9              | 14            |
|   | Transfers to systems                 | 3               | —              | 3              | —             | —              | —             |
|   | <b>Totals</b>                        | <b>\$ 3</b>     | <b>1</b>       | <b>36</b>      | <b>33</b>     | <b>70</b>      | <b>14</b>     |
| <b>Schedule of Employers<br/>Net Pension Liability</b><br><i>(in thousands)</i> | Total pension liability              | \$ 3,345        | 7,226          | 13,628         | 24,266        | 39,023         | 56,841        |
|   | Statement of plan net position       | 3,935           | 8,705          | 15,089         | 25,135        | 40,180         | 54,336        |
|   | <b>Net pension liability/(asset)</b> | <b>\$ (590)</b> | <b>(1,479)</b> | <b>(1,461)</b> | <b>(869)</b>  | <b>(1,157)</b> | <b>2,505</b>  |

Pictured Left: Celeste Carter, Firefighter, Lehi City Fire Department; Right: Nicole Jacobson, Police Officer, Bountiful Police Department

# Defined Contribution Savings Plans

The purpose of the Savings Plans (401(k), 457, Roth and Traditional IRAs) is to allow public employees throughout Utah to adequately prepare themselves for retirement by investing a portion of their income in one or more of these retirement plans.

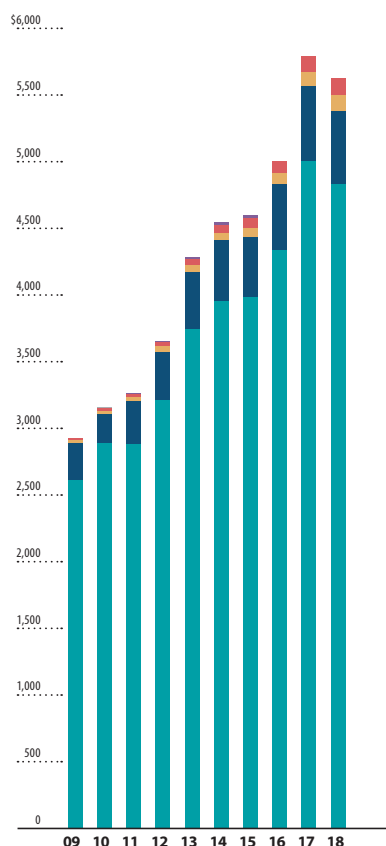
## MEMBER INFORMATION

at December 31, 2018

|  | 401(k)    | 457       | Roth IRA  | Traditional IRA |
|--|-----------|-----------|-----------|-----------------|
| Number of active employees eligible to participate         | 107,226   | 103,336   | 228,207   | 228,207         |
| Employee contributions (excluding employer contributions): |           |           |           |                 |
| Number of employees contributing                           | 40,083    | 8,475     | 8,775     | 614             |
| Percent of eligible employees contributing                 | 37.4%     | 8.2%      | 3.8%      | 0.3%            |
| Average % of salary deferred by employees                  | 5.6%      | 6.2%      | N/A       | N/A             |
| Total participants   | 178,010   | 18,336    | 12,232    | 2,383           |
| Average participant account balance                        | \$ 27,156 | \$ 29,677 | \$ 10,774 | \$ 50,317       |

## Savings Plans Member Balances

(in millions)



It has long been recognized that for employees to experience the comfortable and rewarding retirement they desire, they cannot rely entirely upon Social Security and their employer-provided retirement. Employees should take the initiative to personally put aside a portion of their salary into some type of long-term savings plan.

Each year the number of employees participating in these plans increases. Individuals may participate in more than one plan. As of December 31, 2018, the number of participants by savings plan was as shown in the table above.

Annualized rates of returns for the Investment Funds are shown on pages 149 and 150.

The Plans provided the following benefits:

- » Convenient, automatic payroll deduction
- » 20 investment options
- » Brokerage window option
- » Tax-deferred and/or tax-free savings
- » Increase or decrease contributions as often as every pay period
- » Flexible payout options when eligible
- » Upon death, funds transfer to beneficiaries
- » No sales commissions
- » Low investment and administrative fees
- » Plan loans (401(k) and 457)
- » Hardship and emergency withdrawals
- » Local customer service and counseling.

## SAVINGS PLANS MEMBER BALANCES

at December 31, 2018

|                 | (in millions) |       |       |       |       |       |       |       |       |       |
|-----------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                 | 2009          | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  |
| HRA*            | \$ 3          | 6     | 9     | 11    | 16    | 20    | 23    | —     | —     | —     |
| Roth IRA        | 12            | 21    | 24    | 34    | 48    | 59    | 70    | 89    | 119   | 132   |
| Traditional IRA | 22            | 26    | 30    | 39    | 50    | 60    | 69    | 82    | 102   | 120   |
| 457             | 284           | 317   | 321   | 360   | 425   | 451   | 454   | 494   | 569   | 544   |
| 401(k)          | 2,608         | 2,887 | 2,881 | 3,213 | 3,746 | 3,956 | 3,980 | 4,339 | 5,003 | 4,834 |
| Totals          | \$ 2,929      | 3,257 | 3,265 | 3,657 | 4,285 | 4,546 | 4,596 | 5,004 | 5,793 | 5,630 |

\*Administration of the HRA was transferred to PEHP in October 2016.





# Financial Section

Utah Retirement Systems  
2018 Comprehensive  
Annual Financial Report

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- 136 Schedules of Administrative and Investment Expenses

# Independent Auditor's Report



## INDEPENDENT AUDITORS' REPORT

To the Board of Directors  
Utah State Retirement Board  
Salt Lake City, Utah

### REPORT ON THE FINANCIAL STATEMENTS

We have audited the accompanying financial statements of each of the defined benefit pension plans and of the total combined defined contribution plans of Utah Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, which comprise the statements of fiduciary net position of the pension (and other employee benefit) trust funds as of December 31, 2018, and the related statements of changes in fiduciary net position of the pension plan (and other employee benefit) trust funds for the year then ended, and the related notes to the financial statements, which collectively comprise Utah Retirement Systems' basic financial statements as listed in the table of contents.

### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditors' Responsibility

Our responsibility is to express opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates

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## Independent Auditors' Report *(Continued)*

made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the pension (and other employee benefit) trust funds of each of the defined benefit pension plans and of the total combined defined contribution plans of Utah State Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, at December 31, 2018, and the changes in fiduciary net position of the pension (and other employee benefit) trust funds for the year then ended in accordance with accounting principles generally accepted in the United States of America.

### Emphasis of Matter

As discussed in Note 3 to the financial statements, the financial statements include investments that are not listed on national exchanges or for which quoted market prices are not available. These investments include private equities, absolute returns, and investments in real assets. Such investments totaled \$13.7 billion (35.3% of total assets) at December 31, 2018. Where a publicly listed price is not available, the management of Utah Retirement Systems uses alternative sources of information including audited financial statements, unaudited interim reports, independent appraisals, and similar evidence to determine the fair value of the investments. Our opinion is not modified with respect to this matter.

### Other Matters

#### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, and the schedules of changes in the employers' net pension liability, employers' net pension liability, employer contributions, and investment returns, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial

statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquires of management about the methods or preparing the information and comparing the information for consistency with management's responses to our inquires, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### *Other Information*

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise Utah Retirement Systems' basic financial statements. The additional combining information for the total combined defined contribution plans is presented for purposes of additional analysis of the financial statements rather than to present the fiduciary net position and the changes in fiduciary net position of the individual plans and is not a required part of the basic financial statements. The supplementary financial supporting schedules of individual retirement systems' schedules by division and schedules of administrative and investment expenses as listed in the table of contents are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The additional combining information and the supplementary financial reporting schedules as listed in the table of contents are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the additional combining information and the supplemental financial reporting schedules is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

## Independent Auditors' Report *(Concluded)*

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

### **Report on Summarized Comparative Information**

The financial statements include summarized prior-year comparative information. The financial statements of Utah Retirement Systems' as of December 31, 2017, were audited by other auditors, whose report dated April 26, 2018, expressed an unmodified opinion on those statements. The summarized comparative information presented herein as of and for the year ended December 31, 2017, is consistent, in all material respects, with the audited financial statements from which it has been derived.

### **Other Reporting Required by Government Auditing Standards**

In accordance with *Government Auditing Standards*, we have also issued our report dated April 30, 2019 on our consideration of the Utah Retirement Systems' internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Utah Retirement Systems' internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Utah Retirement Systems' internal control over financial reporting and compliance.



Salt Lake City, Utah  
April 30, 2019



### **INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

To the Utah State Retirement Board  
Utah State Retirement Systems  
Salt Lake City, Utah

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of each of the defined benefit plans and of the total combined defined contribution plans of Utah Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, which comprise the statements of fiduciary net position (and other employee benefit) trust funds as of December 31, 2018 and the related statements of changes in fiduciary net position of the pension (and other employee benefit) trust funds for the year then ended, and the related notes to the financial statements, which collectively comprise Utah State Retirement Systems' basic financial statements, and have issued our report thereon dated April 30, 2019, which included in emphasis-of-matter paragraph regarding the fair value of investments where a publicly listed price is not available.

## Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters *(Concluded)*

### Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered Utah Retirement Systems' internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Utah Retirement Systems' internal control. Accordingly, we do not express an opinion on the effectiveness of the Utah Retirement Systems' internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

### Compliance and Other Matters

As part of obtaining reasonable assurance about whether Utah State Retirement Systems' financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

### Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



Salt Lake City, Utah  
April 30, 2019

# Management's Discussion and Analysis



## Introduction

This section presents management's discussion and analysis of the Utah Retirement Systems' (URS) financial position and performance for the year ended December 31, 2018. It is presented as a narrative overview and analysis. Please read it in conjunction with the Letter of Transmittal included in the Introductory Section, the financial statements and other information that are presented in the Financial Section of this Comprehensive Annual Financial Report. URS is responsible for administering retirement and defined contribution benefits for state, local government, and public education employees in the State of Utah.

URS is composed of eight defined benefit pension systems (Systems) and four defined contribution plans (Plans). The eight defined benefit pension systems are the Public Employees Noncontributory Retirement System (Noncontributory System), the Public Employees Contributory Retirement System (Contributory System), the Public Safety Retirement System (Public Safety System), the Firefighters Retirement System (Firefighters System), the Judges Retirement System (Judges System), the Utah Governors and Legislators Retirement Plan (Governors and Legislators Plan), Tier 2 Public Employees Contributory Retirement System (Tier 2 Public Employees System), and the Tier 2 Public Safety and Firefighter Contributory Retirement System (Tier 2 Public Safety and Firefighter System). The four defined contribution plans (Plans) are the 401(k), 457, and Roth and Traditional IRAs. All of these Systems and Plans are defined as pension (and other employee benefit)

trust funds, which are fiduciary funds. Throughout this discussion and analysis units of measure (i.e., billions, millions, thousands) are approximate, being rounded up or down to the nearest tenth of the respective unit value.

## Financial Highlights

- » The URS Defined Benefit Pension Systems' combined total net position decreased by \$619.1 million, or 1.9% during calendar year 2018. The decrease was primarily due to the decrease in the markets.
- » The URS Defined Benefit Pension Systems' rate of return on investments during calendar year 2018 was negative 0.22% compared with the calendar year 2017 rate of return of 13.57%. The decrease in rate of return was due primarily to the decrease in market performance in 2018.

## Overview of the Financial Statements

The URS 2018 financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with GASB Statement No. 67, *Financial Reporting for Pension Plans*. This discussion and analysis is intended to serve as an introduction to the URS financial reporting, which is comprised of the following components:

- 1) basic financial statements,
- 2) notes to the basic financial statements,
- 3) required supplementary information, and
- 4) other supplementary schedules.

Collectively, this information presents the combined net position held in trust for pension benefits for each of the funds administered by URS as of December 31, 2018. This financial information also summarizes the combined changes in net position held in trust for pension benefits for the year then ended. The information in each of these components is briefly summarized as follows:

### 1) Basic Financial Statements

For the calendar year ended December 31, 2018, basic financial statements are presented for the fiduciary funds administered by URS. Fiduciary funds are used to account for resources held for the benefit of the participants outside of URS. The fiduciary funds are comprised of 12 pension (and other employee benefit) trust funds that consist of eight defined benefit systems and four defined contribution plans.

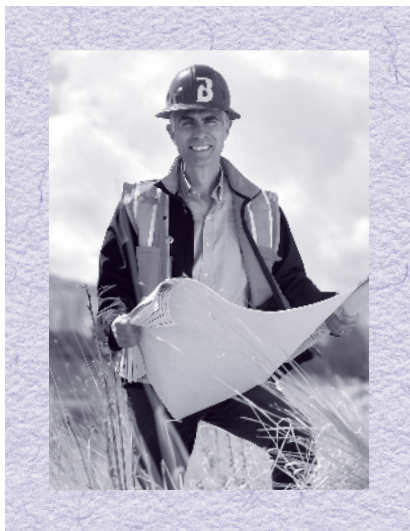
- » The Statements of Fiduciary Net Position are presented for the pension trust funds at December 31, 2018, with combined total comparative information at December 31, 2017. These financial statements reflect the resources available to pay benefits to members, including retirees and beneficiaries, at the end of the years reported.

- » The Statements of Changes in Fiduciary Net Position are presented for the pension trust funds for the year ended December 31, 2018, with combined total comparative information for the year ended December 31, 2017. These financial statements reflect the changes in the resources available to pay benefits to members, including retirees and beneficiaries, for calendar years 2018 and 2017.

### 2) Notes to the Basic Financial Statements

The Notes to the Basic Financial Statements provide additional information that is essential to a full understanding of the data provided in the basic financial statements. Information in the Notes to the Basic Financial Statements is described as follows:

- » Note 1 provides a general description of URS, as well as a description of each of the Systems and Plans administered by URS and a summary of benefits. Information regarding employer and member participation in the Systems and Plans administered by URS is also provided.
- » Note 2 provides a summary of significant accounting policies including the basis of accounting, investment accounting policies, management's use of estimates, information regarding the implementation of new accounting pronouncements, and other significant accounting policies.



- » The URS Defined Benefit Pension Systems had a Net Pension Liability of \$5.4 billion and the Net Pension Liability as a percentage of covered payroll was 105.9 % as of December 31, 2018.
- » The Defined Contribution Plans' combined total net position decreased \$164.1 million during calendar year 2018 primarily due to investment losses.
- » The Defined Contribution Plans' rates of return for investment options ranged from a high of 2.2% to a low of negative 14.5% compared to prior year investment option returns of a high of 33.2% and a low of 1.7%.

Management’s Discussion and Analysis (Continued)

- » Note 3 describes deposits, investment risk disclosures, fair value measurements and related disclosures, and additional information about cash, securities lending, and derivatives.
- » Note 4 explains property and equipment of URS including depreciation and net carrying amounts.
- » Note 5 provides information about net pension liability of employers.
- » Note 6 provides information about contributions to the defined benefit systems administered by URS.
- » Note 7 explains transfers to or from affiliated systems.
- » Note 8 describes supplemental benefits.
- » Note 9 provides information about litigation.
- » Note 10 describes commitments for investment funding.
- » Note 11 provides information about pension plan participation.
- » Note 12 provides information about URS post-employment benefits.
- » Note 13 describes compensated absences and insurance reserves.

- » Note 14 describes required supplementary information.
- » Note 15 provides information about risk management of URS.
- » Note 16 provides information about real estate liabilities.

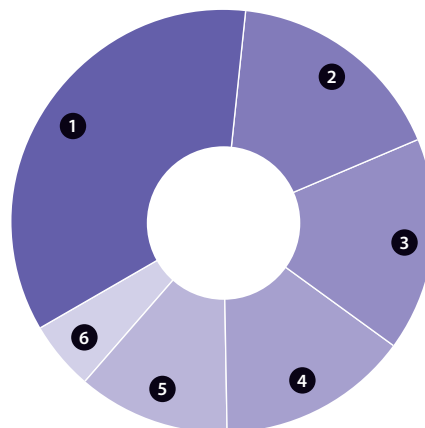
**3) Required Supplementary Information**

The required supplementary information consists of four schedules of changes in employers’ net pension liability, employers’ net pension liability, employer contributions, and the money-weighted rate of investment returns of the defined benefit pension systems administered by URS.

**4) Other Supplementary Schedules**

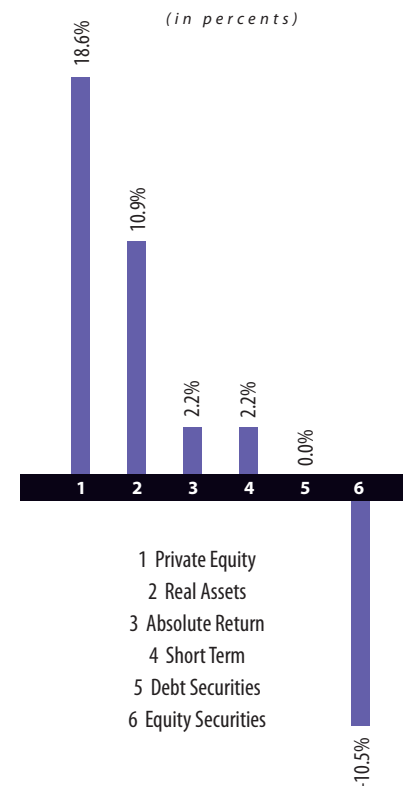
Other schedules include more detailed information pertaining to the Systems and Plans as well as schedules of administrative and investment expenses.

**DEFINED BENEFIT SYSTEMS INVESTMENTS AT FAIR VALUE**



1-Equity Securities (35.1%)    4-Absolute Return (14.6%)  
 2-Debt Securities (16.9%)    5-Private Equity (11.7%)  
 3-Real Assets (16.6%)        6-Short Term (5.1%)

**DEFINED BENEFIT SYSTEMS INVESTMENT RATES OF RETURN BY INVESTMENT TYPE FOR 2018**





## Management's Discussion and Analysis *(Continued)*

# Financial Analysis of the Systems — Defined Benefit Plan

## Investments

Investments of the URS Defined Benefit Systems are combined in a co-mingled investment pool as authorized by state statute. Each system owns an equity position in the pool and receives proportionate investment income from the pool in accordance with each respective ownership percentage.

Each system's allocated share of each type of investment in the pool is shown in the Statements of Net Position. Investment gains or losses are reported in the Statements of Changes in Fiduciary Net Position. The rate of return on investments is therefore approximately the same for each of the systems.

## Systems' Total Investments

As of December 31, 2018, URS Defined Benefit Systems had total net position of \$31.3 billion, a decrease of \$619.1 million from calendar year 2017 investment totals. The combined investment portfolio experienced a return of negative 0.22% compared with the URS investment benchmark return of negative 2.08%. Investment results over time compared with URS benchmarks are presented on page 144 in the Investment Section.

Because the investment gain in all of the retirement systems was a negative 0.22% of net position, further investment performance will not be evaluated in each respective system.

## Equity Securities

As of December 31, 2018, URS Defined Benefit Systems held \$11.0 billion in U.S. and international equity securities, a decrease of \$1.1 billion from year 2017. Equity securities had a return of negative 10.45% for calendar year 2018 compared with the URS benchmark return of negative 10.09%.

## Debt Securities

As of December 31, 2018, URS Defined Benefit Systems held \$5.3 billion in U.S. debt and international debt securities, an increase of \$755.9 million from year 2017. Debt securities returned a negative 0.01% in calendar year 2018 compared with the URS benchmark return of 0.02%.

## Real Assets

As of December 31, 2018, URS Defined Benefit Systems held \$5.2 billion in real assets investments, an increase of \$461.7 million from year 2017. Real assets investments returned 10.94% in calendar year 2018 compared with the URS benchmark return of 6.77%.

## Private Equity

As of December 31, 2018, URS Defined Benefit Systems held \$3.7 billion in private equity investments, an increase of \$210.5 million from year 2017. Private equity investments returned 18.63% in calendar year 2018. The URS benchmark for private equity investments was a negative 2.58%.

## Short Term

As of December 31, 2018, URS Defined Benefit Systems held \$1.6 billion in short-term investments, a decrease of \$1.2 billion from year 2017. Short-term investments returned 2.24% in calendar year 2018 compared with the URS benchmark return of 1.87%.

## Absolute Return

As of December 31, 2018, URS Defined Benefit Systems held \$4.6 billion in absolute return investments, an increase of \$139.2 million from year 2017. Absolute return investments returned 2.24% in calendar year 2018 compared with the URS benchmark return of 6.87%.

## Securities Lending

The Systems earn additional investment income by lending investment securities to brokers. This is done on a pooled basis by URS' custodial bank, The Northern Trust Company (TNT). The brokers provide collateral to TNT and generally use the borrowed securities to cover short sales and failed trades. TNT invests the cash collateral received from the brokers in order to earn interest. As of December 31, 2018, the Systems had \$1.0 billion on loan secured by collateral of \$1.1 billion. For calendar year 2018, net securities lending income to the Systems amounted to \$6.0 million, an increase of \$7.1 million over calendar year 2017. Security lending income increased due to higher demand for securities lent compared to 2017.

## Analysis of the Defined Benefit Systems

### Noncontributory System

The Noncontributory System provides retirement benefits to covered State of Utah, local government, and public education employees. Benefits of the system are funded by employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$24.7 billion, a decrease of \$539.1 million (2.1%) from \$25.2 billion as of December 31, 2017. Additions to the Noncontributory System net position include employer contributions, investment income, and transfers. For the calendar year 2018, member and employer contributions increased from \$871.5 million for calendar year 2017 to \$873.0 million, an increase of \$1.5 million (0.2%). Contributions increased because salaries increased. The system recognized a net investment loss of \$92.2 million for calendar year 2018 compared with net investment gain of \$3.0 billion for calendar year 2017. The decrease in investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.



Deductions from the Noncontributory System net position include retirement benefits, administrative expenses, and transfers. For the calendar year 2018, benefits amounted to \$1.3 billion, an increase of \$70.3 million (5.6%) over calendar year 2017. The increase in benefit payments was due to an increased number of benefit recipients and benefit increases.

For the calendar year 2018, the costs of administering the system totaled \$10.0 million, an increase of \$383 thousand (4.0%) from calendar year 2017.

At December 31, 2018, the Noncontributory Retirement System total pension liability was \$29.12 billion. The Plan’s fiduciary net position was \$24.67 billion leaving a net pension liability of \$4.45 billion. The Plan fiduciary net position as a percentage of the total pension liability was 84.7%.

### Contributory System

The Contributory System provides retirement benefits to covered State of Utah, local government, and public education employees. Benefits of the system are funded by member and employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$1.2 billion, a decrease of \$111.0 million (8.7%) from \$1.3 billion as of December 31, 2017.

Additions to the Contributory System net position include employer and member contributions, investment income, and transfers. For calendar year 2018, member and employer contributions decreased from \$10.6 million for calendar year 2017 to \$8.5 million, a decrease of \$2.1 million (20.1%). Contributions decreased because of the number of active members decreased. For the most part, the Contributory System is a closed system. For this reason both the numbers of active members and retired individuals are declining. The system recognized a net investment loss of \$4.5 million for calendar year 2018 compared with net investment gain of \$155.9 million for the calendar year 2017. The decrease in investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

## Management's Discussion and Analysis *(Continued)*

Deductions from the Contributory System net position include retirement benefits, administrative expenses, and transfers. For calendar year 2018, benefits amounted to \$86.8 million, an increase of \$1.9 million (2.2%) from calendar year 2017. The increase in benefit payments was due to the increase in the number of retired members in the system. For calendar year 2018, the costs of administering the system totaled \$454 thousand, a decrease of \$3 thousand (0.7%) from calendar year 2017.

At December 31, 2018, the Contributory Retirement System total pension liability was \$1.28 billion. The Plan's fiduciary net position was \$1.17 billion leaving a net pension liability of \$111.6 million. The Plan fiduciary net position as a percentage of the total pension liability was 91.3%.

### Public Safety System

The Public Safety System provides retirement benefits to eligible public safety employees of the State of Utah, local governments, and higher education. Benefits of the system are funded by member and employer contributions and by earnings on investments. The system net position as of December 31, 2018, amounted to \$3.5 billion, a decrease of \$48.4 million (1.4%) from \$3.6 billion as of December 31, 2017.

Additions to the Public Safety System net position include employer contributions, investment income, and transfers. For calendar year 2018, member and employer contributions increased from \$146.6 million for calendar year 2017 to \$148.0 million, an increase of \$1.4 million (0.9%). Contributions increased because the total covered payroll increased. The system recognized a net investment loss of \$13.1 million for calendar year 2018 compared with net investment gain of \$421.9 million for calendar year 2017. The decrease in the investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

Deductions from the Public Safety System net position include retirement benefits and administrative expenses. For calendar year 2018, benefits amounted to \$188.4 million, an increase of \$15.7 million (9.1%) over calendar year 2017. The increase in benefit payments was due to an increased number of benefit recipients and benefit increases. For calendar year 2018, the costs of administering the system totaled \$1.5 million, an increase of \$68 thousand (4.9%) from calendar year 2017.

At December 31, 2018, the Public Safety Retirement System total pension liability was \$4.26 billion. The Plan's fiduciary net position was \$3.53 billion leaving a net pension liability of \$730.2 million. The Plan fiduciary net position as a percentage of the total pension liability was 82.9%.

### Firefighters System

The Firefighters System provides retirement benefits to covered firefighters of the State of Utah and local governments. Benefits of the system are funded by member and employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$1.2 billion, a decrease of \$26.5 million (2.1%) from \$1.2 billion as of December 31, 2017.

Additions to the Firefighters System net position consist of employer contributions, including insurance premium taxes, investment income, and transfers. For calendar year 2018, member and employer contributions increased from \$26.4 million for calendar year 2017 to \$34.1 million, an increase of \$7.7 million (29.1%). Contributions increased because insurance premium taxes increased from \$1.2 million in 2017 to \$8.7 million (615%) in calendar year 2018 due the Utah State Legislature appropriation from the General Fund. Contributions also increased because the actuarial determined contribution rate increased.

Deductions from the Firefighters System net position include retirement benefits and administrative expenses. For calendar year 2018, benefits amounted to \$57.4 million, an increase of \$2.3 million (4.1%) over calendar year 2017. The increase in benefit payments was due to an increased number of benefit recipients and benefit increases. For calendar year 2018, the costs of administering the system totaled \$427 thousand, an increase of \$19 thousand (4.7%) from calendar year 2017.

At December 31, 2018, the Firefighters Retirement System total pension liability was \$1.26 billion. The Plan's fiduciary net position was \$1.21 billion leaving a net pension liability of \$53.4 million. The Plan fiduciary net position as a percentage of the total pension liability was 95.8%.

### Judges System

The Judges System provides retirement benefits to judges in the State of Utah who are eligible to participate in the system. Benefits of the system are funded by employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$195.6 million, a decrease of \$2.9 million (1.5%) from \$198.5 million as of December 31, 2017.

Additions to the Judges System net position consist of employer contributions, including court fees, investment income, and transfers. For calendar year 2018, employer contributions increased from \$9.0 million for calendar year 2017 to \$9.6 million, an increase of \$569 thousand (6.3%). Contributions increased because court fees increased. The system recognized a net investment loss of \$730 thousand for the calendar year 2018 compared with net investment gain of \$23.4 million for calendar year 2017. The decrease in investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

## Management's Discussion and Analysis (Continued)

## STATEMENTS OF FIDUCIARY NET POSITION — DEFINED BENEFIT PENSION PLANS

December 31

(dollars in thousands)

|  | Noncontributory System |                   |                   | Contributory System |                  |                  | Public Safety System |                  |                  |
|--|------------------------|-------------------|-------------------|---------------------|------------------|------------------|----------------------|------------------|------------------|
|  | 2018                   | 2017              | 2016              | 2018                | 2017             | 2016             | 2018                 | 2017             | 2016             |
| <b>Assets:</b>                         |                        |                   |                   |                     |                  |                  |                      |                  |                  |
| Cash and receivables                   | \$ 525,604             | 582,456           | 394,604           | 23,343              | 27,814           | 19,301           | 74,354               | 82,840           | 55,097           |
| Investments at fair value              | 24,760,259             | 25,403,896        | 22,995,043        | 1,178,582           | 1,295,483        | 1,226,675        | 3,542,367            | 3,604,502        | 3,229,586        |
| Invested securities                    |                        |                   |                   |                     |                  |                  |                      |                  |                  |
| lending collateral                     | 834,951                | 1,058,631         | 554,319           | 39,744              | 53,985           | 29,570           | 119,453              | 150,205          | 77,853           |
| Property and equipment                 | 3,689                  | 3,472             | 3,875             | 176                 | 177              | 207              | 528                  | 492              | 544              |
| <b>Total assets</b>                    | <b>26,124,503</b>      | <b>27,048,455</b> | <b>23,947,841</b> | <b>1,241,845</b>    | <b>1,377,459</b> | <b>1,275,753</b> | <b>3,736,702</b>     | <b>3,838,039</b> | <b>3,363,080</b> |
| <b>Liabilities:</b>                    |                        |                   |                   |                     |                  |                  |                      |                  |                  |
| Securities lending liability           | 834,951                | 1,058,631         | 554,319           | 39,744              | 53,985           | 29,570           | 119,453              | 150,205          | 77,853           |
| Investment accounts and other payables | 623,493                | 784,697           | 774,779           | 29,672              | 40,008           | 41,279           | 89,180               | 111,317          | 108,682          |
| <b>Total liabilities</b>               | <b>1,458,444</b>       | <b>1,843,328</b>  | <b>1,329,098</b>  | <b>69,416</b>       | <b>93,993</b>    | <b>70,849</b>    | <b>208,633</b>       | <b>261,522</b>   | <b>186,535</b>   |
| Net position restricted for pensions   | \$ 24,666,059          | 25,205,127        | 22,618,743        | 1,172,429           | 1,283,466        | 1,204,904        | 3,528,069            | 3,576,517        | 3,176,545        |

(dollars in thousands)

|  | Tier 2 Public Employees System |                |                | Tier 2 Public Safety and Firefighter System |               |               | Total Defined Benefit Pension Plans |                   |                   | 2018 Percent Change | 2017 Percent Change |
|--|--------------------------------|----------------|----------------|---|---------------|---------------|-------------------------------------|-------------------|-------------------|---------------------|---------------------|
|  | 2018                           | 2017           | 2016           | 2018  | 2017          | 2016          | 2018                                | 2017              | 2016              |                     |                     |
| <b>Assets:</b>                         |                                |                |                |   |               |               |                                     |                   |                   |                     |                     |
| Cash and receivables                   | \$ 13,763                      | 11,918         | 7,015          | 1,653                                       | 1,361         | 754           | 668,515                             | 741,034           | 499,760           | (9.8)%              | 48.3%               |
| Investments at fair value              | 421,417                        | 327,365        | 217,563        | 54,035                                      | 40,050        | 25,226        | 31,376,390                          | 32,125,473        | 29,017,100        | (2.3)               | 10.7                |
| Invested securities                    |                                |                |                |   |               |               |                                     |                   |                   |                     |                     |
| lending collateral                     | 14,211                         | 13,642         | 5,245          | 1,822                                       | 1,669         | 608           | 1,058,056                           | 1,338,730         | 699,487           | (21.0)              | 91.4                |
| Property and equipment                 | 63                             | 45             | 37             | 8   | 5             | 4             | 4,675                               | 4,390             | 4,890             | 6.5                 | (10.2)              |
| <b>Total assets</b>                    | <b>449,454</b>                 | <b>352,970</b> | <b>229,860</b> | <b>57,518</b>                               | <b>43,085</b> | <b>26,592</b> | <b>33,107,636</b>                   | <b>34,209,627</b> | <b>30,221,237</b> | <b>(3.2)</b>        | <b>13.2</b>         |
| <b>Liabilities:</b>                    |                                |                |                |   |               |               |                                     |                   |                   |                     |                     |
| Securities lending liability           | 14,211                         | 13,642         | 5,245          | 1,822                                       | 1,669         | 608           | 1,058,056                           | 1,338,730         | 699,487           | (21.0)              | 91.4                |
| Investment accounts and other payables | 10,610                         | 10,110         | 7,322          | 1,360                                       | 1,236         | 849           | 790,058                             | 992,279           | 977,434           | (20.4)              | 1.5                 |
| <b>Total liabilities</b>               | <b>24,821</b>                  | <b>23,752</b>  | <b>12,567</b>  | <b>3,182</b>                                | <b>2,905</b>  | <b>1,457</b>  | <b>1,848,114</b>                    | <b>2,331,009</b>  | <b>1,676,921</b>  | <b>(20.7)</b>       | <b>39.0</b>         |
| Total position restricted for pensions | \$ 424,633                     | 329,218        | 217,293        | 54,336                                      | 40,180        | 25,135        | 31,259,522                          | 31,878,618        | 28,544,316        | (1.9)%              | 11.7%               |

Management's Discussion and Analysis *(Continued)*

| Firefighters System |           |           | Judges System |         |         | Utah Governors and Legislators Retirement Plan |        |        |
|---------------------|-----------|-----------|---------------|---------|---------|--|--------|--------|
| 2018                | 2017      | 2016      | 2018          | 2017    | 2016    | 2018   | 2017   | 2016   |
| 25,340              | 29,792    | 19,654    | 4,250         | 4,613   | 3,172   | 208  | 240    | 163    |
| 1,212,906           | 1,242,827 | 1,134,044 | 196,230       | 200,022 | 178,422 | 10,594   | 11,328 | 10,541 |
| 40,901              | 51,791    | 27,337    | 6,617         | 8,335   | 4,301   | 357  | 472    | 254    |
| 180                 | 170       | 191       | 29            | 27      | 30      | 2  | 2      | 2      |
| 1,279,327           | 1,324,580 | 1,181,226 | 207,126       | 212,997 | 185,925 | 11,161   | 12,042 | 10,960 |
| 40,901              | 51,791    | 27,337    | 6,617         | 8,335   | 4,301   | 357  | 472    | 254    |
| 30,537              | 38,382    | 38,163    | 4,939         | 6,179   | 6,006   | 267  | 350    | 354    |
| 71,438              | 90,173    | 65,500    | 11,556        | 14,514  | 10,307  | 624  | 822    | 608    |
| 1,207,889           | 1,234,407 | 1,115,726 | 195,570       | 198,483 | 175,618 | 10,537   | 11,220 | 10,352 |

Deductions from the Judges System net position held in trust for benefits include retirement benefits and administrative expenses. For calendar year 2018, benefits amounted to \$16.1 million, an increase of \$2.5 million (18.3%) over calendar year 2017. The increase in benefit payments was due to an increase in the current year retirees. For calendar year 2018, the costs of administering the system totaled \$84 thousand, an increase of 6.3% over the preceding year.

At December 31, 2018, the Judges System total pension liability was \$244.2 million. The Plan's fiduciary net position was \$195.6 million leaving a net pension liability of \$48.7 million. The Plan fiduciary net position as a percentage of the total pension liability was 80.1%.

### Utah Governors and Legislators Retirement Plan

The Governors and Legislators Retirement Plan provides retirement benefits to governors and legislators of the State of Utah. Benefits of the system are funded by employer contributions and by earnings on investments. The system net position as of December 31,

2018, totaled \$10.5 million, a decrease of \$683 thousand (6.1%) from \$11.2 million as of December 31, 2017.

Additions to the Governors and Legislators Retirement Plan net position include investment income and transfers. For calendar year 2018 employer contributions amounted to \$392 thousand. The Plan recognized a net investment loss of \$41 thousand for calendar year 2018 compared with net investment gain of \$1.4 million for calendar year 2017. The decrease in investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

Deductions from the Governors and Legislators Retirement Plan net position include retirement benefits and administrative expenses. For calendar year 2018, retirement benefits amounted to \$978 thousand, an increase of \$5 thousand (0.5%) from calendar year 2017. The increase in benefit payments was due to an increase in the number of benefit recipients. For calendar year 2018, the costs of administering the system totaled \$5 thousand, unchanged from the prior year.

At December 31, 2018, the Governors and Legislators Retirement Plan total pension liability was \$13.2 million. The Plan's fiduciary net position was \$10.5 million leaving a net pension liability of \$2.6 million. The Plan fiduciary net position as a percentage of the total pension liability was 80.0%.

### Tier 2 Public Employees System

The Tier 2 Public Employees System provides retirement benefits to eligible State of Utah, local governments, and public education employees who started employment July 1, 2011, or after. Benefits of the system are funded by member and employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$424.6 million, an increase of \$95.4 million (29%) from \$329.2 million as of December 31, 2017.

Additions to the Tier 2 Public Employees System net position consist of employer contributions, investment income, and transfers. For calendar year 2018, member and employer contributions increased from

Management's Discussion and Analysis *(Continued)***STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION —  
DEFINED BENEFIT PENSION PLANS**

Year Ended December 31

*(dollars in thousands)*

|   | Noncontributory System |           |           | Contributory System |         |         | Public Safety System |         |         |
|---|------------------------|-----------|-----------|---------------------|---------|---------|----------------------|---------|---------|
|   | 2018                   | 2017      | 2016      | 2018                | 2017    | 2016    | 2018                 | 2017    | 2016    |
| <b>Additions:</b>   |                        |           |           |                     |         |         |                      |         |         |
| Contributions   | \$ 873,046             | 871,540   | 847,939   | 8,482               | 10,621  | 11,608  | 147,996              | 146,607 | 147,929 |
| Investment income   | (92,207)               | 2,987,282 | 1,783,911 | (4,513)             | 155,949 | 97,693  | (13,134)             | 421,917 | 249,027 |
| Transfers from affiliated systems                           | 13,035                 | —         | —         | —                   | —       | —       | 6,982                | 5,926   | 6,701   |
| Total additions   | 793,874                | 3,858,822 | 2,631,850 | 3,969               | 166,570 | 109,301 | 141,844              | 574,450 | 403,657 |
| <b>Deductions:</b>  |                        |           |           |                     |         |         |                      |         |         |
| Pension benefits  | 1,320,214              | 1,248,037 | 1,184,317 | 86,795              | 84,761  | 83,447  | 188,414              | 172,870 | 164,508 |
| Refunds   | 2,766                  | 4,635     | 4,366     | 1,471               | 1,613   | 1,700   | 428                  | 226     | 183     |
| Administrative expenses                                     | 9,962                  | 9,579     | 8,856     | 454                 | 457     | 446     | 1,450                | 1,382   | 1,260   |
| Transfers to affiliated systems                             | —                      | 10,187    | 8,005     | 26,286              | 1,177   | 1,895   | —                    | —       | —       |
| Total deductions  | 1,332,942              | 1,272,438 | 1,205,544 | 115,006             | 88,008  | 87,488  | 190,292              | 174,478 | 165,951 |
| Increase (decrease) in net position restricted for pensions | \$ (539,068)           | 2,586,384 | 1,426,306 | (111,037)           | 78,562  | 21,813  | (48,448)             | 399,972 | 237,706 |

*(dollars in thousands)*

|  | Tier 2 Public Employees System |         |        | Tier 2 Public Safety and Firefighter System |        |        | Total Defined Benefit Pension Plans |           |           | 2018 Percent Change | 2017 Percent Change |
|--|--------------------------------|---------|--------|---|--------|--------|-------------------------------------|-----------|-----------|---------------------|---------------------|
|  | 2018                           | 2017    | 2016   | 2018  | 2017   | 2016   | 2018                                | 2017      | 2016      |                     |                     |
| <b>Additions:</b>                                |                                |         |        |   |        |        |                                     |           |           |                     |                     |
| Contributions                                    | \$ 97,680                      | 79,175  | 63,062 | 14,350                                      | 11,126 | 8,488  | 1,185,628                           | 1,154,911 | 1,124,551 | 2.7%                | 2.7%                |
| Investment income                                | (1,454)                        | 33,249  | 14,059 | (180)                                       | 3,989  | 1,591  | (116,768)                           | 3,773,910 | 2,248,696 | (103.1)             | 67.8                |
| Transfers from affiliated systems                | —                              | —       | —      | —   | —      | —      | 26,337                              | 11,364    | 9,912     | 131.8               | 14.6                |
| Total additions                                  | 96,226                         | 112,424 | 77,121 | 14,170                                      | 15,115 | 10,079 | 1,095,197                           | 4,940,185 | 3,383,159 | (77.8)              | 46.0                |
| <b>Deductions:</b>                               |                                |         |        |   |        |        |                                     |           |           |                     |                     |
| Retirement benefits                              | 692                            | 417     | 316    | —   | 61     | 28     | 1,670,644                           | 1,575,533 | 1,497,989 | 6.0                 | 5.2                 |
| Refunds  | —                              | —       | —      | —   | —      | —      | 4,797                               | 6,985     | 6,715     | (31.3)              | 4.0                 |
| Administrative expense                           | 119                            | 82      | 51     | 14  | 9      | 5      | 12,515                              | 12,001    | 11,067    | 4.3                 | 8.4                 |
| Transfers to affiliated systems                  | —                              | —       | —      | —   | —      | —      | 26,337                              | 11,364    | 9,912     | 131.8               | 14.6                |
| Total deductions                                 | 811                            | 499     | 367    | 14  | 70     | 33     | 1,714,293                           | 1,605,883 | 1,525,683 | 6.8                 | 5.3                 |
| Increase in net position restricted for pensions | \$ 95,415                      | 111,925 | 76,754 | 14,156                                      | 15,045 | 10,046 | (619,096)                           | 3,334,302 | 1,857,476 | (118.6)%            | 79.5%               |

## Management's Discussion and Analysis (Continued)

| Firefighters System |         |         | Judges System |        |        | Utah Governors and Legislators Retirement Plan |       |       |
|---------------------|---------|---------|---------------|--------|--------|--|-------|-------|
| 2018                | 2017    | 2016    | 2018          | 2017   | 2016   | 2018   | 2017  | 2016  |
| 34,073              | 26,398  | 36,252  | 9,609         | 9,040  | 8,852  | 392  | 404   | 421   |
| (4,509)             | 146,736 | 87,746  | (730)         | 23,435 | 13,820 | (41)   | 1,353 | 849   |
| 1,917               | 1,259   | 1,611   | 4,403         | 4,090  | 1,600  | —  | 89    | —     |
| 31,481              | 174,393 | 125,609 | 13,282        | 36,565 | 24,272 | 351  | 1,846 | 1,270 |
| 57,440              | 54,793  | 52,102  | 16,111        | 13,621 | 12,330 | 978  | 973   | 941   |
| 132                 | 511     | 466     | —             | —      | —      | —  | —     | —     |
| 427                 | 408     | 374     | 84            | 79     | 71     | 5  | 5     | 4     |
| —                   | —       | —       | —             | —      | —      | 51   | —     | 12    |
| 57,999              | 55,712  | 52,942  | 16,195        | 13,700 | 12,401 | 1,034  | 978   | 957   |
| (26,518)            | 118,681 | 72,667  | (2,913)       | 22,865 | 11,871 | (683)  | 868   | 313   |

\$79.2 million for calendar year 2017, to \$97.7 million, an increase of \$18.5 million (23.4%). Contributions increased because membership increased. The system recognized a net investment loss of \$1.5 million for calendar year 2018 compared with an investment gain of \$33.2 million for calendar year 2017. The decrease in the investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

Deductions from the Tier 2 Public Employees System net position for benefits include retirement benefits and administrative expenses. For calendar year 2018 the system paid \$692 thousand in retirement benefits and \$417 thousand in 2017, and increase of \$275 thousand (65.9%). The costs of administering the system totaled \$119 thousand, an increase of \$37 thousand (45.1%) from calendar year 2017.

At December 31, 2018, the Tier 2 Public Employees Retirement System total pension liability was \$467.5 million. The Plan's fiduciary net position was \$424.6 million leaving a net pension

liability of \$42.8 million. The Plan's fiduciary net position as a percentage of the total pension liability was 90.8%.

### Tier 2 Public Safety and Firefighter System

The Tier 2 Public Safety and Firefighter System provides retirement benefits to eligible state and local government employees directly involved in law enforcement or fire fighting and are in a position of hazardous duty who started employment July 1, 2011, or after. Benefits of the system are funded by member and employer contributions and by earnings on investments. The system net position as of December 31, 2018, totaled \$54.3 million, an increase of \$14.2 million (35.2%) from \$40.2 million as of December 31, 2017.

Additions to the Tier 2 Public Safety and Firefighter System net position consist of employer contributions, investment income, and transfers. For calendar year 2018, member and employer contributions increased from \$11.1 million for calendar year 2017, to

\$14.4 million in 2018, an increase of \$3.2 million (29.0%). Contributions increased because membership increased. The system recognized a net investment loss of \$180 thousand for calendar year 2018 compared with net investment gain of \$4.0 million for calendar year 2017. The decrease in the investment gain for 2018 compared to 2017 was due to the lower rate of return realized in 2018.

Deductions from the Tier 2 Public Safety and Firefighter System net position include retirement benefits and administrative expenses. For calendar year 2018 the system paid \$0 in retirement benefits and \$61 thousand in 2017. The costs of administering the system totaled \$14 thousand.

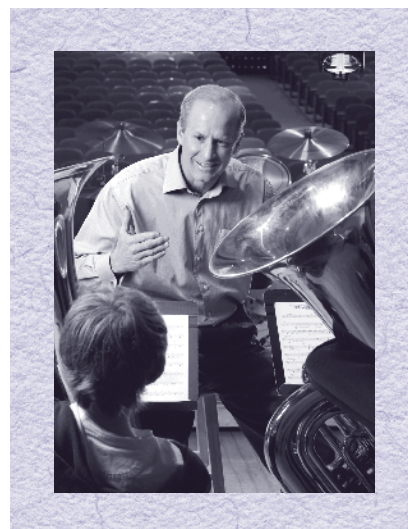
At December 31, 2018, the Tier 2 Public Safety and Firefighter Retirement System total pension liability was \$56.8 million. The Plan's fiduciary net position was \$54.3 million leaving a net pension liability of \$2.5 million. The Plan's fiduciary net position as a percentage of the total pension liability was 95.6%.

## Actuarial Valuations and Funding Progress

Actuarial valuation of each defined benefit system is performed annually. As of January 1, 2018, the date of the most recent actuarial valuation, the average funded ratio of the Systems using the actuarial value of assets was 87.4%. This was increased from the Systems’ January 1, 2017 valuation average funded ratio of 85.2%. The funded ratio increased due to the investment gains realized in calendar year 2017 and the current contribution effort to finance the unfunded actuarial accrued liability. Absent of unfavorable actuarial experience, the Systems funded ratio will gradually increase in future years.

In determining contribution rates an actuarial value of assets is used rather than a fair value of assets. The actuarial value of assets is based on a smoothed expected income investment rate. Investment income in excess or shortfall of the expected rate on fair value is smoothed over a 5-year period with 20% of a year’s excess or shortfall being recognized each year beginning with the current year.

As of January 1, 2018, the Systems’ underfunded actuarial accrued liability was \$4.4 billion. This was a net decrease in the unfunded position of \$565.7 million compared to January 1, 2017. As of January 1, 2018, the difference between the actuarial value of assets and fair value of assets was \$1.0 billion in actuarially deferred gains. These actuarially deferred gains will be recognized by the actuary over the next four years.



### SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

(in thousands)

| System   | 1.00% Decrease (5.95%) | Current Discount Rate (6.95%) | 1.00% Increase (7.95%) |
|--|------------------------|-------------------------------|------------------------|
| Noncontributory Retirement System                | \$ 8,196,651           | 4,456,889                     | 1,331,118              |
| Contributory Retirement System                   | 234,936                | 111,580                       | 6,844                  |
| Public Safety Retirement System                  | 1,332,728              | 730,178                       | 238,045                |
| Firefighters Retirement System                   | 230,327                | 53,400                        | (91,667)               |
| Judges Retirement System                         | 75,935                 | 48,639                        | 25,404                 |
| Utah Governors and Legislative Retirement System | 3,913                  | 2,640                         | 1,559                  |
| Tier 2 Public Employees System                   | 171,577                | 42,828                        | (56,534)               |
| Tier 2 Public Safety and Firefighter System      | 18,898                 | 2,505                         | (10,039)               |
| <b>Total</b>                                     | <b>\$ 10,264,965</b>   | <b>5,448,659</b>              | <b>1,444,730</b>       |

Some URS stakeholders may also be interested in the measure of the net pension liability if the liability was calculated using an interest rate based on the current yields of high-quality fixed income investments. For instance, if a 4.00% discount rate was used to calculate the Total Pension Liability, then the net pension liability would be \$22.8 billion. Note, although the disclosure of a net pension liability using a 4.00% discount rate may be useful for comparison purposes, it is not an appropriate basis for developing contribution requirements for participating employers in the retirement system.

In accordance with GASB Statement 67 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the table to the left presents the net pension liability/(asset) of the participating employers calculated using the discount rate of 6.95%, as well as what the employers’ net pension liability/(asset) would be if it were calculated using a discount rate that is 1.00% lower (5.95%) or 1.00% higher (7.95%) than the current rate.



## Analysis of the Defined Contribution Savings Plans

### 401(k) Defined Contribution Plan

The 401(k) Plan was established under section 401(k) of the Internal Revenue Code. This plan provides supplemental and primary retirement benefits for plan participants. The plan is funded by contributions and by investment earnings. The plan net position as of December 31, 2018, amounted to \$4.8 billion, a decrease of \$169.1 million (3.4%) over net position as of December 31, 2017. Contributions increased because of increased participation. The plan recognized a net investment loss of \$202.4 million for calendar year 2018 compared with a net investment gain of \$630.5 million for the calendar year 2017.



Additions to the 401(k) Plan net position include contributions and investment income. For calendar year 2018, contributions increased from those of calendar year 2017 from \$295.8 million to \$317.5 million or an increase of \$21.7 million (7.35%).

Deductions from the 401(k) Plan net position include participant and beneficiary refunds (including rollovers) and administrative expenses. For calendar year 2018, refunds amounted to \$276 million, an increase of \$21.4 million (8.4%) over calendar year 2017. The increase in refunds was due to an increase in withdrawals for calendar year 2018. For calendar year 2018, the costs of administering the plan amounted to \$8.0 million, an increase of \$239 thousand over calendar year 2017.

Benefit obligations of the 401(k) Defined Contribution Plan are equal to the member account balances, which are equal to net position of the plan.

### 457 Defined Contribution Plan

The 457 Plan was established under Section 457(b) of the Internal Revenue Code. This plan provides supplemental retirement benefits for plan participants. The plan is funded by contributions and by investment earnings.

The plan net position as of December 31, 2018, totaled \$544.2 million, a decrease of \$25.2 million (4.4%) over net position as of December 31, 2017.

Additions to the 457 Plan net position include contributions and investment income. For calendar year 2018, contributions increased from those of calendar year 2017 from \$31.5 million to \$32.6 million or an increase of \$1.1 million (3.5%). Contributions increased because of increased participation. The plan recognized a net investment loss of \$24.2 million for calendar year 2018 compared with a net investment gain of \$72.2 million for the calendar year 2017.

Deductions from the 457 Plan net position include participant and beneficiary refunds (including rollovers) and administrative expenses. For calendar year 2018, refunds amounted to \$32.7 million, an increase of \$4.9 million (17.5%) over calendar year 2017. The increase in refunds was due to an increase in withdrawals for calendar year 2018. For calendar year 2018, the costs of administering the plan amounted to \$901 thousand, an increase of \$14 thousand over calendar year 2017.

Benefit obligations of the 457 Defined Contribution Plan are equal to the member account balances, which are equal to net position of the plan.

Management's Discussion and Analysis *(Continued)*

### STATEMENTS OF FIDUCIARY NET POSITION — DEFINED CONTRIBUTION SAVINGS PLANS

December 31

*(dollars in thousands)*

|  | 401(k) Plan  |           |           | 457 Plan |         |         | Roth IRA Plan |         |        |
|--|--------------|-----------|-----------|----------|---------|---------|---------------|---------|--------|
|  | 2018         | 2017      | 2016      | 2018     | 2017    | 2016    | 2018          | 2017    | 2016   |
| <b>Assets:</b>                         |              |           |           |          |         |         |               |         |        |
| Cash and receivables                   | \$ 97,302    | 95,126    | 95,409    | 10,604   | 10,349  | 10,187  | 399           | 246     | 224    |
| Investments at fair value              | 4,746,307    | 4,917,565 | 4,253,489 | 533,869  | 559,308 | 484,552 | 131,490       | 119,087 | 88,971 |
| Total assets                           | 4,843,609    | 5,012,691 | 4,348,898 | 544,473  | 569,657 | 494,739 | 131,889       | 119,333 | 89,195 |
| <b>Liabilities:</b>                    |              |           |           |          |         |         |               |         |        |
| Investment accounts and other payables | 9,526        | 9,783     | 9,925     | 316      | 267     | 320     | 98            | 36      | 30     |
| Total liabilities                      | 9,526        | 9,783     | 9,925     | 316      | 267     | 320     | 98            | 36      | 30     |
| Net position restricted for pensions   | \$ 4,834,083 | 5,002,908 | 4,338,973 | 544,157  | 569,390 | 494,419 | 131,791       | 119,297 | 89,165 |

### STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION — DEFINED CONTRIBUTION SAVINGS PLANS

Year Ended December 31

*(dollars in thousands)*

|   | 401(k) Plan  |         |         | 457 Plan |         |        | Roth IRA Plan |        |        |
|---|--------------|---------|---------|----------|---------|--------|---------------|--------|--------|
|   | 2018         | 2017    | 2016    | 2018     | 2017    | 2016   | 2018          | 2017   | 2016   |
| <b>Additions:</b>   |              |         |         |          |         |        |               |        |        |
| Contributions   | \$ 317,548   | 295,804 | 290,632 | 32,589   | 31,475  | 27,326 | 25,280        | 19,669 | 16,585 |
| Investment income (loss)                                    | (202,398)    | 630,516 | 332,672 | (24,212) | 72,210  | 39,252 | (7,353)       | 15,389 | 7,200  |
| Total additions   | 115,150      | 926,320 | 623,304 | 8,377    | 103,685 | 66,578 | 17,927        | 35,058 | 23,785 |
| <b>Deductions:</b>  |              |         |         |          |         |        |               |        |        |
| Refunds   | 276,023      | 254,672 | 257,651 | 32,709   | 27,827  | 25,706 | 5,227         | 4,752  | 4,192  |
| Administrative expenses                                     | 7,952        | 7,713   | 7,085   | 901      | 887     | 810    | 206           | 174    | 142    |
| Total deductions  | 283,975      | 262,385 | 264,736 | 33,610   | 28,714  | 26,516 | 5,433         | 4,926  | 4,334  |
| Increase (decrease) in net position restricted for pensions | \$ (168,825) | 663,935 | 358,568 | (25,233) | 74,971  | 40,062 | 12,494        | 30,132 | 19,451 |

#### Roth IRA Plan

The Roth IRA is a “deemed IRA” authorized by section 408(q) of the Internal Revenue Code, and governed by section 408A of the code. This plan allows participants to make after-tax contributions, while the earnings may be withdrawn tax free (for qualified distributions). The plan net position as of December 31, 2018, totaled \$131.8 million, an increase of \$12.5 million (10.5%) over net position as of December 31, 2017.

Additions to the Roth IRA Plan include contributions, transfers from other Roth IRAs, conversions from traditional IRAs, rollovers from other retirement plans, and investment earnings. For calendar year 2018, contributions increased from those of calendar year 2017 from \$19.7 million to \$25.3 million (28.5%). Contributions increased because of increased participation. The plan recognized a net investment loss of \$7.4 million for calendar year 2018 compared with a net investment gain of \$15.4 million for calendar year 2017.

## Management's Discussion and Analysis (Continued)

| Traditional IRA Plan |         |        | Health Reimbursement Arrangement (HRA)* |      |      | Total Defined Contribution Plans |           |           | 2018<br>Percent<br>Change | 2017<br>Percent<br>Change |
|----------------------|---------|--------|---|------|------|----------------------------------|-----------|-----------|---------------------------|---------------------------|
| 2018                 | 2017    | 2016   | 2018                                    | 2017 | 2016 | 2018                             | 2017      | 2016      |                           |                           |
| 1,280                | 32      | 72     | —                                       | —    | —    | 109,585                          | 105,753   | 105,892   | 3.6%                      | (0.1)%                    |
| 119,235              | 102,422 | 81,484 | —                                       | —    | —    | 5,530,901                        | 5,698,382 | 4,908,496 | (2.9)                     | 16.1                      |
| 120,515              | 102,454 | 81,556 | —                                       | —    | —    | 5,640,486                        | 5,804,135 | 5,014,388 | (2.8)                     | 15.7                      |
| 610                  | 45      | 23     | —                                       | —    | —    | 10,550                           | 10,131    | 10,298    | 4.1                       | (1.6)                     |
| 610                  | 45      | 23     | —                                       | —    | —    | 10,550                           | 10,131    | 10,298    | 4.1                       | (1.6)                     |
| 119,905              | 102,409 | 81,533 | —                                       | —    | —    | 5,629,936                        | 5,794,004 | 5,004,090 | (2.8)%                    | 15.8%                     |

\*Administration of the HRA was transferred to PEHP in October 2016.

| Traditional IRA Plan |        |        | Health Reimbursement Arrangement (HRA)* |      |          | Total Defined Contribution Plans |           |         | 2018<br>Percent<br>Change | 2017<br>Percent<br>Change |
|----------------------|--------|--------|---|------|----------|----------------------------------|-----------|---------|---------------------------|---------------------------|
| 2018                 | 2017   | 2016   | 2018                                    | 2017 | 2016     | 2018                             | 2017      | 2016    |                           |                           |
| 30,108               | 20,593 | 16,182 | —                                       | —    | 6,796    | 405,525                          | 367,541   | 357,521 | 10.3%                     | 2.8%                      |
| (2,287)              | 9,465  | 4,825  | —                                       | —    | 36       | (236,250)                        | 727,580   | 383,985 | (132.5)                   | 89.5                      |
| 27,821               | 30,058 | 21,007 | —                                       | —    | 6,832    | 169,275                          | 1,095,121 | 741,506 | (84.5)                    | 47.7                      |
| 10,156               | 9,035  | 8,332  | —                                       | —    | 30,075   | 324,115                          | 296,286   | 325,956 | 9.4                       | (9.1)                     |
| 169                  | 147    | 128    | —                                       | —    | 31       | 9,228                            | 8,921     | 8,196   | 3.4                       | 8.8                       |
| 10,325               | 9,182  | 8,460  | —                                       | —    | 30,106   | 333,343                          | 305,207   | 334,152 | 9.2                       | (8.7)                     |
| 17,496               | 20,876 | 12,547 | —                                       | —    | (23,274) | (164,068)                        | 789,914   | 407,354 | (120.8)%                  | 93.9%                     |

Deductions from the Roth IRA Plan net position include participant and beneficiary refunds, transfers and rollovers, and administrative expenses. For calendar year 2018, refunds amounted to \$5.2 million, an increase of \$478 thousand (10.1%) over calendar year 2017. For calendar year 2018, the costs of administering the plan amounted to \$206 thousand, an increase of \$32 thousand over calendar year 2017.

### Traditional IRA Plan

The Traditional IRA is a "deemed IRA" authorized by section 408(q) of the Internal Revenue Code, and governed by section 408 of the code. This plan allows participants to make after-tax contributions and possibly deduct all or a portion of the contributions from their current taxable income. This plan also allows participants to consolidate many other eligible plan assets when they become eligible for roll over (such as 401(k), 457, and other IRAs).

## Management’s Discussion and Analysis *(Concluded)*

Participants may also convert Traditional IRA funds into a Roth IRA. The plan net position as of December 31, 2018, totaled \$119.9 million, an increase of \$17.5 million (17.1%) over net position as of December 31, 2017.

Additions to the Traditional IRA Plan include contributions, rollovers, and investment earnings. For calendar year 2018, contributions increased from those of calendar year 2017 from \$20.6 million to \$30.1 million (46.2%). The plan recognized a net investment loss of \$2.3 million for calendar year 2018

compared with a net investment gain of \$9.5 million for calendar year 2017.

Deductions from the Traditional IRA Plan net position include participant and beneficiary refunds, rollovers and transfers, and administrative expenses. For calendar year 2018, refunds amounted to \$10.2 million, an increase of \$1.1 million (12.4%) over calendar year 2017. For calendar year 2018, the costs of administering the plan amounted to \$169 thousand, an increase of \$22 thousand over calendar year 2017.

## GASB 68 Employer Allocations and Pension Reporting

URS has included information regarding employer’s proportion share of the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense. This section is where employers and auditors are able to get information regarding their pension disclosures for financial statement purposes.

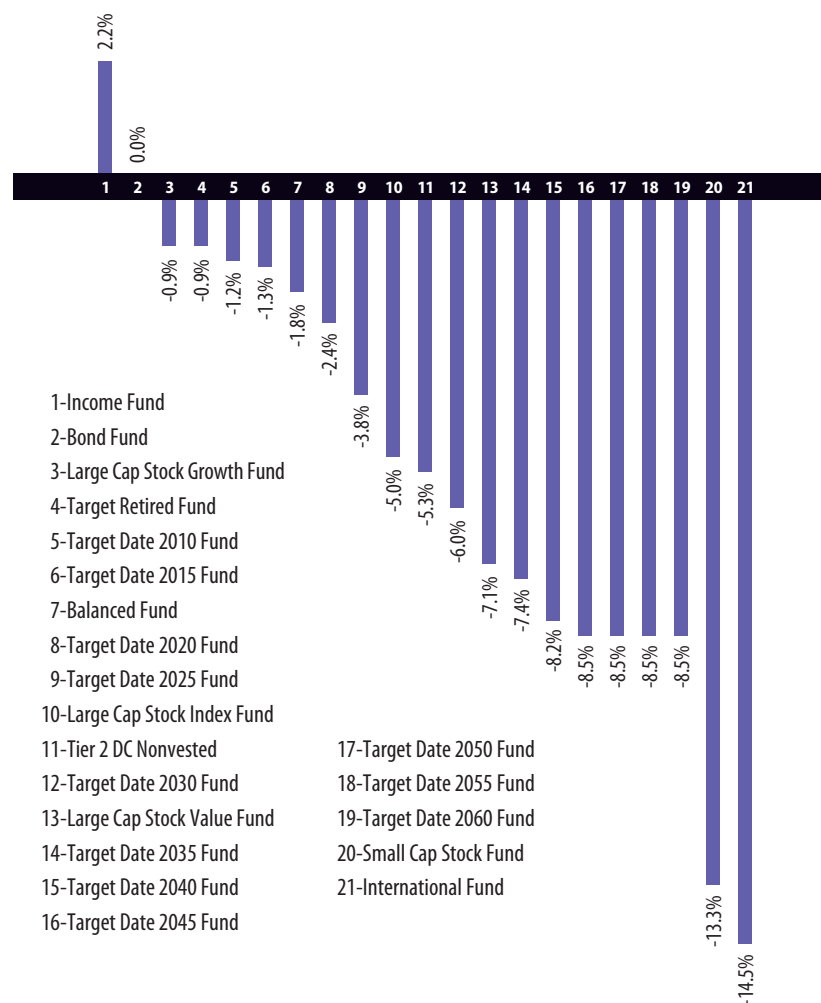
### DEFINED CONTRIBUTION COMPARATIVE ANNUALIZED RATES OF RETURN

Year ended December 31

| Investment Option Comparative Index | 2018   | 2017 |
|-------------------------------------|--------|------|
| Income Fund                         | 2.2%   | 1.7% |
| Bond Fund                           | 0.0    | 4.6  |
| Large Cap Stock Growth Fund         | (0.9)  | 33.2 |
| Target Date Retired Fund            | (0.9)  | 6.8  |
| Target Date 2010 Fund               | (1.2)  | 7.7  |
| Target Date 2015 Fund               | (1.3)  | 8.9  |
| Balanced Fund                       | (1.8)  | 17.1 |
| Target Date 2020 Fund               | (2.4)  | 11.5 |
| Target Date 2025 Fund               | (3.8)  | 14.1 |
| Large Cap Stock Index Fund          | (5.0)  | 21.4 |
| Tier2 DC Nonvested                  | (5.3)  | 13.4 |
| Target Date 2030 Fund               | (6.0)  | 17.0 |
| Large Cap Value Fund                | (7.1)  | 18.2 |
| Target Date 2035 Fund               | (7.4)  | 19.4 |
| Target Date 2040 Fund               | (8.2)  | 20.3 |
| Target Date 2045 Fund               | (8.5)  | 20.7 |
| Target Date 2050 Fund               | (8.5)  | 20.7 |
| Target Date 2055 Fund               | (8.5)  | 20.7 |
| Target Date 2060 Fund               | (8.5)  | 20.7 |
| Small Cap Fund                      | (13.3) | 11.4 |
| International Fund                  | (14.5) | 27.6 |

### DEFINED CONTRIBUTION SAVINGS PLANS INVESTMENT OPTION RATES OF RETURN FOR 2018

(in percents)





# Basic Financial Statements

## Statements of Fiduciary Net Position — Pension (and Other Employee Benefit) Trust Funds

December 31, 2018  
With Comparative Totals  
for December 31, 2017

(in thousands)

|  | Noncontributory<br>System | Contributory<br>System | Public Safety<br>System | Firefighters<br>System | Judges<br>System | Utah Governors<br>and Legislators<br>Retirement Plan |
|--|---------------------------|------------------------|-------------------------|------------------------|------------------|--|
| <b>Assets:</b>   |                           |                        |                         |                        |                  |  |
| Cash   | \$ 3                      | 2                      | 20                      | 2                      | 1                | 1  |
| Receivables:   |                           |                        |                         |                        |                  |  |
| Member contributions   | —                         | 94                     | 8                       | 675                    | —                | —  |
| Employer contributions   | 42,975                    | 274                    | 5,278                   | 274                    | 324              | —  |
| Court fees and fire insurance tax  | —                         | —                      | —                       | 747                    | 100              | —  |
| Investments  | 482,626                   | 22,973                 | 69,048                  | 23,642                 | 3,825            | 207  |
| Total receivables  | 525,601                   | 23,341                 | 74,334                  | 25,338                 | 4,249            | 207  |
| Investments at fair value:   |                           |                        |                         |                        |                  |  |
| Short-term securities  | 1,255,301                 | 59,751                 | 179,591                 | 61,493                 | 9,949            | 537  |
| Debt securities  | 4,192,709                 | 199,572                | 599,837                 | 205,383                | 33,228           | 1,794  |
| Equity investments   | 8,685,749                 | 413,440                | 1,242,643               | 425,480                | 68,836           | 3,716  |
| Absolute return  | 3,628,762                 | 172,728                | 519,156                 | 177,758                | 28,759           | 1,553  |
| Private equity   | 2,889,312                 | 137,531                | 413,362                 | 141,536                | 22,898           | 1,236  |
| Real assets  | 4,108,426                 | 195,560                | 587,778                 | 201,256                | 32,560           | 1,758  |
| Total investments  | 24,760,259                | 1,178,582              | 3,542,367               | 1,212,906              | 196,230          | 10,594   |
| Invested securities lending collateral                                     | 834,951                   | 39,744                 | 119,453                 | 40,901                 | 6,617            | 357  |
| Property and equipment at cost,<br>net of accumulated depreciation         | 3,689                     | 176                    | 528                     | 180                    | 29               | 2  |
| Total assets   | 26,124,503                | 1,241,845              | 3,736,702               | 1,279,327              | 207,126          | 11,161   |
| <b>Liabilities:</b>  |                           |                        |                         |                        |                  |  |
| Securities lending liability   | 834,951                   | 39,744                 | 119,453                 | 40,901                 | 6,617            | 357  |
| Disbursements in excess<br>of cash balance                                 | 26,045                    | 1,204                  | 3,617                   | 1,239                  | 200              | 11   |
| Compensated absences,<br>post-employment benefits<br>and insurance reserve | 16,690                    | 795                    | 2,387                   | 818                    | 132              | 7  |
| Investment accounts payable  | 486,062                   | 23,166                 | 69,629                  | 23,841                 | 3,857            | 208  |
| Real estate liabilities  | 94,696                    | 4,507                  | 13,547                  | 4,639                  | 750              | 41   |
| Total liabilities  | 1,458,444                 | 69,416                 | 208,633                 | 71,438                 | 11,556           | 624  |
| Net position restricted for pensions                                       | \$ 24,666,059             | 1,172,429              | 3,528,069               | 1,207,889              | 195,570          | 10,537   |

The accompanying notes are an integral part of the financial statements.

Utah Retirement Systems

| Tier 2 Public Employees System | Defined Benefit Pension Plans               |                                     | Defined Contribution Plans       |          |               |                      |                                  | Total Pension Trust Funds |            |
|--------------------------------|---|-------------------------------------|----------------------------------|----------|---------------|----------------------|----------------------------------|---------------------------|------------|
|                                | Tier 2 Public Safety and Firefighter System | Total Defined Benefit Pension Plans | Additional Combining Information |          |               |                      |                                  | 2018                      | 2017       |
|                                |   |                                     | 401(k) Plan                      | 457 Plan | Roth IRA Plan | Traditional IRA Plan | Total Defined Contribution Plans |                           |            |
| 2                              | 2   | 33                                  | 11,722                           | 506      | 399           | 1,280                | 13,907                           | 13,940                    | 12,602     |
| —                              | —   | 777                                 | —                                | —        | —             | —                    | —                                | 777                       | 761        |
| 5,547                          | 598   | 55,270                              | —                                | —        | —             | —                    | —                                | 55,270                    | 58,465     |
| —                              | —   | 847                                 | —                                | —        | —             | —                    | —                                | 847                       | 2,989      |
| 8,214                          | 1,053                                       | 611,588                             | 85,580                           | 10,098   | —             | —                    | 95,678                           | 707,266                   | 771,970    |
| 13,761                         | 1,651                                       | 668,482                             | 85,580                           | 10,098   | —             | —                    | 95,678                           | 764,160                   | 834,185    |
| 21,365                         | 2,740                                       | 1,590,727                           | —                                | —        | —             | —                    | —                                | 1,590,727                 | 2,758,739  |
| 71,359                         | 9,150                                       | 5,313,032                           | 1,710,943                        | 180,850  | 36,605        | 66,145               | 1,994,543                        | 7,307,575                 | 6,386,435  |
| 147,831                        | 18,955                                      | 11,006,650                          | 2,837,348                        | 331,403  | 87,524        | 48,699               | 3,304,974                        | 14,311,624                | 15,807,433 |
| 61,761                         | 7,919                                       | 4,598,396                           | —                                | —        | —             | —                    | —                                | 4,598,396                 | 4,459,239  |
| 49,176                         | 6,305                                       | 3,661,356                           | —                                | —        | —             | —                    | —                                | 3,661,356                 | 3,450,900  |
| 69,925                         | 8,966                                       | 5,206,229                           | 198,016                          | 21,616   | 7,361         | 4,391                | 231,384                          | 5,437,613                 | 4,961,109  |
| 421,417                        | 54,035                                      | 31,376,390                          | 4,746,307                        | 533,869  | 131,490       | 119,235              | 5,530,901                        | 36,907,291                | 37,823,855 |
| 14,211                         | 1,822                                       | 1,058,056                           | —                                | —        | —             | —                    | —                                | 1,058,056                 | 1,338,730  |
| 63                             | 8   | 4,675                               | —                                | —        | —             | —                    | —                                | 4,675                     | 4,390      |
| 449,454                        | 57,518                                      | 33,107,636                          | 4,843,609                        | 544,473  | 131,889       | 120,515              | 5,640,486                        | 38,748,122                | 40,013,762 |
| 14,211                         | 1,822                                       | 1,058,056                           | —                                | —        | —             | —                    | —                                | 1,058,056                 | 1,338,730  |
| 430                            | 55  | 32,801                              | 910                              | 129      | 55            | 559                  | 1,653                            | 34,454                    | 38,013     |
| 284                            | 36  | 21,149                              | —                                | —        | —             | —                    | —                                | 21,149                    | 21,926     |
| 8,284                          | 1,062                                       | 616,109                             | 8,616                            | 187      | 43            | 51                   | 8,897                            | 625,006                   | 822,471    |
| 1,612                          | 207   | 119,999                             | —                                | —        | —             | —                    | —                                | 119,999                   | 120,000    |
| 24,821                         | 3,182                                       | 1,848,114                           | 9,526                            | 316      | 98            | 610                  | 10,550                           | 1,858,664                 | 2,341,140  |
| 424,633                        | 54,336                                      | 31,259,522                          | 4,834,083                        | 544,157  | 131,791       | 119,905              | 5,629,936                        | 36,889,458                | 37,672,622 |

**Utah Retirement Systems**  
**Basic Financial Statements** (Concluded)

## Statements of Changes in Fiduciary Net Position — Pension (and Other Employee Benefit) Trust Funds

Year Ended December 31, 2018

With Comparative Totals for

Year Ended December 31, 2017

(in thousands)

|   | Noncontributory System | Contributory System | Public Safety System | Firefighters System | Judges System | Utah Governors and Legislators Retirement Plan |
|---|------------------------|---------------------|----------------------|---------------------|---------------|--|
| <b>Additions:</b>   |                        |                     |                      |                     |               |  |
| Contributions:  |                        |                     |                      |                     |               |  |
| Member  | \$ 14,602              | 2,455               | 895                  | 18,305              | —             | —  |
| Employer  | 858,444                | 6,027               | 147,101              | 7,021               | 8,091         | 392  |
| Court fees and fire insurance tax                               | —                      | —                   | —                    | 8,747               | 1,518         | —  |
| Total contributions   | 873,046                | 8,482               | 147,996              | 34,073              | 9,609         | 392  |
| Investment income:  |                        |                     |                      |                     |               |  |
| Net appreciation (depreciation) in fair value of investments    | (589,575)              | (28,859)            | (83,966)             | (28,833)            | (4,660)       | (262)  |
| Interest, dividends and other investment income                 | 541,933                | 26,527              | 77,181               | 26,503              | 4,283         | 240  |
| Total income (loss) from investment activity                    | (47,642)               | (2,332)             | (6,785)              | (2,330)             | (377)         | (22)   |
| Less investment expenses  | 50,182                 | 2,456               | 7,147                | 2,454               | 397           | 22   |
| Net income (loss) from investment activity                      | (97,824)               | (4,788)             | (13,932)             | (4,784)             | (774)         | (44)   |
| Income from security lending activity                           | 6,456                  | 316                 | 918                  | 316                 | 51            | 3  |
| Less security lending expense                                   | 839                    | 41                  | 120                  | 41                  | 7             | —  |
| Net income from security lending activity                       | 5,617                  | 275                 | 798                  | 275                 | 44            | 3  |
| Net investment income   | (92,207)               | (4,513)             | (13,134)             | (4,509)             | (730)         | (41)   |
| Transfers from affiliated systems                               | 13,035                 | —                   | 6,982                | 1,917               | 4,403         | —  |
| Total additions   | 793,874                | 3,969               | 141,844              | 31,481              | 13,282        | 351  |
| <b>Deductions:</b>  |                        |                     |                      |                     |               |  |
| Retirement benefits   | 1,125,160              | 74,106              | 157,682              | 46,547              | 13,805        | 814  |
| Cost-of-living benefits   | 195,054                | 12,638              | 30,517               | 10,700              | 2,306         | 164  |
| Supplemental retirement benefits                                | —                      | 51                  | 215                  | 193                 | —             | —  |
| Refunds   | 2,766                  | 1,471               | 428                  | 132                 | —             | —  |
| Administrative expenses   | 9,962                  | 454                 | 1,450                | 427                 | 84            | 5  |
| Transfers to affiliated systems                                 | —                      | 26,286              | —                    | —                   | —             | 51   |
| Total deductions  | 1,332,942              | 115,006             | 190,292              | 57,999              | 16,195        | 1,034  |
| Increase (decrease) from operations                             | (539,068)              | (111,037)           | (48,448)             | (26,518)            | (2,913)       | (683)  |
| Net position restricted for pensions benefits beginning of year | 25,205,127             | 1,283,466           | 3,576,517            | 1,234,407           | 198,483       | 11,220   |
| Net position restricted for pensions benefits end of year       | \$ 24,666,059          | 1,172,429           | 3,528,069            | 1,207,889           | 195,570       | 10,537   |

The accompanying notes are an integral part of the financial statements.



Utah Retirement Systems

|  | Defined Benefit Pension Plans  |   | Defined Contribution Plans          |                                  |          |               |                                  | Total Pension Trust Funds |            |                      |
|--|--------------------------------|---|-------------------------------------|----------------------------------|----------|---------------|----------------------------------|---------------------------|------------|----------------------|
|  | Tier 2 Public Employees System | Tier 2 Public Safety and Firefighter System | Total Defined Benefit Pension Plans | Additional Combining Information |          |               | Total Defined Contribution Plans | 2018                      | 2017       |                      |
|  |                                |   |                                     | 401(k) Plan                      | 457 Plan | Roth IRA Plan |                                  |                           |            | Traditional IRA Plan |
|  | —                              | 55  | 36,312                              | 317,548                          | 32,589   | 25,280        | 30,108                           | 405,525                   | 441,837    | 406,754              |
|  | 97,680                         | 14,295                                      | 1,139,051                           | —                                | —        | —             | —                                | —                         | 1,139,051  | 1,112,998            |
|  | —                              | —   | 10,265                              | —                                | —        | —             | —                                | —                         | 10,265     | 2,700                |
|  | 97,680                         | 14,350                                      | 1,185,628                           | 317,548                          | 32,589   | 25,280        | 30,108                           | 405,525                   | 1,591,153  | 1,522,452            |
|  | (8,842)                        | (1,106)                                     | (746,103)                           | (201,890)                        | (24,176) | (7,234)       | (2,173)                          | (235,473)                 | (981,576)  | 3,966,878            |
|  | 8,049                          | 1,009                                       | 685,725                             | 4,022                            | 465      | —             | —                                | 4,487                     | 690,212    | 589,288              |
|  | (793)                          | (97)  | (60,378)                            | (197,868)                        | (23,711) | (7,234)       | (2,173)                          | (230,986)                 | (291,364)  | 4,556,166            |
|  | 745                            | 93  | 63,496                              | 4,530                            | 501      | 119           | 114                              | 5,264                     | 68,760     | 60,654               |
|  | (1,538)                        | (190)                                       | (123,874)                           | (202,398)                        | (24,212) | (7,353)       | (2,287)                          | (236,250)                 | (360,124)  | 4,495,512            |
|  | 96                             | 12  | 8,168                               | —                                | —        | —             | —                                | —                         | 8,168      | 6,771                |
|  | 12                             | 2   | 1,062                               | —                                | —        | —             | —                                | —                         | 1,062      | 793                  |
|  | 84                             | 10  | 7,106                               | —                                | —        | —             | —                                | —                         | 7,106      | 5,978                |
|  | (1,454)                        | (180)                                       | (116,768)                           | (202,398)                        | (24,212) | (7,353)       | (2,287)                          | (236,250)                 | (353,018)  | 4,501,490            |
|  | —                              | —   | 26,337                              | —                                | —        | —             | —                                | —                         | 26,337     | 11,364               |
|  | 96,226                         | 14,170                                      | 1,095,197                           | 115,150                          | 8,377    | 17,927        | 27,821                           | 169,275                   | 1,264,472  | 6,035,306            |
|  | 691                            | —   | 1,418,805                           | —                                | —        | —             | —                                | —                         | 1,418,805  | 1,336,763            |
|  | 1                              | —   | 251,380                             | —                                | —        | —             | —                                | —                         | 251,380    | 238,260              |
|  | —                              | —   | 459                                 | —                                | —        | —             | —                                | —                         | 459        | 510                  |
|  | —                              | —   | 4,797                               | 276,023                          | 32,709   | 5,227         | 10,156                           | 324,115                   | 328,912    | 303,271              |
|  | 119                            | 14  | 12,515                              | 7,952                            | 901      | 206           | 169                              | 9,228                     | 21,743     | 20,922               |
|  | —                              | —   | 26,337                              | —                                | —        | —             | —                                | —                         | 26,337     | 11,364               |
|  | 811                            | 14  | 1,714,293                           | 283,975                          | 33,610   | 5,433         | 10,325                           | 333,343                   | 2,047,636  | 1,911,090            |
|  | 95,415                         | 14,156                                      | (619,096)                           | (168,825)                        | (25,233) | 12,494        | 17,496                           | (164,068)                 | (783,164)  | 4,124,216            |
|  | 329,218                        | 40,180                                      | 31,878,618                          | 5,002,908                        | 569,390  | 119,297       | 102,409                          | 5,794,004                 | 37,672,622 | 33,548,406           |
|  | 424,633                        | 54,336                                      | 31,259,522                          | 4,834,083                        | 544,157  | 131,791       | 119,905                          | 5,629,936                 | 36,889,458 | 37,672,622           |

# Notes to Basic Financial Statements

December 31, 2018



## Note 1

### Description of Systems and Plans

A brief description of the Utah Retirement Systems (Systems), 401(k), 457, Roth and Traditional IRAs (Plans) follows. For a more complete description of plan provisions, membership and benefit statistics, see the Systems Highlights on pages 14 through 30 and Summaries of Plan Provisions on pages 178 through 195.

#### A) General Information and Reporting Entity

**General** — The Utah Retirement Systems are comprised of the following pension trust funds:

- i) the **Public Employees Noncontributory Retirement System (Noncontributory System)**; the **Public Employees Contributory Retirement System (Contributory System)**; and the **Firefighters Retirement System** are multiple-employer, cost-sharing, public employee retirement systems;
- ii) the **Public Safety Retirement System** is a mixed agent and cost-sharing, multiple-employer retirement system;
- iii) the **Judges Retirement System** and the **Utah Governors and Legislators Retirement Plan** are single-employer service-employee retirement systems;

- iv) the **Tier 2 Public Employees Contributory Retirement System** and the **Tier 2 Public Safety and Firefighter Contributory Retirement System** are multiple-employer, cost-sharing public employee retirement systems; and
- v) four defined contribution plans comprised of the **401(k) Plan**, **457 Plan**, and **Roth and Traditional IRAs**.

These Systems and Plans cover employees of the State of Utah and participating local government and public education entities.

**Reporting Entity** — These basic financial statements cover all of the foregoing retirement systems and defined contribution plans administered by the Utah State Retirement Board (Board), the sole governing body for these Systems and Plans.

The Systems are established and governed by the respective sections of Title 49 of the Utah Code Annotated 1953, as amended. The Systems' defined benefit plans are amended statutorily

Notes to the Basic Financial Statements (Continued)

December 31, 2018

by the State Legislature. The Utah State Retirement Office Act in Title 49 provides for the administration of the Systems and Plans under the direction of the Board, whose members are appointed by the Governor. The Plans are established under the authority of the same sections of the Utah Code Annotated 1953, as amended, as well as under Sections 401(k), 457, 408, and 408A of the Internal Revenue Code. The Plans may be amended by the Board within the parameters of the Internal Revenue Code. The Systems and Plans are fiduciary funds defined as pension (and other employee benefit) trust funds. Utah Retirement Systems is a component unit of the State of Utah.

**B) Retirement and Death Benefits**

The Systems' benefits are specified by the statute listed in Note 1(A). The Systems are defined benefit plans wherein benefits are based on age and/or years of service and highest average salary. Various plan options within the Systems may be selected by retiring members. Some options require actuarial reductions based on attained age, age

of spouse, and similar actuarial factors. A brief summary of eligibility and benefits of the various Systems is shown in the table below.

The Utah Governors and Legislators Retirement Plan provides the following benefits. Former governors at age 65 receive \$1,400 per month per term. Legislators receive a benefit at age 65 with four or more years of service at the rate of \$30.40 per month per year of service. Retirement at age 62 with 10 or more years of service will receive an actuarial reduction. Both the governors' and legislators' benefits are adjusted based on the CPI limited to 4% of the base benefit per year.

Death benefits for active and retired employees are in accordance with retirement statutes. Upon termination of employment, members of the Systems may leave their retirement account intact for future benefits based on vesting qualification or withdraw the accumulated funds in their individual member account and forfeit service credits and rights to future benefits upon which the contributions were based.

**C) Defined Contribution Plans**

The 401(k), 457, and Roth and Traditional IRAs administered by the Board are defined contribution plans. These Plans are available as supplemental plans to the basic retirement benefits of the Retirement Systems and as a primary retirement plan for some Tier 2 participants. Contributions may be made into the Plans subject to plan and Internal Revenue Code limitations by employees of employers sponsoring the Plans. Employer contributions may be made into the 401(k) and 457 Plans at rates determined by the employers and according to Utah Title 49. There are 466 employers participating in the 401(k) Plan and 293 employers participating in the 457 Plan. There are 178,010 plan participants in the 401(k) Plan, 18,336 participants in the 457 Plan, 12,232 participants in the Roth IRA, and 2,383 participants in the Traditional IRA.

After termination of employment, benefits are paid out to individuals in lump sum, or as periodic benefit payments, at the option of the participant based on individual account balances and

**SUMMARY OF BENEFITS BY SYSTEM**

|   | Noncontributory System  | Contributory System  | Public Safety System  | Fire-fighters System | Judges System   | Tier 2 Public Employees System   | Tier 2 Public Safety and Firefighter System                                |
|---|---|--|---|----------------------|---|--|--|
| Final average salary is                                   | Highest 3 years   | Highest 5 years  | Highest 3 years   |                      | Highest 2 years   | Highest 5 years  | Highest 5 years  |
| Years of service required and/or age eligible for benefit | 30 years any age<br>25 years any age*<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 30 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 20 years any age<br>10 years age 60<br>4 years age 65       |                      | 25 years any age<br>20 years age 55*<br>10 years age 62<br>6 years age 70 | 35 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 25 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 |
| Benefit percent per year of service**                     | 2.0% per year all years   | 1.25% per year to June 1975<br>2.0% per year July 1975 to present          | 2.5% per year up to 20 years<br>2.0% per year over 20 years |                      | 5.0% first 10 years<br>2.25% second 10 years<br>1.0% over 20 years        | 1.5% per year all years  | 1.5% per year all years  |

Note: The Utah Governors and Legislators Retirement Plan benefits are explained in the second paragraph of section B) above.

\*With actuarial reductions.

\*\*For members and retirees in the systems, prior to January 1, 1989, there may be a 3% benefit enhancement.

Notes to the Basic Financial Statements (Continued)

December 31, 2018

plan provisions. The Defined Contribution Plans account balances are fully vested to the participants at the time of deposit except for Tier 2 required employer contributions and associated earnings during the first four years of employment.

Investments in the vested portion of the Defined Contribution Plans are individually directed and controlled by plan participants who direct the investment of their funds among several investment options of varying degrees of risk and earnings potential. Participants may transfer their funds between these options no more frequently than every seven days. There is also a 2% trading fee for investment transfers between core fund options more frequently than every 30 days. Investments of the Plans are reported at fair value.

**D) Contributions**

As a condition of participation in the Defined Benefit Systems, employers and/or employees are required to contribute certain percentages of salaries and wages as authorized by statute and specified by the Board. Employee contributions may be paid in part or in whole by the employer. Contributions in some Systems are also augmented by fees or insurance premium taxes. Contribution rates are listed in Note 6.

Employee (member) contributions are placed into member accounts, and in Systems where it is authorized, interest is credited to member accounts. Upon termination of employment, a member may withdraw his or her account balance including interest that has been credited. Upon withdrawal a member forfeits the service credit that corresponds to the member contributions withdrawn.

The noncontributory retirement systems have no required member contributions flowing into them. However, where members had a balance transferred in or purchased service credit in the system, these balances and on-going interest, where authorized, are credited to individual member accounts that may be withdrawn upon the termination of employment.

In the 401(k) and 457 Defined Contribution Plans, voluntary deferral of compensation within the limits of plan provisions may be made by employees. In addition to employee voluntary deferrals, employer contributions may be made into the Plans on behalf of employees. The recognition of deferred compensation, employer contributions, and earnings on the accounts are deferred for income tax purposes until actually paid to the participant or beneficiary. The employee may also contribute to the Roth and Traditional deemed IRAs where earnings may grow tax deferred and possibly tax free.

**E) Covered Employees**

The **Public Employees Noncontributory Retirement System (Noncontributory System)** was established on July 1, 1986, and is comprised of two divisions, the State and School division and the Local Government division. These divisions are not separate plans. All eligible employees of the State and School entities hired subsequent to that date are automatically members of the Noncontributory System until July 1, 2011, when Tier 2 came into effect. Local government entities had the option of adopting the new System or remaining with the Contributory System.



**DEFINED CONTRIBUTION PLANS**

|                                   | 401(k)  | 457    | Roth IRA | Traditional IRA |
|-----------------------------------|---------|--------|----------|-----------------|
| Number of participating employers | 466     | 293    | N/A      | N/A             |
| Total participants                | 178,010 | 18,336 | 12,232   | 2,383           |

Notes to the Basic Financial Statements (Continued)

December 31, 2018



All Contributory System members whose employers adopted the Noncontributory System were given the opportunity to transfer to the new System during limited window periods. All eligible new hires subsequent to adoption of the noncontributory plans are automatically members of that plan.

The **Public Employees Contributory Retirement System (Contributory System)** includes eligible public employees of the State of Utah and its political subdivisions including public education employees of those entities covered by the System. The System is comprised of two divisions, the State and School division and the Local Government division. These divisions are not separate plans. Members of this System are those who did not elect to transfer to the Public Employees Noncontributory Retirement System during the period when they were eligible to transfer or whose employers are not participants in the Noncontributory System.

The **Public Safety Retirement System** includes eligible State and local government employees directly involved in law enforcement (e.g., game wardens, prison guards, police officers, and highway patrol officers) and is comprised of eight divisions, the State of Utah, Division A with Social Security, Salt Lake City, Ogden, Provo, Logan, Bountiful, and Division B without Social Security. These divisions are not separate plans. The Public Safety System consists of both contributory and noncontributory

divisions. The noncontributory divisions were authorized by the Legislature effective July 1, 1989.

The **Firefighters Retirement System** includes eligible State and local government employees directly involved in fire fighting and is comprised of two divisions, Division A with Social Security and Division B without Social Security. These divisions are not separate plans.

The **Judges Retirement System** includes justices and judges of the court as authorized by state statutes.

The **Utah Governors and Legislators Retirement Plan** includes only governors and legislators of the State.

The **Tier 2 Public Employees Contributory Retirement System** includes eligible public employees entering into the Utah Retirement Systems on or after July 1, 2011, when Tier 2 came into effect.

The **Tier 2 Public Safety and Firefighter Contributory Retirement System** includes eligible public safety and firefighters entering into the Utah Retirement Systems on or after July 1, 2011, when Tier 2 came into effect.

The **Defined Contribution Plans** may be utilized by employers adopting the Plans and by their employees.

As of December 31, 2018, participating members by System are included in the table below.

**PARTICIPATING MEMBERSHIP BY SYSTEM**

|                             | Noncontributory System | Contributory System | Public Safety System | Firefighters System | Judges System | Utah Governors and Legislators Retirement Plan | Tier 2 Public Employees System | Tier 2 Public Safety and Firefighter System |
|-----------------------------|------------------------|---------------------|----------------------|---------------------|---------------|--|--------------------------------|---|
| Number of participating:    |                        |                     |                      |                     |               |  |                                |   |
| Employers                   | 463                    | 158                 | 134                  | 62                  | 1             | 1  | 476                            | 152   |
| Members:                    |                        |                     |                      |                     |               |  |                                |   |
| Active                      | 56,299                 | 519                 | 5,305                | 1,540               | 116           | 52   | 30,291                         | 3,301                                       |
| Terminated vested           | 46,756                 | 1,186               | 4,921                | 440                 | 8             | 85   | 1,971                          | 130   |
| Retirees and beneficiaries: |                        |                     |                      |                     |               |  |                                |   |
| Service benefits            | 51,547                 | 3,306               | 5,202                | 1,232               | 125           | 173  | 64                             | —   |
| Beneficiary benefits        | 4,857                  | 611                 | 765                  | 232                 | 30            | 77   | —                              | —   |

## Notes to the Basic Financial Statements *(Continued)*

December 31, 2018

### Note 2

## Summary of Significant Accounting Policies

The following are the significant accounting policies followed by the Systems and Plans:

### A) Method of Accounting

The Systems and Plans maintain records and accounts, and prepare financial statements using fund accounting principles and the accrual basis of accounting, under which benefits and expenses are recognized when due and payable and revenues are recorded in the accounting period in which they are earned and become measurable in accordance with the terms of each System and Plan.



For financial reporting purposes, Utah Retirement Systems adheres to accounting principles generally accepted in the United States of America (GAAP). The Systems and Plans apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

GASB Statement No. 67, Financial Reporting for Pensions, addresses accounting and financial reporting requirements for pension plans. Significant requirements include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosure regarding the pension liability, the sensitivity of the net pension liability to the discount rate, and increased investment activity disclosures. The total pension liability, determined in accordance with GASB Statement No. 67, is presented in Note 5 and in the Required Supplementary Information on page 92.

GASB Statement No. 72, Fair Value Measurement and Application, addresses accounting and reporting issues related to fair value measurements. This Statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. Comprehensive footnote disclosure regarding this Statement is found in Note 3 beginning on page 63.

The financial statements include certain prior year summarized comparative information in total, but not by system or plan. Such information does not include sufficient detail to constitute a presentation in conformity with GAAP. Accordingly, such information should be read in conjunction with the Systems' financial statements for the year ended December 31, 2017, from which the summarized information was derived.

### B) Investments

By state statute all of the investment assets of the various Systems are pooled and invested in the common Utah State Retirement Investment Fund (Investment Fund). Each of the Systems has equity in the Investment Fund based on funds contributed and earnings allocated. Earnings of the Investment Fund are allocated based on the average month-end balances of each of the respective Systems. Individual investments in the Investment Fund are not specifically identified to the respective Systems (see Note 3). For financial statement presentation, the Investment Fund assets, liabilities, revenues, and expenses have been allocated to and presented in each respective system in the basic financial statements as required for investment pools.

Notes to the Basic Financial Statements (Continued)

December 31, 2018

Investments are presented at fair value. The defined contribution investments are classified by investment manager classification. The fair value of investments is based on published market prices and quotations from major investment brokers at current exchange rates, as available. Many factors are considered in arriving at that value. Corporate debt securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings.

The fair value of real estate investments has been estimated based on independent appraisals and/or property cash flow. Short-term securities are reported at fair value when published market prices and quotations are available, or at cost plus accrued interest, which approximates market or fair value. For alternative investments (private equity, absolute return, and real assets) where no readily ascertainable fair value exists, management, in consultation with their investment advisors, value these investments in good faith based upon audited financials, cash-flow analysis, purchase and sales of similar investments, other practices used within the industry, or other information provided by the underlying investment advisors. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed.

Approximately 11.0% of the investments held in trust for pension benefits are invested in debt securities of the U.S. Government and its instrumentalities. Of the 11.0%, approximately 7.9% are U.S. Government debt securities and approximately 3.1% are debt securities of the U.S. Government instrumentalities. The Systems and Plans have no investments of any commercial or industrial organization whose fair value equals 5.0% or more of the Systems' or Plans' fiduciary net positions for pension benefits.

**Investment policy.** The pension plan's policy in regard to the allocation of invested assets is established and may be amended by the URS Board. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan. The following was the URS Board's adopted asset allocation policy as of December 31, 2018:

| Asset Class                        | Target Allocation |
|------------------------------------|-------------------|
| Debt securities . . . . .          | 20%               |
| Equities . . . . .                 | 40                |
| Real assets. . . . .               | 15                |
| Private equity. . . . .            | 9                 |
| Absolute return. . . . .           | 16                |
| Cash and cash equivalents. . . . . | —                 |
| <b>Total. . . . .</b>              | <b>100%</b>       |

**Rate of return.** For the year ended December 31, 2018, the annual money-weighted rate of return on pension plan investment, net of pension plan investment expense, was (0.38)%. The money weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

**C) Property and Equipment**

Property and equipment are recorded at cost (see Note 4), are depreciated utilizing the straight-line method, and are included in the assets of the Investment Fund. The schedule below summarizes the estimated useful life by class. The Systems' policy is to capitalize all acquisitions of furniture and equipment with a unit cost of \$10,000 and computer software of \$1,000,000 or more.

|                                   |            |
|-----------------------------------|------------|
| Buildings. . . . .                | 40 years   |
| Building improvements . . . . .   | 10 years   |
| Furniture and equipment . . . . . | 3-10 years |
| Computer software. . . . .        | 5 years    |

**D) Administrative Expenses**

Expenses for the administration of the Systems and Plans are budgeted and approved by the Board. Systems' expenses are paid from investment earnings. Plan expenses are paid from Plan assets.

**E) Federal Tax Status**

The Systems and Plans are exempt from Federal income taxes under the Internal Revenue Code.

**F) Use of Estimates**

Management of the Systems and Plans have made a number of estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these financial statements in conformity with GAAP. Actual results could differ from these estimates.

**G) Subsequent Events**

The Systems and Plans have performed an evaluation of subsequent events through April 30, 2019, the date the basic financial statements were available to be issued. No material events were identified by the Systems and Plans.

## Notes to the Basic Financial Statements (Continued)

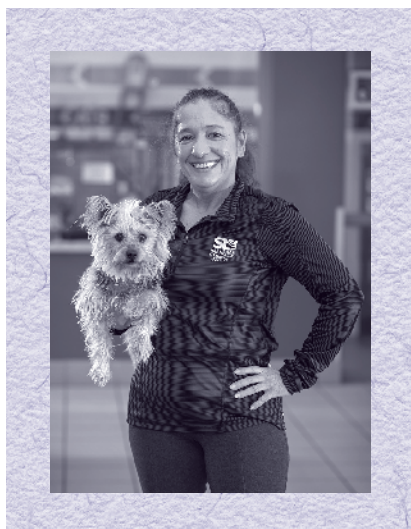
December 31, 2018

## Note 3

## Deposits and Investment Risk Disclosures

A)  
Deposits

Custodial Credit Risk for Deposits is the risk that in the event of a bank failure, the Systems' and Plans' deposits may not be returned to them. The deposits are held in one financial institution with an insured balance of \$250,000. Deposits in the bank in excess of \$250,000 are uninsured and uncollateralized, because they are not required to be by state statute.



## CASH DEPOSITS

(in thousands)

|  |                    |
|--|--------------------|
| Cash                                     | \$ 13,940          |
| Disbursements in excess of cash balances | (34,454)           |
| <b>Total</b>                             | <b>\$ (20,514)</b> |

The Systems and Plans do not have a deposit policy for custodial credit risk. Deposits are presented in the basic financial statements at cost plus accrued interest that is also the market or fair value. As of December 31, 2018, the carrying amount of deposits totaled approximately \$(20,514,000) and the corresponding bank balance was \$170,774 of which \$0 was exposed to custodial credit risk.

B)  
Investments

The table on the bottom of this page shows the Systems' and Plans' investments by type.

| (in thousands)  | 12/31/2018           |
|-----------------|----------------------|
| Private equity  | \$ 3,661,356         |
| Absolute return | 4,598,396            |
| Real assets     | 5,437,613            |
|                 | <b>\$ 13,697,365</b> |

The investments listed above are not listed on national exchanges, over-the-counter markets, nor do they have quoted market prices available.

The Systems and Plans value these investments in good faith at the Systems' and Plans' pro-rata interest in the net assets of these investments based upon audited financial statements or other

## INVESTMENTS

at December 31, 2018

(in thousands)

Fair Value

|  | Defined Benefit      | Defined Contribution | Total All Systems and Plans |
|--|----------------------|----------------------|-----------------------------|
| Short-term securities pools  | \$ 1,590,727         | —                    | 1,590,727                   |
| Debt securities  | 4,925,751            | 1,994,543            | 6,920,294                   |
| Equity securities  | 10,400,703           | 3,304,974            | 13,705,677                  |
| Absolute return  | 4,598,396            | —                    | 4,598,396                   |
| Private equity   | 3,661,356            | —                    | 3,661,356                   |
| Real assets  | 5,206,229            | 231,384              | 5,437,613                   |
| Investments held by broker-dealers under securities lending program: |                      |                      |                             |
| Equities   | 605,947              | —                    | 605,947                     |
| Debt   | 387,281              | —                    | 387,281                     |
| <b>Total investments</b>   | <b>\$ 31,376,390</b> | <b>5,530,901</b>     | <b>36,907,291</b>           |
| Securities lending collateral pool (not categorized)                 | \$ 1,058,056         | —                    | 1,058,056                   |



## Notes to the Basic Financial Statements *(Continued)*

December 31, 2018



information provided to the Systems and Plans by the underlying investment managers. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed.

### C) Fair Value Measurements

The Systems and Plans categorize its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

- Level 1 Unadjusted quoted prices for identical instruments in active markets.
- Level 2 Quoted prices for similar instruments in active markets; quoted priced for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.
- Level 3 Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

The Systems and Plans assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The tables on pages 64-65 show the fair value leveling of the investments for the Systems and Plans. Debt, equity and derivative securities classified in Level 1 are valued using prices quoted in active markets for those securities.

Debt and debt derivative securities classified in Level 2 and Level 3 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Index linked debt securities are valued by multiplying the external market price feed by the applicable day's Index Ratio. Level 2 debt securities have non-proprietary information that was readily available to market participants, from multiple independent sources which are known to be actively involved in the market. Level 3 debt securities use proprietary information or single source pricing. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities. Equity securities classified in Level 3 are valued with last trade data having limited trading volume.

Real assets classified in Level 1 are valued using prices quoted in active markets for those securities. Real assets classified in Level 3 are real estate investment generally valued using the income approach by internal manager reviews or independent external appraisers. The Systems and Plans policy is to obtain an external appraisal a minimum of every three years for properties or portfolios that the Systems and Plans have some degree of control or

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

discretion. In practice, some investments are appraised annually. Appraisals are performed by an independent appraiser with preference for Member Appraisal Institute (MAI) designated appraisers. The appraisals are performed using generally accepted valuation approaches applicable to the property type.

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on page 67.

Synthetic guaranteed investment contracts that are fully benefit-responsive are measured at contract value and do not participate in fair value changes.

## INVESTMENTS AND DERIVATIVE INSTRUMENTS MEASURED AT FAIR VALUE

(in thousands)

|  | Defined Benefit  |  |                                       |           | Defined Contribution   |  |                                       |        |
|--|--|--|---------------------------------------|-----------|--|--|---------------------------------------|--------|
|  | Fair Value Measures Using  |  |                                       |           | Fair Value Measures Using  |  |                                       |        |
|  | Quoted Prices<br>in Active<br>Markets for<br>Identical<br>Assets | Significant<br>Other<br>Observable<br>Inputs | Significant<br>Unobservable<br>Inputs |           | Quoted Prices<br>in Active<br>Markets for<br>Identical<br>Assets | Significant<br>Other<br>Observable<br>Inputs | Significant<br>Unobservable<br>Inputs |        |
| 12/31/18                               | Level 1  | Level 2                                      | Level 3                               | 12/31/18  | Level 1  | Level 2                                      | Level 3                               |        |
| <b>Investments by fair value level</b> |  |  |                                       |           |  |  |                                       |        |
| Short-term securities                  | \$ 1,242,660   | 66,763                                       | 1,175,897                             | —         | \$ —   | —  | —                                     | —      |
| Debt securities                        |  |  |                                       |           |  |  |                                       |        |
| Asset backed                           | 264,390  | —  | 204,696                               | 59,694    | 59,674   | —  | 36,528                                | 23,146 |
| Commercial mortgage-backed             | 108,506  | —  | 86,915                                | 21,591    | 698  | —  | 308                                   | 390    |
| Corporate bonds                        | 1,396,850  | —  | 1,395,729                             | 1,121     | 289,947  | —  | 289,517                               | 430    |
| Funds – other fixed income             | —  | —  | —                                     | —         | 98,580   | —  | 98,580                                | —      |
| Government agencies                    | 95,456   | —  | 95,456                                | —         | 31,854   | —  | 31,854                                | —      |
| Government bonds                       | 1,043,102  | —  | 1,043,102                             | —         | 172,613  | —  | 172,613                               | —      |
| Government mortgage backed securities  | 924,939  | —  | 837,841                               | 87,098    | 249,149  | —  | 223,891                               | 25,258 |
| Index linked government bonds          | 1,413,408  | —  | 1,413,408                             | —         | 142,185  | —  | 142,185                               | —      |
| Non-government backed C.M.O.s          | 77,202   | —  | 61,721                                | 15,481    | 187  | —  | 187                                   | —      |
| Total debt securities                  | 5,323,853  | —  | 5,138,868                             | 184,985   | 1,044,887  | —  | 995,663                               | 49,224 |
| Equity investments                     |  |  |                                       |           |  |  |                                       |        |
| Consumer goods                         | 1,969,686  | 1,969,602                                    | —                                     | 84        | 317,317  | 317,317                                      | —                                     | —      |
| Energy                                 | 628,872  | 624,552                                      | 4,164                                 | 156       | 61,265   | 61,265                                       | —                                     | —      |
| Equity other                           | 8,478  | 8,270  | 2                                     | 206       | 223,130  | 223,130                                      | —                                     | —      |
| Financials                             | 1,606,241  | 1,572,422                                    | 27,147                                | 6,672     | 157,815  | 157,815                                      | —                                     | —      |
| Health care                            | 1,178,456  | 1,178,391                                    | —                                     | 65        | 240,105  | 240,105                                      | —                                     | —      |
| Industrials                            | 1,272,409  | 1,272,284                                    | —                                     | 125       | 126,061  | 126,061                                      | —                                     | —      |
| Information technology                 | 1,371,576  | 1,371,498                                    | —                                     | 78        | 377,683  | 377,683                                      | —                                     | —      |
| Materials                              | 547,738  | 546,103                                      | 4                                     | 1,631     | 35,833   | 35,833                                       | —                                     | —      |
| Real estate investment trusts          | 402,993  | 402,966                                      | —                                     | 27        | 89,744   | 89,744                                       | —                                     | —      |
| Telecommunication services             | 736,082  | 736,062                                      | —                                     | 20        | 186,210  | 186,210                                      | —                                     | —      |
| Utilities                              | 275,742  | 275,742                                      | —                                     | —         | 32,374   | 32,374                                       | —                                     | —      |
| Total equity investments               | 9,998,273  | 9,957,892                                    | 31,317                                | 9,064     | 1,847,537  | 1,847,537                                    | —                                     | —      |
| Real assets                            |  |  |                                       |           |  |  |                                       |        |
| Agriculture                            | 163,191  | —  | —                                     | 163,191   | —  | —  | —                                     | —      |
| Commodities                            | 40,253   | 40,253                                       | —                                     | —         | —  | —  | —                                     | —      |
| Real estate                            | 1,998,259  | —  | —                                     | 1,998,259 | —  | —  | —                                     | —      |
| Total real assets                      | 2,201,703  | 40,253                                       | —                                     | 2,161,450 | —  | —  | —                                     | —      |
| Total investments by fair value level  | \$ 18,766,489  | 10,064,908                                   | 6,346,082                             | 2,355,499 | \$ 2,892,035   | 1,847,537                                    | 995,663                               | 49,224 |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

| Investments and Derivative<br>Instruments Measured at Fair Value<br>(Continued) | (in thousands) |  |  |                                       | Defined Benefit           |  |  |                                       | Defined Contribution      |  |  |                                       |
|---|----------------|--|--|---------------------------------------|---------------------------|--|--|---------------------------------------|---------------------------|--|--|---------------------------------------|
|   |                |  |  |                                       | Fair Value Measures Using |  |  |                                       | Fair Value Measures Using |  |  |                                       |
|   |                | Quoted Prices<br>in Active<br>Markets for<br>Identical<br>Assets | Significant<br>Other<br>Observable<br>Inputs | Significant<br>Unobservable<br>Inputs |                           | Quoted Prices<br>in Active<br>Markets for<br>Identical<br>Assets | Significant<br>Other<br>Observable<br>Inputs | Significant<br>Unobservable<br>Inputs |                           | Quoted Prices<br>in Active<br>Markets for<br>Identical<br>Assets | Significant<br>Other<br>Observable<br>Inputs | Significant<br>Unobservable<br>Inputs |
|   | 12/31/18       | Level 1  | Level 2                                      | Level 3                               | 12/31/18                  | Level 1  | Level 2                                      | Level 3                               | 12/31/18                  | Level 1  | Level 2                                      | Level 3                               |
| <b>Investments measured at the net asset value (NAV)</b>                        |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Short-term securities   | \$ 347,503     |  |  |                                       | \$ —                      |  |  |                                       |                           |  |  |                                       |
| Equity investments  |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Co-mingled international equity fund  | \$ 715,813     |  |  |                                       | 569,326                   |  |  |                                       |                           |  |  |                                       |
| Co-mingled U.S. small cap equity fund   | 288,086        |  |  |                                       | 373,364                   |  |  |                                       |                           |  |  |                                       |
| Co-mingled large cap equity fund  | —              |  |  |                                       | 503,251                   |  |  |                                       |                           |  |  |                                       |
| Co-mingled Russell 1000 Growth equity fund                                      | —              |  |  |                                       | 11,496                    |  |  |                                       |                           |  |  |                                       |
| Total equity investments measured at the NAV                                    | 1,003,899      |  |  |                                       | 1,457,437                 |  |  |                                       |                           |  |  |                                       |
| Absolute return   |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Directional   | 1,217,950      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Equity long/short   | 196,330        |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Event driven  | 997,085        |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Multistrategy   | 826,387        |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Relative value  | 1,360,644      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Total absolute return measured at the NAV                                       | 4,598,396      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Private equity – private equity partnerships                                    | 3,661,356      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Real assets   |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Co-mingled commodities fund   | —              |  |  |                                       | 65,605                    |  |  |                                       |                           |  |  |                                       |
| Co-mingled real estate equity fund  | —              |  |  |                                       | 165,779                   |  |  |                                       |                           |  |  |                                       |
| Agriculture   | 35,697         |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Energy  | 1,222,968      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Minerals  | 328,632        |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Real estate   | 1,118,897      |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Royalty   | 11,683         |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Timber  | 293,133        |  |  |                                       | —                         |  |  |                                       |                           |  |  |                                       |
| Total real assets measured at the NAV   | 3,011,010      |  |  |                                       | 231,384                   |  |  |                                       |                           |  |  |                                       |
| Total investments measured at the NAV   | 12,622,164     |  |  |                                       | 1,688,821                 |  |  |                                       |                           |  |  |                                       |
| Total investments measured at fair value  | \$ 31,388,653  |  |  |                                       | \$ 4,581,245              |  |  |                                       |                           |  |  |                                       |
| Synthetic guaranteed investments<br>contracts measured at contract value        | \$ —           |  |  |                                       | \$ 950,049                |  |  |                                       |                           |  |  |                                       |
| <b>Investments derivative instruments</b>                                       |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Short-term securities – options   | \$ 564         | 564  | —  | —                                     | —                         | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Debt securities   |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Options   | (125)          | —  | (125)  | —                                     | \$ (13)                   | —  | (13)   | —                                     | —                         | —  | —  | —                                     |
| Swaptions   | (3,378)        | —  | (3,378)                                      | —                                     | (47)                      | —  | (47)   | —                                     | —                         | —  | —  | —                                     |
| Swap liabilities  | (17,480)       | —  | (17,480)                                     | —                                     | (733)                     | —  | (733)  | —                                     | —                         | —  | —  | —                                     |
| Swap assets   | 10,162         | —  | 10,162                                       | —                                     | 440                       | —  | 440  | —                                     | —                         | —  | —  | —                                     |
| Total debt security derivatives   | (10,821)       | —  | (10,821)                                     | —                                     | (393)                     | —  | (393)  | —                                     | —                         | —  | —  | —                                     |
| Equity investments – options  | 4,478          | 4,478  | —  | —                                     | —                         | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Real assets – swap liabilities  | (6,484)        | —  | (6,484)                                      | —                                     | —                         | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Total investment derivative instruments   | \$ (12,263)    | 5,042  | (17,305)                                     | —                                     | \$ (393)                  | —  | (393)  | —                                     | —                         | —  | —  | —                                     |
| <b>Invested securities lending collateral</b>                                   |                |  |  |                                       |                           |  |  |                                       |                           |  |  |                                       |
| Short-term securities   | \$ 179,260     | 179,260  | —  | —                                     | \$ —                      | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Debt securities   | 159,470        | 53,425   | 11,021                                       | 95,024                                | —                         | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Equity investments  | 719,326        | 719,326  | —  | —                                     | —                         | —  | —  | —                                     | —                         | —  | —  | —                                     |
| Total invested securities lending collateral                                    | \$ 1,058,056   | 952,011  | 11,021                                       | 95,024                                | \$ —                      | —  | —  | —                                     | —                         | —  | —  | —                                     |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

**Defined Benefit**

- 1. Short-term Beta/Overlays.** This type consists of one pooled investment fund that invests in exchange traded short-term options and futures referencing equity indexes used for portfolio rebalancing. The fair values have been determined using the NAV per share of the investments.
- 2. Co-mingled International Equity Fund and Co-mingled Small Cap Fund.** This type consists of three institutional investment funds that invest in international equities diversified across all sectors and one fund that invests in U.S. small cap equities. The fair values of the investments in these types have been determined using the NAV per share of the investments.
- 3. Absolute Return Funds.** The fair values of the investments in this type have been determined using the NAV per share of the investments. *Directional funds* include investments in eleven funds whose investments are more directional in nature although they can shift opportunistically between having a directional bias and a non-directional bias. *Equity long/short funds* includes investments in nine funds in which the equity securities maintain some level of market exposure (either net long or net short); however the level of market exposure may vary through time. *Event driven funds* includes investments in nineteen funds whose investments focus on identifying and analyzing securities that can benefit from the occurrence of an extraordinary corporate transaction or event (e.g.: restructurings, takeovers, mergers, spin-offs, bankruptcy, etc). One fund is in the process of redemption totaling \$22,565 over the next 2 to 10 years. *Multi-strategy funds* include investments in ten funds. Investments in these funds represent a mix of the other absolute return strategies. Five funds are in the process of redemption totaling \$23 million over the next 1-5 years. *Relative*

*value funds* include investments in twenty-one funds. These funds seek returns by capitalizing on the mispricing of related securities or financial instruments. One new fund with a value of \$154 million has a redemption restriction of 2 years. All other funds currently have no redemption restrictions.

- 4. Private Equity Partnerships.** This type includes investments in limited partnerships. Generally speaking, the types of partnership strategies included in this portfolio: venture capital, growth equity, buyouts, special situations, mezzanine, and distressed debt. These investments have an approximate life of 10 years and are considered illiquid. Redemptions are restricted over the life of the partnership. During the life of the partnerships distributions are received as underlying partnership investments are realized. The majority of the private equity partnership investments are managed by two gatekeepers. Both gatekeepers manage discretionary accounts for URS. The gatekeepers are required to manage the private equity portfolio in accordance with guidelines established by the URS. The Systems have no plans to liquidate the total portfolio. As of December 31, 2018, it is probable that all the investments in this type will be sold at an amount different from the NAV per share (or its equivalent) of the Systems ownership interest in partners' capital.
- 5. Energy, Mineral, and Royalty Funds.** Investments in *Energy funds* consist of twenty-nine private equity partnerships which invest primarily in oil and gas related investments. *Mineral funds* include seven private equity partnerships which invest in mineral mining equity securities, commodities and other mining investments. *Royalty funds* include two private equity partnership which invests primarily in drug royalties. These investments have an approximate life of 10 years and

are considered illiquid. Redemption restrictions are in place over the life of the partnership. During the life of the partnerships distributions are received as underlying partnership investments are realized. As of December 31, 2018, it is probable that all the investments in this type will be sold at an amount different from the NAV per share (or its equivalent) of the Systems ownership interest in partners' capital. The fair values of these investments have been determined using estimates provided by the underlying partnerships using recent observable transactions information for similar investments.

- 6. Real Estate and Timber Funds.** *Real Estate* type includes thirty-eight investments which are invested primarily in apartments and retail space in the United States. *Timber* includes three funds which invest in timber related resources. *Agriculture* includes four investments which operate in the production, processing, and distribution of high value foods. Investments in these types can never be redeemed with the funds. Instead, the nature of these investments are that distributions from each investment will be received as the underlying investments are liquidated. Because it is probable that any individual investment will be sold, the fair value of each individual investment has been determined using the NAV per share (or its equivalent) of the Systems ownership interest in partners' capital.

**Defined Contribution**

**Co-Mingled Funds.** The fair values of the investments in this type have been determined using the NAV per share of the investments. The *co-mingled real estate fund* is comprised of institutional quality commercial real estate across a broad range of real estate asset types. The *co-mingled commodities* fund invests mainly in bulk goods and raw materials. The other funds invest in securities indicative of their name.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

**INVESTMENTS MEASURED AT THE NAV — DEFINED BENEFIT**

(in thousands)

|                                       | Fair Value    | Unfunded Commitments | Redemption Frequency (if Currently Eligible)             | Redemption Notice Period |
|---------------------------------------|---------------|----------------------|--|--------------------------|
| Short-term securities - beta/overlays | \$ 347,503    | \$ —                 | Daily  | None                     |
| Equity investments                    |               |                      |  |                          |
| Co-mingled international equity fund  | 715,813       | —                    | Daily  | None                     |
| Co-mingled U.S. small cap equity fund | 288,086       | —                    | Daily  | None                     |
| Total equity investments              | 1,003,899     | —                    |  |                          |
| Absolute return                       |               |                      |  |                          |
| Directional                           | 1,217,950     | 16,192               | Monthly, Quarterly                                       | 30-60 days               |
| Equity long/short                     | 196,330       | —                    | Monthly, Quarterly, Annually                             | 30-60 days               |
| Event driven                          | 997,085       | 14,400               | Monthly, Quarterly, Semi-annually, Annually, Bi-annually | 45-120 days              |
| Multistrategy                         | 826,387       | —                    | Monthly, Quarterly, Semi-annually, Annually              | 45-90 days               |
| Relative value                        | 1,360,644     | —                    | Weekly, Monthly, Quarterly, Semi-annually, Annually      | 30-90 days, N/A          |
| Total absolute return                 | 4,598,396     | 30,592               |  |                          |
| Private equity – partnerships         | 3,661,356     | 1,722,618            | Not eligible   | N/A                      |
| Real assets                           |               |                      |  |                          |
| Agriculture                           | 35,697        | 36,658               | Not eligible   | N/A                      |
| Energy                                | 1,222,968     | 547,214              | Not eligible   | N/A                      |
| Minerals                              | 328,632       | 161,367              | Not eligible   | N/A                      |
| Real Estate                           | 1,118,897     | 73,998               | Not eligible   | N/A                      |
| Royalty                               | 11,683        | 203,300              | Not eligible   | N/A                      |
| Timber                                | 293,133       | —                    | Not eligible   | N/A                      |
| Total real assets                     | 3,011,010     | 1,022,537            |  |                          |
| Total investments measured at the NAV | \$ 12,622,642 | \$ 2,775,747         |  |                          |

\*See redemption descriptions for these investment types on page 66.

**INVESTMENTS MEASURED AT THE NAV — DEFINED CONTRIBUTION**

(in thousands)

|  | Fair Value   | Unfunded Commitments | Redemption Frequency (if Currently Eligible) | Redemption Notice Period |
|--|--------------|----------------------|--|--------------------------|
| Equity securities                          |              |                      |  |                          |
| Co-mingled international equity fund       | \$ 569,326   | —                    | Daily  | None                     |
| Co-mingled U.S. small cap equity fund      | 373,364      | —                    | Daily  | None                     |
| Co-mingled large cap equity fund           | 503,251      | —                    | Daily  | None                     |
| Co-mingled Russell 1000 growth equity fund | 11,496       | —                    | Daily  | None                     |
| Total equity securities                    | 1,457,437    | —                    |  |                          |
| Real assets                                |              |                      |  |                          |
| Co-mingled real estate equity fund         | 65,605       | —                    | Quarterly                                    | None                     |
| Co-mingled commodities fund                | 165,779      | —                    | Daily  | None                     |
| Total real assets                          | 231,384      | —                    |  |                          |
| Total investments measured at the NAV      | \$ 1,688,821 | \$ —                 |  |                          |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## CREDIT RISK DEBT SECURITIES AT FAIR VALUE

at December 31, 2018

(in thousands)

| Quality Rating  | Total        | Defined Benefit Plans |                            |                 |                    |                     |                  |                            |                    |                               |
|-----------------|--------------|-----------------------|----------------------------|-----------------|--------------------|---------------------|------------------|----------------------------|--------------------|-------------------------------|
|                 |              | Asset Backed          | Commercial Mortgage Backed | Corporate Bonds | Fixed Income Other | Government Agencies | Government Bonds | Government Mortgage Backed | Index Linked Bonds | Non-Government Backed C.M.O.s |
| AAA             | \$ 218,728   | 111,025               | 45,582                     | 11,015          | —                  | 17,211              | 8,407            | 1,023                      | 24,426             | 39                            |
| AA+             | 98,886       | 293                   | 3,420                      | 26,503          | —                  | 21,370              | —                | —                          | 46,672             | 628                           |
| AA              | 17,163       | 9,253                 | —                          | 6,370           | —                  | 1,540               | —                | —                          | —                  | —                             |
| AA-             | 159,073      | 1,907                 | 595                        | 150,657         | —                  | 1,782               | 4,132            | —                          | —                  | —                             |
| A+              | 94,728       | 6,662                 | —                          | 74,499          | —                  | 7,359               | 6,094            | —                          | —                  | 114                           |
| A               | 146,095      | 14,728                | 1,979                      | 126,591         | —                  | 864                 | —                | —                          | —                  | 1,933                         |
| A-              | 247,610      | —                     | 2,768                      | 244,436         | —                  | —                   | 341              | —                          | —                  | 65                            |
| BBB+            | 322,392      | 3,796                 | —                          | 291,835         | —                  | 10,919              | 15,490           | —                          | —                  | 352                           |
| BBB             | 238,960      | 297                   | —                          | 222,297         | —                  | —                   | 15,366           | —                          | —                  | 1,000                         |
| BBB-            | 178,389      | —                     | —                          | 160,931         | —                  | —                   | 17,339           | —                          | —                  | 119                           |
| BB+             | 3,998        | 51                    | —                          | 3,746           | —                  | —                   | —                | —                          | —                  | 201                           |
| BB              | 3,386        | —                     | —                          | 3,038           | —                  | —                   | —                | —                          | —                  | 348                           |
| BB-             | 4,555        | 207                   | 2,419                      | 1,929           | —                  | —                   | —                | —                          | —                  | —                             |
| B+              | 6,906        | —                     | —                          | 1,532           | —                  | —                   | 5,374            | —                          | —                  | —                             |
| B               | 10,476       | 632                   | —                          | 1,206           | —                  | 1,531               | 6,000            | —                          | 1,084              | 23                            |
| B-              | 10,284       | —                     | —                          | 8,396           | —                  | —                   | 928              | —                          | —                  | 960                           |
| CCC+            | 2,004        | —                     | —                          | 2,004           | —                  | —                   | —                | —                          | —                  | —                             |
| CCC             | 855          | 106                   | —                          | —               | —                  | —                   | —                | —                          | —                  | 749                           |
| CCC-            | 789          | 789                   | —                          | —               | —                  | —                   | —                | —                          | —                  | —                             |
| D               | 673          | 173                   | —                          | 500             | —                  | —                   | —                | —                          | —                  | —                             |
| NR              | 1,985,402    | 114,471               | 51,742                     | 58,758          | 39,774             | 45,645              | 204,193          | 672,625                    | 777,510            | 20,684                        |
| Subtotal        | 3,751,352    | 264,390               | 108,505                    | 1,396,243       | 39,774             | 108,221             | 283,664          | 673,648                    | 849,692            | 27,215                        |
| U.S. Treasuries | 1,310,389    |                       |                            |                 |                    |                     |                  |                            |                    |                               |
| Explicit        | 251,291      |                       |                            |                 |                    |                     |                  |                            |                    |                               |
| Total           | \$ 5,313,032 |                       |                            |                 |                    |                     |                  |                            |                    |                               |

| Quality Rating                            | Total        | Defined Contribution Plans |                            |                 |                    |                     |                  |                            |                    |                               |
|---|--------------|----------------------------|----------------------------|-----------------|--------------------|---------------------|------------------|----------------------------|--------------------|-------------------------------|
|   |              | Asset Backed               | Commercial Mortgage Backed | Corporate Bonds | Fixed Income Other | Government Agencies | Government Bonds | Government Mortgage Backed | Index Linked Bonds | Non-Government Backed C.M.O.s |
| AAA                                       | \$ 7,292     | 2,504                      | 190                        | —               | —                  | 2,736               | 1,221            | —                          | 641                | —                             |
| AA+                                       | 47,824       | 40,524                     | —                          | 1,787           | —                  | —                   | —                | —                          | 5,513              | —                             |
| AA  | 1,391        | 1,000                      | —                          | 391             | —                  | —                   | —                | —                          | —                  | —                             |
| AA-                                       | 8,359        | 76                         | 99                         | 1,092           | —                  | 6,455               | 637              | —                          | —                  | —                             |
| A+  | 16,385       | 389                        | —                          | 11,016          | —                  | 4,269               | 711              | —                          | —                  | —                             |
| A   | 9,306        | 2,183                      | —                          | 7,123           | —                  | —                   | —                | —                          | —                  | —                             |
| A-  | 29,565       | —                          | —                          | 29,565          | —                  | —                   | —                | —                          | —                  | —                             |
| BBB+                                      | 78,076       | 302                        | —                          | 65,178          | —                  | 12,596              | —                | —                          | —                  | —                             |
| BBB                                       | 75,460       | 59                         | —                          | 74,242          | —                  | —                   | 1,159            | —                          | —                  | —                             |
| BBB-                                      | 52,962       | —                          | —                          | 46,494          | —                  | 4,246               | 2,222            | —                          | —                  | —                             |
| BB+                                       | 20,152       | 18                         | —                          | 20,134          | —                  | —                   | —                | —                          | —                  | —                             |
| BB  | 17,098       | —                          | —                          | 17,098          | —                  | —                   | —                | —                          | —                  | —                             |
| BB-                                       | 13,840       | —                          | 349                        | 13,491          | —                  | —                   | —                | —                          | —                  | —                             |
| B+  | 2,060        | —                          | —                          | 215             | —                  | —                   | 1,845            | —                          | —                  | —                             |
| B   | 2,052        | —                          | —                          | 79              | —                  | 257                 | 1,523            | —                          | 193                | —                             |
| B-  | 283          | —                          | —                          | 109             | —                  | —                   | 174              | —                          | —                  | —                             |
| CCC+                                      | —            | —                          | —                          | —               | —                  | —                   | —                | —                          | —                  | —                             |
| CCC                                       | —            | —                          | —                          | —               | —                  | —                   | —                | —                          | —                  | —                             |
| CCC-                                      | —            | —                          | —                          | —               | —                  | —                   | —                | —                          | —                  | —                             |
| D   | —            | —                          | —                          | —               | —                  | —                   | —                | —                          | —                  | —                             |
| NR  | 503,806      | 12,619                     | 60                         | 1,933           | 98,187             | 1,295               | 76,680           | 228,446                    | 84,399             | 187                           |
| Subtotal                                  | 885,911      | 59,674                     | 698                        | 289,947         | 98,187             | 31,854              | 86,172           | 228,446                    | 90,746             | 187                           |
| U.S. Treasuries                           | 137,880      |                            |                            |                 |                    |                     |                  |                            |                    |                               |
| Explicit U.S. Government Agencies         | 20,703       |                            |                            |                 |                    |                     |                  |                            |                    |                               |
| Synthetic Guaranteed Investment Contracts | 950,049      |                            |                            |                 |                    |                     |                  |                            |                    |                               |
| Total debt security investments           | \$ 1,994,543 |                            |                            |                 |                    |                     |                  |                            |                    |                               |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

**DEBT SECURITIES INVESTMENTS**

at December 31, 2018

(dollars in thousands)

| Investment   | Defined Benefit Plans |                             | Defined Contribution Plans |                             | Total All Systems and Plans |
|--|-----------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|
|  | Fair Value            | Effective Weighted Duration | Fair Value                 | Effective Weighted Duration |                             |
| Asset backed securities  | \$ 264,390            | 1.51                        | \$ 59,674                  | 0.55                        | \$ 324,064                  |
| Commercial mortgage-backed   | 108,505               | 3.91                        | 698                        | 0.80                        | 109,203                     |
| Corporate bonds  | 1,396,243             | 4.97                        | 289,947                    | 6.05                        | 1,686,190                   |
| Fixed income other   | 39,774                | —                           | 98,187                     | —                           | 137,961                     |
| Government agencies  | 108,221               | 4.74                        | 31,854                     | 8.14                        | 140,075                     |
| Government bonds   | 1,030,337             | 9.46                        | 172,613                    | 8.07                        | 1,202,950                   |
| Government mortgage backed securities                                | 924,939               | 5.52                        | 249,149                    | 3.55                        | 1,174,088                   |
| Index linked bonds   | 1,413,408             | 11.48                       | 142,185                    | 5.17                        | 1,555,593                   |
| Non-government backed C.M.O.s  | 27,215                | 3.66                        | 187                        | 4.60                        | 27,402                      |
| Total measured at fair value   | 5,313,032             | 7.47                        | 1,044,494                  | 5.33                        | 6,357,526                   |
| Synthetic guaranteed investment contracts measured at contract value | —                     | —                           | 950,049                    | —                           | 950,049                     |
| <b>Total</b>   | <b>\$ 5,313,032</b>   |                             | <b>\$ 1,994,543</b>        |                             | <b>\$ 7,307,575</b>         |

**D) Credit Risk Debt Securities**

The Systems and Plans expect their domestic debt securities investment managers to maintain diversified portfolios by sector and by issuer by using the following guidelines:

- » U.S. Government and Agency Securities — no restriction.
- » Total portfolio quality will maintain a minimum overall rating of "A".
- » Securities with a quality rating of below BBB- are considered below investment grade. For the Systems, no more than 5% of an investment manager's assets can be below investment grade and no more than 1% of an investment manager's assets can be with a single below investment grade issuer. For the Plans, no more than 15% of an investment manager's assets can be below investment grade.
- » Upon approval, a domestic debt securities investment manager may invest up to 10% of the portfolio in non-U.S. dollar denominated bonds.

For the Systems, global debt securities investment managers may hold up to 25% of the fair value of their portfolios in securities rated below investment grade (below BBB-/Baa3). The remaining assets will have an investment grade rating. For the Plans, international debt securities investment managers may hold up to 20% of the fair value of their portfolios in securities rated below investment grade (below BBB-/Baa3). The remaining assets will have an investment grade rating.

The Systems and Plans' weighted quality rating average of the global debt securities, excluding pooled investments, as of December 31, 2018, was A+, and the fair value of below grade investments was \$99,411,000 or 1.87%.

The government mortgage backed securities in both the Systems and Plans that are not rated include \$250,379 Federal Home Loan Mortgage Corporation and \$632,106 of Federal National Mortgage Association securities which are implicitly guaranteed by the U.S. government.

Notes to the Basic Financial Statements (Continued)

December 31, 2018

**E) Custodial Credit Risk**

Custodial credit risk for investments is the risk that, in the event of a failure of the counterparty, the Systems and Plans will not be able to recover the value of the investment or collateral securities that are in the possession of an outside party. The Systems and Plans do not have an investment policy regarding custodial credit risk. As of December 31, 2018, the table below represents the investments that have custodial credit risk. The \$41,820,000 frictional cash and cash equivalents subject to custodial credit risk are in foreign banks in the Systems' and Plans' name. Because it is in foreign banks, it is subject to custodial credit risk. URS does not have an investment policy regarding custodial credit risk for frictional cash in foreign banks.



**CUSTODIAL CREDIT RISK**

**Exposed to Custodial Credit Risk**

| Type of Investment        | (in thousands)<br>Fair Value |
|---------------------------|------------------------------|
| Cash and cash equivalents | \$ 41,820                    |

**Exposure to Custodial Credit Risk Not Determined**

| Investment   | (in thousands)<br>Fair Value |
|--------------|------------------------------|
| Other assets | \$ 518,972                   |

**F) Concentrations Credit Risk**

The Systems and Plans expect investment managers to maintain diversified portfolios by sector and by issuer using the following guidelines:

- » AAA/Aaa Debt Securities — no more than 5% of an investment manager's assets at market with a single issuer.
- » AA-/Aa3 Debt Securities or higher — no more than 4% of an investment manager's assets at market with a single issuer.

- » A-/A3 Debt Securities or higher — no more than 3% of an investment manager's assets at market with a single issuer.
- » BBB-/Baa3 Debt Securities or higher — for the Systems, no more than 2% of an investment manager's assets at market with a single issuer.
- » For Debt Securities — for the Systems, no individual holding will constitute more than 10% of the fair value of outstanding debt of a single issuer with the exception of the U.S. Government or its agencies, or collateralized mortgage obligations.

As of December 31, 2018, there were no single issuer investments that exceeded the above guidelines.

**G) Interest Rate Risk**

The Systems and Plans manage their exposure to fair value loss arising from increasing interest rates by complying with the following policy:

- » For domestic debt securities managers, an individual debt securities investment manager's portfolio will have an effective duration between 75-125% of the effective duration of the appropriate index.
- » The international debt securities investment managers will maintain an effective duration of their portfolio between 80 -120% of the appropriate index.
- » The global debt securities investment managers will maintain an effective duration of their portfolio between 75-125% of the appropriate index.
- » The global debt inflation-linked debt securities invest managers will maintain an effective duration of their portfolio between 80-120% of the appropriate index.



Notes to the Basic Financial Statements *(Continued)*

December 31, 2018



Duration is a measure of a debt investment's exposure to fair value changes arising from changes in interest rates. It uses the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price.

The Systems compare an investment's effective duration against the Bloomberg Barclays US Aggregate Bond Index for domestic debt securities, the Bloomberg Barclays Global Aggregate Bond Index (USD hedged) for global debt securities and the Bloomberg Barclays World Government Inflation-Linked Bond Index (USD hedged) for inflation-linked debt securities. The index duration range as of December 31, 2018, was 4.40 to 7.34 for domestic debt securities, 5.22 to 8.70 for global debt securities, and 9.65 to 14.47 for inflation-linked debt securities.

The Plans compare an investment's effective duration against the Bloomberg Barclays US Aggregate Bond Index for domestic debt securities, the Bloomberg Barclays Global Aggregate ex-U.S. Bond Index (USD hedged) for international debt securities and the Bloomberg Barclays Global Inflation Linked Bond Index 1-10 Year (USD hedged) for inflation-linked debt securities. The index duration range as of December 31, 2018, was 4.40 to 7.34 for domestic debt securities, 6.34 to 9.50 for international debt securities, and 4.02 to 6.04 for inflation-linked debt securities.

As of December 31, 2018, no individual debt securities investment manager's portfolio was outside of the policy guidelines except for one manager in the Plans that was 0.02 below its index duration range. This manager brought its portfolio back into range on the next business day. As of December 31, 2018, the table on page 69 shows the debt securities investments by investment type, amount, and the effective weighted duration.

## H) Foreign Currency Risk

The Systems and Plans expect the International Securities Investment Managers to maintain diversified portfolios by sector and by issuer using the following guidelines:

- » International investment managers invest in fixed income instruments and equity instruments of corporations headquartered outside of the United States unless specifically authorized within the investment managers' contract.
- » Domestic investment managers are allowed to invest in international corporations traded in American Depository Receipts (ADR).
- » Portfolios should be adequately diversified to limit foreign currency and security risk.

Risk of loss arises from changes in currency exchange rates. The Systems' and Plans' exposure to foreign currency risk is shown on page 72.

## I) Securities Lending

The Systems and Plans participate in a securities lending program as authorized by Board policy, whereby securities are transferred to an independent broker or dealer in exchange for collateral in the form of cash, government securities, and irrevocable bank letters of credit, equal to approximately 102% of the fair value of the domestic securities on loan and 105% of the fair value of the international securities on loan, with a simultaneous agreement to return the collateral for the same securities in the future. The custodial bank is the agent for the securities lending program. Securities under loan are maintained in the financial records, and corresponding liabilities are recorded for the fair value of the collateral received.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## FOREIGN CURRENCY RISK

International Investment Securities at Fair Value at December 31, 2018

| Currency   | <i>(in thousands)</i> |                  |                  |                    |                   |                  | Defined Contribution Plans |                |                | Total<br>All Systems<br>and Plans |
|--|-----------------------|------------------|------------------|--------------------|-------------------|------------------|----------------------------|----------------|----------------|-----------------------------------|
|  | Short-Term            | Debt             | Equity           | Absolute<br>Return | Private<br>Equity | Total            | Debt                       | Equity         | Total          |                                   |
| Argentine peso   | \$ 227                | 3,606            | —                | —                  | —                 | 3,833            | 876                        | —              | 876            | 4,709                             |
| Australian dollar  | 889                   | 22,620           | 167,882          | —                  | 3,269             | 194,660          | 11,156                     | 22,954         | 34,110         | 228,770                           |
| Brazilian real   | 453                   | —                | 91,601           | —                  | —                 | 92,054           | —                          | 10,611         | 10,611         | 102,665                           |
| British pound sterling                                       | 9,696                 | 324,287          | 627,377          | 1,461              | 46,631            | 1,009,452        | 20,279                     | 57,566         | 77,845         | 1,087,297                         |
| Canadian dollar  | 1,144                 | 51,280           | 295,399          | —                  | —                 | 347,823          | 9,440                      | 92,588         | 102,028        | 449,851                           |
| Cayman Islands dollar  | —                     | —                | —                | —                  | —                 | —                | —                          | 18             | 18             | 18                                |
| Chilean peso   | 113                   | 3,307            | 10,477           | —                  | —                 | 13,897           | 545                        | 1,649          | 2,194          | 16,091                            |
| Chinese yuan renminbi  | —                     | —                | 5,556            | —                  | —                 | 5,556            | —                          | 39,966         | 39,966         | 45,522                            |
| Colombian peso   | 154                   | —                | 3,967            | —                  | —                 | 4,121            | —                          | 562            | 562            | 4,683                             |
| Czech koruna   | 64                    | —                | 1,308            | —                  | —                 | 1,372            | —                          | 233            | 233            | 1,605                             |
| Danish krone   | 224                   | 2,153            | 37,700           | —                  | —                 | 40,077           | 321                        | 5,821          | 6,142          | 46,219                            |
| Egyptian pound   | —                     | —                | 895              | —                  | —                 | 895              | 71,658                     | 250            | 71,908         | 72,803                            |
| Euro   | 10,766                | 375,779          | 1,055,328        | 470,383            | 164,704           | 2,076,960        | —                          | 105,312        | 105,312        | 2,182,272                         |
| Hong Kong dollar   | 2,002                 | —                | 455,822          | —                  | —                 | 457,824          | —                          | 13,248         | 13,248         | 471,072                           |
| Hungarian forint   | 10                    | —                | 12,927           | —                  | —                 | 12,937           | —                          | 438            | 438            | 13,375                            |
| Indian rupee   | 375                   | 3,054            | 85,970           | —                  | —                 | 89,399           | 571                        | 14,443         | 15,014         | 104,413                           |
| Indonesian rupiah  | 142                   | —                | 18,636           | —                  | —                 | 18,778           | —                          | 3,329          | 3,329          | 22,107                            |
| Japanese yen   | 2,200                 | 241,281          | 914,997          | 8,788              | —                 | 1,167,266        | 50,589                     | 80,564         | 131,153        | 1,298,419                         |
| Malaysian ringgit  | 130                   | —                | 25,558           | —                  | —                 | 25,688           | —                          | 3,590          | 3,590          | 29,278                            |
| Mexican peso   | 106                   | —                | 58,386           | 28,871             | —                 | 87,363           | —                          | 3,983          | 3,983          | 91,346                            |
| Moroccan dirham  | 17                    | —                | —                | —                  | —                 | 17               | —                          | —              | —              | 17                                |
| New Israeli shekel   | 459                   | 917              | 9,056            | —                  | —                 | 10,432           | 260                        | 1,772          | 2,032          | 12,464                            |
| New Taiwan dollar  | 1,300                 | —                | 117,351          | —                  | —                 | 118,651          | —                          | 17,289         | 17,289         | 135,940                           |
| New Zealand dollar   | 538                   | 56,936           | 8,374            | —                  | —                 | 65,848           | 7,173                      | 774            | 7,947          | 73,795                            |
| Norwegian krone  | 389                   | 4,472            | 17,921           | —                  | —                 | 22,782           | 576                        | 2,425          | 3,001          | 25,783                            |
| Pakistani rupee  | —                     | —                | —                | —                  | —                 | —                | —                          | 174            | 174            | 174                               |
| Peruvian nuevo sol   | 39                    | —                | 203              | —                  | —                 | 242              | —                          | 550            | 550            | 792                               |
| Philippine peso  | 102                   | —                | 14,041           | —                  | —                 | 14,143           | —                          | 1,562          | 1,562          | 15,705                            |
| Polish zloty   | 135                   | —                | 8,571            | —                  | —                 | 8,706            | —                          | 1,787          | 1,787          | 10,493                            |
| Qatar riyal  | —                     | —                | —                | —                  | —                 | —                | —                          | 1,554          | 1,554          | 1,554                             |
| Russian ruble  | 100                   | —                | 16,653           | —                  | —                 | 16,753           | —                          | 4,823          | 4,823          | 21,576                            |
| Singapore dollar   | 1,133                 | —                | 48,653           | —                  | —                 | 49,786           | —                          | 4,601          | 4,601          | 54,387                            |
| South African rand   | 166                   | —                | 52,435           | —                  | —                 | 52,601           | —                          | 8,818          | 8,818          | 61,419                            |
| South Korean won   | 98                    | —                | 201,404          | —                  | —                 | 201,502          | —                          | 20,353         | 20,353         | 221,855                           |
| Swedish krona  | 447                   | 9,389            | 83,803           | —                  | —                 | 93,639           | 2,042                      | 9,009          | 11,051         | 104,690                           |
| Swiss franc  | 1,029                 | —                | 261,365          | —                  | —                 | 262,394          | —                          | 28,770         | 28,770         | 291,164                           |
| Thai baht  | 142                   | 1,955            | 36,999           | —                  | —                 | 39,096           | 575                        | 3,673          | 4,248          | 43,344                            |
| Turkish lira   | 28                    | —                | 11,826           | —                  | —                 | 11,854           | —                          | 1,008          | 1,008          | 12,862                            |
| United Arab Emirates dirham                                  | 289                   | —                | 8,553            | —                  | —                 | 8,842            | —                          | 1,049          | 1,049          | 9,891                             |
| <b>Total securities subject<br/>to foreign currency risk</b> | <b>\$ 35,106</b>      | <b>1,101,036</b> | <b>4,766,994</b> | <b>509,503</b>     | <b>214,604</b>    | <b>6,627,243</b> | <b>176,061</b>             | <b>567,116</b> | <b>743,177</b> | <b>7,370,420</b>                  |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018



At December 31, 2018, there was no credit risk exposure to borrowers because the collateral exceeded the amount borrowed. The securities on loan at year end were \$993,228,000 and the collateral received for those securities on loan was \$1,058,050,000. Under the terms of the lending agreement, the Systems and Plans are indemnified against loss should the lending agent be unable to recover borrowed securities and distributions due to borrower insolvency or failure of the lending agent to properly evaluate the credit worthiness of the borrower. In addition, the Systems and Plans are indemnified against loss should the lending agent fail to demand adequate and appropriate collateral on a timely basis. All securities loaned can be terminated on demand by either the Systems and Plans or the borrower. Cash collateral is invested in the lending agent's short-term investment pool.

The short-term investment pool guidelines specify that a minimum of 20% of the invested cash collateral is to be available each business day and the dollar weighted average maturity of holdings should not exceed 60 days. The relationship between the maturities of the short-term investment pool and the Systems' and Plans' loans is affected by the maturities of the securities loans made by other entities that use the agent's pool, which the Systems and Plans cannot determine. Because the securities lending collateral is in a pool maintained by the custodial bank, the Systems and Plans do not have the ability to pledge or sell the securities, and it is not necessary to report the total income and expenses of securities lending.

## J) Derivative Financial Instruments

The Systems and Plans invest in derivative financial investments as authorized by Board policy. Derivatives are financial arrangements between two parties whose payments are based on, or "derived" from, the performance of some agreed-upon benchmark. All derivatives are considered investments. The fair value of all derivative financial instruments is reported in the Statements of Fiduciary Net Position. Within the investment asset class, swaptions are recorded in debt securities. By policy, portfolio liabilities associated with investments will be backed by cash equivalents or deliverable securities. URS does not have a policy regarding master netting arrangements. As of December 31, 2018, the Systems and Plans had five types of derivative financial instruments: futures, currency forwards, options, swaps, and Synthetic Guaranteed Investment Contracts (SGIC).

### Futures

Futures represent commitments to purchase (asset) or sell (liability) securities at a future date and at a specified price. Futures contracts are traded on organized exchanges (exchange traded) thereby minimizing the Systems' and Plans' credit risk. The net change in the futures contracts value is settled daily in cash with the exchanges. Net gains or losses resulting from the daily settlements are included with trading account securities gains in the Statements of Changes in Fiduciary Net Position. As of December 31, 2018, the Systems' and Plans' investments had the notional future balances as shown below.

|                         |       | Notional Value             |                                 |
|-------------------------|-------|----------------------------|---------------------------------|
|                         |       | Defined Benefit Plans 2018 | Defined Contribution Plans 2018 |
| <b>FUTURES</b>          |       |                            |                                 |
| <i>(in thousands)</i>   |       |                            |                                 |
| Cash & Cash Equivalents | Long  | \$ —                       | —                               |
|                         | Short | (90,724)                   | —                               |
| Equity                  | Long  | 106,895                    | —                               |
|                         | Short | (72,151)                   | —                               |
| Fixed Income            | Long  | 765,935                    | 43,327                          |
|                         | Short | (728,552)                  | (62,298)                        |
| Total Futures           |       | \$ (18,597)                | (18,971)                        |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## CURRENCY FORWARDS

(in thousands)

| Currency  | Defined Benefit Plans |                                    |                                |                 |
|---|-----------------------|------------------------------------|--------------------------------|-----------------|
|   | Notional Cost         | Pending Foreign Exchange Purchases | Pending Foreign Exchange Sales | Fair Value 2018 |
| Argentine peso                                  | \$ (2,094)            | 765                                | (2,902)                        | (2,137)         |
| Australian dollar                               | (14,006)              | 11,989                             | (25,383)                       | (13,394)        |
| Brazilian real                                  | 1,972                 | 1,985                              | —                              | 1,985           |
| British pound sterling                          | (332,404)             | 32,305                             | (363,949)                      | (331,644)       |
| Canadian dollar                                 | (51,435)              | 5,389                              | (55,506)                       | (50,117)        |
| Chilean peso                                    | 501                   | 1,947                              | (1,410)                        | 537             |
| Colombian peso                                  | 1,530                 | 1,540                              | —                              | 1,540           |
| Czech koruna                                    | 11,416                | 11,495                             | —                              | 11,495          |
| Danish krone                                    | (2,519)               | —                                  | (2,528)                        | (2,528)         |
| Euro  | (399,880)             | 15,404                             | (417,599)                      | (402,195)       |
| Hong Kong dollar                                | (4,667)               | 3,766                              | (8,416)                        | (4,650)         |
| Hungarian forint                                | (1,988)               | 973                                | (2,991)                        | (2,018)         |
| Indian rupee                                    | 700                   | 715                                | —                              | 715             |
| Indonesian rupiah                               | 3,273                 | 3,354                              | (38)                           | 3,316           |
| Japanese yen                                    | (233,729)             | 10,507                             | (251,805)                      | (241,298)       |
| Malaysian ringgit                               | (1,949)               | —                                  | (1,980)                        | (1,980)         |
| Mexican peso                                    | (3,702)               | 22,327                             | (25,969)                       | (3,642)         |
| New Israeli shekel                              | (473)                 | —                                  | (470)                          | (470)           |
| New Romanian leu                                | (3,678)               | —                                  | (3,696)                        | (3,696)         |
| New Zealand dollar                              | (59,941)              | 176                                | (58,770)                       | (58,594)        |
| Norwegian krone                                 | 12,847                | 12,716                             | —                              | 12,716          |
| Peruvian nuevo sol                              | (3,842)               | —                                  | (3,842)                        | (3,842)         |
| Philippine peso                                 | (3,645)               | 36                                 | (3,696)                        | (3,660)         |
| Russian ruble                                   | 1,913                 | 1,839                              | —                              | 1,839           |
| Singapore dollar                                | 2,058                 | 2,946                              | (887)                          | 2,059           |
| South Korean won                                | (25,985)              | 21                                 | (26,179)                       | (26,158)        |
| Swedish krona                                   | (1,097)               | 13,087                             | (14,170)                       | (1,083)         |
| Swiss franc                                     | 625                   | 2,571                              | (1,970)                        | 601             |
| Thai baht                                       | (1,880)               | —                                  | (1,899)                        | (1,899)         |
| United States dollar                            | 1,112,079             | 1,262,229                          | (150,149)                      | 1,112,080       |
| Total forwards subject to foreign currency risk | \$ —                  | 1,420,082                          | (1,426,204)                    | (6,122)         |

| Currency  | Defined Contribution Plans |                                    |                                |                 |
|---|----------------------------|------------------------------------|--------------------------------|-----------------|
|   | Notional Cost              | Pending Foreign Exchange Purchases | Pending Foreign Exchange Sales | Fair Value 2018 |
| Argentine peso                                  | \$ (569)                   | —                                  | (581)                          | (581)           |
| Australian dollar                               | (7,302)                    | 1,723                              | (8,827)                        | (7,104)         |
| Brazilian real                                  | 436                        | 439                                | —                              | 439             |
| British pound sterling                          | (14,916)                   | 1,309                              | (16,243)                       | (14,934)        |
| Canadian dollar                                 | (5,755)                    | 131                                | (5,750)                        | (5,619)         |
| Chilean peso                                    | 210                        | 382                                | (169)                          | 213             |
| Colombian peso                                  | 159                        | 160                                | —                              | 160             |
| Czech koruna                                    | 2,187                      | 2,202                              | —                              | 2,202           |
| Danish krone                                    | (303)                      | —                                  | (304)                          | (304)           |
| Euro  | (81,036)                   | 126                                | (81,575)                       | (81,449)        |
| Hong Kong dollar                                | (1,412)                    | —                                  | (1,409)                        | (1,409)         |
| Hungarian forint                                | (483)                      | —                                  | (488)                          | (488)           |
| Indian rupee                                    | 210                        | 214                                | —                              | 214             |
| Indonesian rupiah                               | 538                        | 545                                | —                              | 545             |
| Japanese yen                                    | (44,997)                   | 312                                | (46,752)                       | (46,440)        |
| Malaysian ringgit                               | (377)                      | —                                  | (382)                          | (382)           |
| Mexican peso                                    | (723)                      | 627                                | (1,377)                        | (750)           |
| New Israeli shekel                              | (176)                      | —                                  | (175)                          | (175)           |
| New Romanian leu                                | (727)                      | —                                  | (731)                          | (731)           |
| New Zealand dollar                              | (7,512)                    | —                                  | (7,345)                        | (7,345)         |
| Norwegian krone                                 | 2,834                      | 2,804                              | —                              | 2,804           |
| Peruvian nuevo sol                              | (739)                      | —                                  | (739)                          | (739)           |
| Philippine peso                                 | (728)                      | —                                  | (731)                          | (731)           |
| Russian ruble                                   | 376                        | 361                                | —                              | 361             |
| Singapore dollar                                | 462                        | 463                                | —                              | 463             |
| South Korean won                                | (2,982)                    | —                                  | (3,014)                        | (3,014)         |
| Swedish krona                                   | (582)                      | 430                                | (1,022)                        | (592)           |
| Thai baht                                       | (552)                      | —                                  | (558)                          | (558)           |
| United States dollar                            | 164,459                    | 176,096                            | (11,634)                       | 164,462         |
| Total forwards subject to foreign currency risk | \$ —                       | 188,324                            | (189,806)                      | (1,482)         |

## OPTIONS

(in thousands)

|                         |      | Fair Value                 |                                 |
|-------------------------|------|----------------------------|---------------------------------|
|                         |      | Defined Benefit Plans 2018 | Defined Contribution Plans 2018 |
| Cash & Cash Equivalents | Call | \$ 328                     | 41                              |
|                         | Put  | 236                        | 46                              |
| Equity                  | Call | —                          | —                               |
|                         | Put  | 4,478                      | —                               |
| Fixed Income            | Call | (282)                      | (8)                             |
|                         | Put  | (16)                       | (5)                             |
| Swaptions               | Call | (2,713)                    | (47)                            |
|                         | Put  | (665)                      | —                               |
| Interest Rate Contracts |      | 173                        | 5                               |
| Total Options           |      | \$ 1,539                   | 32                              |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018



### Currency Forwards

Currency forwards represent forward foreign exchange contracts that are entered into in order to hedge the exposure to changes in foreign currency exchange rate on the foreign currency denominated portfolio holdings. A forward foreign exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The gain or loss arising from the difference between the original contracts and the closing of such contracts is included in the net realized gains or losses on foreign currency related transactions in the Statements of Changes in Fiduciary Net Position. As of December 31, 2018, the Systems' and Plans' investments included the currency forwards balances at left.

### Options

Options represent or give buyers the right, but not the obligation, to buy (call) or sell (put) an asset at a preset price over a specified period. The option's price is usually a small percentage of the underlying asset's value. As a writer of financial options, the Systems and Plans receive a premium at the outset of the agreement and bear the risk of an unfavorable change in the price of the financial instrument underlying the option. As a purchaser of financial options, the Systems and Plans pay a premium at the outset of the agreement and the counter-party bears the risk of an unfavorable change in the price of the financial instrument underlying the option. As of December 31, 2018, the Systems' and Plans' investments had the option balances shown on page 74.

### Swaps

The Systems and Plans have entered into various inflation, credit default and interest rate swap agreements in an attempt to manage their exposure to inflation, credit and interest rate risk. Interest rate and inflation risk represents the exposure to fair value losses arising from inflation and the future changes in prevailing market interest rates. Credit risk is an investor's risk of loss arising from a borrower who does not make payments as promised. Swaps represent an agreement between two or more parties to exchange sequences of cash flows over a period in the future. In the most common type of interest rate swap arrangement, one party agrees to pay fixed interest payments on designated dates to a counterparty, who in turn agrees to make return interest payments that float with some reference rate. The real estate interest rate swaps allowed the Systems to effectively convert most of their long-term variable interest rate credit facility loans into fixed interest rate loans, thereby mitigating some of their interest rate risk. All swap instruments contain collateral clauses. Gains and losses on swaps are determined based on fair values and are recorded in the Statements of Changes in Fiduciary Net Position. Swap fair values are determined by an independent third party. As of December 31, 2018, the Systems' and Plans' investments had the swap fair value balances as shown in the tables on pages 75-78.

## REAL ESTATE PORTFOLIO INTEREST SWAPS

(in thousands)

| Counterparty                                 | Notional Amount | Utah Rate | Counterparty Rate | Maturity Date | Defined Benefit |                 |
|--|-----------------|-----------|-------------------|---------------|-----------------|-----------------|
|  |                 |           |                   |               | Credit Rating   | Fair Value 2018 |
| Morgan Stanley                               | \$ 71,700       | 4.72%     | 1M Libor          | 10/1/20       | BBB+            | \$ (2,910)      |
| Morgan Stanley                               | 43,660          | 5.294%    | 1M Libor          | 11/1/21       | BBB+            | (3,574)         |
| Total interest rate and credit default swaps | \$ 115,360      |           |                   |               |                 | \$ (6,484)      |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## FIXED INCOME PORTFOLIO SWAPS

(in thousands)

| Counterparty    | Defined Benefit Plans |           |                    |               |               |                 |
|-----------------|-----------------------|-----------|--------------------|---------------|---------------|-----------------|
|                 | Notional Amount       | Utah Rate | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Goldman Sachs   | \$ 125,000            | 3M LIBOR  | 1.80%              | 9/18/20       | A+            | \$(1,196)       |
| Bank of America | 32,940                | 2.23%     | CPI                | 9/18/20       | A-            | (542)           |
| Bank of America | 19,930                | (0.135%)  | 6M EURIB           | 11/12/20      | A-            | (17)            |
| Bank of America | 12,810                | (0.160%)  | 6M EURIB           | 11/12/20      | A-            | (4)             |
| Bank of America | 7,120                 | (0.165%)  | 6M EURIB           | 11/12/20      | A-            | (2)             |
| Goldman Sachs   | 44,810                | (0.135%)  | 6M EURIB           | 12/11/20      | A+            | (38)            |
| Goldman Sachs   | 28,810                | 0.16%     | 6M EURIB           | 12/11/20      | A+            | (10)            |
| Goldman Sachs   | 16,000                | (0.165%)  | 6M EURIB           | 12/11/20      | A+            | (4)             |
| Goldman Sachs   | 57,050                | 2.857%    | 3M LIBOR           | 12/31/20      | A+            | (219)           |
| Goldman Sachs   | 48,560                | 2.77%     | 3M LIBOR           | 12/31/20      | A+            | (112)           |
| Bank of America | 25,330                | 2.857%    | 3M LIBOR           | 12/31/20      | A-            | (97)            |
| Bank of America | 21,680                | 2.77%     | 3M LIBOR           | 12/31/20      | A-            | (50)            |
| Bank of America | 4,460                 | 3M LIBOR  | 3.07%              | 11/22/21      | A-            | 47              |
| Goldman Sachs   | 940                   | 3M LIBOR  | 3.019%             | 12/3/21       | A+            | 9               |
| Bank of America | 4,310                 | 3M LIBOR  | 3.024%             | 12/3/21       | A-            | 42              |
| Bank of America | 4,310                 | 3M LIBOR  | 3.019%             | 12/3/21       | A-            | 42              |
| Goldman Sachs   | 15,280                | 3M LIBOR  | 2.979%             | 12/6/21       | A+            | 141             |
| Bank of America | 10,460                | 3M LIBOR  | 2.979%             | 12/6/21       | A-            | 93              |
| Goldman Sachs   | 2,995                 | 3M LIBOR  | 2.899%             | 12/9/21       | A+            | 22              |
| Bank of America | 4,395                 | 3M LIBOR  | 2.891%             | 12/10/21      | A-            | 32              |
| Bank of America | 7,580                 | 3M LIBOR  | 2.835%             | 12/10/21      | A-            | 47              |
| Bank of America | 8,790                 | 3M LIBOR  | 2.925%             | 12/10/21      | A-            | 70              |
| Goldman Sachs   | 9,870                 | 3M LIBOR  | 2.891%             | 12/10/21      | A+            | 72              |
| Goldman Sachs   | 19,740                | 3M LIBOR  | 2.925%             | 12/10/21      | A+            | 157             |
| Goldman Sachs   | 9,870                 | 3M LIBOR  | 2.816%             | 12/12/21      | A+            | 58              |
| Bank of America | 1,265                 | 3M LIBOR  | 2.823%             | 12/12/21      | A-            | 8               |
| Bank of America | 3,300                 | 3M LIBOR  | 2.782%             | 12/12/21      | A-            | 17              |
| Bank of America | 4,395                 | 3M LIBOR  | 2.816%             | 12/12/21      | A-            | 26              |
| Goldman Sachs   | 7,430                 | 3M LIBOR  | 2.782%             | 12/12/21      | A+            | 39              |
| Goldman Sachs   | 7,420                 | 3M LIBOR  | 2.823%             | 12/12/21      | A+            | 45              |
| Goldman Sachs   | 7,965                 | 3M LIBOR  | 2.890%             | 12/16/21      | A+            | 58              |
| Bank of America | 4,390                 | 3M LIBOR  | 2.847%             | 12/17/21      | A-            | 28              |
| Goldman Sachs   | 9,910                 | 3M LIBOR  | 2.847%             | 12/17/21      | A+            | 64              |
| Bank of America | 4,390                 | 3M LIBOR  | 2.806%             | 12/19/21      | A-            | 25              |
| Goldman Sachs   | 9,900                 | 3M LIBOR  | 2.806%             | 12/19/21      | A+            | 57              |
| Bank of America | 6,600                 | 3M LIBOR  | 2.751%             | 12/20/21      | A-            | 31              |
| Goldman Sachs   | 14,900                | 3M LIBOR  | 2.751%             | 12/20/21      | A+            | 70              |
| Bank of America | 8,510                 | 3M LIBOR  | 2.771%             | 12/23/21      | A-            | 33              |
| Goldman Sachs   | 19,150                | 3M LIBOR  | 2.771%             | 12/23/21      | A+            | 75              |
| Bank of America | 4,235                 | 3M LIBOR  | 2.588%             | 12/30/21      | A-            | 7               |
| Goldman Sachs   | 9,580                 | 3M LIBOR  | 2.588%             | 12/30/21      | A+            | 16              |
| Goldman Sachs   | 9,590                 | 3M LIBOR  | 2.642%             | 12/30/21      | A+            | 26              |
| Bank of America | 4,230                 | 3M LIBOR  | 2.642%             | 12/30/21      | A-            | 11              |
| Bank of America | 2,120                 | 3M LIBOR  | 2.597%             | 12/31/21      | A-            | 4               |
| Bank of America | 2,120                 | 3M LIBOR  | 2.593%             | 12/31/21      | A-            | 4               |
| Goldman Sachs   | 4,780                 | 3M LIBOR  | 2.593%             | 12/31/21      | A+            | 8               |
| Goldman Sachs   | 4,780                 | 3M LIBOR  | 2.597%             | 12/31/21      | A+            | 9               |
| Goldman Sachs   | 2,315                 | 3M LIBOR  | 2.559%             | 1/3/22        | A+            | 3               |

| Counterparty    | Defined Benefit Plans |           |                    |               |               |                 |
|-----------------|-----------------------|-----------|--------------------|---------------|---------------|-----------------|
|                 | Notional Amount       | Utah Rate | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Bank of America | \$ 5,800              | 3M LIBOR  | 2.559%             | 1/3/22        | A-            | \$ 6            |
| Goldman Sachs   | 142,960               | 3.015%    | 3M LIBOR           | 9/14/22       | A+            | (675)           |
| Goldman Sachs   | 44,710                | 3.055%    | 3M LIBOR           | 9/14/22       | A+            | (228)           |
| Bank of America | 27,839                | 3M LIBOR  | 2.225%             | 10/6/22       | A-            | (335)           |
| Goldman Sachs   | 20,375                | 3.124%    | 3M LIBOR           | 10/6/22       | A+            | (245)           |
| Goldman Sachs   | 17,580                | 0.42%     | 6M EURIB           | 12/17/22      | A+            | (58)            |
| Bank of America | 7,790                 | 0.42%     | 6M EURIB           | 12/17/22      | A-            | (26)            |
| Bank of America | 2,779                 | 3M LIBOR  | 2.834%             | 12/17/22      | A-            | 18              |
| Goldman Sachs   | 6                     | 3M LIBOR  | 2.834%             | 12/17/22      | A+            | 40              |
| Bank of America | 3,895                 | 6M EURIB  | 0.364%             | 12/21/22      | A-            | 8               |
| Goldman Sachs   | 6,760                 | 6M EURIB  | 0.364%             | 12/21/22      | A+            | 13              |
| Bank of America | 6,550                 | 6M EURIB  | 2.639%             | 12/22/22      | A-            | 21              |
| Bank of America | 12,360                | 3M LIBOR  | 2.633%             | 12/22/22      | A-            | 33              |
| Bank of America | 12,360                | 3M LIBOR  | 2.654%             | 12/22/22      | A-            | 37              |
| Bank of America | 10,320                | 3M LIBOR  | 2.696%             | 12/22/22      | A-            | 39              |
| Bank of America | 9,010                 | 3M LIBOR  | 2.734%             | 12/22/22      | A-            | 41              |
| Goldman Sachs   | 14,740                | 3M LIBOR  | 2.639%             | 12/22/22      | A+            | 41              |
| Goldman Sachs   | 23,830                | 3M LIBOR  | 2.633%             | 12/22/22      | A+            | 63              |
| Goldman Sachs   | 23,830                | 3M LIBOR  | 2.654%             | 12/22/22      | A+            | 72              |
| Goldman Sachs   | 20,360                | 3M LIBOR  | 2.734%             | 12/22/22      | A+            | 92              |
| Goldman Sachs   | 39,610                | 3M LIBOR  | 2.696%             | 12/22/22      | A+            | 151             |
| Bank of America | 32,830                | 1.38%     | CPTFE              | 4/15/23       | A-            | (107)           |
| Bank of America | 6,296,410             | 6M LIBOR  | 0.129%             | 4/26/23       | A-            | 297             |
| Bank of America | 10,820                | 3.256%    | RPI                | 5/15/23       | A-            | 303             |
| Bank of America | 27,250                | 1DFFUND   | 2.675%             | 5/31/23       | A-            | 442             |
| Goldman Sachs   | 61,430                | 1DFFUND   | 2.675%             | 5/31/23       | A+            | 997             |
| Bank of America | 12,660                | 1.545%    | CPTFE              | 7/15/23       | A-            | (270)           |
| Bank of America | 3,300                 | RPI       | 3.355%             | 8/15/23       | A-            | (617)           |
| Bank of America | 1,880                 | 3.357%    | RPI                | 8/15/23       | A-            | 216             |
| Bank of America | 17,280                | 3.35%     | RPI                | 8/15/23       | A-            | 227             |
| Bank of America | 17,280                | 3.475%    | RPI                | 9/15/23       | A-            | 39              |
| Goldman Sachs   | 7,860                 | 3.45%     | RPI                | 10/15/23      | A+            | (30)            |
| Bank of America | 17,280                | 3.45%     | RPI                | 10/15/23      | A-            | (13)            |
| Bank of America | 32,940                | RPI       | 3.446%             | 10/15/23      | A-            | 13              |
| Goldman Sachs   | 10,820                | 3.413%    | RPI                | 10/15/23      | A+            | 15              |
| Goldman Sachs   | 3,310                 | CPI       | 2.164%             | 10/30/23      | A+            | 266             |
| Goldman Sachs   | 1,615                 | CPI       | 2.164%             | 10/30/23      | A+            | 608             |
| Goldman Sachs   | 38,428                | 3.045%    | 3M LIBOR           | 11/29/23      | A+            | (840)           |
| Bank of America | 25,951                | 3.045%    | 3M LIBOR           | 11/29/23      | A-            | (567)           |
| Bank of America | 1,460                 | 3.575%    | RPI                | 12/15/23      | A-            | (37)            |
| Bank of America | 250                   |           |                    | 12/20/23      | A-            | 14              |
| Goldman Sachs   | 15,290                | 5%        | 1%                 | 12/20/23      | A+            | 60              |
| Goldman Sachs   | 53,240                | 2.92%     | 3M LIBOR           | 7/19/24       | A+            | \$(283)         |
| Bank of America | 23,720                | 2.92%     | 3M LIBOR           | 7/19/24       | A-            | (126)           |
| Goldman Sachs   | 7,010                 | 3.02%     | 3M LIBOR           | 12/3/24       | A+            | (145)           |
| Bank of America | 3,064                 | 3.02%     | 3M LIBOR           | 12/3/24       | A-            | (63)            |
| Bank of America | 35,162                | 3M LIBOR  | 2.900%             | 12/10/24      | A-            | 533             |
| Goldman Sachs   | 15,010                | 2.872%    | 3M LIBOR           | 12/16/24      | A+            | (208)           |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

| Defined Benefit Plans |                 |           |                    |               |               |                 |
|-----------------------|-----------------|-----------|--------------------|---------------|---------------|-----------------|
| Counterparty          | Notional Amount | Utah Rate | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Bank of America       | \$ 6,530        | 2.872%    | 3M LIBOR           | 12/16/24      | A-            | (90)            |
| Goldman Sachs         | 13,154          | 2.902%    | 3M LIBOR           | 12/19/24      | A+            | (58)            |
| Bank of America       | 5,839           | 2.902%    | 3M LIBOR           | 12/19/24      | A-            | (26)            |
| Goldman Sachs         | 6,190           | 2.776%    | 3M LIBOR           | 12/20/24      | A+            | (58)            |
| Bank of America       | 2,740           | 2.776%    | 3M LIBOR           | 12/20/24      | A-            | (26)            |
| Goldman Sachs         | 7,940           | 2.738%    | 3M LIBOR           | 12/23/24      | A+            | (61)            |
| Bank of America       | 3,530           | 2.738%    | 3M LIBOR           | 12/23/24      | A-            | (27)            |
| Goldman Sachs         | 21,625          | 2.912%    | 3M LIBOR           | 12/7/25       | A+            | (291)           |
| Bank of America       | 9,625           | 2.912%    | 3M LIBOR           | 12/7/25       | A-            | (129)           |
| Goldman Sachs         | 12,035          | 2.719%    | 3M LIBOR           | 12/21/25      | A+            | (55)            |
| Bank of America       | 5,325           | 2.715%    | 3M LIBOR           | 12/21/25      | A-            | (23)            |
| Bank of America       | 12,500          | 3M LIBOR  | 2.978%             | 7/19/26       | A-            | 35              |
| Goldman Sachs         | 28,060          | 3M LIBOR  | 2.978%             | 7/19/26       | A+            | 79              |
| Goldman Sachs         | 6,912           | 3M LIBOR  | 3.048%             | 12/17/26      | A+            | 22              |
| Bank of America       | 723,570         | 0.272%    | 6M LIBOR           | 8/11/27       | A-            | (88)            |
| Bank of America       | 12,660          | 3.46%     | UK RPI             | 11/15/27      | A-            | 97              |
| Bank of America       | 3,300           | RPI       | 3.405%             | 1/15/28       | A-            | (221)           |
| Bank of America       | 1,510           | 6M EURIB  | 0.761%             | 2/15/28       | A-            | 3               |
| Goldman Sachs         | 3,390           | 6M EURIB  | 0.761%             | 2/15/28       | A+            | 7               |
| Bank of America       | 2,720           | 6M EURIB  | 0.782%             | 2/15/28       | A-            | 11              |
| Goldman Sachs         | 6,100           | 6M EURIB  | 0.782%             | 2/15/28       | A+            | 25              |
| Bank of America       | 4,230           | 6M EURIB  | 0.799%             | 2/15/28       | A-            | 25              |
| Goldman Sachs         | 9,490           | 6M EURIB  | 0.799%             | 2/15/28       | A+            | 55              |
| Bank of America       | 7,950           | 6M EURIB  | 0.815%             | 2/15/28       | A-            | 59              |
| Goldman Sachs         | 18,090          | 6M EURIB  | 0.815%             | 2/15/28       | A+            | 135             |
| Bank of America       | 19,230          | 6M EURIB  | 0.827%             | 2/15/28       | A-            | 167             |
| Bank of America       | 12,930          | 3.21%     | 3M BBR             | 3/19/28       | A-            | (512)           |
| Bank of America       | 17,250          | 3.21%     | 3M BBR             | 3/20/28       | A-            | (683)           |
| Bank of America       | 3,775           | 1.04%     | 6M EURIB           | 3/23/28       | A-            | (160)           |
| Bank of America       | 1,530,490       | 0.32%     | 6M LIBOR           | 4/27/28       | A-            | (235)           |
| Bank of America       | 52,640          | RPI       | 3.338%             | 6/15/28       | A-            | (110)           |
| Goldman Sachs         | 2,180           | 3.05%     | 3M LIBOR           | 7/25/28       | A+            | (82)            |
| Bank of America       | 980             | 3.050%    | 3M LIBOR           | 7/25/28       | A-            | (37)            |
| Goldman Sachs         | 11,862          | 3.121%    | 3M LIBOR           | 8/15/28       | A+            | (403)           |
| Bank of America       | 6,825           | RPI       | 3.385%             | 8/15/28       | A-            | (219)           |
| Bank of America       | 5,146           | 3.121%    | 3M LIBOR           | 8/15/28       | A-            | (175)           |
| Bank of America       | 4,840           | 3M LIBOR  | 2.831%             | 8/15/28       | A-            | 48              |
| Goldman Sachs         | 10,980          | 3M LIBOR  | 2.831%             | 8/15/28       | A+            | 109             |
| Goldman Sachs         | 369             | 6M EURIB  | 0.878%             | 8/28/28       | A+            | 6               |
| Bank of America       | 760             | 6M EURIB  | 0.878%             | 8/28/28       | A-            | 12              |
| Bank of America       | 1,880           | RPI       | 3.50%              | 9/15/28       | A-            | (104)           |
| Goldman Sachs         | 19,030          | 3.115%    | 3M LIBOR           | 10/4/28       | A+            | (679)           |

| Defined Benefit Plans                        |                 |             |                    |               |               |                 |
|--|-----------------|-------------|--------------------|---------------|---------------|-----------------|
| Counterparty                                 | Notional Amount | Utah Rate   | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Bank of America                              | \$ 250          | 3.115%      | 3M LIBOR           | 10/4/28       | A-            | (9)             |
| Bank of America                              | 5,580           | 3.27%       | 3M LIBOR           | 10/9/28       | A-            | (276)           |
| Goldman Sachs                                | 2,150           | 3.277%      | 3M LIBOR           | 10/9/28       | A+            | (108)           |
| Bank of America                              | 950             | 3.277%      | 3M LIBOR           | 10/9/28       | A-            | (48)            |
| Bank of America                              | 1,370           | 3M LIBOR    | 3.25%              | 10/9/28       | A-            | 65              |
| Goldman Sachs                                | 3,110           | 3M LIBOR    | 3.25%              | 10/9/28       | A+            | 148             |
| Goldman Sachs                                | 8,540           | RPI         | 3.485%             | 10/15/28      | A+            | (43)            |
| Bank of America                              | 17,970          | RPI         | 3.505%             | 10/15/28      | A-            | 5               |
| Goldman Sachs                                | 1,565           | RPI         | 3.505%             | 10/15/28      | A+            | 10              |
| Goldman Sachs                                | 11,335          | 2.249%      | CPI                | 10/30/28      | A+            | (924)           |
| Bank of America                              | 7,860           | 2.249%      | CPI                | 10/30/28      | A-            | (404)           |
| Bank of America                              | 716,795         | 0.351%      | 6M LIBOR           | 11/1/28       | A-            | (138)           |
| Goldman Sachs                                | 5,508           | 3.273%      | 3M LIBOR           | 11/9/28       | A+            | (270)           |
| Bank of America                              | 2,450           | 3.273%      | 3M LIBOR           | 11/9/28       | A-            | (120)           |
| Bank of America                              | 14,510          | 3M LIBOR    | 3.143%             | 11/29/28      | A-            | 539             |
| Goldman Sachs                                | 33,030          | 3M LIBOR    | 3.143%             | 12/29/28      | A+            | 1,228           |
| Goldman Sachs                                | 5,590           | 1.37%       | 6M EURIB           | 2/20/29       | A+            | (333)           |
| Bank of America                              | 38,770          | 2.80%       | 3M BBR             | 3/20/29       | A-            | (9)             |
| Bank of America                              | 14,410          | UKRPI       | 3.5475%            | 11/15/32      | A-            | 11              |
| Bank of America                              | 3,060           | 3M LIBOR    | 2.997%             | 2/15/36       | A-            | 64              |
| Goldman Sachs                                | 7,040           | 3M LIBOR    | 2.997%             | 12/15/36      | A+            | 148             |
| Bank of America                              | 3,800           | UKRPI       | 3.60%              | 11/15/42      | A-            | 212             |
| Goldman Sachs                                | 23,710          | 3.23%       | 3M LIBOR           | 5/15/44       | A+            | (1,582)         |
| Bank of America                              | 10,540          | 3.23%       | 3M LIBOR           | 5/15/44       | A-            | (703)           |
| Goldman Sachs                                | 5,117           | 3.086%      | 3M LIBOR           | 5/15/44       | A+            | (206)           |
| Bank of America                              | 2,195           | 3.086%      | 3M LIBOR           | 5/15/44       | A-            | (88)            |
| Bank of America                              | 220             | EUR CPI     | 1.832%             | 5/15/47       | A-            | 39              |
| Bank of America                              | 17,280          | 3.55%       | RPI                | 11/15/47      | A-            | (346)           |
| Bank of America                              | 15,290          | EUR P CPTFE | 1.974%             | 1/15/48       | A-            | 104             |
| Bank of America                              | 1,605           | EUR P CPTFE | 1.991%             | 1/15/48       | A-            | 114             |
| Bank of America                              | 3,800           | 3.51%       | RPI                | 2/15/48       | A-            | (104)           |
| Bank of America                              | 1,460           | 3.41%       | RPI                | 3/15/48       | A-            | 72              |
| Bank of America                              | 1,460           | EUR P CPTFE | 1.982%             | 6/15/48       | A-            | 110             |
| Bank of America                              | 3,310           | RPI         | 3.440%             | 8/15/48       | A-            | (53)            |
| Bank of America                              | 18,825          | 3.433%      | RPI                | 8/15/48       | A-            | 7               |
| Bank of America                              | 17,970          | EUR P CPTFE | 1.9000%            | 12/15/48      | A-            | 130             |
| Goldman Sachs                                | 1,810           | 3M LIBOR    | 3.08%              | 2/20/53       | A+            | 60              |
| Total interest rate and credit default swaps | \$11,589,746    |             |                    |               |               | \$(7,318)       |

3M LIBOR – Three Month London Inter-bank Offered Rate  
6M LIBOR – Six Month London Inter-bank Offered Rate  
RPI – Retail Price Index

1DF FUND – 1 Day Federal Funds Rate  
3M BBR – New Zealand Base Bank Rate  
6M EURIB – Six Month Europe Interbank Offered Rate

EUR CPI – Europe Consumer Price Index  
UK RPI – United Kingdom Retail Price Index  
EUR P CPTFE – Eurostat Eurozone HICP Ex Tobacco (Unrevised)

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## FIXED INCOME PORTFOLIO SWAPS

(in thousands)

| Counterparty               | Defined Contribution |           |                    |               |               |                 |
|----------------------------|----------------------|-----------|--------------------|---------------|---------------|-----------------|
|                            | Notional Amount      | Utah Rate | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Credit Suisse First Boston | \$ 1,500             | 2.23%     | US CPI             | 9/18/20       | BBB+          | \$ (24)         |
| Credit Suisse First Boston | 1,780                | 0.00%     | 6M EURIB           | 11/12/20      | BBB+          | (1)             |
| Credit Suisse First Boston | 2,300                | 2.86%     | 3M Libor           | 12/31/20      | BBB+          | (9)             |
| Credit Suisse First Boston | 1,950                | 2.77%     | 3M Libor           | 12/31/20      | BBB+          | (5)             |
| Credit Suisse First Boston | 960                  | 3M Libor  | 2.98%              | 12/31/20      | BBB+          | 8               |
| Credit Suisse First Boston | 410                  | 3M Libor  | 3.07%              | 11/22/21      | BBB+          | 4               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 3.02%              | 12/3/21       | BBB+          | 4               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 3.02%              | 12/3/21       | BBB+          | 4               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 2.89%              | 12/10/21      | BBB+          | 3               |
| Credit Suisse First Boston | 800                  | 3M Libor  | 2.93%              | 12/10/21      | BBB+          | 6               |
| Credit Suisse First Boston | 300                  | 3M Libor  | 2.82%              | 12/12/21      | BBB+          | 2               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 2.85%              | 12/17/21      | BBB+          | 2               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 2.82%              | 12/12/21      | BBB+          | 2               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 2.81%              | 12/19/21      | BBB+          | 2               |
| Credit Suisse First Boston | 600                  | 3M Libor  | 2.75%              | 12/20/21      | BBB+          | 3               |
| Credit Suisse First Boston | 800                  | 3M Libor  | 2.71%              | 12/23/21      | BBB+          | 3               |
| Credit Suisse First Boston | 395                  | 3M Libor  | 2.59%              | 12/30/21      | BBB+          | 1               |
| Credit Suisse First Boston | 400                  | 3M Libor  | 2.64%              | 12/30/21      | BBB+          | 1               |
| Credit Suisse First Boston | 2,087                | 3.12%     | 3M Libor           | 10/6/22       | BBB+          | (24)            |
| Credit Suisse First Boston | 710                  | 0.42%     | 6M EURIB           | 12/17/22      | BBB+          | (2)             |
| Credit Suisse First Boston | 252                  | 3M Libor  | 2.83%              | 12/17/22      | BBB+          | 2               |
| Credit Suisse First Boston | 330                  | 6M EURIB  | 0.36%              | 12/21/22      | BBB+          | 1               |
| Credit Suisse First Boston | 610                  | 3M Libor  | 2.64%              | 12/22/22      | BBB+          | 2               |
| Credit Suisse First Boston | 975                  | 3M Libor  | 2.63%              | 12/22/22      | BBB+          | 3               |
| Credit Suisse First Boston | 820                  | 3M Libor  | 2.73%              | 12/22/22      | BBB+          | 4               |
| Credit Suisse First Boston | 975                  | 3M Libor  | 2.65%              | 12/22/22      | BBB+          | 3               |
| Credit Suisse First Boston | 815                  | 1.38%     | EUR CPI            | 4/15/23       | BBB+          | (10)            |
| Credit Suisse First Boston | 498,280              | 6M Libor  | 0.13%              | 4/26/23       | BBB+          | 22              |
| Credit Suisse First Boston | 1,395                | 3.256%    | UK RPI             | 5/15/23       | BBB+          | 24              |
| Credit Suisse First Boston | 2,550                | 1D FF     | 2.680%             | 5/31/23       | BBB+          | 41              |
| Credit Suisse First Boston | 980                  | 1.55%     | EUR CPI            | 7/15/23       | BBB+          | (19)            |
| Credit Suisse First Boston | 4,035                | UK RPI    | 3.355%             | 8/15/23       | BBB+          | (47)            |
| Credit Suisse First Boston | 1,695                | 3.357%    | UK RPI             | 8/15/23       | BBB+          | 20              |
| Credit Suisse First Boston | 1,695                | 3.35%     | UK RPI             | 8/15/23       | BBB+          | 20              |
| Credit Suisse First Boston | 1,395                | 3.475%    | UK RPI             | 9/15/23       | BBB+          | 3               |
| Credit Suisse First Boston | 820                  | UK RPI    | 3.44625%           | 10/15/23      | BBB+          | 1               |
| Credit Suisse First Boston | 715                  | 3.450%    | UK RPI             | 10/15/23      | BBB+          | (1)             |
| Credit Suisse First Boston | 1,315                | US CPI    | 2.164%             | 10/30/23      | BBB+          | 24              |
| Credit Suisse First Boston | 2,482                | 3.05%     | 3M Libor           | 11/29/23      | BBB+          | (60)            |
| Credit Suisse First Boston | 2,482                | 3.05%     | 3M Libor           | 11/29/23      | BBB+          | 6               |
| Credit Suisse First Boston | 250                  | 3.21%     | 1.97%              | 12/20/23      | BBB+          | 13              |
| Credit Suisse First Boston | 750                  | 3.21%     | 1.79534%           | 12/20/23      | BBB+          | 16              |
| Credit Suisse First Boston | 2150                 | 2.92%     | 3M Libor           | 7/19/24       | BBB+          | (12)            |
| Credit Suisse First Boston | 330                  | 2.87%     | 3M Libor           | 12/16/24      | BBB+          | (4)             |
| Credit Suisse First Boston | 529                  | 2.90%     | 3M Libor           | 12/19/24      | BBB+          | (2)             |

| Counterparty               | Defined Contribution |           |                    |               |               |                 |
|----------------------------|----------------------|-----------|--------------------|---------------|---------------|-----------------|
|                            | Notional Amount      | Utah Rate | Counter-party Rate | Maturity Date | Credit Rating | Fair Value 2018 |
| Credit Suisse First Boston | \$ 250               | 2.78%     | 3M Libor           | 12/20/24      | BBB+          | \$ (2)          |
| Credit Suisse First Boston | 330                  | 2.74%     | 3M Libor           | 12/23/24      | BBB+          | (2)             |
| Credit Suisse First Boston | 875                  | 2.91%     | 3M Libor           | 12/7/25       | BBB+          | (12)            |
| Credit Suisse First Boston | 500                  | 2.71%     | 3M Libor           | 12/21/25      | BBB+          | (2)             |
| Credit Suisse First Boston | 1,810                | 6M EURIB  | 0.83%              | 7/19/26       | BBB+          | 15              |
| Credit Suisse First Boston | 1,130                | 3M Libor  | 2.98%              | 7/19/26       | BBB+          | 3               |
| Credit Suisse First Boston | 228                  | 3M Libor  | 3.05%              | 12/17/26      | BBB+          | 1               |
| Credit Suisse First Boston | 59,100               | 0.27%     | 6M Libor           | 8/11/27       | BBB+          | (7)             |
| Credit Suisse First Boston | 925                  | 3.455%    | UK RPI             | 11/15/27      | BBB+          | 8               |
| Credit Suisse First Boston | 1,050                | UK RPI    | 3.405%             | 1/15/28       | BBB+          | (19)            |
| Credit Suisse First Boston | 220                  | 6M EURIB  | 0.78%              | 2/15/28       | BBB+          | 1               |
| Credit Suisse First Boston | 340                  | 6M EURIB  | 0.80%              | 2/15/28       | BBB+          | 2               |
| Credit Suisse First Boston | 850                  | 6M EURIB  | 0.82%              | 2/15/28       | BBB+          | 6               |
| Bank of America            | 2,150                | 3.21%     | 3M Libor           | 3/19/28       | A-            | (85)            |
| Bank of America            | 2,150                | 3.21%     | 3M NDBBB3          | 3/19/28       | A-            | 1               |
| Bank of America            | 2,860                | 3.21%     | 3M NDBBB4          | 3/19/28       | A-            | 1               |
| Bank of America            | 2,860                | 3.21%     | 3M Libor           | 3/20/28       | A-            | (112)           |
| Credit Suisse First Boston | 290                  | 1.04%     | 6M EURIB           | 3/23/28       | BBB+          | (12)            |
| Credit Suisse First Boston | 118,900              | 0.32%     | 6M Libor           | 4/27/28       | BBB+          | (18)            |
| Credit Suisse First Boston | 140                  | UK RPI    | 3.338%             | 6/15/28       | BBB+          | (5)             |
| Credit Suisse First Boston | 90                   | 3.05%     | 3M Libor           | 7/25/28       | BBB+          | (4)             |
| Credit Suisse First Boston | 770                  | UK RPI    | 3.385%             | 8/15/28       | BBB+          | (20)            |
| Credit Suisse First Boston | 522                  | 3.12%     | 3M Libor           | 8/15/28       | BBB+          | (18)            |
| Credit Suisse First Boston | 390                  | 3M Libor  | 3.05%              | 8/15/28       | BBB+          | 4               |
| Credit Suisse First Boston | 40                   | 6M EURIB  | 0.88%              | 8/28/28       | BBB+          | 1               |
| Credit Suisse First Boston | 1,395                | UK RPI    | 3.50%              | 9/15/28       | BBB+          | (9)             |
| Credit Suisse First Boston | 130                  | 3M Libor  | 3.05%              | 10/9/28       | BBB+          | 7               |
| Credit Suisse First Boston | 90                   | 3.28%     | 3M Libor           | 10/9/28       | BBB+          | (5)             |
| Credit Suisse First Boston | 130                  | 3M Libor  | 3.25%              | 10/9/28       | BBB+          | (1)             |
| Credit Suisse First Boston | 460                  | 3.27%     | 3M Libor           | 10/9/28       | BBB+          | (25)            |
| Credit Suisse First Boston | 90                   | 3.28%     | 3M Libor           | 10/9/28       | BBB+          | 1               |
| Credit Suisse First Boston | 460                  | 3.27%     | 3M Libor           | 10/9/28       | BBB+          | 3               |
| Credit Suisse First Boston | 1,315                | 2.249%    | US CPI             | 10/30/28      | BBB+          | (35)            |
| Credit Suisse First Boston | 59,140               | 0.35%     | 6M Libor           | 11/1/28       | BBB+          | (11)            |
| Credit Suisse First Boston | 225                  | 3.27%     | 3M Libor           | 11/9/28       | BBB+          | (12)            |
| Credit Suisse First Boston | 225                  | 3.27%     | 3M Libor           | 11/9/28       | BBB+          | 1               |
| Credit Suisse First Boston | 1,330                | 3M Libor  | 3.140%             | 11/29/28      | BBB+          | (3)             |
| Credit Suisse First Boston | 1,330                | 3.140%    | 3M Libor           | 11/29/28      | BBB+          | 52              |
| Credit Suisse First Boston | 3,450                | 2.800%    | 3M Libor           | 3/20/29       | BBB+          | (20)            |
| Credit Suisse First Boston | 115                  | EUR CPI   | 1.832%             | 5/15/47       | BBB+          | 3               |
| Credit Suisse First Boston | 555                  | 3.55%     | UK RPI             | 11/15/47      | BBB+          | (28)            |
| Credit Suisse First Boston | 925                  | UK RPI    | 3.5475%            | 11/15/32      | BBB+          | 1               |
| Credit Suisse First Boston | 270                  | 3M Libor  | 3.25%              | 2/15/36       | BBB+          | 6               |
| Credit Suisse First Boston | 555                  | UK RPI    | 3.60%              | 11/15/42      | BBB+          | 17              |
| Credit Suisse First Boston | 880                  | 3.23%     | 3M Libor           | 5/15/44       | BBB+          | (60)            |

3M LIBOR – Three Month London Inter-bank Offered Rate

6M LIBOR – Six Month London Inter-bank Offered Rate

RPI – Retail Price Index

1DF FUND – 1 Day Federal Funds Rate

3M BBR – New Zealand Base Bank Rate

6M EURIB – Six Month Europe Interbank Offered Rate

EUR CPI – Europe Consumer Price Index

UK RPI – United Kingdom Retail Price Index

EUR P CPTFE – Eurostat Eurozone HICP Ex Tobacco (Unrevised)



## Notes to the Basic Financial Statements (Continued)

December 31, 2018

| Counterparty                                 | Notional Amount | Utah Rate | Defined Contribution |               |               | Fair Value 2018 |
|--|-----------------|-----------|----------------------|---------------|---------------|-----------------|
|  |                 |           | Counter-party Rate   | Maturity Date | Credit Rating |                 |
| Credit Suisse First Boston                   | \$ 120          | EUR CPI   | 1.97375%             | 1/15/48       | BBB+          | \$ 8            |
| Credit Suisse First Boston                   | 120             | EUR CPI   | 1.991%               | 1/15/48       | BBB+          | 9               |
| Credit Suisse First Boston                   | 265             | UK RPI    | 3.51%                | 2/15/48       | BBB+          | 8               |
| Credit Suisse First Boston                   | 255             | 3.51%     | UK RPI               | 2/15/48       | BBB+          | (8)             |
| Credit Suisse First Boston                   | 120             | 3.41%     | UK RPI               | 3/15/48       | BBB+          | 6               |
| Credit Suisse First Boston                   | 125             | EUR CPI   | 1.9825%              | 6/15/48       | BBB+          | 9               |
| Credit Suisse First Boston                   | 145             | 2.80%     | EUR CPI              | 7/15/48       | BBB+          | (12)            |
| Credit Suisse First Boston                   | 170             | UK RPI    | 3.44%                | 8/15/48       | BBB+          | (5)             |
| Credit Suisse First Boston                   | 60              | EUR CPI   | 1.945%               | 8/15/48       | BBB+          | 3               |
| Credit Suisse First Boston                   | 260             | 3.467%    | UK RPI               | 9/15/48       | BBB+          | 2               |
| Credit Suisse First Boston                   | 300             | EUR CPI   | 1.90%                | 12/15/48      | BBB+          | 10              |
| Total interest rate and credit default swaps | \$819,797       |           |                      |               |               | \$(333)         |

## DERIVATIVE CREDIT RISK AT FAIR VALUE

(in thousands)

| Quality Rating               | Forwards   | Options | Swaps   | Total   |
|------------------------------|------------|---------|---------|---------|
| AA+                          | \$ (262)   | —       | —       | (262)   |
| AA-                          | (466)      | —       | —       | (466)   |
| A+                           | (315)      | 433     | —       | 118     |
| A                            | (334)      | 411     | —       | 77      |
| A-                           | (435)      | 1,226   | (1,778) | (987)   |
| BBB+                         | (141)      | (1,687) | (103)   | (1,931) |
| BBB                          | (5,148)    | (3,127) | —       | (8,275) |
| BBB-                         | (487)      | —       | —       | (487)   |
| NA                           | (14)       | 4,315   | 361     | 4,662   |
| Total subject to credit risk | \$ (7,602) | 1,571   | (1,520) | (7,551) |

## Derivative Credit Risk

Derivatives that are exchange traded are not subject to credit risk. No derivatives held are subject to custodial credit risk. The maximum loss that would be recognized as of December 31, 2018, if all counterparties fail to perform as contracted was \$1,631,908,723. Derivative credit risk at fair value is shown in the table above. This maximum exposure is reduced by \$1,644,456,218 of liabilities, resulting in \$0 exposure to credit risk. Credit ratings for the wrap contracts associated with the SGICs are noted in the top table on page 80. As of December 31,

2018, the counterparties' credit ratings for currency forwards, options, and swaps are subject to credit risk.

## Synthetic Guaranteed Investment Contracts

In the Utah Retirement Systems Defined Contribution Plans, members are able to participate in Synthetic Guaranteed Investment Contracts (SGICs). The SGICs are fully benefit responsive, which means that Utah Retirement Systems is prohibited from assigning and selling the contract or its proceeds to a third party without the



## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## SYNTHETIC GUARANTEED INVESTMENT CONTRACTS UNDERLYING INVESTMENTS

| Underlying Investments                | 1-5 Yr. Government/Credit Bond |                |          |               | Intermediate Government/Credit Bond |                |          |               |
|---------------------------------------|--------------------------------|----------------|----------|---------------|-------------------------------------|----------------|----------|---------------|
|                                       | Fair Value                     | Market Value   | Duration | Credit Rating | Fair Value                          | Market Value   | Duration | Credit Rating |
| (in thousands)                        |                                |                |          |               |                                     |                |          |               |
| Asset-backed securities               | \$ 99,295                      | 98,526         | 1.27     | AAA           | \$ 39,569                           | 39,263         | 1.39     | AAA           |
| Agencies                              | 49,874                         | 49,488         | 2.19     | AA+           | 33,201                              | 32,944         | 3.83     | AA+           |
| Corporates                            | 153,653                        | 152,463        | 3.65     | A-            | 102,439                             | 101,646        | 4.87     | A-            |
| Government mortgage-backed securities | 40,724                         | 40,408         | 3.06     | AA+           | 24,085                              | 23,899         | 3.83     | AA+           |
| United States treasuries              | 45,253                         | 44,903         | 3.98     | AA+           | 60,606                              | 60,137         | 7.01     | AA+           |
| Commercial mortgage-backed securities | 59,296                         | 58,837         | 1.31     | AA+           | 38,422                              | 38,125         | 1.33     | AA+           |
| Cash                                  | 4,892                          | 4,854          | —        | —             | 3,501                               | 3,474          | —        | —             |
| <b>Total</b>                          | <b>\$ 452,987</b>              | <b>449,479</b> |          |               | <b>\$ 301,823</b>                   | <b>299,488</b> |          |               |

## WRAP CONTRACTS

| Contract Issuer          | Fair Value          | Market Value     | Rate  | Duration | Quality Rating |
|--------------------------|---------------------|------------------|-------|----------|----------------|
| (in thousands)           |                     |                  |       |          |                |
| American General         | \$ 86,295           | 85,701           | 2.49% | 3.08     | A+             |
| Lincoln National Life    | 118,535             | 117,257          | 2.28  | 3.08     | AA-            |
| MetLife                  | 195,239             | 195,770          | 3.40  | 1.85     | AA-            |
| Transamerica             | 189,467             | 188,331          | 2.16  | 3.08     | AA-            |
| Pacific Life             | 206,054             | 203,770          | 2.91  | 3.08     | AA-            |
| Royal Bank of Canada     | 154,459             | 153,908          | 2.76  | 3.08     | AA-            |
| Subtotal wrap contracts  | 950,049             | 944,737          |       |          |                |
| Merrill Lynch repurchase | 74,164              | 74,164           |       |          |                |
| <b>Total</b>             | <b>\$ 1,024,213</b> | <b>1,018,901</b> |       |          |                |

consent of the issuer. Prospective interest crediting rate adjustments are provided to plan participants. The SGICs provide assurance that the probability of future rate adjustments resulting in an interest crediting rate less than zero is remote. The underlying investments are high credit quality averaging A+ and therefore credit loss is remote. The terms of the SGICs require all plan participants to initiate transactions within the fund at contract value. The contract value is the fair value (cost plus accrued interest). The fair value of these contracts as of December 31, 2018, was \$950,049,000 and the market value was \$944,737,000.

### K) Investment Payables

The investment accounts payable are comprised of investment advisor fees payable of \$8,094,000, administrative expenses payable of \$956,000, and investment purchases payable of \$703,427,000.

### L) Investment Compliance Officer

The Systems and Plans have an investment compliance officer on staff who reports his/her findings directly to the Board. The investment compliance officer monitors all of the investments made by the investment managers to determine the investments were made in accordance with the investment policies that were approved by the Board.



## Notes to the Basic Financial Statements (Continued)

December 31, 2018

| MetLife Separate Account |                |          |               | Total Underlying Investments |                |
|--------------------------|----------------|----------|---------------|------------------------------|----------------|
| Fair Value               | Market Value   | Duration | Credit Rating | Fair Value                   | Market Value   |
| \$ 47,931                | 48,062         | 1.32     | AAA           | \$ 186,795                   | 185,851        |
| 11,714                   | 11,746         | 2.60     | AA+           | 94,789                       | 94,178         |
| 69,427                   | 69,616         | 1.85     | A-            | 325,519                      | 323,725        |
| 6,052                    | 6,069          | 2.60     | AA+           | 70,861                       | 70,376         |
| 23,468                   | 23,532         | 3.13     | AA+           | 129,327                      | 128,572        |
| 33,913                   | 34,005         | 1.50     | AA+           | 131,631                      | 130,967        |
| 2,734                    | 2,740          | —        | —             | 11,127                       | 11,068         |
| <b>\$ 195,239</b>        | <b>195,770</b> |          |               | <b>\$ 950,049</b>            | <b>944,737</b> |

## Note 4

## Property and Equipment

Property and equipment consist of the amounts shown in the following table as of December 31, 2018 and 2017. There were no significant leases as of December 31, 2018 or 2017.

### PROPERTY AND EQUIPMENT

|                                       | <i>(in thousands)</i> |               |
|---------------------------------------|-----------------------|---------------|
|                                       | 2018                  | 2017          |
| Land                                  | \$ 1,780              | 1,780         |
| Buildings and building improvements   | 20,270                | 19,312        |
| Furniture and equipment               | 3,129                 | 2,579         |
| Computer software                     | 6,615                 | 5,543         |
| <b>Total property and equipment</b>   | <b>31,794</b>         | <b>29,214</b> |
| Less accumulated depreciation:        |                       |               |
| Buildings and building improvements   | 10,459                | 10,098        |
| Furniture and equipment               | 2,248                 | 1,820         |
| Computer software                     | 3,337                 | 2,271         |
| <b>Total accumulated depreciation</b> | <b>16,044</b>         | <b>14,189</b> |
| Less operating reserves               | 11,072                | 10,635        |
| <b>Net property and equipment</b>     | <b>\$ 4,678</b>       | <b>4,390</b>  |

## Note 5

## Net Pension Liability of Employers

The net pension liability (i.e., the retirement system's liability determined in accordance with GASB Statement No. 67 less the fiduciary net position) as of December 31, 2018, is as shown to the right.

Actuarial valuation of the ongoing Systems involves estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The most recent experience study was conducted for the five-year period ending December 31, 2016. The Schedule of Employers' Net Pension Liability presents multi-year trend information about whether the plan fiduciary net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the Required Supplementary Information section. The Total Pension Liability as of December 31, 2018, is based on the results of an actuarial valuation date of January 1, 2018, and rolled-forward using generally accepted actuarial procedures.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Systems target asset allocation as of December 31, 2018, are summarized in the table on page 82.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

**NET PENSION LIABILITY OF EMPLOYERS**

(dollars in thousands)

| System   | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net<br>Position | (3)<br>Employers'<br>Net Pension<br>Liability<br>(1) - (2) | (4)<br>Plan Fiduciary<br>Net Position<br>as a % of the<br>Total Pension<br>Liability<br>(2) / (1) | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability<br>as a % of<br>Covered<br>Payroll<br>(3) / (5) |
|--|--------------------------------------|---|--|---|--|---|
| Noncontributory Retirement System              | \$ 29,122,948                        | \$ 24,666,059                               | \$ 4,456,889   | 84.7%   | \$ 3,330,548                           | 133.8%  |
| Contributory Retirement System                 | 1,284,009                            | 1,172,429                                   | 111,580  | 91.3  | 39,279                                 | 284.1   |
| Public Safety Retirement System                | 4,258,247                            | 3,528,069                                   | 730,178  | 82.9  | 348,475                                | 209.5   |
| Firefighters Retirement System                 | 1,261,289                            | 1,207,889                                   | 53,400   | 95.8  | 113,587                                | 47.0  |
| Judges Retirement System                       | 244,209                              | 195,570                                     | 48,639   | 80.1  | 18,802                                 | 258.7   |
| Utah Governors and Legislators Retirement Plan | 13,177                               | 10,537                                      | 2,640  | 80.0  | 639                                    | 413.1   |
| Tier 2 Public Employees System                 | 467,461                              | 424,633                                     | 42,828   | 90.8  | 1,171,543                              | 3.7   |
| Tier 2 Public Safety and Firefighters System   | 56,841                               | 54,336                                      | 2,505  | 95.6  | 123,439                                | 2.0   |
| <b>Total</b>                                   | <b>\$ 36,708,181</b>                 | <b>\$ 31,259,522</b>                        | <b>\$ 5,448,659</b>  | <b>85.2 %</b>   | <b>\$ 5,146,312</b>                    | <b>105.9%</b>   |

**SUMMARY OF ACTUARIAL ASSUMPTIONS**

|   | Noncontributory  | Contributory | Public Safety | Firefighters | Judges    | Governors<br>and Legislators | Tier 2 Public<br>Employees | Tier 2 Public Safety<br>and Firefighter |
|---|--|--------------|---------------|--------------|-----------|------------------------------|----------------------------|---|
| Valuation date                                  | 1/1/18   | 1/1/18       | 1/1/18        | 1/1/18       | 1/1/18    | 1/1/18                       | 1/1/18                     | 1/1/18                                  |
| Actuarial cost method                           | Entry Age  | Entry Age    | Entry Age     | Entry Age    | Entry Age | Entry Age                    | Entry Age                  | Entry Age                               |
| Actuarial assumptions:                          |  |              |               |              |           |                              |                            |   |
| Investment rate of return                       | 6.95%  | 6.95%        | 6.95%         | 6.95%        | 6.95%     | 6.95%                        | 6.95%                      | 6.95%                                   |
| Projected salary increases                      | 3.25-9.75%   | 3.25-9.75%   | 3.25-7.25%    | 3.25-8.75%   | 3.25%     | None                         | 3.25-9.75%                 | 3.25-8.75%                              |
| Inflation rate                                  | 2.50%  | 2.50%        | 2.50%         | 2.50%        | 2.50%     | 2.50%                        | 2.50%                      | 2.50%                                   |
| Post-retirement<br>cost-of-living<br>adjustment | 2.50%  | 2.50%        | 2.50%         | 2.50%        | 2.50%     | 2.50%                        | 2.50%                      | 2.50%                                   |
| Mortality: (Non-educators)                      | Male: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017. |              |               |              |           |                              |                            |   |
| Mortality: (Educators)                          | Male: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017.   |              |               |              |           |                              |                            |   |

Note: All post-retirement cost-of-living adjustments are noncompounding and are based on the original benefit except for Judges, which is a compounding benefit. The cost-of-living adjustments are also limited to the actual CPI increase for the year, although unused CPI increases not met may be carried forward to subsequent years.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018



## TARGET ALLOCATIONS

| Asset Class               | Target Asset Allocation | Expected Return Arithmetic Basis |   |
|---------------------------|-------------------------|----------------------------------|---|
|                           |                         | Real Return Arithmetic Basis     | Long-term Expected Portfolio Real Rate of Return* |
| Equity securities         | 40%                     | 6.15%                            | 2.46%   |
| Debt securities           | 20                      | 0.40                             | 0.08  |
| Real assets               | 15                      | 5.75                             | 0.86  |
| Private equity            | 9                       | 9.95                             | 0.89  |
| Absolute return           | 16                      | 2.85                             | 0.46  |
| Cash and cash equivalents | 0                       | 0.00                             | 0.00  |
| <b>Totals</b>             | <b>100%</b>             |                                  | <b>4.75%</b>                                      |
|                           |                         |                                  | <b>Inflation</b> 2.50                             |
|                           |                         |                                  | <b>Expected arithmetic nominal return</b> 7.25%   |

\*The total URS Defined Benefit long-term expected rate of return is 6.95%, which is comprised of a 2.50% inflation assumption and a 4.45% net real rate of return.

The discount rate used to measure the total pension liability was 6.95%. The projection of cash flows used to determine the discount rate assumed contributions from participating employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required

rates under Utah State Code. Based on those assumptions, the Systems' fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

In accordance with GASB Statement No. 67 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the table below presents the net pension liability/(asset) of the participating employers calculated using the discount rate of 6.95%, as well as what the employers' net pension liability/(asset) would be if it were calculated using a discount rate that is 1.00% lower (5.95%) or 1.00% higher (7.95%) than the current rate.

Employer contribution rates consist of (1) an amount for normal cost, the estimated amount necessary to finance benefits earned by the members during the current year, and (2) an amount for amortization of the unfunded or excess funded actuarial accrued liability over an open 20-year amortization period. The rates are determined using the entry age actuarial cost method.

## CHANGES IN DISCOUNT RATE

(dollars in thousands)

| System   | Net Pension Liability/(Asset) 1% Decrease (5.95%) | Net Pension Liability/(Asset) Current Discount Rate (6.95%) | Net Pension Liability/(Asset) 1% Increase (7.95%) |
|--|---|---|---|
| Noncontributory Retirement System              | \$ 8,196,651                                      | 4,456,889   | 1,331,118   |
| Contributory Retirement System                 | 234,936   | 111,580   | 6,844   |
| Public Safety Retirement System                | 1,332,728   | 730,178   | 238,045   |
| Firefighters Retirement System                 | 230,327   | 53,400  | (91,667)  |
| Judges Retirement System                       | 75,935  | 48,639  | 25,404  |
| Utah Governors and Legislative Retirement Plan | 3,913   | 2,640   | 1,559   |
| Tier 2 Public Employees System                 | 171,577   | 42,828  | (56,534)  |
| Tier 2 Public Safety and Firefighters System   | 18,898  | 2,505   | (10,039)  |
| <b>Total</b>                                   | <b>\$ 10,264,965</b>                              | <b>5,448,659</b>  | <b>1,444,730</b>                                  |

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## Note 6

## Employer Contribution Requirements

The schedule below summarizes contribution rates in effect as of December 31, 2018. Contributions made by employers and members were in accordance with actuarially computed funding requirements. Fire insurance premium taxes and court fees are considered as part of employer contributions in the schedule shown below for the Firefighters and Judges Systems, respectively.

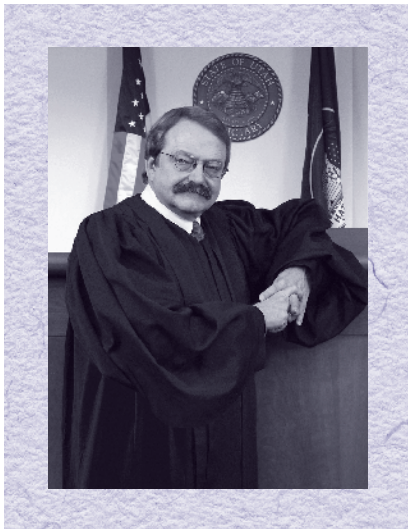
These contribution rates also include rates for a 3% benefit enhancement that is funded by the State. For contribution rate purposes the actuary evaluates the assets of the Systems based on a 5-year smoothed expected return wherein 20% of a year's excess or shortfall of expected return is recognized each year for five years.

The actual contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

Information with regard to contributions to the Systems, for the year ended December 31, 2018, is indicated in the schedules shown below.

Member contributions in the 401(k), 457, Roth and Traditional IRAs, total \$405,525,000, that in combination with the member contributions made in the Retirement Systems total \$441,837,000.



## CONTRIBUTION RATES

December 31, 2018

| System                               | Contribution Rates as a Percent of Covered Payroll |              |        |
|--------------------------------------|--|--------------|--------|
|                                      | Member   | Employer     | Other  |
| Noncontributory                      | —  | 18.47-22.19% | —      |
| Contributory                         | 6.00%  | 14.46-17.70  | —      |
| Public Safety:                       |  |              |        |
| Noncontributory                      | —  | 32.28-50.38  | —      |
| Contributory                         | 10.50-12.29  | 22.79-28.98  | —      |
| Firefighters:                        |  |              |        |
| Division A                           | 15.05  | 4.61         | 11.06% |
| Division B                           | 16.71  | 7.24         | 11.06  |
| Judges:                              |  |              |        |
| Noncontributory                      | —  | 43.68        | 8.23   |
| Governors and Legislators            | —  | \$ 384,103   | —      |
| Tier 2 Public Employees              | —  | 15.54-18.87% | —      |
| Tier 2 Public Safety and Firefighter | —  | 11.34-38.23  | —      |

## REQUIRED CONTRIBUTIONS

(dollars in thousands)

|                                       | Contribution Requirements |               |                              |                            |                           |                             |
|---------------------------------------|---------------------------|---------------|------------------------------|----------------------------|---------------------------|-----------------------------|
|                                       | Normal Cost               | Unfunded Cost | Total Required Contributions | Total Actual Contributions | Member Contributions Made | Employer Contributions Made |
| Noncontributory Retirement System     | \$ 560,665                | \$ 312,381    | \$ 873,046                   | \$ 873,046                 | \$ 14,602                 | \$ 858,444                  |
| Contributory                          | 4,677                     | 3,805         | 8,482                        | 8,482                      | 2,455                     | 6,027                       |
| Public Safety                         | 95,251                    | 52,745        | 147,996                      | 147,996                    | 895                       | 147,101                     |
| Firefighters                          | 33,247                    | 826           | 34,073                       | 34,073                     | 18,305                    | 15,768                      |
| Judges                                | 7,395                     | 2,214         | 9,609                        | 9,609                      | —                         | 9,609                       |
| Governors & Legislators               | 392                       | —             | 392                          | 392                        | —                         | 392                         |
| Tier 2 Public Employees               | 97,680                    | —             | 97,680                       | 97,680                     | —                         | 97,680                      |
| Tier 2 Public Safety and Firefighters | 14,350                    | —             | 14,350                       | 14,350                     | 55                        | 14,295                      |
| Total                                 | \$ 813,657                | \$ 371,971    | \$ 1,185,628                 | \$ 1,185,628               | \$ 36,312                 | \$ 1,149,316                |

## Notes to the Basic Financial Statements *(Continued)*

December 31, 2018

### Note 7

## Transfer to and from Affiliated Systems

Asset transfers to or from affiliated systems are for the purpose of spreading employer contribution costs across same employer and same class of employee group and to record transfers of benefits and corresponding assets where employees transfer from one system to another. Benefit transfers usually are between contributory and noncontributory systems as allowed during authorized transfer windows established by statute or as otherwise authorized.

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### Note 8

## Supplemental Benefits

In the past, the Utah State legislature appropriated funds as supplemental retirement benefits to be paid to qualified participants who have previously retired under the Contributory System. These benefits, already granted, are now and will continue to be funded through contribution rates unless otherwise provided by the legislature.

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### Note 9

## Litigation

The Systems and Plans are involved in various claims and legal actions arising in the ordinary course of business. In the opinion of management and legal counsel, the ultimate disposition of these matters will not have a material adverse effect on the Systems' and Plans' financial position as a whole.

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### Note 10

## Commitments

As of December 31, 2018, the Systems had committed to fund certain private equity partnerships, absolute return, and real asset funds projects for an amount of \$12,169,842,433. Funding of \$9,394,093,897 had been provided by December 31, 2018, leaving an unfunded commitment of \$2,775,748,536 as of December 31, 2018.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## Note 11

## Pension Plan Participation

## Defined Benefit Plans

Utah Retirement Systems (URS) contributes to the State and School Noncontributory Retirement System, a cost-sharing multiple-employer defined benefit pension plan administered by Utah Retirement Systems (Systems). The Systems provide refunds, retirement benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries in accordance with retirement statutes.

The Systems are established and governed by the respective sections of Chapter 49 of the Utah Code Annotated 1953 as amended. The Utah State Retirement Act in Chapter 49 provides for the administration of the Utah Retirement Systems and Plans under the direction of the Utah State Retirement Board (Board) whose members are appointed by the governor. The Systems issue a publicly available financial report that includes financial statements and required supplementary information for the State and School Noncontributory Retirement System. A copy of the report may be obtained by writing to the Utah Retirement Systems, 560 East 200 South, Salt Lake City, UT 84102-2044 or by calling 1-800-365-8772. Funding Policy: In the State and School Noncontributory Retirement System and the Tier 2 Public Employees Retirement System, Utah Retirement Systems is required to contribute 22.19% and 20.02% of its annual covered salary, respectively. The contribution rates are the actuarially determined rates. The contributions were equal to the requirements of the Systems, are authorized by statute, and specified by the Board.

The Utah Retirement Systems' contributions to the State and School Noncontributory Retirement System for the years ended December 31, 2018, 2017, and 2016, were \$3,055,948, \$3,008,977, and \$2,941,508, respectively.

The contributions were equal to the required contributions for each year.

Employees hired beginning July 1, 2011, are automatically enrolled in the Tier 2 Public Employees Retirement System. The Utah Retirement Systems' contributions to the Tier 2 Public Employees Retirement Systems for years ended December 31, 2018, 2017, and 2016, were \$679,751, \$596,455, and \$487,794, respectively. The contributions were equal to the required contributions for each year.

## Defined Contribution Plans

Utah Retirement Systems also participates in four defined contribution plans, the 401(k), 457, Roth and Traditional IRAs.

## 401(k) Plan

The Utah Retirement Systems offers its employees a 401(k) Plan to supplement retirement benefits accrued by participants in the Systems and may also be used as a primary retirement benefit. Employees covered by the State and School Noncontributory Retirement System have a contribution of 1.5% of covered salaries automatically made by Utah Retirement Systems. In addition, URS will match up to 2% and \$26 of employee contributions each pay period.

Employees participating in the Systems can make additional contributions through payroll deduction to the 401(k) Plan up to specified limits. Contributions and earnings may be withdrawn by the employee upon termination or may be used as supplemental income during retirement. The employer 401(k) contributions for the years ended December 31, 2018, 2017, and 2016, were \$1,342,138, \$1,145,630, and \$946,818, respectively; the employee contributions for the years ended December 31, 2018, 2017, and 2016, were \$888,860, \$902,966, and \$755,806, respectively. The 401(k) Plan funds are fully vested to the participants at the time of deposit except for employer required contributions and earnings for Tier 2. Plan assets are administered and held by Utah Retirement Systems.

## 457 Plan

The Utah Retirement Systems also offers its employees a deferred compensation plan created in accordance with Internal Revenue Code Section 457. The plan, available to all employees, permits them to defer a portion of their salary until future years. Employees are eligible to voluntarily participate from the date of employment and are vested immediately upon participating. Employee contributions to the Section 457 Plan for the years ended December 31, 2018, 2017, and 2016, were \$486,440, \$507,529, and \$460,828, respectively.

## Roth and Traditional IRAs

Utah Retirement Systems offers its employees two payroll deducted IRAs authorized by section 408 of the Internal Revenue Code. Employees are eligible to participate from the date of employment and are vested immediately upon participating. For the years ended December 31, 2018, 2017, and 2016, the Roth IRA employee contributions were \$211,468, \$192,786, and \$186,088, respectively. For the years ended December 31, 2018, 2017, and 2016, the traditional IRA employee contributions were \$2,719, \$11,185, and \$8,985, respectively.



Notes to the Basic Financial Statements (Continued)

December 31, 2018

## Note 12 Post-Employment Healthcare Plan

The Utah Retirement Office contributes to a noncontributory defined benefit post-employment healthcare plan to provide post-employment insurance benefits for retired employees of the Utah Retirement Office. This plan was established in 2005. The Utah Retirement Employees Post-Employment Healthcare Plan, (UREPEHP), is an agent multiple-employer post-employment healthcare plan administered by the Utah Retirement Office.



For purposes of measuring the net OPEB liability, deferred outflows/inflows of resources and expenses, information about the fiduciary net positions of the Other Postemployment Benefit Plan and additions to/ deductions from the Plans' fiduciary net positions have been determined on the same basis as they are reported by the Plans. For this purpose, the Plans recognize benefit payments when due and payable in accordance with the benefit terms. OPEB investments for the Plans are reported at fair value.

Assets and liabilities of the plan are identified separately for each employer. Plan assets may be used only for the payment of benefits to the members of that system, in accordance with the terms of the plan. UREPEHP issues a publicly available financial report that includes financial statements and required supplementary information for UREPEHP. A copy of the report may be obtained by writing the Utah Retirement Office, 560 East 200 South, Salt Lake City, UT 84102-2044 or by calling 1-800-365-8772.

### Membership

(as in January 1, 2017, the last actuarial valuation date)

|                         |            |
|-------------------------|------------|
| Number of retirees      | 36         |
| Inactive, nonretired    | —          |
| Active members          | 89         |
| <b>Total membership</b> | <b>125</b> |

### Net OPEB Liability

The net OPEB liability was measured as of December 31, 2018. The total OPEB liability, used to calculate the net OPEB liability, was determined by an actuarial valuation as of January 1, 2017 and rolled-forward using generally accepted actuarial procedures. The combined total net OPEB liability is \$10.1 thousand. Below are the changes in the net OPEB liability and related ratios of the net OPEB liability:

#### Net OPEB Liability

|   |                  |
|---|------------------|
| Total OPEB Liability  | \$ 6,045,059     |
| Plan Fiduciary Net Position   | 6,034,960        |
| <b>Net OPEB Liability</b>   | <b>\$ 10,099</b> |
| Plan Fiduciary Net Position as a Percentage of Total OPEB Liability | 99.83%           |
| <b>Net OPEB Liability as a Percentage of Covered Payroll</b>        | <b>0.13%</b>     |

The actuarial valuation was performed as of January 1, 2017. Update procedures were used to roll forward the total OPEB liability to December 31, 2018. All assumptions and methods used to develop the December 31, 2018 total OPEB liability are identical to those used in the January 1, 2017 actuarial valuation.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

## SUMMARY OF ACTUARIAL ASSUMPTIONS

| Actuarial Cost Method   | Individual Entry Age Normal  |
|-------------------------|--|
| Discount Rate           | 6.95%, net of OPEB plan investment expense, including inflation  |
| Inflation               | 2.50%  |
| Salary Increases        | 3.25% to 8.50%, including inflation  |
| Demographic Assumptions | The demographic assumptions were based on the experience study covering the five year period ending January 1, 2016 as conducted for the Utah Retirement Systems (URS).  |
| Mortality Assumptions   | Male retirees: 110% of 2017 PR UTAH Retiree Mortality Table for males, projected with Scale AA from 2017.<br>Female retirees: 110% of 2017 PR UTAH Retiree Mortality Table for females, projected with Scale AA from 2017. |
| Participation Rates     | All eligible members are assumed to convert all unused sick leave into health coverage at retirement.  |
| Health Care Trend Rates | Initial trend rate of 7.50%, decreasing to an ultimate of 4.50% over 15 years.   |

### Single Discount Rate

A Single Discount Rate of 6.95% was used to measure the total OPEB liability. This Single Discount Rate was based on the expected rate of return on OPEB plan investments of 6.95%. The funding policy is to pay the recommended actuarially determined contribution, which is based on a maximum 20-year amortization period. For both funds, the Fiduciary Net Position currently exceeds the total OPEB liability. As a result, the OPEB plan's fiduciary net position is expected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

### Target Allocations

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation

## SCHEDULE OF CHANGES IN NET OPEB LIABILITY AND RELATED RATIOS MULTIYEAR\*

Fiscal Year Ending December 31

|   | 2018         | 2017      |
|---|--------------|-----------|
| <b>Total OPEB Liability</b>   |              |           |
| Service cost  | \$ 35,009    | 36,798    |
| Interest on the total OPEB liability                                | 402,338      | 393,103   |
| Changes of benefit terms  | —            | —         |
| Difference between expected and actual experience                   | 15,944       | 68,615    |
| Changes of Assumptions  | —            | —         |
| Benefit payments  | (359,523)    | (369,968) |
| Net change in total OPEB liability                                  | 93,768       | 128,548   |
| Total OPEB liability – beginning                                    | 5,951,291    | 5,822,743 |
| Total OPEB liability – ending (a)                                   | \$ 6,045,059 | 5,951,291 |
| <b>Plan Fiduciary Net Position</b>                                  |              |           |
| Employer contributions  | \$ —         | —         |
| Employee contributions  | —            | —         |
| OPEB plan net investment income                                     | (23,149)     | 781,412   |
| Benefit payments  | (359,523)    | (369,968) |
| OPEB plan administrative expense                                    | (2,482)      | —         |
| Other   | —            | —         |
| Net change in plan fiduciary net position                           | (385,154)    | 411,444   |
| Plan fiduciary net position – beginning                             | 6,420,114    | 6,008,670 |
| Plan fiduciary net position – ending (b)                            | 6,034,960    | 6,420,114 |
| Net OPEB liability – ending (a) - (b)                               | \$ 10,099    | (468,823) |
| Plan fiduciary net position as a percentage of total OPEB liability | 99.83%       | 107.88%   |
| Covered payroll   | \$ 7,897,200 | 7,897,200 |
| Net OPEB liability as a percentage of covered payroll               | 0.13%        | (5.94)%   |

Additional years will be displayed as they become available.

## Notes to the Basic Financial Statements (Continued)

December 31, 2018

percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Systems target asset allocation as of December 31, 2018, are summarized in the table below:

### TARGET ALLOCATIONS

| Asset Class                        | Target Asset Allocation | Expected Return Arithmetic Basis |   |
|------------------------------------|-------------------------|----------------------------------|---|
|                                    |                         | Real Return Arithmetic Basis     | Long-term Expected Portfolio Real Rate of Return* |
| Equity securities                  | 40%                     | 6.15%                            | 2.46%   |
| Debt securities                    | 20                      | 0.40                             | 0.08  |
| Real assets                        | 15                      | 5.75                             | 0.86  |
| Private equity                     | 9                       | 9.95                             | 0.89  |
| Absolute return                    | 16                      | 2.85                             | 0.46  |
| Cash and cash equivalents          | 0                       | 0.00                             | 0.00  |
| <b>Totals</b>                      | <b>100%</b>             |                                  | <b>4.75%</b>                                      |
| Inflation                          |                         |                                  | 2.50  |
| Expected arithmetic nominal return |                         |                                  | 7.25%   |

\*The total URS Defined Benefit long-term expected rate of return is 6.95%, which is comprised of a 2.50% inflation assumption and a 4.45% net real rate of return.

### Funding Policy

The contribution requirements of Utah Retirement Employees Post-Employment Healthcare Plan are determined by the Plan and approved by the Board. Utah Retirement Office is required to contribute the annual required contribution (ARC), an actuarially determined rate. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal costs each year and amortize any unfunded actuarial liabilities (or funding excess) over an open 20-year period using the level dollar amount. The current dollar amount is \$0 since the funded ratio as of the most recent actuarial valuation, January 1, 2017, was over 100% and the plan is closed to new participants.

### Required Contributions

For the year ended December 31, 2018, the annual cost (expense) of \$0 for UREPEHP was equal to the ARC. The net Other Post-Employment Benefits (OPEB) obligation for 2018 was as follows:

### SCHEDULE OF CONTRIBUTIONS MULTIYEAR LAST 10 FISCAL YEARS

|      | FY Ending December 31, | Actuarially Determined Contribution | Actual Contribution | Contribution Deficiency (Excess) | Covered Payroll | Actual Contribution as a % of Covered Payroll |
|------|------------------------|-------------------------------------|---------------------|----------------------------------|-----------------|---|
| 2009 |                        | \$ 220                              | \$ 220              | \$ —                             | \$ 8,678        | 2.54%   |
| 2010 |                        | 313                                 | 313                 | —                                | 8,366           | 3.74  |
| 2011 |                        | 285                                 | 285                 | —                                | 7,835           | 3.64  |
| 2012 |                        | 285                                 | 285                 | —                                | 7,538           | 3.78  |
| 2013 |                        | 285                                 | 285                 | —                                | 7,189           | 3.96  |
| 2014 |                        | 285                                 | 285                 | —                                | 6,955           | 4.10  |
| 2015 |                        | —                                   | —                   | —                                | 7,841           | 0.00  |
| 2016 |                        | —                                   | —                   | —                                | 7,647           | 0.00  |
| 2017 |                        | —                                   | —                   | —                                | 7,897           | 0.00  |
| 2018 |                        | —                                   | —                   | —                                | 7,897           | 0.00  |

### NOTES TO THE SCHEDULE OF CONTRIBUTIONS

**Valuation Date:** January 1, 2017

#### Methods and Assumptions Used to Determine Contribution Rates:

|                               |  |
|-------------------------------|--|
| Actuarial Cost Method         | Individual Entry Age Normal  |
| Amortization Method           | Level Dollar Contributions   |
| Remaining Amortization Period | 20 years, maximum  |
| Asset Valuation Method        | 5-year smoothed  |
| Investment Rate of Return     | 6.95%, net of OPEB plan investment expense, including inflation  |
| Inflation                     | 2.50%  |
| Salary Increases              | 3.25% to 8.50%, including inflation  |
| Demographic Assumptions       | The demographic assumptions were based on the experience study covering the five year period ending January 1, 2017 as conducted for the Utah Retirement Systems (URS).  |
| Mortality Assumptions         | Male retirees: 110% of 2017 PR UTAH Retiree Mortality Table for males, projected with Scale AA from 2017.<br>Female retirees: 110% of 2017 PR UTAH Retiree Mortality Table for females, projected with Scale AA from 2017. |
| Participation Rates           | All eligible members are assumed to convert all unused sick leave into health coverage at retirement.  |
| Health Care Trend Rates       | Initial trend rate of 7.50%, decreasing to an ultimate of 4.50% over 15 years.   |

Notes to the Basic Financial Statements (Continued)

December 31, 2018

**Frequency and Timing of the Actuarial Valuation**

An actuarial valuation to determine the total OPEB liability is required to be performed at least every two years. If the actuarial valuation is not calculated as of the plan’s fiscal year end, the total OPEB liability is required to be rolled forward from the actuarial valuation date to the OPEB plan’s fiscal year end. If update procedures are used to roll forward the total OPEB liability, the date of the actuarial valuation must be no more than 24 months earlier than the OPEB plan’s most recent fiscal year-end.

**The total OPEB liability shown in this report is based on an actuarial valuation performed as of January 1, 2017 and a measurement date of December 31, 2018.**

**Single Discount Rate**

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on OPEB plan investments (to the extent that the plan’s fiduciary net

position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on OPEB plan investments is 6.95%; the municipal bond rate is 3.71% (based on the daily rate closest to but not later than the measurement date of the Fidelity “20-Year Municipal GO AA Index”); and the resulting Single Discount Rate is 6.95%.

**Sensitivity of Net OPEB Liability**

Regarding the sensitivity of the net OPEB liability to changes in the Single Discount Rate, the following presents the plan’s net OPEB liability, calculated using a Single Discount Rate of 6.95%, as well as what the plan’s net OPEB liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

**Sensitivity of Net OPEB Liability to a Single Discount Rate Assumption**

| 1% Decrease<br>5.95% | Current Single Discount Rate Assumption<br>6.95% | 1% Increase<br>7.95% |
|----------------------|--|----------------------|
| \$ 488,122           | \$ 10,999  | \$ (419,410)         |

Regarding the sensitivity of the net OPEB liability to changes in the healthcare cost trend rates, the following presents the plan’s net OPEB liability, calculated using the assumed trend rates as well as what the plan’s net OPEB liability would be if it were calculated using a trend rate that is one percent lower or one percent higher:

**Sensitivity of Net OPEB Liability to the Healthcare Cost Trend Rate Assumption**

| 1% Decrease  | Current Healthcare Cost Trend Rate Assumption | 1% Increase |
|--------------|---|-------------|
| \$ (585,423) | \$ 10,099                                     | \$ 522,236  |



**Note 13**

**Compensated Absences and Insurance Reserve**

The compensated absences liability for Utah Retirement Office employees as of December 31, 2018, was \$6,405,946. This represents the amount of unused leave to be paid to employees upon termination. As of December 31, 2018, the insurance reserve was \$4,822,000. The insurance reserve coverage is explained in Note 15, Risk Management.

Notes to the Basic Financial Statements *(Concluded)*

December 31, 2018

**Note 14****Required Supplementary Information**

Required supplementary information is included immediately following the notes to the financial statements on pages 92 through 101. Other supplementary information presented in succeeding sections of this report is for the benefit of statement users and is not a required part of the basic financial statements.

**Note 15****Risk Management**

Most risks of loss to which the Systems, Plans, and Investment Fund are exposed, other than routine investment losses, are covered under commercial insurance policies. Risks in excess of coverage limits or large deductible, and otherwise uninsured losses, are retained by the Systems, Plans or Investment Fund through the insurance reserve. There have been no reductions of insurance coverage from coverages of the previous year in any of the categories of risk. Coverages are increased or decreased commensurate with real estate acquisitions or dispositions. During the past three calendar years, no loss settlements exceeded insurance coverages beyond immaterial deductible amounts. The insurance reserve was established by the Board from investment earnings as authorized by statute.

**Note 16****Real Estate Liabilities**

The real estate liability consists of one line of credit. This note bears interest and is scheduled to be repaid over the next year. The rest of the liabilities are unsecured. As mentioned in Note 3, page 75, the Systems and Plans entered into various interest rate swap agreements that effectively changed credit facility liabilities from variable interest rates to fixed interest rates. As of December 31, 2018, there is \$120 million in credit facility debt. Using interest rates as of December 31, 2018, principal and interest requirements of the debt and net swap payments for the terms of the debt and swaps are shown below.

**REAL ESTATE LIABILITIES***(in thousands)*

|                          | Initial Affected Balance | Maturity Date           | Annual Payment      |
|--------------------------|--------------------------|-------------------------|---------------------|
| The Northern Trust       | \$ 120,000               | 8/1/2019                | \$120,000           |
| <b>Total</b>             | <b>\$ 120,000</b>        |                         |                     |
| Year Ending December 31, | Total Principal Payments | Total Interest Payments | Total Swap Payments |
| 2018                     | \$ 120,000               | 1,781                   | 2,464               |
| 2019                     | —                        | —                       | 2,032               |
| 2020                     | —                        | —                       | 753                 |

*Loan and swap interest payments are calculated using the One Month LIBOR rate at December 31, 2018.*

# Required Supplementary Information

## Schedule of Changes in the Employers' Net Pension Liability

Year Ended December 31

|   | <i>(in thousands)</i> |                   |                   |                   |                        |                   | 2018             |
|---|-----------------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------|
|   | 2018                  | 2017              | 2016              | 2015              | Noncontributory System |                   |                  |
|   |                       |                   |                   |                   | 2014                   | 2013              |                  |
| <b>Total pension liability</b>  |                       |                   |                   |                   |                        |                   |                  |
| Service cost  | \$ 404,391            | 403,981           | 407,690           | 394,798           | 407,992                | 441,320           | 4,044            |
| Interest  | 1,920,238             | 1,877,576         | 1,764,653         | 1,775,819         | 1,699,693              | 1,646,213         | 87,297           |
| Benefit changes   | —                     | —                 | 48,400            | —                 | —                      | 23,123            | —                |
| Difference between actual and expected experience                                 | 32,680                | (84,234)          | 6,408             | (188,166)         | (204,823)              | (208,501)         | (17,249)         |
| Assumption changes  | —                     | 642,187           | 563,741           | —                 | (157,921)              | —                 | —                |
| Benefit payments  | (1,320,214)           | (1,248,037)       | (1,184,317)       | (1,123,647)       | (1,043,798)            | (974,684)         | (86,795)         |
| Refunds   | (2,766)               | (4,635)           | (4,366)           | (2,496)           | (2,204)                | (2,454)           | (1,471)          |
| <b>Net change in total pension liability</b>                                      | <b>1,034,329</b>      | <b>1,586,838</b>  | <b>1,602,209</b>  | <b>856,308</b>    | <b>698,939</b>         | <b>925,017</b>    | <b>(14,174)</b>  |
| <b>Total pension liability — beginning</b>  | <b>28,088,619</b>     | <b>26,501,781</b> | <b>24,899,572</b> | <b>24,043,264</b> | <b>23,344,325</b>      | <b>22,419,308</b> | <b>1,298,183</b> |
| <b>Total pension liability — ending (a)</b>                                       | <b>29,122,948</b>     | <b>28,088,619</b> | <b>26,501,781</b> | <b>24,899,572</b> | <b>24,043,264</b>      | <b>23,344,325</b> | <b>1,284,009</b> |
| <b>Plan fiduciary net position</b>  |                       |                   |                   |                   |                        |                   |                  |
| Contributions — member  | 14,602                | 17,285            | 16,308            | 17,020            | 13,587                 | 14,208            | 2,455            |
| Contributions — employer  | 858,444               | 854,255           | 831,631           | 813,449           | 772,420                | 710,933           | 6,027            |
| Court fees and fire insurance tax   | —                     | —                 | —                 | —                 | —                      | —                 | —                |
| Net investment income   | (92,207)              | 2,987,282         | 1,783,911         | 366,748           | 1,419,053              | 2,588,981         | (4,513)          |
| Benefit payments  | (1,320,214)           | (1,248,037)       | (1,184,317)       | (1,123,647)       | (1,043,798)            | (974,684)         | (86,795)         |
| Refunds   | (2,766)               | (4,635)           | (4,366)           | (2,496)           | (2,204)                | (2,454)           | (1,471)          |
| Administrative expense  | (9,962)               | (9,579)           | (8,856)           | (8,797)           | (8,828)                | (8,329)           | (454)            |
| Net transfers with affiliated systems   | 13,035                | (10,187)          | (8,005)           | 33,648            | 30,467                 | (42,277)          | (26,286)         |
| <b>Net change in plan fiduciary net position</b>                                  | <b>(539,068)</b>      | <b>2,586,384</b>  | <b>1,426,306</b>  | <b>95,925</b>     | <b>1,180,697</b>       | <b>2,286,378</b>  | <b>(111,037)</b> |
| <b>Plan fiduciary net position — beginning</b>                                    | <b>25,205,127</b>     | <b>22,618,743</b> | <b>21,192,437</b> | <b>21,096,512</b> | <b>19,915,815</b>      | <b>17,629,437</b> | <b>1,283,466</b> |
| <b>Plan fiduciary net position — ending (b)</b>                                   | <b>\$ 24,666,059</b>  | <b>25,205,127</b> | <b>22,618,743</b> | <b>21,192,437</b> | <b>21,096,512</b>      | <b>19,915,815</b> | <b>1,172,429</b> |
| <b>Net pension liability/(asset) — ending (a-b)</b>                               | <b>\$ 4,456,889</b>   | <b>2,883,492</b>  | <b>3,883,038</b>  | <b>3,707,135</b>  | <b>2,946,752</b>       | <b>3,428,510</b>  | <b>111,580</b>   |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | <b>84.7%</b>          | <b>89.7%</b>      | <b>85.3%</b>      | <b>85.1%</b>      | <b>87.7%</b>           | <b>85.3%</b>      | <b>91.3%</b>     |
| <b>Projected covered payroll</b>  | <b>\$ 3,330,548</b>   | <b>3,375,321</b>  | <b>3,406,567</b>  | <b>3,458,286</b>  | <b>3,570,912</b>       | <b>3,705,771</b>  | <b>39,279</b>    |
| <b>Net pension liability/(asset) as a percentage of covered payroll</b>           | <b>133.8%</b>         | <b>85.4%</b>      | <b>114.0%</b>     | <b>107.2%</b>     | <b>82.5%</b>           | <b>92.5%</b>      | <b>284.1%</b>    |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| Contributory System |           |           |           |           | Public Safety Systems |           |           |           |           |           |
|---------------------|-----------|-----------|-----------|-----------|-----------------------|-----------|-----------|-----------|-----------|-----------|
| 2017                | 2016      | 2015      | 2014      | 2013      | 2018                  | 2017      | 2016      | 2015      | 2014      | 2013      |
| 4,801               | 5,673     | 8,672     | 9,580     | 10,997    | 80,296                | 78,272    | 78,843    | 75,352    | 76,681    | 81,736    |
| 90,124              | 91,894    | 95,463    | 93,819    | 93,750    | 280,149               | 269,818   | 249,722   | 248,980   | 236,803   | 229,965   |
| —                   | (45,057)  | —         | —         | 721       | —                     | —         | —         | —         | —         | —         |
| (24,988)            | (13,801)  | (15,289)  | (22,839)  | (20,520)  | 1,441                 | (3,041)   | 9,358     | (17,164)  | (25,225)  | (29,228)  |
| 22,108              | 22,909    | —         | (4,233)   | —         | —                     | 118,370   | 110,373   | —         | (52,410)  | —         |
| (84,761)            | (83,447)  | (81,390)  | (77,015)  | (74,158)  | (188,414)             | (172,870) | (164,508) | (155,387) | (144,763) | (137,486) |
| (1,613)             | (1,700)   | (1,215)   | (2,433)   | (1,922)   | (428)                 | (226)     | (183)     | (533)     | (199)     | (467)     |
| 5,671               | (23,529)  | 6,241     | (3,121)   | 8,868     | 173,044               | 290,323   | 283,605   | 151,248   | 90,887    | 144,520   |
| 1,292,512           | 1,316,041 | 1,309,800 | 1,312,921 | 1,304,053 | 4,085,203             | 3,794,880 | 3,511,275 | 3,360,027 | 3,269,140 | 3,124,620 |
| 1,298,183           | 1,292,512 | 1,316,041 | 1,309,800 | 1,312,921 | 4,258,247             | 4,085,203 | 3,794,880 | 3,511,275 | 3,360,027 | 3,269,140 |
| 2,675               | 3,420     | 4,771     | 5,461     | 6,376     | 895                   | 793       | 830       | 905       | 835       | 1,258     |
| 7,946               | 8,188     | 11,719    | 12,954    | 12,874    | 147,101               | 145,814   | 147,099   | 141,024   | 135,588   | 128,744   |
| —                   | —         | —         | —         | —         | —                     | —         | —         | —         | —         | —         |
| 155,949             | 97,693    | 21,251    | 87,577    | 169,510   | (13,134)              | 421,917   | 249,027   | 50,654    | 194,222   | 350,563   |
| (84,761)            | (83,447)  | (81,390)  | (77,015)  | (74,158)  | (188,414)             | (172,870) | (164,508) | (155,387) | (144,763) | (137,486) |
| (1,613)             | (1,700)   | (1,215)   | (2,433)   | (1,922)   | (428)                 | (226)     | (183)     | (533)     | (199)     | (467)     |
| (457)               | (446)     | (478)     | (494)     | (480)     | (1,450)               | (1,382)   | (1,260)   | (1,233)   | (1,227)   | (1,161)   |
| (1,177)             | (1,895)   | (41,558)  | (38,004)  | 33,094    | 6,982                 | 5,926     | 6,701     | 4,023     | 2,746     | 4,676     |
| 78,562              | 21,813    | (86,900)  | (11,954)  | 145,294   | (48,448)              | 399,972   | 237,706   | 39,453    | 187,202   | 346,127   |
| 1,204,904           | 1,183,091 | 1,269,991 | 1,281,945 | 1,136,651 | 3,576,517             | 3,176,545 | 2,938,839 | 2,899,386 | 2,712,184 | 2,366,057 |
| 1,283,466           | 1,204,904 | 1,183,091 | 1,269,991 | 1,281,945 | 3,528,069             | 3,576,517 | 3,176,545 | 2,938,839 | 2,899,386 | 2,712,184 |
| 14,717              | 87,608    | 132,950   | 39,809    | 30,976    | 730,178               | 508,686   | 618,335   | 572,436   | 460,641   | 556,956   |
| 98.9%               | 93.2%     | 89.9%     | 97.0%     | 97.6%     | 82.9%                 | 87.5%     | 83.7%     | 83.7%     | 86.3%     | 83.0%     |
| 45,177              | 53,615    | 82,426    | 90,623    | 98,023    | 348,475               | 350,782   | 352,407   | 355,171   | 360,750   | 365,998   |
| 32.6%               | 163.4%    | 161.3%    | 43.9%     | 31.6%     | 209.5%                | 145.0%    | 175.5%    | 161.2%    | 127.7%    | 152.2%    |

Continued on page 94.

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

**Schedules of Changes in the Employers' Net Pension Liability** (Continued)

Year Ended December 31

|   | (in thousands)      |                  |                  |                  |                    |                | 2018           |
|---|---------------------|------------------|------------------|------------------|--------------------|----------------|----------------|
|   | 2018                | 2017             | 2016             | 2015             | Firefighter System |                |                |
|   |                     |                  |                  |                  | 2014               | 2013           |                |
| <b>Total pension liability</b>  |                     |                  |                  |                  |                    |                |                |
| Service cost  | \$ 29,378           | 28,775           | 28,652           | 27,182           | 27,266             | 29,577         | 5,682          |
| Interest  | 82,819              | 80,386           | 75,334           | 75,212           | 71,490             | 70,259         | 15,697         |
| Benefit changes   | —                   | —                | —                | —                | —                  | —              | —              |
| Difference between actual and expected experience                                 | 937                 | (9,216)          | (5,525)          | (8,259)          | (15,077)           | (13,083)       | 7,872          |
| Assumption changes  | —                   | 31,357           | 25,572           | —                | (20,372)           | —              | —              |
| Benefit payments  | (57,440)            | (54,793)         | (52,102)         | (49,671)         | (47,710)           | (44,747)       | (16,111)       |
| Refunds   | (132)               | (511)            | (466)            | (528)            | (293)              | (106)          | —              |
| <b>Net change in total pension liability</b>                                      | <b>55,562</b>       | <b>75,998</b>    | <b>71,465</b>    | <b>43,936</b>    | <b>15,304</b>      | <b>41,900</b>  | <b>13,140</b>  |
| <b>Total pension liability — beginning</b>  | <b>1,205,727</b>    | <b>1,129,729</b> | <b>1,058,264</b> | <b>1,014,328</b> | <b>999,024</b>     | <b>957,124</b> | <b>231,069</b> |
| <b>Total pension liability — ending (a)</b>                                       | <b>1,261,289</b>    | <b>1,205,727</b> | <b>1,129,729</b> | <b>1,058,264</b> | <b>1,014,328</b>   | <b>999,024</b> | <b>244,209</b> |
| <b>Plan fiduciary net position</b>  |                     |                  |                  |                  |                    |                |                |
| Contributions — member  | 18,305              | 18,460           | 18,729           | 18,175           | 18,300             | 18,325         | —              |
| Contributions — employer  | 7,021               | 6,715            | 6,954            | 6,690            | 5,514              | 3,494          | 8,091          |
| Court fees and fire insurance tax   | 8,747               | 1,223            | 10,569           | 17,218           | 14,154             | 11,285         | 1,518          |
| Net investment income   | (4,509)             | 146,736          | 87,746           | 17,934           | 69,070             | 125,685        | (730)          |
| Benefit payments  | (57,440)            | (54,793)         | (52,102)         | (49,671)         | (47,710)           | (44,747)       | (16,111)       |
| Refunds   | (132)               | (511)            | (466)            | (528)            | (293)              | (106)          | —              |
| Administrative expense  | (427)               | (408)            | (374)            | (371)            | (370)              | (355)          | (84)           |
| Net transfers with affiliated systems   | 1,917               | 1,259            | 1,611            | 2,573            | 3,713              | 1,302          | 4,403          |
| <b>Net change in plan fiduciary net position</b>                                  | <b>(26,518)</b>     | <b>118,681</b>   | <b>72,667</b>    | <b>12,020</b>    | <b>62,378</b>      | <b>114,883</b> | <b>(2,913)</b> |
| <b>Plan fiduciary net position — beginning</b>                                    | <b>1,234,407</b>    | <b>1,115,726</b> | <b>1,043,059</b> | <b>1,031,039</b> | <b>968,661</b>     | <b>853,778</b> | <b>198,483</b> |
| <b>Plan fiduciary net position — ending (b)</b>                                   | <b>\$ 1,207,889</b> | <b>1,234,407</b> | <b>1,115,726</b> | <b>1,043,059</b> | <b>1,031,039</b>   | <b>968,661</b> | <b>195,570</b> |
| <b>Net pension liability/(asset) — ending (a-b)</b>                               | <b>\$ 53,400</b>    | <b>(28,680)</b>  | <b>14,003</b>    | <b>15,205</b>    | <b>(16,711)</b>    | <b>30,363</b>  | <b>48,639</b>  |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | <b>95.8%</b>        | <b>102.4%</b>    | <b>98.8%</b>     | <b>98.6%</b>     | <b>101.6%</b>      | <b>97.0%</b>   | <b>80.1%</b>   |
| <b>Projected covered payroll</b>  | <b>\$ 113,587</b>   | <b>112,953</b>   | <b>112,322</b>   | <b>111,133</b>   | <b>111,305</b>     | <b>110,741</b> | <b>18,802</b>  |
| <b>Net pension liability/(asset) as a percentage of covered payroll</b>           | <b>47.0%</b>        | <b>(25.4)%</b>   | <b>12.5%</b>     | <b>13.7%</b>     | <b>(15.0)%</b>     | <b>27.4%</b>   | <b>258.7%</b>  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.



Utah Retirement Systems

| Judges System |          |          |          |          | Utah Governors and Legislators Plan |        |        |        |        |        |
|---------------|----------|----------|----------|----------|-------------------------------------|--------|--------|--------|--------|--------|
| 2017          | 2016     | 2015     | 2014     | 2013     | 2018                                | 2017   | 2016   | 2015   | 2014   | 2013   |
| 5,325         | 5,023    | 4,794    | 4,895    | 4,537    | 65                                  | 68     | 89     | 99     | 106    | 100    |
| 14,866        | 14,064   | 14,136   | 13,641   | 12,924   | 877                                 | 879    | 851    | 890    | 884    | 860    |
| —             | —        | —        | —        | —        | —                                   | —      | —      | —      | —      | —      |
| 809           | 1,995    | 171      | 2,602    | (569)    | 139                                 | 182    | 167    | (105)  | 307    | (233)  |
| 13,067        | 2,885    | —        | (130)    | —        | —                                   | 264    | 241    | —      | —      | —      |
| (13,621)      | (12,330) | (12,400) | (11,361) | (10,189) | (978)                               | (973)  | (941)  | (904)  | (909)  | (892)  |
| —             | —        | —        | —        | —        | —                                   | —      | —      | —      | —      | —      |
| 20,446        | 11,637   | 6,701    | 9,647    | 6,703    | 103                                 | 420    | 407    | (20)   | 388    | (165)  |
| 210,623       | 198,986  | 192,285  | 182,638  | 175,935  | 13,074                              | 12,654 | 12,247 | 12,267 | 11,879 | 12,044 |
| 231,069       | 210,623  | 198,986  | 192,285  | 182,638  | 13,177                              | 13,074 | 12,654 | 12,247 | 12,267 | 11,879 |
| —             | —        | —        | 317      | —        | —                                   | —      | —      | —      | —      | —      |
| 7,563         | 7,382    | 6,555    | 5,627    | 4,990    | 392                                 | 404    | 421    | 421    | 411    | 252    |
| 1,477         | 1,470    | 1,653    | 1,486    | 1,498    | —                                   | —      | —      | —      | —      | —      |
| 23,435        | 13,820   | 2,842    | 11,068   | 20,130   | (41)                                | 1,353  | 849    | 181    | 717    | 1,346  |
| (13,621)      | (12,330) | (12,400) | (11,361) | (10,189) | (978)                               | (973)  | (941)  | (904)  | (909)  | (892)  |
| —             | —        | —        | —        | —        | —                                   | —      | —      | —      | —      | —      |
| (79)          | (71)     | (71)     | (71)     | (66)     | (5)                                 | (5)    | (4)    | (5)    | (5)    | (4)    |
| 4,090         | 1,600    | 1,334    | 1,092    | 3,186    | (51)                                | 89     | (12)   | (20)   | (14)   | 19     |
| 22,865        | 11,871   | (87)     | 8,158    | 19,549   | (683)                               | 868    | 313    | (327)  | 200    | 721    |
| 175,618       | 163,747  | 163,834  | 155,676  | 136,127  | 11,220                              | 10,352 | 10,039 | 10,366 | 10,166 | 9,445  |
| 198,483       | 175,618  | 163,747  | 163,834  | 155,676  | 10,537                              | 11,220 | 10,352 | 10,039 | 10,366 | 10,166 |
| 32,586        | 35,005   | 35,239   | 28,451   | 26,962   | 2,640                               | 1,854  | 2,302  | 2,208  | 1,901  | 1,713  |
| 85.9%         | 83.4%    | 82.3%    | 85.2%    | 85.2%    | 80.0%                               | 85.8%  | 81.8%  | 82.0%  | 84.5%  | 85.6%  |
| 18,661        | 16,755   | 15,832   | 16,072   | 15,195   | 639                                 | 722    | 799    | 943    | 928    | 390    |
| 174.6%        | 208.9%   | 222.6%   | 177.0%   | 177.4%   | 413.1%                              | 256.6% | 288.1% | 234.1% | 204.8% | 439.2% |

Continued on page 96.

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

**Schedules of Changes in the Employers' Net Pension Liability** (Concluded)

Year Ended December 31

|   | (in thousands)                 |                |                |                |                |                | 2018           |
|---|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|   | Tier 2 Public Employees System |                |                |                |                |                |                |
|   | 2018                           | 2017           | 2016           | 2015           | 2014           | 2013           |                |
| <b>Total pension liability</b>  |                                |                |                |                |                |                |                |
| Service cost  | \$ 104,736                     | 84,388         | 69,887         | 51,005         | 39,283         | 29,318         | 13,998         |
| Interest  | 27,109                         | 19,471         | 12,608         | 8,370          | 4,648          | 2,351          | 3,199          |
| Benefit changes   | —                              | —              | —              | —              | —              | (119)          | —              |
| Difference between actual and expected experience                                 | (1,727)                        | 357            | (1,917)        | (4,982)        | (4,577)        | (4,459)        | 621            |
| Assumption changes  | —                              | 5,786          | 7,867          | —              | (1,385)        | —              | —              |
| Benefit payments  | (692)                          | (417)          | (316)          | (333)          | —              | —              | —              |
| Refunds   | —                              | —              | —              | —              | —              | —              | —              |
| <b>Net change in total pension liability</b>                                      | <b>129,426</b>                 | <b>109,585</b> | <b>88,129</b>  | <b>54,060</b>  | <b>37,969</b>  | <b>27,091</b>  | <b>17,818</b>  |
| <b>Total pension liability — beginning</b>  | <b>338,035</b>                 | <b>228,450</b> | <b>140,321</b> | <b>86,261</b>  | <b>48,292</b>  | <b>21,201</b>  | <b>39,023</b>  |
| <b>Total pension liability — ending (a)</b>                                       | <b>467,461</b>                 | <b>338,035</b> | <b>228,450</b> | <b>140,321</b> | <b>86,261</b>  | <b>48,292</b>  | <b>56,841</b>  |
| <b>Plan fiduciary net position</b>  |                                |                |                |                |                |                |                |
| Contributions — member  | —                              | —              | —              | —              | —              | —              | 55             |
| Contributions — employer  | 97,680                         | 79,175         | 63,062         | 49,645         | 37,299         | 25,743         | 14,295         |
| Court fees and fire insurance tax   | —                              | —              | —              | —              | —              | —              | —              |
| Net investment income   | (1,454)                        | 33,249         | 14,059         | 1,963          | 4,320          | 4,017          | (180)          |
| Benefit payments  | (692)                          | (417)          | (316)          | (333)          | —              | —              | —              |
| Refunds   | —                              | —              | —              | —              | —              | —              | —              |
| Administrative expense  | (119)                          | (82)           | (51)           | (30)           | (16)           | (6)            | (14)           |
| Net transfers with affiliated systems   | —                              | —              | —              | 3              | (2)            | 3              | —              |
| <b>Net change in plan fiduciary net position</b>                                  | <b>95,415</b>                  | <b>111,925</b> | <b>76,754</b>  | <b>51,248</b>  | <b>41,601</b>  | <b>29,757</b>  | <b>14,156</b>  |
| <b>Plan fiduciary net position — beginning</b>                                    | <b>329,218</b>                 | <b>217,293</b> | <b>140,539</b> | <b>89,291</b>  | <b>47,690</b>  | <b>17,933</b>  | <b>40,180</b>  |
| <b>Plan fiduciary net position — ending (b)</b>                                   | <b>424,633</b>                 | <b>329,218</b> | <b>217,293</b> | <b>140,539</b> | <b>89,291</b>  | <b>47,690</b>  | <b>54,336</b>  |
| <b>Net pension liability/(asset) — ending (a-b)</b>                               | <b>\$ 42,828</b>               | <b>8,817</b>   | <b>11,157</b>  | <b>(218)</b>   | <b>(3,030)</b> | <b>602</b>     | <b>2,505</b>   |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | <b>90.8%</b>                   | <b>97.4%</b>   | <b>95.1%</b>   | <b>100.2%</b>  | <b>103.5%</b>  | <b>98.8%</b>   | <b>95.6%</b>   |
| <b>Projected covered payroll</b>  | <b>\$ 1,171,543</b>            | <b>996,965</b> | <b>822,196</b> | <b>637,560</b> | <b>492,882</b> | <b>353,227</b> | <b>123,439</b> |
| <b>Net pension liability/(asset) as a percentage of covered payroll</b>           | <b>3.7%</b>                    | <b>0.9%</b>    | <b>1.4%</b>    | <b>(0.0)%</b>  | <b>(0.6)%</b>  | <b>0.2%</b>    | <b>2.0%</b>    |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| Tier 2 Public Safety and Firefighter System |        |         |         |        | Total All Retirement Systems |             |             |             |             |             |
|---|--------|---------|---------|--------|------------------------------|-------------|-------------|-------------|-------------|-------------|
| 2017  | 2016   | 2015    | 2014    | 2013   | 2018                         | 2017        | 2016        | 2015        | 2014        | 2013        |
| 10,763                                      | 8,164  | 5,466   | 3,579   | 2,151  | 642,590                      | 616,373     | 604,021     | 567,368     | 569,382     | 599,736     |
| 2,133                                       | 1,274  | 746     | 379     | 159    | 2,417,385                    | 2,355,253   | 2,210,400   | 2,219,616   | 2,121,357   | 2,056,481   |
| —   | —      | —       | —       | (7)    | —                            | —           | 3,343       | —           | —           | 23,718      |
| (2)   | 425    | 220     | 50      | 106    | 24,714                       | (120,133)   | (2,890)     | (233,574)   | (269,582)   | (276,487)   |
| 1,924                                       | 803    | —       | (127)   | —      | —                            | 835,063     | 734,391     | —           | (236,578)   | —           |
| (61)  | (28)   | (30)    | —       | —      | (1,670,644)                  | (1,575,533) | (1,497,989) | (1,423,762) | (1,325,556) | (1,242,156) |
| —   | —      | —       | —       | —      | (4,797)                      | (6,985)     | (6,715)     | (4,772)     | (5,129)     | (4,949)     |
| 14,757                                      | 10,638 | 6,402   | 3,881   | 2,409  | 1,409,248                    | 2,104,038   | 2,044,561   | 1,124,876   | 853,894     | 1,156,343   |
| 24,266                                      | 13,628 | 7,226   | 3,345   | 936    | 35,298,933                   | 33,194,895  | 31,150,334  | 30,025,458  | 29,171,564  | 28,015,221  |
| 39,023                                      | 24,266 | 13,628  | 7,226   | 3,345  | 36,708,181                   | 35,298,933  | 33,194,895  | 31,150,334  | 30,025,458  | 29,171,564  |
| —   | —      | —       | —       | —      | 36,312                       | 39,213      | 39,287      | 40,871      | 38,500      | 40,167      |
| 11,126                                      | 8,488  | 6,221   | 4,365   | 2,451  | 1,139,051                    | 1,112,998   | 1,073,225   | 1,035,724   | 974,178     | 889,481     |
| —   | —      | —       | —       | —      | 10,265                       | 2,700       | 12,039      | 18,871      | 15,640      | 12,783      |
| 3,989                                       | 1,591  | 199     | 404     | 316    | (116,768)                    | 3,773,910   | 2,248,696   | 461,772     | 1,786,431   | 3,260,548   |
| (61)  | (28)   | (30)    | —       | —      | (1,670,644)                  | (1,575,533) | (1,497,989) | (1,423,762) | (1,325,556) | (1,242,156) |
| —   | —      | —       | —       | —      | (4,797)                      | (6,985)     | (6,715)     | (4,772)     | (5,129)     | (4,949)     |
| (9)   | (5)    | (3)     | (1)     | —      | (12,515)                     | (12,001)    | (11,067)    | (10,988)    | (11,012)    | (10,401)    |
| —   | —      | (3)     | 2       | (3)    | —                            | —           | —           | —           | —           | —           |
| 15,045                                      | 10,046 | 6,384   | 4,770   | 2,764  | (619,096)                    | 3,334,302   | 1,857,476   | 117,716     | 1,473,052   | 2,945,473   |
| 25,135                                      | 15,089 | 8,705   | 3,935   | 1,171  | 31,878,618                   | 28,544,316  | 26,686,840  | 26,569,124  | 25,096,072  | 22,150,599  |
| 40,180                                      | 25,135 | 15,089  | 8,705   | 3,935  | 31,259,522                   | 31,878,618  | 28,544,316  | 26,686,840  | 26,569,124  | 25,096,072  |
| (1,157)                                     | (869)  | (1,461) | (1,479) | (590)  | 5,448,659                    | 3,420,315   | 4,650,579   | 4,463,494   | 3,456,334   | 4,075,492   |
| 103.0%                                      | 103.6% | 110.7%  | 120.5%  | 117.6% | 85.2%                        | 90.3%       | 86.0%       | 85.7%       | 88.5%       | 86.0%       |
| 98,113                                      | 74,834 | 53,276  | 35,019  | 20,215 | 5,146,312                    | 4,998,694   | 4,839,495   | 4,714,627   | 4,678,491   | 4,669,560   |
| (1.2)%                                      | (1.2)% | (2.7)%  | (4.2)%  | (2.9)% | 105.9%                       | 68.4%       | 96.1%       | 94.7%       | 73.9%       | 87.3%       |

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

## Schedules of Employers' Net Pension Liability

(dollars in thousands)

| System   | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|--|----------|--------------------------------------|--|--|---|--|---|
| <b>Noncontributory<br/>Retirement<br/>System</b> | 12/31/13 | \$ 23,344,325                        | 19,915,815                               | 3,428,510  | 85.3%   | \$ 3,705,771                           | 92.5%   |
|  | 12/31/14 | 24,043,264                           | 21,096,512                               | 2,946,752  | 87.7  | 3,570,912                              | 82.5  |
|  | 12/31/15 | 24,899,572                           | 21,192,437                               | 3,707,135  | 85.1  | 3,458,286                              | 107.2   |
|  | 12/31/16 | 26,501,781                           | 22,618,743                               | 3,883,038  | 85.3  | 3,406,567                              | 114.0   |
|  | 12/31/17 | 28,088,619                           | 25,205,127                               | 2,883,492  | 89.7  | 3,375,321                              | 85.4  |
|  | 12/31/18 | 29,122,948                           | 24,666,059                               | 4,456,889  | 84.7  | 3,330,548                              | 133.8   |
| <b>Contributory<br/>Retirement<br/>System</b>    | 12/31/13 | \$ 1,312,921                         | 1,281,945                                | 30,976   | 97.6%   | \$ 98,023                              | 31.6%   |
|  | 12/31/14 | 1,309,800                            | 1,269,991                                | 39,809   | 97.0  | 90,623                                 | 43.9  |
|  | 12/31/15 | 1,316,041                            | 1,183,091                                | 132,950  | 89.9  | 82,426                                 | 161.3   |
|  | 12/31/16 | 1,292,512                            | 1,204,904                                | 87,608   | 93.2  | 53,615                                 | 163.4   |
|  | 12/31/17 | 1,298,183                            | 1,283,466                                | 14,717   | 98.9  | 45,177                                 | 32.6  |
|  | 12/31/18 | 1,284,009                            | 1,172,429                                | 111,580  | 91.3  | 39,279                                 | 284.1   |
| <b>Public Safety<br/>Retirement<br/>System</b>   | 12/31/13 | \$ 3,269,140                         | 2,712,184                                | 556,956  | 83.0%   | \$ 365,998                             | 152.2%  |
|  | 12/31/14 | 3,360,027                            | 2,899,386                                | 460,641  | 86.3  | 360,750                                | 127.7   |
|  | 12/31/15 | 3,511,275                            | 2,938,839                                | 572,436  | 83.7  | 355,171                                | 161.2   |
|  | 12/31/16 | 3,794,880                            | 3,176,545                                | 618,335  | 83.7  | 352,407                                | 175.5   |
|  | 12/31/17 | 4,085,203                            | 3,576,517                                | 508,686  | 87.5  | 350,782                                | 145.0   |
|  | 12/31/18 | 4,258,247                            | 3,528,069                                | 730,178  | 82.9  | 348,475                                | 209.5   |
| <b>Firefighters<br/>Retirement<br/>System</b>    | 12/31/13 | \$ 999,024                           | 968,661                                  | 30,363   | 97.0%   | \$ 110,741                             | 27.4%   |
|  | 12/31/14 | 1,014,328                            | 1,031,039                                | (16,711)   | 101.6   | 111,305                                | (15.0)  |
|  | 12/31/15 | 1,058,264                            | 1,043,059                                | 15,205   | 98.6  | 111,133                                | 13.7  |
|  | 12/31/16 | 1,129,729                            | 1,115,726                                | 14,003   | 98.8  | 112,322                                | 12.5  |
|  | 12/31/17 | 1,205,727                            | 1,234,407                                | (28,680)   | 102.4   | 112,953                                | (25.4)  |
|  | 12/31/18 | 1,261,289                            | 1,207,889                                | 53,400   | 95.8  | 113,587                                | 47.0  |
| <b>Judges<br/>Retirement<br/>System</b>          | 12/31/13 | \$ 182,638                           | 155,676                                  | 26,962   | 85.2%   | \$ 15,195                              | 177.4%  |
|  | 12/31/14 | 192,285                              | 163,834                                  | 28,451   | 85.2  | 16,072                                 | 177.0   |
|  | 12/31/15 | 198,986                              | 163,747                                  | 35,239   | 82.3  | 15,832                                 | 222.6   |
|  | 12/31/16 | 210,623                              | 175,618                                  | 35,005   | 83.4  | 16,755                                 | 208.9   |
|  | 12/31/17 | 231,069                              | 198,483                                  | 32,586   | 85.9  | 18,661                                 | 174.6   |
|  | 12/31/18 | 244,209                              | 195,570                                  | 48,639   | 80.1  | 18,802                                 | 258.7   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

**Schedules of Employers' Net Pension Liability** (Concluded)

(dollars in thousands)

| System  | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|---|----------|--------------------------------------|--|--|---|--|---|
| <b>Utah Governors<br/>and Legislative<br/>Retirement Plan</b>         | 12/31/13 | \$ 11,879                            | 10,166                                   | 1,713  | 85.6%   | \$ 390                                 | 439.2%  |
|   | 12/31/14 | 12,267                               | 10,366                                   | 1,901  | 84.5  | 928                                    | 204.8   |
|   | 12/31/15 | 12,247                               | 10,039                                   | 2,208  | 82.0  | 943                                    | 234.1   |
|   | 12/31/16 | 12,654                               | 10,352                                   | 2,302  | 81.8  | 799                                    | 288.1   |
|   | 12/31/17 | 13,074                               | 11,220                                   | 1,854  | 85.8  | 722                                    | 256.6   |
|   | 12/31/18 | 13,177                               | 10,537                                   | 2,640  | 80.0  | 639                                    | 413.1   |
| <b>Tier 2 Public<br/>Employees<br/>Retirement System</b>              | 12/31/13 | \$ 48,292                            | 47,690                                   | 602  | 98.8%   | \$ 353,227                             | 0.2%  |
|   | 12/31/14 | 86,261                               | 89,291                                   | (3,030)  | 103.5   | 492,882                                | (0.6)   |
|   | 12/31/15 | 140,321                              | 140,539                                  | (218)  | 100.2   | 637,560                                | (0.0)   |
|   | 12/31/16 | 228,450                              | 217,293                                  | 11,157   | 95.1  | 822,196                                | 1.4   |
|   | 12/31/17 | 338,035                              | 329,218                                  | 8,817  | 97.4  | 996,965                                | 0.9   |
|   | 12/31/18 | 467,461                              | 424,633                                  | 42,828   | 90.8  | 1,171,543                              | 3.7   |
| <b>Tier 2 Public Safety<br/>and Firefighter<br/>Retirement System</b> | 12/31/13 | \$ 3,345                             | 3,935                                    | (590)  | 117.6%  | \$ 20,215                              | (2.9)%  |
|   | 12/31/14 | 7,226                                | 8,705                                    | (1,479)  | 120.5   | 35,019                                 | (4.2)   |
|   | 12/31/15 | 13,628                               | 15,089                                   | (1,461)  | 110.7   | 53,276                                 | (2.7)   |
|   | 12/31/16 | 24,266                               | 25,135                                   | (869)  | 103.6   | 74,834                                 | (1.2)   |
|   | 12/31/17 | 39,023                               | 40,180                                   | (1,157)  | 103.0   | 98,113                                 | (1.2)   |
|   | 12/31/18 | 56,841                               | 54,336                                   | 2,505  | 95.6  | 123,439                                | 2.0   |
| <b>All Retirement<br/>Systems</b>                                     | 12/31/13 | \$ 29,171,564                        | 25,096,072                               | 4,075,492  | 86.0%   | \$ 4,669,560                           | 87.3%   |
|   | 12/31/14 | 30,025,458                           | 26,569,124                               | 3,456,334  | 88.5  | 4,679,491                              | 73.9  |
|   | 12/31/15 | 31,150,334                           | 26,686,840                               | 4,463,494  | 85.7  | 4,714,627                              | 94.7  |
|   | 12/31/16 | 33,194,895                           | 28,544,316                               | 4,650,579  | 86.0  | 4,839,495                              | 96.1  |
|   | 12/31/17 | 35,298,933                           | 31,878,618                               | 3,420,315  | 90.3  | 4,998,694                              | 68.4  |
|   | 12/31/18 | 36,708,181                           | 31,259,522                               | 5,448,659  | 85.2  | 5,146,312                              | 105.9   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

## Schedules of Employer Contributions

(dollars in thousands)

| System   | Year Ended<br>December 31 | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|--|---------------------------|--|--|--|---------------------------------|--|
| <b>Noncontributory<br/>Retirement<br/>System</b> | 2009                      | \$ 535,298                               | 535,298  | —                                      | 3,955,040                       | 13.53%   |
|  | 2010                      | 564,154                                  | 564,154  | —                                      | 3,888,179                       | 14.51  |
|  | 2011                      | 610,270                                  | 610,270  | —                                      | 3,900,106                       | 15.65  |
|  | 2012                      | 644,907                                  | 644,907  | —                                      | 3,794,929                       | 16.99  |
|  | 2013                      | 710,933                                  | 710,933  | —                                      | 3,705,771                       | 19.18  |
|  | 2014                      | 772,420                                  | 772,420  | —                                      | 3,570,912                       | 21.63  |
|  | 2015                      | 813,449                                  | 813,449  | —                                      | 3,458,286                       | 23.52  |
|  | 2016                      | 831,631                                  | 831,631  | —                                      | 3,406,567                       | 24.41  |
|  | 2017                      | 854,255                                  | 854,255  | —                                      | 3,375,321                       | 25.31  |
| 2018   | 858,444                   | 858,444                                  | —  | 3,330,548                              | 25.77                           |  |
| <b>Contributory<br/>Retirement<br/>System</b>    | 2009                      | \$ 10,865                                | 10,865   | —                                      | 127,804                         | 8.50%  |
|  | 2010                      | 11,851                                   | 11,851   | —                                      | 116,395                         | 10.18  |
|  | 2011                      | 11,125                                   | 11,125   | —                                      | 110,103                         | 10.10  |
|  | 2012                      | 11,705                                   | 11,705   | —                                      | 103,074                         | 11.36  |
|  | 2013                      | 12,874                                   | 12,874   | —                                      | 98,023                          | 13.13  |
|  | 2014                      | 12,954                                   | 12,954   | —                                      | 90,623                          | 14.29  |
|  | 2015                      | 11,719                                   | 11,719   | —                                      | 82,426                          | 14.22  |
|  | 2016                      | 8,188                                    | 8,188  | —                                      | 53,615                          | 15.27  |
|  | 2017                      | 7,946                                    | 7,946  | —                                      | 45,177                          | 17.59  |
| 2018   | 6,027                     | 6,027                                    | —  | 39,279                                 | 15.34                           |  |
| <b>Public Safety<br/>Retirement<br/>System</b>   | 2009                      | \$ 98,729                                | 98,729   | —                                      | 373,959                         | 26.40%   |
|  | 2010                      | 103,586                                  | 103,586  | —                                      | 363,037                         | 28.53  |
|  | 2011                      | 110,829                                  | 110,829  | —                                      | 374,293                         | 29.61  |
|  | 2012                      | 117,975                                  | 117,975  | —                                      | 366,471                         | 32.19  |
|  | 2013                      | 128,744                                  | 128,744  | —                                      | 365,998                         | 35.18  |
|  | 2014                      | 135,588                                  | 135,588  | —                                      | 360,750                         | 37.59  |
|  | 2015                      | 141,024                                  | 141,024  | —                                      | 355,171                         | 39.71  |
|  | 2016                      | 147,099                                  | 147,099  | —                                      | 352,407                         | 41.74  |
|  | 2017                      | 145,814                                  | 145,814  | —                                      | 350,783                         | 41.57  |
| 2018   | 147,101                   | 147,101                                  | —  | 348,475                                | 42.21                           |  |
| <b>Firefighters<br/>Retirement<br/>System</b>    | 2009                      | \$ 16,159                                | 16,159   | —                                      | 107,625                         | 15.01%   |
|  | 2010                      | 10,915                                   | 10,915   | —                                      | 105,275                         | 10.37  |
|  | 2011                      | 13,005                                   | 13,005   | —                                      | 110,751                         | 11.74  |
|  | 2012                      | 17,321                                   | 17,321   | —                                      | 110,608                         | 15.66  |
|  | 2013                      | 14,779                                   | 14,779   | —                                      | 110,741                         | 13.35  |
|  | 2014                      | 19,668                                   | 19,668   | —                                      | 111,305                         | 17.67  |
|  | 2015                      | 23,908                                   | 23,908   | —                                      | 111,133                         | 21.51  |
|  | 2016                      | 17,523                                   | 17,523   | —                                      | 112,322                         | 15.60  |
|  | 2017                      | 7,938                                    | 7,938  | —                                      | 112,953                         | 7.03   |
| 2018   | 15,768                    | 15,768                                   | -  | 113,587                                | 13.88                           |  |
| <b>Judges<br/>Retirement<br/>System</b>          | 2009                      | \$ 4,184                                 | 4,184  | —                                      | 14,434                          | 28.99%   |
|  | 2010                      | 4,715                                    | 4,715  | —                                      | 14,234                          | 33.12  |
|  | 2011                      | 5,403                                    | 5,403  | —                                      | 14,981                          | 36.07  |
|  | 2012                      | 5,898                                    | 5,898  | —                                      | 14,885                          | 39.62  |
|  | 2013                      | 6,488                                    | 6,488  | —                                      | 15,195                          | 42.70  |
|  | 2014                      | 7,113                                    | 7,113  | —                                      | 16,072                          | 44.26  |
|  | 2015                      | 8,208                                    | 8,208  | —                                      | 15,832                          | 51.84  |
|  | 2016                      | 8,852                                    | 8,852  | —                                      | 16,755                          | 52.83  |
|  | 2017                      | 9,040                                    | 9,040  | —                                      | 18,661                          | 48.44  |
| 2018   | 9,609                     | 9,609                                    | —  | 18,802                                 | 51.11                           |  |

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

**Utah Retirement Systems**  
**Required Supplementary Information** (Continued)

**Schedules of Employer Contributions** (Concluded)

(dollars in thousands)

| System  | Year Ended December 31 | Actuarial Determined Contribution* | Contributions in Relation to the Actuarial Determined Contribution | Contribution Deficiency (Excess) | Projected Covered Payroll | Contributions as a Percentage of Covered Payroll** |
|---|------------------------|------------------------------------|--|----------------------------------|---------------------------|--|
| <b>Utah Governors and Legislative Retirement Plan</b>                     | 2009                   | \$ —                               | —  | —                                | 910                       | 0.00%  |
|   | 2010                   | —                                  | —  | —                                | 910                       | 0.00   |
|   | 2011                   | 153                                | 153  | —                                | 910                       | 16.81  |
|   | 2012                   | 214                                | 214  | —                                | 910                       | 23.52  |
|   | 2013                   | 252                                | 252  | —                                | 390                       | 64.62  |
|   | 2014                   | 411                                | 411  | —                                | 928                       | 44.29  |
|   | 2015                   | 421                                | 421  | —                                | 943                       | 44.64  |
|   | 2016                   | 421                                | 421  | —                                | 799                       | 52.69  |
|   | 2017                   | 404                                | 404  | —                                | 722                       | 55.96  |
| 2018  | 392                    | 392                                | —  | 639                              | 61.35                     |  |
| <b>Tier 2 Public Employees Retirement System<sup>†</sup></b>              | 2011                   | \$ 2,790                           | 2,790  | —                                | 36,821                    | 7.58%  |
|   | 2012                   | 14,208                             | 14,208   | —                                | 203,779                   | 6.97   |
|   | 2013                   | 25,743                             | 25,743   | —                                | 353,227                   | 7.29   |
|   | 2014                   | 37,299                             | 37,299   | —                                | 492,882                   | 7.57   |
|   | 2015                   | 49,645                             | 49,645   | —                                | 637,560                   | 7.79   |
|   | 2016                   | 63,062                             | 63,062   | —                                | 822,196                   | 7.67   |
|   | 2017                   | 79,175                             | 79,175   | —                                | 996,965                   | 7.94   |
|   | 2018                   | 97,680                             | 97,680   | —                                | 1,171,543                 | 8.34   |
| <b>Tier 2 Public Safety and Firefighter Retirement System<sup>†</sup></b> | 2011                   | \$ 89                              | 89   | —                                | 855                       | 10.41%   |
|   | 2012                   | 1,031                              | 1,031  | —                                | 10,237                    | 10.07  |
|   | 2013                   | 2,451                              | 2,451  | —                                | 20,215                    | 12.12  |
|   | 2014                   | 4,365                              | 4,365  | —                                | 35,019                    | 12.46  |
|   | 2015                   | 6,221                              | 6,221  | —                                | 53,276                    | 11.68  |
|   | 2016                   | 8,488                              | 8,488  | —                                | 74,834                    | 11.34  |
|   | 2017                   | 11,126                             | 11,126   | —                                | 98,113                    | 11.34  |
|   | 2018                   | 14,295                             | 14,295   | —                                | 123,439                   | 11.58  |
| <b>All Retirement Systems</b>   | 2009                   | \$ 665,235                         | 665,235  | —                                | 4,579,772                 | 14.53%   |
|   | 2010                   | 695,221                            | 695,221  | —                                | 4,488,030                 | 15.49  |
|   | 2011                   | 753,664                            | 753,664  | —                                | 4,548,820                 | 16.57  |
|   | 2012                   | 813,259                            | 813,259  | —                                | 4,604,893                 | 17.66  |
|   | 2013                   | 902,264                            | 902,264  | —                                | 4,669,560                 | 19.32  |
|   | 2014                   | 989,818                            | 989,818  | —                                | 4,678,491                 | 21.16  |
|   | 2015                   | 1,054,595                          | 1,054,595  | —                                | 4,714,628                 | 22.37  |
|   | 2016                   | 1,085,264                          | 1,085,264  | —                                | 4,839,495                 | 22.43  |
|   | 2017                   | 1,115,698                          | 1,115,698  | —                                | 4,998,694                 | 22.32  |
| 2018  | 1,149,316              | 1,149,316                          | —  | 5,146,312                        | 22.33                     |  |

<sup>†</sup>Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## Schedule of Investment Returns

Year Ended December 31

|   | 2018    | 2017   | 2016  | 2015  | 2014  |
|---|---------|--------|-------|-------|-------|
| Annual money weighted rate of return, net of investment expense | (0.38)% | 13.38% | 8.73% | 2.02% | 7.94% |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

# Notes to Required Supplementary Information



## Note 1

### Schedules of Changes in the Employer Net Pension Liability

The total pension liability contained in this schedule was provided by the Systems actuary, Gabriel, Roeder, Smith & Company. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the Retirement Systems.

## Note 2

### Schedules of Employer Contributions

The required employer contributions and percent of those contributions actually made are presented in the schedule.

The actuarially determined contribution rates determined by an actuarial valuation are effective for the fiscal year beginning 18 months after the valuation date. For example, the actuarially determined contribution rate determined by the January 1, 2017 valuation is effective for the fiscal year beginning July 1, 2019.

The Board certifies the contribution rates that employers are contractually required to contribute to the retirement system. Per 49-11-301(5) of the Utah Code, if the funded ratio of the plan is less than 110%, then the Board is permitted to maintain the prior year's contribution rate if the actuarially determined contribution is lower. The Board has

historically followed this policy. The projected covered payroll is an estimated payroll figure based upon the January 1, 2017, census data.

The actual contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems. Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## Note 3

### Actuarial Assumptions

The information presented in the required supplementary schedules was used in the actuarial valuation for purposes of determining the actuarially determined contribution rate. The assumptions and methods used for this actuarial valuation were recommended by the actuary and adopted by the Board. Additional information as of the latest actuarial valuation follows.



## Notes to Required Supplementary Information (Concluded)

December 31, 2018

## SUMMARY OF ACTUARIAL ASSUMPTIONS

|  | Noncontributory  | Contributory                         | Public Safety                        | Firefighters                         | Judges                               | Governors and Legislators                | Tier 2 Public Employees              | Tier 2 Public Safety and Firefighter |
|--|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--------------------------------------|--------------------------------------|
| Valuation date   | 1/1/18   | 1/1/18                               | 1/1/18                               | 1/1/18                               | 1/1/18                               | 1/1/18                                   | 1/1/18                               | 1/1/18                               |
| Actuarial cost method  | Entry Age  | Entry Age                            | Entry Age                            | Entry Age                            | Entry Age                            | Entry Age                                | Entry Age                            | Entry Age                            |
| Amortization method  | Level Percent of Payroll   | Level Percent of Payroll             | Level Percent of Payroll             | Level Percent of Payroll             | Level Percent of Payroll             | Level Dollar Amount                      | Level Percent of Payroll             | Level Percent of Payroll             |
| Amortization period  | Open Group<br>20-Year<br>Open Period   | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Closed Group<br>16-Year<br>Closed Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period |
| Actuarial asset valuation method (All Systems under same method) | Based on the total fair value income of investments with the excess or shortfall of actual investment income over or under the expected investment return smoothed over five years. One-fifth of the excess or shortfall is recognized each year for five years. |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Actuarial assumptions:   |  |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Investment rate of return  | 6.95%  | 6.95%                                | 6.95%                                | 6.95%                                | 6.95%                                | 6.95%                                    | 6.95%                                | 6.95%                                |
| Projected salary increases*                                      | 3.25-9.75%   | 3.25-9.75%                           | 3.25-7.25%                           | 3.25-8.75%                           | 3.25%                                | None                                     | 3.25-9.75%                           | 3.25-8.75%                           |
| Inflation rate   | 2.50%  | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                    | 2.50%                                | 2.50%                                |
| Post-retirement cost-of-living adjustment                        | 2.50%  | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                    | 2.50%                                | 2.50%                                |
| Mortality: (Non-educators)                                       | Male: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017.   |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Mortality: (Educators)   | Male: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017.     |                                      |                                      |                                      |                                      |  |                                      |                                      |

Note: All post-retirement cost-of-living adjustments are noncompounding and are based on the original benefit except for Judges, which is a compounding benefit. The cost-of-living adjustments are also limited to the actual CPI increase for the year, although unused CPI increases not met may be carried forward to subsequent years.

\*Composed of 2.50% inflation, plus 0.75% productivity increase rate, plus step-rate promotional increases for members with less than 25 years of service.

## Noncontributory Retirement System

Schedules of Fiduciary Net Position —  
Pension Trust Fund by Division

December 31, 2018

With Comparative Totals for December 31, 2017

*(in thousands)*

|   | Local<br>Government | State and<br>School | Total All Divisions |            |
|---|---------------------|---------------------|---------------------|------------|
|   |                     |                     | 2018                | 2017       |
| <b>Assets:</b>  |                     |                     |                     |            |
| Cash  | \$ 1                | 2                   | 3                   | 3          |
| Receivables:  |                     |                     |                     |            |
| Employer contributions  | 6,424               | 36,551              | 42,975              | 45,689     |
| Investments   | 96,409              | 386,217             | 482,626             | 536,764    |
| Total receivables   | 102,833             | 422,768             | 525,601             | 582,453    |
| Investments at fair value:  |                     |                     |                     |            |
| Short-term securities   | 250,757             | 1,004,544           | 1,255,301           | 2,181,530  |
| Debt securities   | 837,530             | 3,355,179           | 4,192,709           | 3,603,652  |
| Equity investments  | 1,735,052           | 6,950,697           | 8,685,749           | 9,611,772  |
| Absolute return   | 724,876             | 2,903,886           | 3,628,762           | 3,526,238  |
| Private equity  | 577,165             | 2,312,147           | 2,889,312           | 2,728,872  |
| Real assets   | 820,693             | 3,287,733           | 4,108,426           | 3,751,832  |
| Total investments   | 4,946,073           | 19,814,186          | 24,760,259          | 25,403,896 |
| Invested securities lending collateral                                  | 166,789             | 668,162             | 834,951             | 1,058,631  |
| Property and equipment at cost,<br>net of accumulated depreciation      | 737                 | 2,952               | 3,689               | 3,472      |
| Total assets  | 5,216,433           | 20,908,070          | 26,124,503          | 27,048,455 |
| <b>Liabilities:</b>   |                     |                     |                     |            |
| Securities lending liability  | 166,789             | 668,162             | 834,951             | 1,058,631  |
| Disbursements in excess of cash balance                                 | 5,051               | 20,994              | 26,045              | 28,974     |
| Compensated absences, post-employment<br>benefits and insurance reserve | 3,334               | 13,356              | 16,690              | 17,339     |
| Investment accounts payable   | 97,221              | 388,841             | 486,062             | 643,491    |
| Real estate liabilities   | 18,916              | 75,780              | 94,696              | 94,893     |
| Total liabilities   | 291,311             | 1,167,133           | 1,458,444           | 1,843,328  |
| Net position restricted for pensions                                    | \$ 4,925,122        | 19,740,937          | 24,666,059          | 25,205,127 |

## Noncontributory Retirement System

Schedules of Changes in Fiduciary Net Position —  
Pension Trust Fund by Division

Year Ended December 31, 2018

With Comparative Totals for Year Ended December 31, 2017

*(in thousands)*

|   | Local<br>Government | State and<br>School | Total All Divisions |            |
|---|---------------------|---------------------|---------------------|------------|
|   |                     |                     | 2018                | 2017       |
| <b>Additions:</b>   |                     |                     |                     |            |
| Contributions:  |                     |                     |                     |            |
| Member  | \$ 4,491            | 10,111              | 14,602              | 17,285     |
| Employer  | 176,481             | 681,963             | 858,444             | 854,255    |
| Total contributions   | 180,972             | 692,074             | 873,046             | 871,540    |
| Investment income:  |                     |                     |                     |            |
| Net appreciation (depreciation)<br>in fair value of investments | (117,096)           | (472,479)           | (589,575)           | 2,564,293  |
| Interest, dividends, and other investment income                | 107,633             | 434,300             | 541,933             | 463,263    |
| Total income (loss) from investment activity                    | (9,463)             | (38,179)            | (47,642)            | 3,027,556  |
| Less investment expenses  | 9,967               | 40,215              | 50,182              | 45,007     |
| Net income (loss) from investment activity                      | (19,430)            | (78,394)            | (97,824)            | 2,982,549  |
| Income from security lending activity                           | 1,282               | 5,174               | 6,456               | 5,361      |
| Less security lending expense                                   | 167                 | 672                 | 839                 | 628        |
| Net income from security lending activity                       | 1,115               | 4,502               | 5,617               | 4,733      |
| Net investment income (loss)                                    | (18,315)            | (73,892)            | (92,207)            | 2,987,282  |
| Transfers from affiliated systems                               | 9,583               | 3,452               | 13,035              | —          |
| Total additions   | 172,240             | 621,634             | 793,874             | 3,858,822  |
| <b>Deductions:</b>  |                     |                     |                     |            |
| Retirement benefits   | 190,213             | 934,947             | 1,125,160           | 1,063,894  |
| Cost-of-living benefits   | 28,094              | 166,960             | 195,054             | 184,143    |
| Refunds   | 738                 | 2,028               | 2,766               | 4,635      |
| Administrative expenses   | 1,919               | 8,043               | 9,962               | 9,579      |
| Transfers to affiliated systems                                 | —                   | —                   | —                   | 10,187     |
| Total deductions  | 220,964             | 1,111,978           | 1,332,942           | 1,272,438  |
| Increase (decrease) from operations                             | (48,724)            | (490,344)           | (539,068)           | 2,586,384  |
| Net position restricted for pensions beginning of year          | 4,973,846           | 20,231,281          | 25,205,127          | 22,618,743 |
| Net position restricted for pensions end of year                | \$ 4,925,122        | 19,740,937          | 24,666,059          | 25,205,127 |

## Noncontributory Retirement System

## Schedules of Changes in the Employers' Net Pension Liability by Division

Year Ended December 31

(in thousands)

|  | Local Government |           |           |           |           |           | 2018        |
|--|------------------|-----------|-----------|-----------|-----------|-----------|-------------|
|  | 2018             | 2017      | 2016      | 2015      | 2014      | 2013      |             |
| Total pension liability  |                  |           |           |           |           |           |             |
| Service cost   | \$ 91,556        | 93,774    | 96,049    | 91,304    | 93,436    | 100,789   | 312,835     |
| Interest   | 371,702          | 359,989   | 330,648   | 328,120   | 310,587   | 297,617   | 1,548,536   |
| Benefit changes  | —                | —         | 48,400    | —         | —         | 6,063     | —           |
| Difference between actual and expected experience                          | 5,305            | (22,546)  | 18,123    | (19,610)  | (16,109)  | (39,370)  | 27,375      |
| Assumption changes   | —                | 129,368   | 112,696   | —         | (52,889)  | —         | —           |
| Benefit payments   | (218,307)        | (202,324) | (191,011) | (177,915) | (159,967) | (149,891) | (1,101,907) |
| Refunds  | (738)            | (814)     | (392)     | (248)     | (235)     | (620)     | (2,028)     |
| Net change in total pension liability                                      | 249,518          | 357,447   | 414,513   | 221,651   | 174,823   | 214,588   | 784,811     |
| Total pension liability — beginning  | \$ 5,411,976     | 5,054,529 | 4,640,016 | 4,418,365 | 4,243,542 | 4,028,954 | 22,676,643  |
| Total pension liability — ending (a)                                       | 5,661,494        | 5,411,976 | 5,054,529 | 4,640,016 | 4,418,365 | 4,243,542 | 23,461,454  |
| Plan fiduciary net position  |                  |           |           |           |           |           |             |
| Contributions — member   | 4,491            | 3,928     | 5,023     | 5,481     | 3,859     | 2,637     | 10,111      |
| Contributions — employer   | 176,481          | 174,037   | 171,967   | 167,015   | 157,930   | 147,105   | 681,963     |
| Net investment income  | (18,315)         | 586,793   | 346,001   | 69,895    | 266,210   | 478,461   | (73,892)    |
| Benefit payments   | (218,307)        | (202,324) | (191,011) | (177,915) | (159,967) | (149,891) | (1,101,907) |
| Refunds  | (738)            | (814)     | (392)     | (248)     | (235)     | (620)     | (2,028)     |
| Administrative expense   | (1,919)          | (1,828)   | (1,671)   | (1,622)   | (1,604)   | (1,497)   | (8,043)     |
| Net transfers with affiliated systems                                      | 9,583            | 1,647     | 8,323     | 27,420    | 14,058    | (5,302)   | 3,452       |
| Net change in plan fiduciary net position                                  | (48,724)         | 561,439   | 338,240   | 90,026    | 280,251   | 470,893   | (490,344)   |
| Plan fiduciary net position — beginning                                    | 4,973,846        | 4,412,407 | 4,074,167 | 3,984,141 | 3,703,890 | 3,232,997 | 20,231,281  |
| Plan fiduciary net position — ending (b)                                   | 4,925,122        | 4,973,846 | 4,412,407 | 4,074,167 | 3,984,141 | 3,703,890 | 19,740,937  |
| Net pension liability — ending (a-b)                                       | \$ 736,372       | 438,130   | 642,122   | 565,849   | 434,224   | 539,652   | 3,720,517   |
| Plan fiduciary net position as a percentage of the total pension liability | 87.0%            | 91.9%     | 87.3%     | 87.8%     | 90.2%     | 87.3%     | 84.1%       |
| Projected covered payroll  | \$ 804,891       | 811,404   | 830,406   | 826,998   | 845,364   | 864,838   | 2,525,657   |
| Net pension liability as a percentage of covered payroll                   | 91.5%            | 54.0%     | 77.3%     | 68.4%     | 51.4%     | 62.4%     | 147.3%      |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| State and School |            |            |            |            | Total All Divisions |             |             |             |             |            |
|------------------|------------|------------|------------|------------|---------------------|-------------|-------------|-------------|-------------|------------|
| 2017             | 2016       | 2015       | 2014       | 2013       | 2018                | 2017        | 2016        | 2015        | 2014        | 2013       |
| 310,207          | 311,641    | 303,494    | 314,556    | 340,531    | 404,391             | 403,981     | 407,690     | 394,798     | 407,992     | 441,320    |
| 1,517,587        | 1,434,005  | 1,447,699  | 1,389,106  | 1,348,596  | 1,920,238           | 1,877,576   | 1,764,653   | 1,775,819   | 1,699,693   | 1,646,213  |
| —                | —          | —          | —          | 17,060     | —                   | —           | 48,400      | —           | —           | 23,123     |
| (61,688)         | (11,715)   | (168,556)  | (188,714)  | (169,131)  | 32,680              | (84,234)    | 6,408       | (188,166)   | (204,823)   | (208,501)  |
| 512,819          | 451,045    | —          | (105,032)  | —          | —                   | 642,187     | 563,741     | —           | (157,921)   | —          |
| (1,045,713)      | (993,306)  | (945,732)  | (883,831)  | (824,793)  | (1,320,214)         | (1,248,037) | (1,184,317) | (1,123,647) | (1,043,798) | (974,684)  |
| (3,821)          | (3,974)    | (2,248)    | (1,969)    | (1,834)    | (2,766)             | (4,635)     | (4,366)     | (2,496)     | (2,204)     | (2,454)    |
| 1,229,391        | 1,187,696  | 634,657    | 524,116    | 710,429    | 1,034,329           | 1,586,838   | 1,602,209   | 856,308     | 698,939     | 925,017    |
| 21,447,252       | 20,259,556 | 19,624,899 | 19,100,783 | 18,390,354 | 28,088,619          | 26,501,781  | 24,899,572  | 24,043,264  | 23,344,325  | 22,419,308 |
| 22,676,643       | 21,447,252 | 20,259,556 | 19,624,899 | 19,100,783 | 29,122,948          | 28,088,619  | 26,501,781  | 24,899,572  | 24,043,264  | 23,344,325 |
| 13,357           | 11,285     | 11,539     | 9,728      | 11,571     | 14,602              | 17,285      | 16,308      | 17,020      | 13,587      | 14,208     |
| 680,218          | 659,664    | 646,434    | 614,490    | 563,828    | 858,444             | 854,255     | 831,631     | 813,449     | 772,420     | 710,933    |
| 2,400,489        | 1,437,910  | 296,853    | 1,152,843  | 2,110,520  | (92,207)            | 2,987,282   | 1,783,911   | 366,748     | 1,419,053   | 2,588,981  |
| (1,045,713)      | (993,306)  | (945,732)  | (883,831)  | (824,793)  | (1,320,214)         | (1,248,037) | (1,184,317) | (1,123,647) | (1,043,798) | (974,684)  |
| (3,821)          | (3,974)    | (2,248)    | (1,969)    | (1,834)    | (2,766)             | (4,635)     | (4,366)     | (2,496)     | (2,204)     | (2,454)    |
| (7,751)          | (7,185)    | (7,175)    | (7,224)    | (6,832)    | (9,962)             | (9,579)     | (8,856)     | (8,797)     | (8,828)     | (8,329)    |
| (11,834)         | (16,328)   | 6,228      | 16,409     | (36,975)   | 13,035              | (10,187)    | (8,005)     | 33,648      | 30,467      | (42,277)   |
| 2,024,945        | 1,088,066  | 5,899      | 900,446    | 1,815,485  | (539,068)           | 2,586,384   | 1,426,306   | 95,925      | 1,180,697   | 2,286,378  |
| 18,206,336       | 17,118,270 | 17,112,371 | 16,211,925 | 14,396,440 | 25,205,127          | 22,618,743  | 21,192,437  | 21,096,512  | 19,915,815  | 17,629,437 |
| 20,231,281       | 18,206,336 | 17,118,270 | 17,112,371 | 16,211,925 | 24,666,059          | 25,205,127  | 22,618,743  | 21,192,437  | 21,096,512  | 19,915,815 |
| 2,445,362        | 3,240,916  | 3,141,286  | 2,512,528  | 2,888,858  | 4,456,889           | 2,883,492   | 3,883,038   | 3,707,135   | 2,946,752   | 3,428,510  |
| 89.2%            | 84.9%      | 84.5%      | 87.2%      | 84.9%      | 84.7%               | 89.7%       | 85.3%       | 85.1%       | 87.7%       | 85.3%      |
| 2,563,917        | 2,576,161  | 2,631,288  | 2,725,548  | 2,840,933  | 3,330,548           | 3,375,321   | 3,406,567   | 3,458,286   | 3,570,912   | 3,705,771  |
| 95.4%            | 125.8%     | 119.4%     | 92.2%      | 101.7%     | 133.8%              | 85.4%       | 114.0%      | 107.2%      | 82.5%       | 92.5%      |

## Noncontributory Retirement System

## Schedules of Net Pension Liability by Division

*(dollars in thousands)*

| System                                       | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|--|----------|--------------------------------------|--|--|---|--|---|
| <b>Noncontributory<br/>Local Government</b>  | 12/31/13 | \$ 4,243,542                         | 3,703,890                                | 539,652  | 87.3%   | \$ 864,838                             | 62.4%   |
|  | 12/31/14 | 4,418,365                            | 3,984,141                                | 434,224  | 90.2  | 845,364                                | 51.4  |
|  | 12/31/15 | 4,640,016                            | 4,074,167                                | 565,849  | 87.8  | 826,998                                | 68.4  |
|  | 12/31/16 | 5,054,529                            | 4,412,407                                | 642,122  | 87.3  | 830,406                                | 77.3  |
|  | 12/31/17 | 5,411,976                            | 4,973,846                                | 438,130  | 91.9  | 811,404                                | 54.0  |
|  | 12/31/18 | 5,661,494                            | 4,925,122                                | 736,372  | 87.0  | 804,891                                | 91.5  |
| <b>Noncontributory<br/>State and School</b>  | 12/31/13 | \$ 19,100,783                        | 16,211,925                               | 2,888,858  | 84.9%   | \$ 2,840,933                           | 101.7%  |
|  | 12/31/14 | 19,624,899                           | 17,112,371                               | 2,512,528  | 87.2  | 2,725,548                              | 92.2  |
|  | 12/31/15 | 20,259,556                           | 17,118,270                               | 3,141,286  | 84.5  | 2,631,288                              | 119.4   |
|  | 12/31/16 | 21,447,252                           | 18,206,336                               | 3,240,916  | 84.9  | 2,576,161                              | 125.8   |
|  | 12/31/17 | 22,676,643                           | 20,231,281                               | 2,445,362  | 89.2  | 2,563,917                              | 95.4  |
|  | 12/31/18 | 23,461,454                           | 19,740,937                               | 3,720,517  | 84.1  | 2,525,657                              | 147.3   |
| <b>Total</b>                                 | 12/31/13 | \$ 23,344,325                        | 19,915,815                               | 3,428,510  | 85.3%   | \$ 3,705,771                           | 92.5%   |
| <b>Noncontributory<br/>Retirement System</b> | 12/31/14 | 24,043,264                           | 21,096,512                               | 2,946,752  | 87.7  | 3,570,912                              | 82.5  |
|  | 12/31/15 | 24,899,572                           | 21,192,437                               | 3,707,135  | 85.1  | 3,458,286                              | 107.2   |
|  | 12/31/16 | 26,501,781                           | 22,618,743                               | 3,883,038  | 85.3  | 3,406,567                              | 114.0   |
|  | 12/31/17 | 28,088,619                           | 25,205,127                               | 2,883,492  | 89.7  | 3,375,321                              | 85.4  |
|  | 12/31/18 | 29,122,948                           | 24,666,059                               | 4,456,889  | 84.7  | 3,330,548                              | 133.8   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Noncontributory Retirement System

## Schedules of Employer Contributions by Division

*(dollars in thousands)*

| System   | Year Ended | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|--|------------|--|--|--|---------------------------------|--|
| <b>Noncontributory<br/>Local Government</b>            | 2013       | \$ 147,105                               | 147,105  | —                                      | 864,838                         | 17.01%   |
|  | 2014       | 157,930                                  | 157,930  | —                                      | 845,364                         | 18.68  |
|  | 2015       | 167,015                                  | 167,015  | —                                      | 826,998                         | 20.20  |
|  | 2016       | 171,967                                  | 171,967  | —                                      | 830,406                         | 20.71  |
|  | 2017       | 174,037                                  | 174,037  | —                                      | 811,404                         | 21.45  |
|  | 2018       | 176,481                                  | 176,481  | —                                      | 804,891                         | 21.93  |
| <b>Noncontributory<br/>State and School</b>            | 2013       | \$ 563,828                               | 563,828  | —                                      | 2,840,933                       | 19.85%   |
|  | 2014       | 614,490                                  | 614,490  | —                                      | 2,725,548                       | 22.55  |
|  | 2015       | 646,490                                  | 646,434  | —                                      | 2,631,288                       | 24.57  |
|  | 2016       | 659,664                                  | 659,664  | —                                      | 2,576,161                       | 25.61  |
|  | 2017       | 680,218                                  | 680,218  | —                                      | 2,563,917                       | 26.53  |
|  | 2018       | 681,963                                  | 681,963  | —                                      | 2,525,657                       | 27.00  |
| <b>Total<br/>Noncontributory<br/>Retirement System</b> | 2013       | \$ 710,933                               | 710,933  | —                                      | 3,705,771                       | 19.18%   |
|  | 2014       | 772,420                                  | 772,420  | —                                      | 3,570,912                       | 21.63  |
|  | 2015       | 813,449                                  | 813,449  | —                                      | 3,458,286                       | 23.52  |
|  | 2016       | 831,631                                  | 831,631  | —                                      | 3,406,567                       | 24.41  |
|  | 2017       | 854,255                                  | 854,255  | —                                      | 3,375,321                       | 25.31  |
|  | 2018       | 858,444                                  | 858,444  | —                                      | 3,330,548                       | 25.77  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## Contributory Retirement System

Schedules of Fiduciary Net Position —  
Pension Trust Fund by Division

December 31, 2018

With Comparative Totals for December 31, 2017

*(in thousands)*

|   | Local<br>Government | State and<br>School | Total All Divisions |           |
|---|---------------------|---------------------|---------------------|-----------|
|   |                     |                     | 2018                | 2017      |
| <b>Assets:</b>  |                     |                     |                     |           |
| Cash  | \$ 1                | 1                   | 2                   | 2         |
| Receivables:  |                     |                     |                     |           |
| Member contributions  | 47                  | 47                  | 94                  | 115       |
| Employer contributions  | 134                 | 140                 | 274                 | 325       |
| Investments   | 8,202               | 14,771              | 22,973              | 27,372    |
| Total receivables   | 8,383               | 14,958              | 23,341              | 27,812    |
| Investments at fair value:  |                     |                     |                     |           |
| Short-term securities   | 21,333              | 38,418              | 59,751              | 111,248   |
| Debt securities   | 71,253              | 128,319             | 199,572             | 183,770   |
| Equity investments  | 147,611             | 265,829             | 413,440             | 490,156   |
| Absolute return   | 61,669              | 111,059             | 172,728             | 179,822   |
| Private equity  | 49,103              | 88,428              | 137,531             | 139,160   |
| Real assets   | 69,821              | 125,739             | 195,560             | 191,327   |
| Total investments   | 420,790             | 757,792             | 1,178,582           | 1,295,483 |
| Invested securities lending collateral                                  | 14,190              | 25,554              | 39,744              | 53,985    |
| Property and equipment at cost,<br>net of accumulated depreciation      | 63                  | 113                 | 176                 | 177       |
| Total assets  | 443,427             | 798,418             | 1,241,845           | 1,377,459 |
| <b>Liabilities:</b>   |                     |                     |                     |           |
| Securities lending collateral liability                                 | 14,190              | 25,554              | 39,744              | 53,985    |
| Disbursements in excess of cash balance                                 | 430                 | 774                 | 1,204               | 1,374     |
| Compensated absences, post-employment<br>benefits and insurance reserve | 284                 | 511                 | 795                 | 884       |
| Investment accounts payable   | 8,271               | 14,895              | 23,166              | 32,911    |
| Real estate liabilities   | 1,609               | 2,898               | 4,507               | 4,839     |
| Total liabilities   | 24,784              | 44,632              | 69,416              | 93,993    |
| Net position restricted for pensions                                    | \$ 418,643          | 753,786             | 1,172,429           | 1,283,466 |



## Contributory Retirement System

Schedules of Changes in Fiduciary Net Position —  
Pension Trust Fund by Division

Year Ended December 31, 2018

With Comparative Totals for Year Ended December 31, 2017

(in thousands)

|   | Local<br>Government | State and<br>School | Total All Divisions |           |
|---|---------------------|---------------------|---------------------|-----------|
|   |                     |                     | 2018                | 2017      |
| <b>Additions:</b>   |                     |                     |                     |           |
| Contributions:  |                     |                     |                     |           |
| Member  | \$ 1,068            | 1,387               | 2,455               | 2,675     |
| Employer  | 2,762               | 3,265               | 6,027               | 7,946     |
| Total contributions   | 3,830               | 4,652               | 8,482               | 10,621    |
| Investment income:  |                     |                     |                     |           |
| Net appreciation (depreciation)<br>in fair value of investments | (10,257)            | (18,602)            | (28,859)            | 133,867   |
| Interest, dividends, and other investment income                | 9,428               | 17,099              | 26,527              | 24,185    |
| Total income (loss) from investment activity                    | (829)               | (1,503)             | (2,332)             | 158,052   |
| Less investment expenses  | 873                 | 1,583               | 2,456               | 2,350     |
| Net income from investment activity                             | (1,702)             | (3,086)             | (4,788)             | 155,702   |
| Income from securities lending activity                         | 112                 | 204                 | 316                 | 280       |
| Less security lending expense                                   | 15                  | 26                  | 41                  | 33        |
| Net income from security lending activity                       | 97                  | 178                 | 275                 | 247       |
| Net investment income (loss)                                    | (1,605)             | (2,908)             | (4,513)             | 155,949   |
| Total additions   | 2,225               | 1,744               | 3,969               | 166,570   |
| <b>Deductions:</b>  |                     |                     |                     |           |
| Retirement benefits   | 24,350              | 49,756              | 74,106              | 72,073    |
| Cost-of-living benefits   | 3,606               | 9,032               | 12,638              | 12,624    |
| Supplemental retirement benefits                                | 8                   | 43                  | 51                  | 64        |
| Refunds   | 430                 | 1,041               | 1,471               | 1,613     |
| Administrative expenses   | 161                 | 293                 | 454                 | 457       |
| Transfers to affiliated systems                                 | 9,774               | 16,512              | 26,286              | 1,177     |
| Total deductions  | 38,329              | 76,677              | 115,006             | 88,008    |
| Increase (decrease) from operations                             | (36,104)            | (74,933)            | (111,037)           | 78,562    |
| Net position restricted for pensions beginning of year          | 454,747             | 828,719             | 1,283,466           | 1,204,904 |
| Net position restricted for pensions end of year                | \$ 418,643          | 753,786             | 1,172,429           | 1,283,466 |

## Contributory Retirement System

## Schedules of Changes in the Employers' Net Pension Liability by Division

Year Ended December 31

*(in thousands)*

|   | Local Government |                |                 |                 |                |                | 2018            |
|---|------------------|----------------|-----------------|-----------------|----------------|----------------|-----------------|
|   | 2018             | 2017           | 2016            | 2015            | 2014           | 2013           |                 |
| <b>Total pension liability</b>  |                  |                |                 |                 |                |                |                 |
| Service cost  | \$ 1,945         | 2,301          | 2,659           | 5,360           | 5,679          | 6,352          | 2,099           |
| Interest  | 31,251           | 32,120         | 34,422          | 35,298          | 34,255         | 33,840         | 56,046          |
| Benefit changes   | —                | —              | (45,057)        | —               | —              | 415            | —               |
| Difference between actual and expected experience                                 | (8,463)          | (11,176)       | (4,618)         | (4,833)         | (8,465)        | (8,020)        | (8,786)         |
| Assumption changes  | —                | 8,760          | 8,285           | —               | (2,914)        | —              | —               |
| Benefit payments  | (27,964)         | (27,468)       | (26,126)        | (26,652)        | (23,177)       | (21,607)       | (58,831)        |
| Refunds   | (430)            | (703)          | (655)           | (623)           | (1,294)        | (855)          | (1,041)         |
| <b>Net change in total pension liability</b>                                      | <b>(3,661)</b>   | <b>3,834</b>   | <b>(31,090)</b> | <b>8,550</b>    | <b>4,084</b>   | <b>10,125</b>  | <b>(10,513)</b> |
| <b>Total pension liability — beginning</b>  | <b>462,884</b>   | <b>459,050</b> | <b>490,140</b>  | <b>481,590</b>  | <b>477,506</b> | <b>467,381</b> | <b>835,299</b>  |
| <b>Total pension liability — ending (a)</b>                                       | <b>459,223</b>   | <b>462,884</b> | <b>459,050</b>  | <b>490,140</b>  | <b>481,590</b> | <b>477,506</b> | <b>824,786</b>  |
| <b>Plan fiduciary net position</b>  |                  |                |                 |                 |                |                |                 |
| Contributions — member  | 1,068            | 1,289          | 1,759           | 2,572           | 3,103          | 3,418          | 1,387           |
| Contributions — employer  | 2,762            | 2,969          | 3,730           | 6,384           | 7,410          | 6,963          | 3,265           |
| Net investment income   | (1,605)          | 55,066         | 34,351          | 7,597           | 30,871         | 58,533         | (2,908)         |
| Benefit payments  | (27,964)         | (27,468)       | (26,126)        | (26,652)        | (23,177)       | (21,607)       | (58,831)        |
| Refunds   | (430)            | (703)          | (655)           | (623)           | (1,294)        | (855)          | (1,041)         |
| Administrative expense  | (161)            | (162)          | (157)           | (176)           | (179)          | (172)          | (293)           |
| Net transfers with affiliated systems   | (9,774)          | (2,482)        | (6,519)         | (21,993)        | (10,140)       | 5,790          | (16,512)        |
| <b>Net change in plan fiduciary net position</b>                                  | <b>(36,104)</b>  | <b>28,509</b>  | <b>6,383</b>    | <b>(32,891)</b> | <b>6,594</b>   | <b>52,070</b>  | <b>(74,933)</b> |
| <b>Plan fiduciary net position — beginning</b>                                    | <b>454,747</b>   | <b>426,238</b> | <b>419,855</b>  | <b>452,746</b>  | <b>446,152</b> | <b>394,082</b> | <b>828,719</b>  |
| <b>Plan fiduciary net position — ending (b)</b>                                   | <b>418,643</b>   | <b>454,747</b> | <b>426,238</b>  | <b>419,855</b>  | <b>452,746</b> | <b>446,152</b> | <b>753,786</b>  |
| <b>Net pension liability — ending (a-b)</b>                                       | <b>\$ 40,580</b> | <b>8,137</b>   | <b>32,812</b>   | <b>70,285</b>   | <b>28,844</b>  | <b>31,354</b>  | <b>71,000</b>   |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | <b>91.2%</b>     | <b>98.2%</b>   | <b>92.9%</b>    | <b>85.7%</b>    | <b>94.0%</b>   | <b>93.4%</b>   | <b>91.4%</b>    |
| <b>Projected covered payroll</b>  | <b>\$ 18,276</b> | <b>20,724</b>  | <b>23,959</b>   | <b>48,590</b>   | <b>51,420</b>  | <b>54,445</b>  | <b>21,003</b>   |
| <b>Net pension liability as a percentage of covered payroll</b>                   | <b>222.0%</b>    | <b>39.3%</b>   | <b>137.0%</b>   | <b>144.6%</b>   | <b>56.1%</b>   | <b>57.6%</b>   | <b>338.0%</b>   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| State and School |          |          |          |          | Total All Divisions |           |           |           |           |           |
|------------------|----------|----------|----------|----------|---------------------|-----------|-----------|-----------|-----------|-----------|
| 2017             | 2016     | 2015     | 2014     | 2013     | 2018                | 2017      | 2016      | 2015      | 2014      | 2013      |
| 2,500            | 3,014    | 3,312    | 3,901    | 4,645    | 4,044               | 4,801     | 5,673     | 8,672     | 9,580     | 10,997    |
| 58,004           | 57,472   | 60,165   | 59,564   | 59,910   | 87,297              | 90,124    | 91,894    | 95,463    | 93,819    | 93,750    |
| —                | —        | —        | —        | 306      | —                   | —         | (45,057)  | —         | —         | 721       |
| (13,814)         | (9,183)  | (10,456) | (14,374) | (12,500) | (17,249)            | (24,990)  | (13,801)  | (15,289)  | (22,839)  | (20,520)  |
| 13,348           | 14,624   | —        | (1,319)  | —        | —                   | 22,108    | 22,909    | —         | (4,233)   | —         |
| (57,291)         | (57,321) | (54,738) | (53,838) | (52,551) | (86,795)            | (84,759)  | (83,447)  | (81,390)  | (77,015)  | (74,158)  |
| (910)            | (1,045)  | (592)    | (1,139)  | (1,067)  | (1,471)             | (1,613)   | (1,700)   | (1,215)   | (2,433)   | (1,922)   |
| 1,837            | 7,561    | (2,309)  | (7,205)  | (1,257)  | (14,174)            | 5,671     | (23,529)  | 6,241     | (3,121)   | 8,868     |
| 833,462          | 825,901  | 828,210  | 835,415  | 836,672  | 1,298,183           | 1,292,512 | 1,316,041 | 1,309,800 | 1,312,921 | 1,304,053 |
| 835,299          | 833,462  | 825,901  | 828,210  | 835,415  | 1,284,009           | 1,298,183 | 1,292,512 | 1,316,041 | 1,309,800 | 1,312,921 |
| 1,386            | 1,661    | 2,199    | 2,358    | 2,958    | 2,455               | 2,675     | 3,420     | 4,771     | 5,461     | 6,376     |
| 4,977            | 4,458    | 5,335    | 5,544    | 5,911    | 6,027               | 7,946     | 8,188     | 11,719    | 12,954    | 12,874    |
| 100,883          | 63,342   | 13,654   | 56,706   | 110,977  | (4,513)             | 155,949   | 97,693    | 21,251    | 87,577    | 169,510   |
| (57,293)         | (57,321) | (54,738) | (53,838) | (52,551) | (86,795)            | (84,761)  | (83,447)  | (81,390)  | (77,015)  | (74,158)  |
| (910)            | (1,045)  | (592)    | (1,139)  | (1,067)  | (1,471)             | (1,613)   | (1,700)   | (1,215)   | (2,433)   | (1,922)   |
| (295)            | (289)    | (302)    | (315)    | (308)    | (454)               | (457)     | (446)     | (478)     | (494)     | (480)     |
| 1,305            | 4,624    | (19,565) | (27,864) | 27,304   | (26,286)            | (1,177)   | (1,895)   | (41,558)  | (38,004)  | 33,094    |
| 50,053           | 15,430   | (54,009) | (18,548) | 93,224   | (111,037)           | 78,562    | 21,813    | (86,900)  | (11,954)  | 145,294   |
| 778,666          | 763,236  | 817,245  | 835,793  | 742,569  | 1,283,466           | 1,204,904 | 1,183,091 | 1,269,991 | 1,281,945 | 1,136,651 |
| 828,719          | 778,666  | 763,236  | 817,245  | 835,793  | 1,172,429           | 1,283,466 | 1,204,904 | 1,183,091 | 1,269,991 | 1,281,945 |
| 6,580            | 54,796   | 62,665   | 10,965   | (378)    | 111,580             | 14,717    | 87,608    | 132,950   | 39,809    | 30,976    |
| 99.2%            | 93.4%    | 92.4%    | 98.7%    | 100.0%   | 91.3%               | 98.9%     | 93.2%     | 89.9%     | 97.0%     | 97.6%     |
| 24,453           | 29,656   | 33,836   | 39,203   | 43,578   | 39,279              | 45,177    | 53,615    | 82,426    | 90,623    | 98,023    |
| 26.9%            | 184.8%   | 185.2%   | 28.0%    | (0.9)%   | 284.1%              | 32.6%     | 163.4%    | 161.3%    | 43.9%     | 31.6%     |

## Contributory Retirement System

## Schedules of Net Pension Liability by Division

*(dollars in thousands)*

| System                   | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|--------------------------|----------|--------------------------------------|--|--|---|--|---|
| <b>Contributory</b>      | 12/31/13 | \$ 477,506                           | 446,152                                  | 31,354   | 93.4%   | \$ 54,445                              | 57.6%   |
| <b>Local Government</b>  | 12/31/14 | 481,590                              | 452,746                                  | 28,844   | 94.0  | 51,420                                 | 56.1  |
|                          | 12/31/15 | 490,140                              | 419,855                                  | 70,285   | 85.7  | 48,590                                 | 144.6   |
|                          | 12/31/16 | 459,050                              | 426,238                                  | 32,812   | 92.9  | 23,959                                 | 137.0   |
|                          | 12/31/17 | 462,884                              | 454,747                                  | 8,137  | 98.2  | 20,724                                 | 39.3  |
|                          | 12/31/18 | 459,223                              | 418,643                                  | 40,580   | 91.2  | 18,276                                 | 222.0   |
| <b>Contributory</b>      | 12/31/13 | \$ 835,415                           | 835,793                                  | (378)  | 100.0%  | \$ 43,578                              | (0.9)%  |
| <b>State and School</b>  | 12/31/14 | 828,210                              | 817,245                                  | 10,965   | 98.7  | 39,203                                 | 28.0  |
|                          | 12/31/15 | 825,901                              | 763,236                                  | 62,665   | 92.4  | 33,836                                 | 185.2   |
|                          | 12/31/16 | 833,462                              | 778,666                                  | 54,796   | 93.4  | 29,656                                 | 184.8   |
|                          | 12/31/17 | 835,299                              | 828,719                                  | 6,580  | 99.2  | 24,453                                 | 26.9  |
|                          | 12/31/18 | 824,786                              | 753,786                                  | 71,000   | 91.4  | 21,003                                 | 338.0   |
| <b>Total</b>             | 12/31/13 | \$ 1,312,921                         | 1,281,945                                | 30,976   | 97.6%   | \$ 98,023                              | 31.6%   |
| <b>Contributory</b>      | 12/31/14 | 1,309,800                            | 1,269,991                                | 39,809   | 97.0  | 90,623                                 | 43.9  |
| <b>Retirement System</b> | 12/31/15 | 1,316,041                            | 1,183,091                                | 132,950  | 89.9  | 82,426                                 | 161.3   |
|                          | 12/31/16 | 1,292,512                            | 1,204,904                                | 87,608   | 93.2  | 53,615                                 | 163.4   |
|                          | 12/31/17 | 1,298,183                            | 1,283,466                                | 14,717   | 98.9  | 45,177                                 | 32.6  |
|                          | 12/31/18 | 1,284,009                            | 1,172,429                                | 111,580  | 91.3  | 39,279                                 | 284.1   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Contributory Retirement System

## Schedules of Employer Contributions by Division

*(dollars in thousands)*

| System  | Year Ended | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|---|------------|--|--|--|---------------------------------|--|
| <b>Contributory<br/>Local Government</b>            | 2013       | \$ 6,963                                 | 6,963  | —                                      | 54,445                          | 12.79%   |
|   | 2014       | 7,410                                    | 7,410  | —                                      | 51,420                          | 14.41  |
|   | 2015       | 6,384                                    | 6,384  | —                                      | 48,590                          | 13.14  |
|   | 2016       | 3,730                                    | 3,730  | —                                      | 23,959                          | 15.57  |
|   | 2017       | 2,969                                    | 2,969  | —                                      | 20,724                          | 14.33  |
|   | 2018       | 2,762                                    | 2,762  | —                                      | 18,276                          | 15.11  |
| <b>Contributory<br/>State and School</b>            | 2013       | \$ 5,911                                 | 5,911  | —                                      | 43,578                          | 13.56%   |
|   | 2014       | 5,544                                    | 5,544  | —                                      | 39,203                          | 14.14  |
|   | 2015       | 5,335                                    | 5,335  | —                                      | 33,836                          | 15.77  |
|   | 2016       | 4,458                                    | 4,458  | —                                      | 29,656                          | 15.03  |
|   | 2017       | 4,977                                    | 4,977  | —                                      | 24,453                          | 20.35  |
|   | 2018       | 3,265                                    | 3,265  | —                                      | 21,003                          | 15.55  |
| <b>Total<br/>Contributory<br/>Retirement System</b> | 2013       | \$ 12,874                                | 12,874   | —                                      | 98,023                          | 13.13%   |
|   | 2014       | 12,954                                   | 12,954   | —                                      | 90,623                          | 14.29  |
|   | 2015       | 11,719                                   | 11,719   | —                                      | 82,426                          | 14.22  |
|   | 2016       | 8,188                                    | 8,188  | —                                      | 53,615                          | 15.27  |
|   | 2017       | 7,946                                    | 7,946  | —                                      | 45,177                          | 17.59  |
|   | 2018       | 6,027                                    | 6,027  | —                                      | 39,279                          | 15.34  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## Public Safety Retirement System

Schedules of Fiduciary Net Position —  
Pension Trust Fund by Division

December 31, 2018

With Comparative Totals for December 31, 2017

(in thousands)

|   | State of Utah<br>Public Safety | Other<br>Division A<br>(with Social<br>Security) | Salt Lake City |
|---|--------------------------------|--|----------------|
| <b>Assets:</b>  |                                |  |                |
| Cash  | \$ 2                           | 4  | 2              |
| Receivables:  |                                |  |                |
| Member contributions  | —                              | 7  | —              |
| Employer contributions  | 1,978                          | 1,824  | 585            |
| Investments   | 23,170                         | 27,845   | 5,653          |
| Total receivables   | 25,148                         | 29,676   | 6,238          |
| Investments at fair value:  |                                |  |                |
| Short-term securities   | 60,266                         | 72,424   | 14,704         |
| Debt securities   | 201,288                        | 241,895  | 49,114         |
| Equity investments  | 416,995                        | 501,117  | 101,745        |
| Absolute return   | 174,214                        | 209,358  | 42,507         |
| Private equity  | 138,713                        | 166,696  | 33,845         |
| Real assets   | 197,242                        | 237,032  | 48,126         |
| Total investments   | 1,188,718                      | 1,428,522  | 290,041        |
| Invested securities lending collateral                                  | 40,085                         | 48,172   | 9,781          |
| Property and equipment at cost,<br>net of accumulated depreciation      | 177                            | 213  | 43             |
| Total assets  | 1,254,130                      | 1,506,587  | 306,105        |
| <b>Liabilities:</b>   |                                |  |                |
| Securities lending liability  | 40,085                         | 48,172   | 9,781          |
| Disbursements in excess of cash balance                                 | 1,214                          | 1,459  | 296            |
| Compensated absences, post-employment<br>benefits and insurance reserve | 801                            | 963  | 196            |
| Investment accounts payable   | 23,366                         | 28,079   | 5,701          |
| Real estate liabilities   | 4,546                          | 5,463  | 1,109          |
| Total liabilities   | 70,012                         | 84,136   | 17,083         |
| Net position restricted for pensions                                    | \$ 1,184,118                   | 1,422,451  | 289,022        |

Utah Retirement Systems

|  | Ogden  | Provo  | Logan  | Bountiful | Other<br>Division B<br>(without<br>Social Security) | Total All Divisions |           |
|--|--------|--------|--------|-----------|---|---------------------|-----------|
|  |        |        |        |           |   | 2018                | 2017      |
|  | 2      | 2      | 2      | 2         | 4   | 20                  | 20        |
|  | —      | —      | —      | —         | 1   | 8                   | 12        |
|  | 111    | 91     | 85     | 39        | 565   | 5,278               | 6,646     |
|  | 1,250  | 994    | 560    | 399       | 9,177   | 69,048              | 76,162    |
|  | 1,361  | 1,085  | 645    | 438       | 9,743   | 74,334              | 82,820    |
|  | 3,250  | 2,585  | 1,456  | 1,038     | 23,868  | 179,591             | 309,533   |
|  | 10,856 | 8,633  | 4,863  | 3,467     | 79,721  | 599,837             | 511,315   |
|  | 22,490 | 17,884 | 10,075 | 7,183     | 165,154   | 1,242,643           | 1,363,791 |
|  | 9,396  | 7,472  | 4,209  | 3,001     | 68,999  | 519,156             | 500,330   |
|  | 7,481  | 5,949  | 3,351  | 2,389     | 54,938  | 413,362             | 387,194   |
|  | 10,638 | 8,459  | 4,765  | 3,397     | 78,119  | 587,778             | 532,339   |
|  | 64,111 | 50,982 | 28,719 | 20,475    | 470,799   | 3,542,367           | 3,604,502 |
|  | 2,162  | 1,719  | 968    | 690       | 15,876  | 119,453             | 150,205   |
|  | 10     | 8      | 4      | 3         | 70  | 528                 | 492       |
|  | 67,646 | 53,796 | 30,338 | 21,608    | 496,492   | 3,736,702           | 3,838,039 |
|  | 2,162  | 1,719  | 968    | 690       | 15,876  | 119,453             | 150,205   |
|  | 65     | 52     | 29     | 21        | 481   | 3,617               | 3,822     |
|  | 43     | 34     | 19     | 14        | 317   | 2,387               | 2,460     |
|  | 1,260  | 1,002  | 565    | 402       | 9,254   | 69,629              | 91,572    |
|  | 245    | 195    | 110    | 78        | 1,801   | 13,547              | 13,463    |
|  | 3,775  | 3,002  | 1,691  | 1,205     | 27,729  | 208,633             | 261,522   |
|  | 63,871 | 50,794 | 28,647 | 20,403    | 468,763   | 3,528,069           | 3,576,517 |

## Public Safety Retirement System

Schedules of Changes in Fiduciary Net Position —  
Pension Trust Fund by Division

Year Ended December 31, 2018

With Comparative Totals for Year Ended December 31, 2017

*(in thousands)*

|  | State of Utah<br>Public Safety | Other<br>Division A<br>(with Social<br>Security) | Salt Lake City |
|--|--------------------------------|--|----------------|
| <b>Additions:</b>  |                                |  |                |
| Contributions:   |                                |  |                |
| Member   | \$ 264                         | 545  | —              |
| Employer   | 50,030                         | 53,057   | 15,294         |
| Total contributions  | 50,294                         | 53,602   | 15,294         |
| Investment income:   |                                |  |                |
| Net appreciation (depreciation) in fair value of investments | (28,261)                       | (33,963)   | (6,873)        |
| Interest, dividends, and other investment income             | 25,978                         | 31,218   | 6,318          |
| Total income (loss) from investment activity                 | (2,283)                        | (2,745)  | (555)          |
| Less investment expenses                                     | 2,405                          | 2,891  | 585            |
| Net income (loss) from investment activity                   | (4,688)                        | (5,636)  | (1,140)        |
| Income from security lending activity                        | 309                            | 372  | 75             |
| Less security lending expense                                | 40                             | 48   | 10             |
| Net income from security lending activity                    | 269                            | 324  | 65             |
| Net investment income (loss)                                 | (4,419)                        | (5,312)  | (1,075)        |
| Transfers from (to) affiliated systems                       | 738                            | (8,899)  | 2,259          |
| Total additions  | 46,613                         | 39,391   | 16,478         |
| <b>Deductions:</b>   |                                |  |                |
| Retirement benefits  | 56,695                         | 56,506   | 16,113         |
| Cost-of-living benefits                                      | 11,687                         | 10,625   | 4,079          |
| Supplemental retirement benefits                             | 97                             | 76   | 33             |
| Refunds  | 113                            | 85   | 39             |
| Administrative expenses                                      | 487                            | 569  | 135            |
| Total deductions   | 69,079                         | 67,861   | 20,399         |
| Increase (decrease) from operations                          | (22,466)                       | (28,470)   | (3,921)        |
| Net position restricted for pensions beginning of year       | 1,206,584                      | 1,450,921  | 292,943        |
| Net position restricted for pensions end of year             | \$ 1,184,118                   | 1,422,451  | 289,022        |



Utah Retirement Systems

| Ogden   | Provo   | Logan  | Bountiful | Other<br>Division B<br>(without<br>Social Security) | Total All Divisions |           |
|---------|---------|--------|-----------|---|---------------------|-----------|
|         |         |        |           |   | 2018                | 2017      |
| —       | —       | —      | —         | 86  | 895                 | 793       |
| 2,970   | 2,266   | 1,068  | 964       | 21,452  | 147,101             | 145,814   |
| 2,970   | 2,266   | 1,068  | 964       | 21,538  | 147,996             | 146,607   |
| (1,534) | (1,214) | (683)  | (489)     | (10,949)  | (83,966)            | 362,177   |
| 1,410   | 1,116   | 628    | 449       | 10,064  | 77,181              | 65,430    |
| (124)   | (98)    | (55)   | (40)      | (885)   | (6,785)             | 427,607   |
| 131     | 103     | 58     | 42        | 932   | 7,147               | 6,357     |
| (255)   | (201)   | (113)  | (82)      | (1,817)   | (13,932)            | 421,250   |
| 17      | 13      | 7      | 5         | 120   | 918                 | 756       |
| 2       | 2       | 1      | 1         | 16  | 120                 | 89        |
| 15      | 11      | 6      | 4         | 104   | 798                 | 667       |
| (240)   | (190)   | (107)  | (78)      | (1,713)   | (13,134)            | 421,917   |
| 106     | 97      | 185    | 35        | 12,461  | 6,982               | 5,926     |
| 2,836   | 2,173   | 1,146  | 921       | 32,286  | 141,844             | 574,450   |
| 3,894   | 2,640   | 1,327  | 1,306     | 19,201  | 157,682             | 143,774   |
| 949     | 595     | 298    | 263       | 2,021   | 30,517              | 28,854    |
| 3       | 5       | —      | 1         | —   | 215                 | 242       |
| —       | —       | —      | —         | 191   | 428                 | 226       |
| 30      | 23      | 12     | 10        | 184   | 1,450               | 1,382     |
| 4,876   | 3,263   | 1,637  | 1,580     | 21,597  | 190,292             | 174,478   |
| (2,040) | (1,090) | (491)  | (659)     | 10,689  | (48,448)            | 399,972   |
| 65,911  | 51,884  | 29,138 | 21,062    | 458,074   | 3,576,517           | 3,176,545 |
| 63,871  | 50,794  | 28,647 | 20,403    | 468,763   | 3,528,069           | 3,576,517 |

## Public Safety Retirement System

## Schedules of Changes in the Employers' Net Pension Liability by Division

Year Ended December 31

(in thousands)

|   | State of Utah     |                  |                  |                  |                  |                  | 2018             |
|---|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|   | 2018              | 2017             | 2016             | 2015             | 2014             | 2013             |                  |
| <b>Total pension liability</b>  |                   |                  |                  |                  |                  |                  |                  |
| Service cost  | \$ 24,680         | 24,057           | 24,327           | 23,270           | 24,190           | 26,013           | 31,875           |
| Interest  | 94,417            | 91,628           | 86,361           | 87,273           | 83,519           | 81,713           | 110,510          |
| Benefit changes   | —                 | —                | —                | —                | —                | —                | —                |
| Difference between actual and expected experience                                 | (7,483)           | 3,619            | (3,139)          | (14,298)         | (12,067)         | (2,099)          | (3,170)          |
| Assumption changes  | —                 | 32,840           | 29,315           | —                | (17,596)         | —                | —                |
| Benefit payments  | (68,479)          | (64,451)         | (62,622)         | (59,271)         | (55,075)         | (52,432)         | (67,207)         |
| Refunds   | (113)             | (66)             | (8)              | (18)             | (12)             | (2)              | (85)             |
| <b>Net change in total pension liability</b>                                      | <b>43,022</b>     | <b>87,627</b>    | <b>74,234</b>    | <b>36,956</b>    | <b>22,959</b>    | <b>53,193</b>    | <b>71,923</b>    |
| <b>Total pension liability — beginning</b>  | <b>1,380,471</b>  | <b>1,292,844</b> | <b>1,218,610</b> | <b>1,181,654</b> | <b>1,158,695</b> | <b>1,105,502</b> | <b>1,607,787</b> |
| <b>Total pension liability — ending (a)</b>                                       | <b>1,423,493</b>  | <b>1,380,471</b> | <b>1,292,844</b> | <b>1,218,610</b> | <b>1,181,654</b> | <b>1,158,695</b> | <b>1,679,710</b> |
| <b>Plan fiduciary net position</b>  |                   |                  |                  |                  |                  |                  |                  |
| Contributions — member  | 264               | 221              | 112              | 115              | 152              | 103              | 545              |
| Contributions — employer  | 50,030            | 49,386           | 50,554           | 47,449           | 45,810           | 43,393           | 53,057           |
| Net investment income   | (4,419)           | 142,696          | 84,744           | 17,349           | 66,949           | 121,520          | (5,312)          |
| Benefit payments  | (68,479)          | (64,451)         | (62,622)         | (59,271)         | (55,075)         | (52,432)         | (67,207)         |
| Refunds   | (113)             | (66)             | (8)              | (18)             | (12)             | (2)              | (85)             |
| Administrative expense  | (487)             | (470)            | (432)            | (431)            | (434)            | (413)            | (569)            |
| Net transfers with affiliated systems   | 738               | 233              | 3,363            | 2,301            | 1,124            | 757              | (8,899)          |
| <b>Net change in plan fiduciary net position</b>                                  | <b>(22,466)</b>   | <b>127,549</b>   | <b>75,711</b>    | <b>7,494</b>     | <b>58,514</b>    | <b>112,926</b>   | <b>(28,470)</b>  |
| <b>Plan fiduciary net position — beginning</b>                                    | <b>1,206,584</b>  | <b>1,079,035</b> | <b>1,003,324</b> | <b>995,830</b>   | <b>937,316</b>   | <b>824,390</b>   | <b>1,450,921</b> |
| <b>Plan fiduciary net position — ending (b)</b>                                   | <b>1,184,118</b>  | <b>1,206,584</b> | <b>1,079,035</b> | <b>1,003,324</b> | <b>995,830</b>   | <b>937,316</b>   | <b>1,422,451</b> |
| <b>Net pension liability — ending (a-b)</b>                                       | <b>\$ 239,375</b> | <b>173,887</b>   | <b>213,809</b>   | <b>215,286</b>   | <b>185,824</b>   | <b>221,379</b>   | <b>257,259</b>   |
| <b>Plan fiduciary net position as a percentage of the total pension liability</b> | <b>83.2%</b>      | <b>87.4%</b>     | <b>83.5%</b>     | <b>82.3%</b>     | <b>84.3%</b>     | <b>80.9%</b>     | <b>84.7%</b>     |
| <b>Projected covered payroll</b>  | <b>\$ 107,407</b> | <b>107,557</b>   | <b>108,759</b>   | <b>108,967</b>   | <b>113,111</b>   | <b>115,960</b>   | <b>138,269</b>   |
| <b>Net pension liability as a percentage of covered payroll</b>                   | <b>222.9%</b>     | <b>161.7%</b>    | <b>196.6%</b>    | <b>197.6%</b>    | <b>164.3%</b>    | <b>190.9%</b>    | <b>186.1%</b>    |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| Other Division A (with Social Security) |           |           |           |           | Salt Lake City |          |          |          |          |          |
|---|-----------|-----------|-----------|-----------|----------------|----------|----------|----------|----------|----------|
| 2017                                    | 2016      | 2015      | 2014      | 2013      | 2018           | 2017     | 2016     | 2015     | 2014     | 2013     |
| 30,590                                  | 31,202    | 29,942    | 30,473    | 32,564    | 6,763          | 6,704    | 6,316    | 5,963    | 5,878    | 6,209    |
| 107,017                                 | 98,935    | 98,538    | 93,276    | 90,791    | 25,881         | 24,937   | 23,099   | 23,023   | 22,171   | 21,719   |
| —                                       | —         | —         | —         | —         | —              | —        | —        | —        | —        | —        |
| (21,479)                                | (6,830)   | (12,388)  | (16,141)  | (25,616)  | 532            | 2,143    | 2,815    | 2,063    | (1,430)  | (3,743)  |
| 50,755                                  | 48,303    | —         | (21,812)  | —         | —              | 11,737   | 11,313   | —        | (4,551)  | —        |
| (60,128)                                | (57,652)  | (54,909)  | (51,394)  | (48,824)  | (20,225)       | (18,745) | (17,681) | (17,076) | (16,398) | (15,737) |
| (158)                                   | (175)     | (208)     | (115)     | (97)      | (39)           | (2)      | —        | —        | —        | (15)     |
| 106,597                                 | 113,783   | 60,975    | 34,287    | 48,818    | 12,912         | 26,774   | 25,862   | 13,973   | 5,670    | 8,433    |
| 1,501,190                               | 1,387,407 | 1,326,432 | 1,292,145 | 1,243,327 | 379,138        | 352,364  | 326,502  | 312,529  | 306,859  | 298,426  |
| 1,607,787                               | 1,501,190 | 1,387,407 | 1,326,432 | 1,292,145 | 392,050        | 379,138  | 352,364  | 326,502  | 312,529  | 306,859  |
| 366                                     | 515       | 701       | 597       | 714       | —              | —        | 8        | —        | 4        | 13       |
| 53,112                                  | 52,359    | 51,677    | 49,156    | 46,421    | 15,294         | 14,899   | 15,260   | 14,100   | 13,519   | 12,426   |
| 171,806                                 | 102,156   | 20,899    | 80,565    | 146,201   | (1,075)        | 34,603   | 20,441   | 4,178    | 16,113   | 29,378   |
| (60,128)                                | (57,652)  | (54,909)  | (51,394)  | (48,824)  | (20,225)       | (18,745) | (17,681) | (17,076) | (16,398) | (15,737) |
| (158)                                   | (175)     | (208)     | (115)     | (97)      | (39)           | (2)      | —        | —        | —        | (15)     |
| (542)                                   | (496)     | (485)     | (482)     | (458)     | (135)          | (129)    | (118)    | (116)    | (116)    | (110)    |
| (11,797)                                | (6,727)   | (10,067)  | (6,061)   | (3,111)   | 2,259          | 1,642    | 1,369    | 657      | 620      | 447      |
| 152,659                                 | 89,980    | 7,608     | 72,266    | 140,846   | (3,921)        | 32,268   | 19,279   | 1,743    | 13,742   | 26,402   |
| 1,298,262                               | 1,208,282 | 1,200,674 | 1,128,408 | 987,562   | 292,943        | 260,675  | 241,396  | 239,653  | 225,911  | 199,509  |
| 1,450,921                               | 1,298,262 | 1,208,282 | 1,200,674 | 1,128,408 | 289,022        | 292,943  | 260,675  | 241,396  | 239,653  | 225,911  |
| 156,866                                 | 202,928   | 179,125   | 125,758   | 163,737   | 103,028        | 86,195   | 91,689   | 85,106   | 72,876   | 80,948   |
| 90.2%                                   | 86.5%     | 87.1%     | 90.5%     | 87.3%     | 73.7%          | 77.3%    | 74.0%    | 73.9%    | 76.7%    | 73.6%    |
| 137,270                                 | 139,677   | 141,681   | 143,924   | 146,190   | 29,356         | 30,142   | 28,331   | 28,275   | 27,821   | 28,016   |
| 114.3%                                  | 145.3%    | 126.4%    | 87.4%     | 112.0%    | 351.0%         | 286.0%   | 323.6%   | 301.0%   | 261.9%   | 288.9%   |

Continued on page 122.

## Public Safety Retirement System

Schedules of Changes in the Employers'  
Net Pension Liability by Division (Continued)

Year Ended December 31

(in thousands)

|   |           |         |         |         |         |         | Ogden   |
|---|-----------|---------|---------|---------|---------|---------|---------|
|   | 2018      | 2017    | 2016    | 2015    | 2014    | 2013    | 2018    |
| Total pension liability   |           |         |         |         |         |         |         |
| Service cost  | \$ 1,143  | 1,200   | 1,139   | 1,164   | 1,170   | 1,304   | 1,091   |
| Interest  | 5,838     | 5,549   | 5,232   | 5,359   | 5,185   | 5,028   | 4,323   |
| Benefit changes   | —         | —       | —       | —       | —       | —       | —       |
| Difference between actual<br>and expected experience                          | (1,850)   | 2,044   | (288)   | (1,153) | 559     | (713)   | 458     |
| Assumption changes  | —         | 2,724   | 2,544   | —       | (822)   | —       | —       |
| Benefit payments  | (4,846)   | (4,286) | (4,208) | (4,090) | (3,956) | (3,864) | (3,240) |
| Refunds   | —         | —       | —       | —       | —       | —       | —       |
| Net change in total pension liability   | 285       | 7,231   | 4,419   | 1,280   | 2,136   | 1,755   | 2,632   |
| Total pension liability — beginning   | 85,850    | 78,619  | 74,200  | 72,920  | 70,784  | 69,029  | 63,274  |
| Total pension liability — ending (a)  | 86,135    | 85,850  | 78,619  | 74,200  | 72,920  | 70,784  | 65,906  |
| Plan fiduciary net position   |           |         |         |         |         |         |         |
| Contributions — member  | —         | —       | —       | 56      | —       | —       | —       |
| Contributions — employer  | 2,970     | 3,072   | 3,147   | 2,729   | 2,791   | 2,525   | 2,266   |
| Net investment income   | (240)     | 7,843   | 4,696   | 976     | 3,803   | 6,973   | (190)   |
| Benefit payments  | (4,846)   | (4,286) | (4,208) | (4,090) | (3,956) | (3,864) | (3,240) |
| Refunds   | —         | —       | —       | —       | —       | —       | —       |
| Administrative expense  | (30)      | (29)    | (27)    | (26)    | (27)    | (26)    | (23)    |
| Net transfers with affiliated systems   | 106       | (128)   | (74)    | (66)    | 107     | 535     | 97      |
| Net change in plan fiduciary net position                                     | (2,040)   | 6,472   | 3,534   | (421)   | 2,718   | 6,143   | (1,090) |
| Plan fiduciary net position — beginning                                       | 65,911    | 59,439  | 55,905  | 56,326  | 53,608  | 47,465  | 51,884  |
| Plan fiduciary net position — ending (b)                                      | 63,871    | 65,911  | 59,439  | 55,905  | 56,326  | 53,608  | 50,794  |
| Net pension liability — ending (a-b)  | \$ 22,264 | 19,939  | 19,180  | 18,295  | 16,594  | 17,176  | 15,112  |
| Plan fiduciary net position as a<br>percentage of the total pension liability | 74.2%     | 76.8%   | 75.6%   | 75.3%   | 77.2%   | 75.7%   | 77.1%   |
| Projected covered payroll   | \$ 4,940  | 5,372   | 5,082   | 5,517   | 5,518   | 5,831   | 4,699   |
| Net pension liability as a<br>percentage of covered payroll                   | 450.7%    | 371.2%  | 377.4%  | 331.6%  | 300.7%  | 294.6%  | 321.6%  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

|  |         |         |         |         | Provo   |  |         |         |         |         |         | Logan   |
|--|---------|---------|---------|---------|---------|--|---------|---------|---------|---------|---------|---------|
|  | 2017    | 2016    | 2015    | 2014    | 2013    |  | 2018    | 2017    | 2016    | 2015    | 2014    | 2013    |
|  | 1,122   | 1,134   | 1,099   | 1,141   | 1,181   |  | 482     | 465     | 488     | 485     | 524     | 580     |
|  | 4,282   | 3,972   | 3,916   | 3,748   | 3,680   |  | 2,389   | 2,364   | 2,220   | 2,201   | 2,110   | 2,029   |
|  | —       | —       | —       | —       | —       |  | —       | —       | —       | —       | —       | —       |
|  | (1,391) | 147     | 636     | (638)   | 561     |  | (736)   | (766)   | (264)   | 278     | 232     | (701)   |
|  | 1,895   | 1,960   | —       | (859)   | —       |  | —       | 1,056   | 1,103   | —       | (420)   | —       |
|  | (3,089) | (2,701) | (2,739) | (2,503) | (2,281) |  | (1,625) | (1,547) | (1,516) | (1,442) | (1,366) | (1,320) |
|  | —       | —       | —       | (11)    | (204)   |  | —       | —       | —       | —       | —       | —       |
|  | 2,819   | 4,512   | 2,912   | 878     | 2,937   |  | 510     | 1,572   | 2,031   | 1,522   | 1,080   | 588     |
|  | 60,455  | 55,943  | 53,031  | 52,153  | 49,216  |  | 34,947  | 33,375  | 31,344  | 29,822  | 28,742  | 28,154  |
|  | 63,274  | 60,455  | 55,943  | 53,031  | 52,153  |  | 35,457  | 34,947  | 33,375  | 31,344  | 29,822  | 28,742  |
|  | —       | —       | —       | —       | —       |  | —       | —       | —       | —       | 35      | 49      |
|  | 2,258   | 2,403   | 2,314   | 2,255   | 2,158   |  | 1,068   | 1,034   | 1,052   | 1,044   | 989     | 944     |
|  | 6,141   | 3,660   | 749     | 2,877   | 5,204   |  | (107)   | 3,456   | 2,068   | 432     | 1,671   | 3,047   |
|  | (3,089) | (2,701) | (2,739) | (2,503) | (2,281) |  | (1,625) | (1,547) | (1,516) | (1,442) | (1,366) | (1,320) |
|  | —       | —       | —       | (11)    | (204)   |  | —       | —       | —       | —       | —       | —       |
|  | (22)    | (20)    | (20)    | (19)    | (19)    |  | (12)    | (12)    | (11)    | (11)    | (11)    | (10)    |
|  | 16      | (39)    | 66      | 145     | 16      |  | 185     | 36      | (52)    | (247)   | 100     | 88      |
|  | 5,304   | 3,303   | 370     | 2,744   | 4,874   |  | (491)   | 2,967   | 1,541   | (224)   | 1,418   | 2,798   |
|  | 46,580  | 43,277  | 42,907  | 40,163  | 35,289  |  | 29,138  | 26,171  | 24,630  | 24,854  | 23,436  | 20,638  |
|  | 51,884  | 46,580  | 43,277  | 42,907  | 40,163  |  | 28,647  | 29,138  | 26,171  | 24,630  | 24,854  | 23,436  |
|  | 11,390  | 13,875  | 12,666  | 10,124  | 11,990  |  | 6,810   | 5,809   | 7,204   | 6,714   | 4,968   | 5,306   |
|  | 82.0%   | 77.0%   | 77.4%   | 80.9%   | 77.0%   |  | 80.8%   | 83.4%   | 78.4%   | 78.6%   | 83.3%   | 81.5%   |
|  | 5,023   | 5,065   | 5,213   | 5,424   | 5,295   |  | 2,079   | 2,088   | 2,183   | 2,306   | 2,459   | 2,584   |
|  | 226.8%  | 273.9%  | 243.0%  | 186.7%  | 226.4%  |  | 327.6%  | 278.2%  | 330.0%  | 291.2%  | 202.0%  | 205.3%  |

Continued on page 124.

## Public Safety Retirement System

Schedules of Changes in the Employers'  
Net Pension Liability by Division (Concluded)

Year Ended December 31

(in thousands)

|   | Bountiful |         |         |         |         |         | 2018     |
|---|-----------|---------|---------|---------|---------|---------|----------|
|   | 2018      | 2017    | 2016    | 2015    | 2014    | 2013    |          |
| Total pension liability   |           |         |         |         |         |         |          |
| Service cost  | \$ 394    | 411     | 409     | 380     | 383     | 390     | 13,868   |
| Interest  | 1,859     | 1,845   | 1,711   | 1,682   | 1,635   | 1,580   | 34,932   |
| Benefit changes   | —         | —       | —       | —       | —       | —       | —        |
| Difference between actual<br>and expected experience                          | (92)      | (453)   | 383     | 652     | 297     | (147)   | 13,782   |
| Assumption changes  | —         | 880     | 830     | —       | (229)   | —       | —        |
| Benefit payments  | (1,570)   | (1,514) | (1,435) | (1,358) | (1,419) | (1,369) | (21,222) |
| Refunds   | —         | —       | —       | —       | —       | —       | (191)    |
| Net change in total pension liability   | 591       | 1,169   | 1,898   | 1,356   | 667     | 454     | 41,169   |
| Total pension liability — beginning   | 27,342    | 26,173  | 24,275  | 22,919  | 22,252  | 21,798  | 506,394  |
| Total pension liability — ending (a)  | 27,933    | 27,342  | 26,173  | 24,275  | 22,919  | 22,252  | 547,563  |
| Plan fiduciary net position   |           |         |         |         |         |         |          |
| Contributions — member  | —         | —       | —       | —       | —       | —       | 86       |
| Contributions — employer  | 964       | 911     | 943     | 883     | 822     | 716     | 21,452   |
| Net investment income   | (78)      | 2,498   | 1,493   | 310     | 1,220   | 2,271   | (1,713)  |
| Benefit payments  | (1,570)   | (1,514) | (1,435) | (1,358) | (1,419) | (1,369) | (21,222) |
| Refunds   | —         | —       | —       | —       | —       | —       | (191)    |
| Administrative expense  | (10)      | (9)     | (9)     | (9)     | (9)     | (8)     | (184)    |
| Net transfers with affiliated systems   | 35        | 323     | 35      | 35      | 14      | 99      | 12,461   |
| Net change in plan fiduciary net position                                     | (659)     | 2,209   | 1,027   | (139)   | 628     | 1,709   | 10,689   |
| Plan fiduciary net position — beginning                                       | 21,062    | 18,853  | 17,826  | 17,965  | 17,337  | 15,628  | 458,074  |
| Plan fiduciary net position — ending (b)                                      | 20,403    | 21,062  | 18,853  | 17,826  | 17,965  | 17,337  | 468,763  |
| Net pension liability — ending (a-b)  | \$ 7,530  | 6,280   | 7,320   | 6,449   | 4,954   | 4,915   | 78,800   |
| Plan fiduciary net position as a<br>percentage of the total pension liability | 73.0%     | 77.0%   | 72.0%   | 73.4%   | 78.4%   | 77.9%   | 85.6%    |
| Projected covered payroll   | \$ 1,675  | 1,814   | 1,810   | 1,776   | 1,795   | 1,749   | 60,050   |
| Net pension liability as a<br>percentage of covered payroll                   | 449.6%    | 346.2%  | 404.4%  | 363.1%  | 276.0%  | 281.0%  | 131.2%   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| Other Division B (with Social Security) |          |          |          |          | Total All Divisions |           |           |           |           |           |
|---|----------|----------|----------|----------|---------------------|-----------|-----------|-----------|-----------|-----------|
| 2017                                    | 2016     | 2015     | 2014     | 2013     | 2018                | 2017      | 2016      | 2015      | 2014      | 2013      |
| 13,723                                  | 13,828   | 13,049   | 12,922   | 13,495   | 80,296              | 78,272    | 78,843    | 75,352    | 76,681    | 81,736    |
| 32,196                                  | 28,192   | 26,988   | 25,159   | 23,425   | 280,149             | 269,818   | 249,722   | 248,980   | 236,803   | 229,965   |
| —                                       | —        | —        | —        | —        | —                   | —         | —         | —         | —         | —         |
| 13,242                                  | 16,534   | 7,046    | 3,963    | 3,230    | 1,441               | (3,041)   | 9,358     | (17,164)  | (25,225)  | (29,228)  |
| 16,483                                  | 15,005   | —        | (6,121)  | —        | —                   | 118,370   | 110,373   | —         | (52,410)  | —         |
| (19,110)                                | (16,693) | (14,502) | (12,652) | (11,659) | (188,414)           | (172,870) | (164,508) | (155,387) | (144,763) | (137,486) |
| —                                       | —        | (307)    | (61)     | (149)    | (428)               | (226)     | (183)     | (533)     | (199)     | (467)     |
| 56,534                                  | 56,866   | 32,274   | 23,210   | 28,342   | 173,044             | 290,323   | 283,605   | 151,248   | 90,887    | 144,520   |
| 449,860                                 | 392,994  | 360,720  | 337,510  | 309,168  | 4,085,203           | 3,794,880 | 3,511,275 | 3,360,027 | 3,269,140 | 3,124,620 |
| 506,394                                 | 449,860  | 392,994  | 360,720  | 337,510  | 4,258,247           | 4,085,203 | 3,794,880 | 3,511,275 | 3,360,027 | 3,269,140 |
| 206                                     | 195      | 33       | 47       | 379      | 895                 | 793       | 830       | 905       | 835       | 1,258     |
| 21,142                                  | 21,381   | 20,828   | 20,246   | 20,161   | 147,101             | 145,814   | 147,099   | 141,024   | 135,588   | 128,744   |
| 52,874                                  | 29,769   | 5,761    | 21,024   | 35,969   | (13,134)            | 421,917   | 249,027   | 50,654    | 194,222   | 350,563   |
| (19,110)                                | (16,693) | (14,502) | (12,652) | (11,659) | (188,414)           | (172,870) | (164,508) | (155,387) | (144,763) | (137,486) |
| —                                       | —        | (307)    | (61)     | (149)    | (428)               | (226)     | (183)     | (533)     | (199)     | (467)     |
| (169)                                   | (147)    | (135)    | (129)    | (117)    | (1,450)             | (1,382)   | (1,260)   | (1,233)   | (1,227)   | (1,161)   |
| 15,601                                  | 8,826    | 11,344   | 6,697    | 5,845    | 6,982               | 5,926     | 6,701     | 4,023     | 2,746     | 4,676     |
| 70,544                                  | 43,331   | 23,022   | 35,172   | 50,429   | (48,448)            | 399,972   | 237,706   | 39,453    | 187,202   | 346,127   |
| 387,530                                 | 344,199  | 321,177  | 286,005  | 235,576  | 3,576,517           | 3,176,545 | 2,938,839 | 2,899,386 | 2,712,184 | 2,366,057 |
| 458,074                                 | 387,530  | 344,199  | 321,177  | 286,005  | 3,528,069           | 3,576,517 | 3,176,545 | 2,938,839 | 2,899,386 | 2,712,184 |
| 48,320                                  | 62,330   | 48,795   | 39,543   | 51,505   | 730,178             | 508,686   | 618,335   | 572,436   | 460,641   | 556,956   |
| 90.5%                                   | 86.1%    | 87.6%    | 89.0%    | 84.7%    | 82.9%               | 87.5%     | 83.7%     | 83.7%     | 86.3%     | 83.0%     |
| 61,516                                  | 61,501   | 61,436   | 60,698   | 60,373   | 348,475             | 350,782   | 352,408   | 355,171   | 360,750   | 365,998   |
| 78.5%                                   | 101.3%   | 79.4%    | 65.1%    | 85.3%    | 209.5%              | 145.0%    | 175.5%    | 161.2%    | 127.7%    | 152.2%    |

## Public Safety Retirement System

## Schedules of Net Pension Liability by Division

*(dollars in thousands)*

| System   | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|--|----------|--------------------------------------|--|--|---|--|---|
| <b>Public Safety<br/>State of Utah</b>                               | 12/31/13 | \$ 1,158,695                         | 937,316                                  | 221,379  | 80.9%   | \$ 115,960                             | 190.9%  |
|  | 12/31/14 | 1,181,654                            | 995,830                                  | 185,824  | 84.3  | 113,111                                | 164.3   |
|  | 12/31/15 | 1,218,610                            | 1,003,324                                | 215,286  | 82.3  | 108,967                                | 197.6   |
|  | 12/31/16 | 1,292,844                            | 1,079,035                                | 213,809  | 83.5  | 108,759                                | 196.6   |
|  | 12/31/17 | 1,380,471                            | 1,206,584                                | 173,887  | 87.4  | 107,557                                | 161.7   |
|  | 12/31/18 | 1,423,493                            | 1,184,118                                | 239,375  | 83.2  | 107,407                                | 222.9   |
| <b>Public Safety<br/>Other Division A<br/>(with Social Security)</b> | 12/31/13 | \$ 1,292,145                         | 1,128,408                                | 163,737  | 87.3%   | \$ 146,190                             | 112.0%  |
|  | 12/31/14 | 1,326,432                            | 1,200,674                                | 125,758  | 90.5  | 143,924                                | 87.4  |
|  | 12/31/15 | 1,387,407                            | 1,208,282                                | 179,125  | 87.1  | 141,681                                | 126.4   |
|  | 12/31/16 | 1,501,190                            | 1,298,262                                | 202,928  | 86.5  | 139,677                                | 145.3   |
|  | 12/31/17 | 1,607,787                            | 1,450,921                                | 156,866  | 90.2  | 137,270                                | 114.3   |
|  | 12/31/18 | 1,679,710                            | 1,422,451                                | 257,259  | 84.7  | 138,269                                | 186.1   |
| <b>Public Safety<br/>Salt Lake City</b>                              | 12/31/13 | \$ 306,859                           | 225,911                                  | 80,948   | 73.6%   | \$ 28,016                              | 288.9%  |
|  | 12/31/14 | 312,529                              | 239,653                                  | 72,876   | 76.7  | 27,821                                 | 261.9   |
|  | 12/31/15 | 326,502                              | 241,396                                  | 85,106   | 73.9  | 28,275                                 | 301.0   |
|  | 12/31/16 | 352,364                              | 260,675                                  | 91,689   | 74.0  | 28,331                                 | 323.6   |
|  | 12/31/17 | 379,138                              | 292,943                                  | 86,195   | 77.3  | 30,142                                 | 286.0   |
|  | 12/31/18 | 392,050                              | 289,022                                  | 103,028  | 73.7  | 29,356                                 | 351.0   |
| <b>Public Safety<br/>Ogden</b>                                       | 12/31/13 | \$ 70,784                            | 53,608                                   | 17,176   | 75.7%   | \$ 5,831                               | 294.6%  |
|  | 12/31/14 | 72,920                               | 56,326                                   | 16,594   | 77.2  | 5,518                                  | 300.8   |
|  | 12/31/15 | 74,200                               | 55,905                                   | 18,295   | 75.3  | 5,517                                  | 331.6   |
|  | 12/31/16 | 78,619                               | 59,439                                   | 19,180   | 75.6  | 5,082                                  | 377.4   |
|  | 12/31/17 | 85,850                               | 65,911                                   | 19,939   | 76.8  | 5,372                                  | 371.2   |
|  | 12/31/18 | 86,135                               | 63,871                                   | 22,264   | 74.2  | 4,940                                  | 450.7   |
| <b>Public Safety<br/>Provo</b>                                       | 12/31/13 | \$ 52,153                            | 40,163                                   | 11,990   | 77.0%   | \$ 5,295                               | 226.4%  |
|  | 12/31/14 | 53,031                               | 42,907                                   | 10,124   | 80.9  | 5,424                                  | 186.7   |
|  | 12/31/15 | 55,943                               | 43,277                                   | 12,666   | 77.4  | 5,213                                  | 243.0   |
|  | 12/31/16 | 60,455                               | 46,580                                   | 13,875   | 77.0  | 5,065                                  | 273.9   |
|  | 12/31/17 | 63,274                               | 51,884                                   | 11,390   | 82.0  | 5,023                                  | 226.8   |
|  | 12/31/18 | 65,906                               | 50,794                                   | 15,112   | 77.1  | 4,699                                  | 321.6   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.



## Public Safety Retirement System

Schedules of Net Pension Liability by Division *(Concluded)**(dollars in thousands)*

| System  | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|---|----------|--------------------------------------|--|--|---|--|---|
| <b>Public Safety<br/>Logan</b>  | 12/31/13 | \$ 28,742                            | 23,436                                   | 5,306  | 81.5%   | \$ 2,584                               | 205.3%  |
|   | 12/31/14 | 29,822                               | 24,854                                   | 4,968  | 83.3  | 2,459                                  | 202.0   |
|   | 12/31/15 | 31,344                               | 24,630                                   | 6,714  | 78.6  | 2,306                                  | 291.2   |
|   | 12/31/16 | 33,375                               | 26,171                                   | 7,204  | 78.4  | 2,183                                  | 330.0   |
|   | 12/31/17 | 34,947                               | 29,138                                   | 5,808  | 83.4  | 2,088                                  | 278.4   |
|   | 12/31/18 | 35,457                               | 28,647                                   | 6,810  | 80.8  | 2,079                                  | 327.6   |
| <b>Public Safety<br/>Bountiful</b>                                      | 12/31/13 | \$ 22,252                            | 17,337                                   | 4,915  | 77.9%   | \$ 1,749                               | 281.0%  |
|   | 12/31/14 | 22,919                               | 17,965                                   | 4,954  | 78.4  | 1,795                                  | 275.9   |
|   | 12/31/15 | 24,275                               | 17,826                                   | 6,449  | 73.4  | 1,776                                  | 363.1   |
|   | 12/31/16 | 26,173                               | 18,853                                   | 7,320  | 72.0  | 1,810                                  | 404.4   |
|   | 12/31/17 | 27,342                               | 21,062                                   | 6,280  | 77.0  | 1,814                                  | 346.2   |
|   | 12/31/18 | 27,933                               | 20,403                                   | 7,530  | 73.0  | 1,675                                  | 449.6   |
| <b>Public Safety<br/>Other Division B<br/>(without Social Security)</b> | 12/31/13 | \$ 337,510                           | 286,005                                  | 51,505   | 84.7%   | \$ 60,373                              | 85.3%   |
|   | 12/31/14 | 360,720                              | 321,177                                  | 39,543   | 89.0  | 60,698                                 | 65.1  |
|   | 12/31/15 | 392,994                              | 344,199                                  | 48,795   | 87.6  | 61,436                                 | 79.4  |
|   | 12/31/16 | 449,860                              | 387,530                                  | 62,330   | 86.1  | 61,501                                 | 101.3   |
|   | 12/31/17 | 506,394                              | 458,074                                  | 48,320   | 90.5  | 61,516                                 | 78.5  |
|   | 12/31/18 | 547,563                              | 468,763                                  | 78,800   | 85.6  | 60,050                                 | 131.2   |
| <b>Total<br/>Public Safety<br/>Retirement System</b>                    | 12/31/13 | \$ 3,269,140                         | 2,712,184                                | 556,956  | 83.0%   | \$ 365,998                             | 152.2%  |
|   | 12/31/14 | 3,360,027                            | 2,899,386                                | 460,641  | 86.3  | 360,750                                | 127.7   |
|   | 12/31/15 | 3,511,275                            | 2,938,839                                | 572,436  | 83.7  | 355,171                                | 161.2   |
|   | 12/31/16 | 3,794,880                            | 3,176,545                                | 618,335  | 83.7  | 352,408                                | 175.5   |
|   | 12/31/17 | 4,085,203                            | 3,576,517                                | 508,686  | 87.5  | 350,782                                | 145.0   |
|   | 12/31/18 | 4,258,247                            | 3,528,069                                | 730,178  | 82.9  | 348,475                                | 209.5   |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Public Safety Retirement System

## Schedules of Employer Contributions by Division

*(dollars in thousands)*

| System   | Year Ended | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|--|------------|--|--|--|---------------------------------|--|
| <b>Public Safety<br/>State of Utah</b>                               | 2013       | \$ 43,393                                | 43,393   | —                                      | 115,960                         | 37.42%   |
|  | 2014       | 45,810                                   | 45,810   | —                                      | 113,111                         | 40.50  |
|  | 2015       | 47,449                                   | 47,449   | —                                      | 108,967                         | 43.54  |
|  | 2016       | 50,554                                   | 50,554   | —                                      | 108,759                         | 46.48  |
|  | 2017       | 49,386                                   | 49,386   | —                                      | 107,557                         | 45.92  |
|  | 2018       | 50,030                                   | 50,030   | —                                      | 107,407                         | 46.58  |
| <b>Public Safety<br/>Other Division A<br/>(with Social Security)</b> | 2013       | \$ 46,421                                | 46,421   | —                                      | 146,190                         | 31.75%   |
|  | 2014       | 49,156                                   | 49,156   | —                                      | 143,924                         | 34.15  |
|  | 2015       | 51,677                                   | 51,677   | —                                      | 141,681                         | 36.47  |
|  | 2016       | 52,359                                   | 52,359   | —                                      | 139,677                         | 37.49  |
|  | 2017       | 53,112                                   | 53,112   | —                                      | 137,270                         | 38.69  |
|  | 2018       | 53,057                                   | 53,057   | —                                      | 138,269                         | 38.37  |
| <b>Public Safety<br/>Salt Lake City</b>                              | 2013       | \$ 12,426                                | 12,426   | —                                      | 28,016                          | 44.35%   |
|  | 2014       | 13,519                                   | 13,519   | —                                      | 27,821                          | 48.59  |
|  | 2015       | 14,100                                   | 14,100   | —                                      | 28,276                          | 49.87  |
|  | 2016       | 15,260                                   | 15,260   | —                                      | 28,331                          | 53.86  |
|  | 2017       | 14,899                                   | 14,899   | —                                      | 30,142                          | 49.43  |
|  | 2018       | 15,294                                   | 15,294   | —                                      | 29,356                          | 52.10  |
| <b>Public Safety<br/>Ogden</b>                                       | 2013       | \$ 2,525                                 | 2,525  | —                                      | 5,831                           | 43.30%   |
|  | 2014       | 2,791                                    | 2,791  | —                                      | 5,518                           | 50.58  |
|  | 2015       | 2,729                                    | 2,729  | —                                      | 5,517                           | 49.47  |
|  | 2016       | 3,147                                    | 3,147  | —                                      | 5,082                           | 61.92  |
|  | 2017       | 3,072                                    | 3,072  | —                                      | 5,372                           | 57.19  |
|  | 2018       | 2,970                                    | 2,970  | —                                      | 4,940                           | 60.12  |
| <b>Public Safety<br/>Provo</b>                                       | 2013       | \$ 2,158                                 | 2,158  | —                                      | 5,295                           | 40.76%   |
|  | 2014       | 2,255                                    | 2,255  | —                                      | 5,424                           | 41.57  |
|  | 2015       | 2,314                                    | 2,314  | —                                      | 5,213                           | 44.39  |
|  | 2016       | 2,403                                    | 2,403  | —                                      | 5,065                           | 47.44  |
|  | 2017       | 2,258                                    | 2,258  | —                                      | 5,023                           | 44.95  |
|  | 2018       | 2,266                                    | 2,266  | —                                      | 4,699                           | 48.22  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

**Public Safety Retirement System****Schedules of Employer Contributions by Division** (Concluded)

(dollars in thousands)

| System  | Year Ended | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|---|------------|--|--|--|---------------------------------|--|
| <b>Public Safety<br/>Logan</b>  | 2013       | \$ 944                                   | 944  | —                                      | 2,584                           | 36.53%   |
|   | 2014       | 989                                      | 989  | —                                      | 2,459                           | 40.42  |
|   | 2015       | 1,044                                    | 1,044  | —                                      | 2,306                           | 45.27  |
|   | 2016       | 1,052                                    | 1,052  | —                                      | 2,183                           | 48.19  |
|   | 2017       | 1,034                                    | 1,034  | —                                      | 2,088                           | 49.52  |
|   | 2018       | 1,068                                    | 1,068  | —                                      | 2,079                           | 51.37  |
| <b>Public Safety<br/>Bountiful</b>                                      | 2013       | \$ 716                                   | 716  | —                                      | 1,749                           | 40.94%   |
|   | 2014       | 822                                      | 822  | —                                      | 1,795                           | 45.79  |
|   | 2015       | 883                                      | 883  | —                                      | 1,776                           | 49.72  |
|   | 2016       | 943                                      | 943  | —                                      | 1,810                           | 52.10  |
|   | 2017       | 911                                      | 911  | —                                      | 1,814                           | 50.22  |
|   | 2018       | 964                                      | 964  | —                                      | 1,675                           | 57.55  |
| <b>Public Safety<br/>Other Division B<br/>(without Social Security)</b> | 2013       | \$ 20,161                                | 20,161   | —                                      | 60,373                          | 33.39%   |
|   | 2014       | 20,246                                   | 20,246   | —                                      | 60,698                          | 33.36  |
|   | 2015       | 20,828                                   | 20,828   | —                                      | 61,436                          | 33.90  |
|   | 2016       | 21,381                                   | 21,381   | —                                      | 61,501                          | 34.77  |
|   | 2017       | 21,142                                   | 21,142   | —                                      | 61,516                          | 34.37  |
|   | 2018       | 21,452                                   | 21,452   | —                                      | 60,050                          | 35.72  |
| <b>Total<br/>Public Safety<br/>Retirement System</b>                    | 2013       | \$ 128,744                               | 128,744  | —                                      | 365,998                         | 35.18%   |
|   | 2014       | 135,588                                  | 135,588  | —                                      | 360,750                         | 37.59  |
|   | 2015       | 141,024                                  | 141,024  | —                                      | 355,172                         | 39.71  |
|   | 2016       | 147,099                                  | 147,099  | —                                      | 352,408                         | 41.74  |
|   | 2017       | 145,814                                  | 145,814  | —                                      | 350,783                         | 41.57  |
|   | 2018       | 147,101                                  | 147,101  | —                                      | 348,475                         | 42.21  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## Firefighters Retirement System

Schedules of Fiduciary Net Position —  
Pension Trust Fund by Division

December 31, 2018

With Comparative Totals for December 31, 2017

*(in thousands)*

|   | Division A<br>(with<br>Social Security) | Division B<br>(without<br>Social Security) | Total All Divisions |           |
|---|---|--|---------------------|-----------|
|   |   |  | 2018                | 2017      |
| <b>Assets:</b>  |   |  |                     |           |
| Cash  | \$ 1                                    | 1  | 2                   | 2         |
| Receivables:  |   |  |                     |           |
| Member contributions  | 144                                     | 531  | 675                 | 634       |
| Employer contributions  | 44                                      | 230  | 274                 | 235       |
| Fire insurance tax  | 205                                     | 542  | 747                 | 2,661     |
| Investments   | 4,238                                   | 19,404                                     | 23,642              | 26,260    |
| Total receivables   | 4,631                                   | 20,707                                     | 25,338              | 29,790    |
| Investments at fair value:  |   |  |                     |           |
| Short-term securities   | 11,024                                  | 50,469                                     | 61,493              | 106,727   |
| Debt securities   | 36,817                                  | 168,566                                    | 205,383             | 176,300   |
| Equity investments  | 76,273                                  | 349,207                                    | 425,480             | 470,234   |
| Absolute return   | 31,865                                  | 145,893                                    | 177,758             | 172,512   |
| Private equity  | 25,372                                  | 116,164                                    | 141,536             | 133,504   |
| Real assets   | 36,078                                  | 165,178                                    | 201,256             | 183,550   |
| Total investments   | 217,429                                 | 995,477                                    | 1,212,906           | 1,242,827 |
| Invested securities lending collateral                                  | 7,332                                   | 33,569                                     | 40,901              | 51,791    |
| Property and equipment at cost,<br>net of accumulated depreciation      | 32                                      | 148  | 180                 | 170       |
| Total assets  | 229,425                                 | 1,049,902                                  | 1,279,327           | 1,324,580 |
| <b>Liabilities:</b>   |   |  |                     |           |
| Securities lending collateral liability                                 | 7,332                                   | 33,569                                     | 40,901              | 51,791    |
| Disbursements in excess of cash balance                                 | 222                                     | 1,017                                      | 1,239               | 1,318     |
| Compensated absences, post-employment<br>benefits and insurance reserve | 147                                     | 671  | 818                 | 848       |
| Investment accounts payable   | 4,274                                   | 19,567                                     | 23,841              | 31,574    |
| Real estate liabilities   | 832                                     | 3,807                                      | 4,639               | 4,642     |
| Total liabilities   | 12,807                                  | 58,631                                     | 71,438              | 90,173    |
| Net position restricted for pensions benefits                           | \$ 216,618                              | 991,271                                    | 1,207,889           | 1,234,407 |

## Firefighters Retirement System

Schedules of Changes in Fiduciary Net Position —  
Pension Trust Fund by Division

Year Ended December 31, 2018

With Comparative Totals for Year Ended December 31, 2017

(in thousands)

|   | Division A<br>(with<br>Social Security) | Division B<br>(without<br>Social Security) | Total All Divisions |           |
|---|---|--|---------------------|-----------|
|   |   |  | 2018                | 2017      |
| <b>Additions:</b>   |   |  |                     |           |
| Contributions:  |   |  |                     |           |
| Member  | \$ 4,638                                | 13,667                                     | 18,305              | 18,460    |
| Employer  | 1,319                                   | 5,702                                      | 7,021               | 6,715     |
| Fire insurance tax  | 2,395                                   | 6,352                                      | 8,747               | 1,223     |
| Total contributions   | 8,352                                   | 25,721                                     | 34,073              | 26,398    |
| Investment income:  |   |  |                     |           |
| Net appreciation (depreciation)<br>in fair value of investments | (5,097)                                 | (23,736)                                   | (28,833)            | 125,958   |
| Interest, dividends, and other investment income                | 4,685                                   | 21,818                                     | 26,503              | 22,756    |
| Total income (loss) from investment activity                    | (412)                                   | (1,918)                                    | (2,330)             | 148,714   |
| Less investment expenses  | 434                                     | 2,020                                      | 2,454               | 2,211     |
| Net income (loss) from investment activity                      | (846)                                   | (3,938)                                    | (4,784)             | 146,503   |
| Income from securities lending activity                         | 56                                      | 260  | 316                 | 263       |
| Less security lending expense                                   | 7                                       | 34   | 41                  | 30        |
| Net income from security lending activity                       | 49                                      | 226  | 275                 | 233       |
| Net investment income (loss)                                    | (797)                                   | (3,712)                                    | (4,509)             | 146,736   |
| Transfers from affiliated systems                               | (982)                                   | 2,899                                      | 1,917               | 1,259     |
| Total additions   | 6,573                                   | 24,908                                     | 31,481              | 174,393   |
| <b>Deductions:</b>  |   |  |                     |           |
| Retirement benefits   | 6,579                                   | 39,968                                     | 46,547              | 44,331    |
| Cost-of-living benefits   | 967                                     | 9,733                                      | 10,700              | 10,258    |
| Supplemental retirement benefits                                | 12                                      | 181  | 193                 | 204       |
| Refunds   | 58                                      | 74   | 132                 | 511       |
| Administrative expenses   | 76                                      | 351  | 427                 | 408       |
| Total deductions  | 7,692                                   | 50,307                                     | 57,999              | 55,712    |
| Increase from operations  | (1,119)                                 | (25,399)                                   | (26,518)            | 118,681   |
| Net position restricted for pensions beginning of year          | 217,737                                 | 1,016,670                                  | 1,234,407           | 1,115,726 |
| Net position restricted for pensions end of year                | \$ 216,618                              | 991,271                                    | 1,207,889           | 1,234,407 |

## Firefighters Retirement System

## Schedules of Changes in the Employers' Net Pension Liability by Division

Year Ended December 31

(in thousands)

|  | Other Division A (with Social Security) |         |         |         |         |         | 2018      |
|--|---|---------|---------|---------|---------|---------|-----------|
|  | 2018                                    | 2017    | 2016    | 2015    | 2014    | 2013    |           |
| Total pension liability  |   |         |         |         |         |         |           |
| Service cost   | \$ 7,756                                | 7,085   | 7,020   | 6,584   | 6,636   | 7,158   | 21,622    |
| Interest   | 14,704                                  | 13,905  | 12,644  | 12,290  | 11,387  | 10,840  | 68,115    |
| Benefit changes  | —                                       | —       | —       | —       | —       | —       | —         |
| Difference between actual and expected experience                          | 3,268                                   | (1,851) | (271)   | (985)   | (1,199) | (1,812) | (2,331)   |
| Assumption changes   | —                                       | 6,170   | 4,636   | —       | (4,028) | —       | —         |
| Benefit payments   | (7,558)                                 | (6,670) | (6,121) | (6,243) | (5,432) | (4,889) | (49,882)  |
| Refunds  | (58)                                    | (124)   | (174)   | (190)   | (72)    | —       | (74)      |
| Net change in total pension liability                                      | 18,112                                  | 18,515  | 17,734  | 11,456  | 7,292   | 11,297  | 37,450    |
| Total pension liability — beginning  | 211,491                                 | 192,976 | 175,242 | 163,786 | 156,494 | 145,197 | 994,236   |
| Total pension liability — ending (a)                                       | 229,603                                 | 211,491 | 192,976 | 175,242 | 163,786 | 156,494 | 1,031,686 |
| Plan fiduciary net position  |   |         |         |         |         |         |           |
| Contributions — member   | 4,638                                   | 4,457   | 4,214   | 4,063   | 3,983   | 3,977   | 13,667    |
| Contributions — employer   | 1,319                                   | 1,147   | 1,124   | 1,055   | 888     | 745     | 5,702     |
| Fire insurance tax   | 2,395                                   | 262     | 2,581   | 4,170   | 3,398   | 2,748   | 6,352     |
| Net investment income  | (797)                                   | 25,677  | 15,014  | 2,982   | 11,118  | 19,648  | (3,712)   |
| Benefit payments   | (7,558)                                 | (6,670) | (6,121) | (6,243) | (5,432) | (4,889) | (49,882)  |
| Refunds  | (58)                                    | (124)   | (174)   | (190)   | (72)    | —       | (74)      |
| Administrative expense   | (76)                                    | (70)    | (62)    | (60)    | (58)    | (54)    | (351)     |
| Net transfers with affiliated systems                                      | (982)                                   | (706)   | 135     | 1,784   | 664     | 796     | 2,899     |
| Net change in plan fiduciary net position                                  | (1,119)                                 | 23,973  | 16,711  | 7,561   | 14,489  | 22,971  | (25,399)  |
| Plan fiduciary net position — beginning                                    | 217,737                                 | 193,764 | 177,053 | 169,492 | 155,003 | 132,032 | 1,016,670 |
| Plan fiduciary net position — ending (b)                                   | \$ 216,618                              | 217,737 | 193,764 | 177,053 | 169,492 | 155,003 | 991,271   |
| Net pension liability/(asset) — ending (a-b)                               | \$ 12,985                               | (6,246) | (788)   | (1,811) | (5,706) | 1,491   | 40,415    |
| Plan fiduciary net position as a percentage of the total pension liability | 94.3%                                   | 103.0%  | 100.4%  | 101.0%  | 103.5%  | 99.0%   | 96.1%     |
| Projected covered payroll  | \$ 29,680                               | 27,603  | 27,266  | 26,672  | 26,873  | 26,521  | 83,907    |
| Net pension liability as a percentage of covered payroll                   | 43.8%                                   | (22.6)% | (2.9)%  | (6.8)%  | (21.2)% | 5.6%    | 48.2%     |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Utah Retirement Systems

| Other Division B (with Social Security) |          |          |          |          | Total All Divisions |           |           |           |           |          |
|---|----------|----------|----------|----------|---------------------|-----------|-----------|-----------|-----------|----------|
| 2017                                    | 2016     | 2015     | 2014     | 2013     | 2018                | 2017      | 2016      | 2015      | 2014      | 2013     |
| 21,690                                  | 21,632   | 20,598   | 20,630   | 22,419   | 29,378              | 28,775    | 28,652    | 27,182    | 27,266    | 29,577   |
| 66,481                                  | 62,690   | 62,922   | 60,103   | 59,419   | 82,819              | 80,386    | 75,334    | 75,212    | 71,490    | 70,259   |
| —                                       | —        | —        | —        | —        | —                   | —         | —         | —         | —         | —        |
| (7,365)                                 | (5,254)  | (7,274)  | (13,878) | (11,271) | 937                 | (9,216)   | (5,525)   | (8,259)   | (15,077)  | (13,083) |
| 25,187                                  | 20,936   | —        | (16,344) | —        | —                   | 31,357    | 25,572    | —         | (20,372)  | —        |
| (48,123)                                | (45,981) | (43,428) | (42,278) | (39,858) | (57,440)            | (54,793)  | (52,102)  | (49,671)  | (47,710)  | (44,747) |
| (387)                                   | (292)    | (338)    | (221)    | (106)    | (132)               | (511)     | (466)     | (528)     | (293)     | (106)    |
| 57,483                                  | 53,731   | 32,480   | 8,012    | 30,603   | 55,562              | 75,998    | 71,465    | 43,936    | 15,304    | 41,900   |
| 936,753                                 | 883,022  | 850,542  | 842,530  | 811,927  | 1,205,727           | 1,129,729 | 1,058,264 | 1,014,328 | 999,024   | 957,124  |
| 994,236                                 | 936,753  | 883,022  | 850,542  | 842,530  | 1,261,289           | 1,205,727 | 1,129,729 | 1,058,264 | 1,014,328 | 999,024  |
| 14,003                                  | 14,515   | 14,112   | 14,317   | 14,348   | 18,305              | 18,460    | 18,729    | 18,175    | 18,300    | 18,325   |
| 5,568                                   | 5,830    | 5,635    | 4,626    | 2,749    | 7,021               | 6,715     | 6,954     | 6,690     | 5,514     | 3,494    |
| 961                                     | 7,988    | 13,048   | 10,756   | 8,537    | 8,747               | 1,223     | 10,569    | 17,218    | 14,154    | 11,285   |
| 121,059                                 | 72,732   | 14,952   | 57,952   | 106,037  | (4,509)             | 146,736   | 87,746    | 17,934    | 69,070    | 125,685  |
| (48,123)                                | (45,981) | (43,428) | (42,278) | (39,858) | (57,440)            | (54,793)  | (52,102)  | (49,671)  | (47,710)  | (44,747) |
| (387)                                   | (292)    | (338)    | (221)    | (106)    | (132)               | (511)     | (466)     | (528)     | (293)     | (106)    |
| (338)                                   | (312)    | (311)    | (312)    | (301)    | (427)               | (408)     | (374)     | (371)     | (370)     | (355)    |
| 1,965                                   | 1,476    | 789      | 3,049    | 506      | 1,917               | 1,259     | 1,611     | 2,573     | 3,713     | 1,302    |
| 94,708                                  | 55,956   | 4,459    | 47,889   | 91,912   | (26,518)            | 118,681   | 72,667    | 12,020    | 62,378    | 114,883  |
| 921,962                                 | 866,006  | 861,547  | 813,658  | 721,746  | 1,234,407           | 1,115,726 | 1,043,059 | 1,031,039 | 968,661   | 853,778  |
| 1,016,670                               | 921,962  | 866,006  | 861,547  | 813,658  | 1,207,889           | 1,234,407 | 1,115,726 | 1,043,059 | 1,031,039 | 968,661  |
| (22,434)                                | 14,791   | 17,016   | (11,005) | 28,872   | 53,400              | (28,680)  | 14,003    | 15,205    | (16,711)  | 30,363   |
| 102.3%                                  | 98.4%    | 98.1%    | 101.3%   | 96.6%    | 95.8%               | 102.4%    | 98.8%     | 98.6%     | 101.6%    | 97.0%    |
| 85,350                                  | 85,056   | 84,461   | 84,432   | 84,220   | 113,587             | 112,953   | 112,322   | 111,133   | 111,305   | 110,741  |
| (26.3)%                                 | 17.4%    | 20.1%    | (13.0)%  | 34.3%    | 47.0%               | (25.4)%   | 12.5%     | 13.7%     | (15.0)%   | 27.4%    |

## Firefighters Retirement System

## Schedules of Net Pension Liability by Division

*(dollars in thousands)*

| System                    | Date     | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Plan Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/(Asset)<br>as a Percentage<br>of Covered<br>Payroll |
|---------------------------|----------|--------------------------------------|--|--|---|--|---|
| <b>Firefighters</b>       | 12/31/13 | \$ 156,494                           | 155,003                                  | 1,491  | 99.0%   | \$ 26,521                              | 5.6%  |
| <b>Division A</b>         | 12/31/14 | 163,786                              | 169,492                                  | (5,706)  | 103.5   | 26,873                                 | (21.2)  |
| (with Social Security)    | 12/31/15 | 175,242                              | 177,053                                  | (1,811)  | 101.0   | 26,672                                 | (6.8)   |
|                           | 12/31/16 | 192,976                              | 193,764                                  | (788)  | 100.4   | 27,266                                 | (2.9)   |
|                           | 12/31/17 | 211,491                              | 217,737                                  | (6,246)  | 103.0   | 27,603                                 | (22.6)  |
|                           | 12/31/18 | 229,603                              | 216,618                                  | 12,985   | 94.3  | 29,680                                 | 43.8  |
| <b>Firefighters</b>       | 12/31/13 | \$ 842,530                           | 813,658                                  | 28,872   | 96.6%   | \$ 84,220                              | 34.3%   |
| <b>Division B</b>         | 12/31/14 | 850,542                              | 861,547                                  | (11,005)   | 101.3   | 84,432                                 | (13.0)  |
| (without Social Security) | 12/31/15 | 883,022                              | 866,006                                  | 17,016   | 98.1  | 84,461                                 | 20.1  |
|                           | 12/31/16 | 936,753                              | 921,962                                  | 14,791   | 98.4  | 85,056                                 | 17.4  |
|                           | 12/31/17 | 994,236                              | 1,016,670                                | (22,434)   | 102.3   | 85,350                                 | (26.3)  |
|                           | 12/31/18 | 1,031,686                            | 991,271                                  | 40,415   | 96.1  | 83,907                                 | 48.2  |
| <b>Total</b>              | 12/31/13 | \$ 999,024                           | 968,661                                  | 30,363   | 97.0%   | \$ 110,741                             | 27.4%   |
| <b>Firefighters</b>       | 12/31/14 | 1,014,328                            | 1,031,039                                | (16,711)   | 101.6   | 111,305                                | (15.0)  |
| <b>Retirement System</b>  | 12/31/15 | 1,058,264                            | 1,043,059                                | 15,205   | 98.6  | 111,133                                | 13.7  |
|                           | 12/31/16 | 1,129,729                            | 1,115,726                                | 14,003   | 98.8  | 112,322                                | 12.5  |
|                           | 12/31/17 | 1,205,727                            | 1,234,407                                | (28,680)   | 102.4   | 112,953                                | (25.4)  |
|                           | 12/31/18 | 1,261,289                            | 1,207,889                                | 53,400   | 95.8  | 113,587                                | 47.0  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.



## Firefighters Retirement System

## Schedules of Employer Contributions by Division

*(dollars in thousands)*

| System                    | Year Ended | Actuarial<br>Determined<br>Contribution* | Contributions<br>in Relation to<br>the Actuarial<br>Determined<br>Contribution | Contribution<br>Deficiency<br>(Excess) | Projected<br>Covered<br>Payroll | Contributions<br>as a<br>Percentage<br>of Covered<br>Payroll** |
|---------------------------|------------|--|--|--|---------------------------------|--|
| <b>Firefighters</b>       | 2013       | \$ 3,493                                 | 3,493  | —                                      | 26,521                          | 13.17%   |
| <b>Division A</b>         | 2014       | 5,514                                    | 5,514  | —                                      | 26,873                          | 20.52  |
| (with Social Security)    | 2015       | 5,225                                    | 5,225  | —                                      | 26,672                          | 19.59  |
|                           | 2016       | 3,705                                    | 3,705  | —                                      | 27,266                          | 13.59  |
|                           | 2017       | 1,409                                    | 1,409  | —                                      | 27,603                          | 5.10   |
|                           | 2018       | 3,714                                    | 3,714  | —                                      | 29,680                          | 12.51  |
| <b>Firefighters</b>       | 2013       | \$ 11,286                                | 11,286   | —                                      | 84,220                          | 13.40%   |
| <b>Division B</b>         | 2014       | 14,154                                   | 14,154   | —                                      | 84,432                          | 16.76  |
| (without Social Security) | 2015       | 18,683                                   | 18,683   | —                                      | 84,461                          | 22.12  |
|                           | 2016       | 13,818                                   | 13,818   | —                                      | 85,056                          | 16.25  |
|                           | 2017       | 6,529                                    | 6,529  | —                                      | 85,350                          | 7.65   |
|                           | 2018       | 12,054                                   | 12,054   | —                                      | 83,907                          | 14.37  |
| <b>Total</b>              | 2013       | \$ 14,779                                | 14,779   | —                                      | 110,741                         | 13.35%   |
| <b>Firefighters</b>       | 2014       | 19,668                                   | 19,668   | —                                      | 111,305                         | 17.67  |
| <b>Retirement System</b>  | 2015       | 23,908                                   | 23,908   | —                                      | 111,133                         | 21.51  |
|                           | 2016       | 17,523                                   | 17,523   | —                                      | 112,322                         | 15.60  |
|                           | 2017       | 7,938                                    | 7,938  | —                                      | 112,953                         | 7.03   |
|                           | 2018       | 15,768                                   | 15,768   | —                                      | 113,587                         | 13.88  |

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

\*Contributions for the Tier 1 Systems include contributions received on the Tier 2 payroll to help finance the unfunded actuarial accrued liability of the Tier 1 Systems.

\*\*Contributions as a percentage of covered payroll may be different than the board certified rate due to rounding and other administrative issues.

## All Retirement Systems

Schedules of  
Administrative  
and Investment  
Expenses

Year Ended  
December 31, 2018

(in thousands)

|   | Total     |
|---|-----------|
| Personal services:                                      |           |
| Salaries and wages                                      | \$ 14,957 |
| Employee benefits                                       | 7,274     |
| Total personal services                                 | 22,231    |
| Professional services:                                  |           |
| Audit   | 510       |
| Actuarial services                                      | 229       |
| General counsel   | 722       |
| Banking services  | 55        |
| Security handling expense                               | 953       |
| Investment advisor fees                                 | 55,796    |
| Other consulting services                               | 3,162     |
| Total professional services                             | 61,427    |
| Communications:   |           |
| Telephone   | 224       |
| Postage   | 388       |
| Total communications                                    | 612       |
| Rentals:  |           |
| Office space  | 1,092     |
| Office equipment rental                                 | 45        |
| Total rentals   | 1,137     |
| Miscellaneous:  |           |
| Data processing   | 1,796     |
| Professional development                                | 380       |
| Contractual services                                    | 282       |
| Supplies and maintenance                                | 193       |
| Insurance and bonding premiums                          | 660       |
| Office supplies   | 79        |
| Other   | 499       |
| Depreciation expense                                    | 1,207     |
| Total miscellaneous                                     | 5,096     |
| Total administrative and investment expenses            | \$ 90,503 |
| Allocation of administrative expenses:                  |           |
| Noncontributory Retirement System                       | \$ 9,962  |
| Contributory Retirement System                          | 454       |
| Public Safety Retirement System                         | 1,450     |
| Firefighters Retirement System                          | 427       |
| Judges Retirement System                                | 84        |
| Utah Governors and Legislators Retirement Plan          | 5         |
| Tier 2 Public Employees Retirement System               | 119       |
| Tier 2 Public Safety and Firefighter Retirement System  | 14        |
| 401(k) Plan   | 7,952     |
| 457 Plan  | 901       |
| Roth IRA Plan   | 206       |
| Traditional IRA Plan                                    | 169       |
| Total administrative expenses                           | 21,743    |
| Investment administrative expense                       | 12,964    |
| Investment advisor fees:                                |           |
| Investment Fund   | 50,532    |
| 401(k) Plan   | 4,530     |
| 457 Plan  | 501       |
| Roth IRA Plan   | 119       |
| Traditional IRA Plan                                    | 114       |
| Total investment expenses                               | 68,760    |
| Total administrative and investment expense allocations | \$ 90,503 |



# Investment Section

Utah Retirement Systems  
2018 Comprehensive  
Annual Financial Report

## Defined Benefit Investments

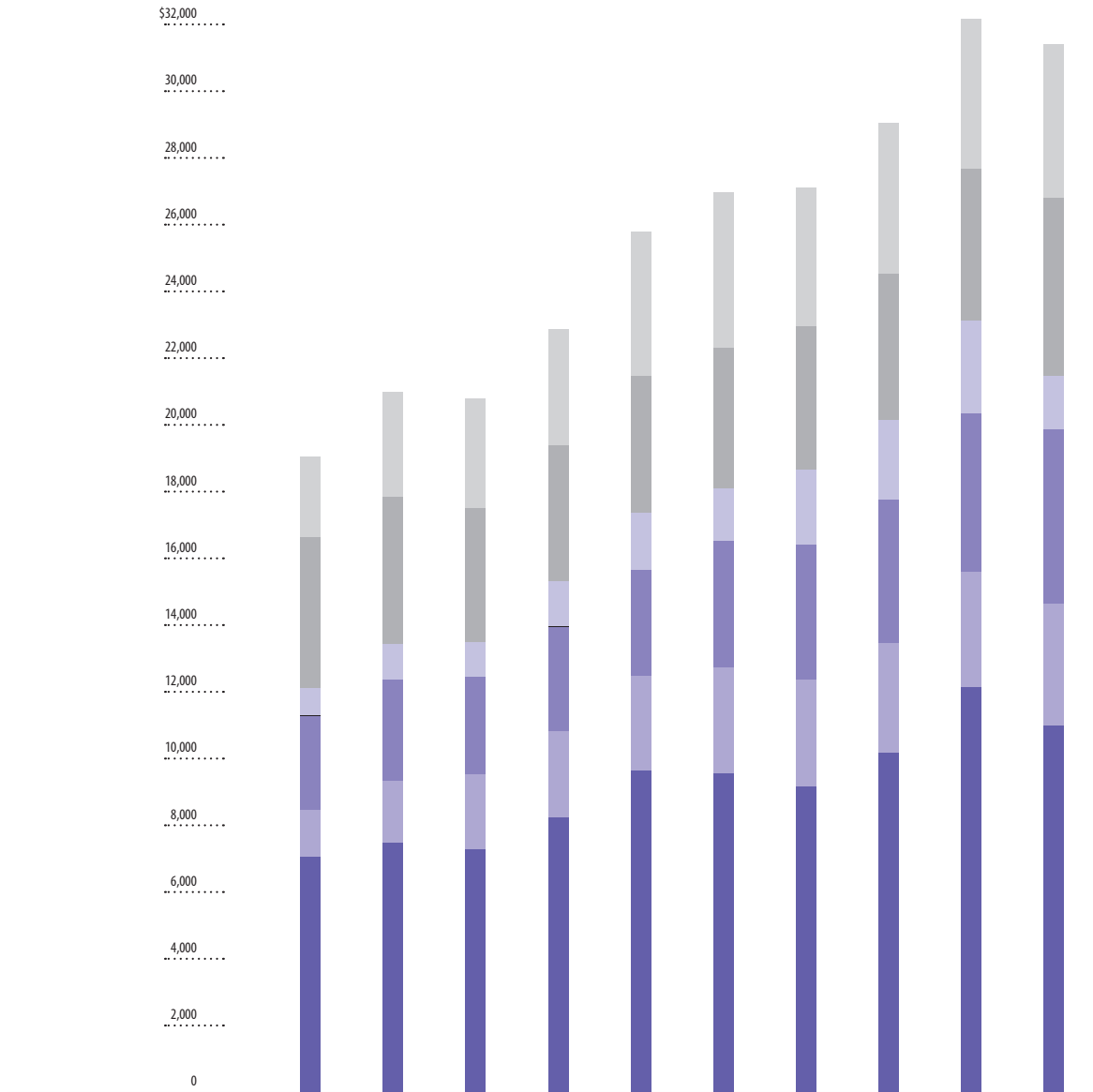
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# 10-Year Investment Comparison

(in millions)



| (in millions)         | 2009             | 2010          | 2011          | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          |
|-----------------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Absolute return       | \$ 2,411         | 3,138         | 3,287         | 3,474         | 4,298         | 4,643         | 4,141         | 4,509         | 4,459         | 4,598         |
| Debt securities       | 4,521            | 4,406         | 4,022         | 4,093         | 4,094         | 4,213         | 4,282         | 4,356         | 4,557         | 5,313         |
| Short-term securities | 804              | 1,056         | 1,017         | 1,337         | 1,711         | 1,572         | 2,230         | 2,392         | 2,759         | 1,591         |
| Mortgages             | 7                | 7             | 7             | 7             | —             | —             | —             | —             | —             | —             |
| Real assets           | 2,799            | 3,024         | 2,886         | 3,094         | 3,147         | 3,780         | 4,025         | 4,269         | 4,745         | 5,206         |
| Private equity        | 1,411            | 1,840         | 2,255         | 2,594         | 2,840         | 3,170         | 3,215         | 3,291         | 3,451         | 3,661         |
| Equities              | 7,104            | 7,521         | 7,323         | 8,272         | 9,675         | 9,577         | 9,193         | 10,200        | 12,155        | 11,007        |
| <b>Totals</b>         | <b>\$ 19,057</b> | <b>20,992</b> | <b>20,797</b> | <b>22,871</b> | <b>25,765</b> | <b>26,955</b> | <b>27,086</b> | <b>29,017</b> | <b>32,126</b> | <b>31,376</b> |

# Defined Benefit Investments

## Report on Investment Activity



UTAH STATE RETIREMENT BOARD

**UTAH RETIREMENT SYSTEMS**

560 East 200 South  
Salt Lake City, Utah 84102-2044  
801-366-7700  
800-365-8772  
801-366-7734 FAX

DANIEL D. ANDERSEN  
EXECUTIVE DIRECTOR

April 30, 2019

Utah State Retirement Board  
560 East 200 South  
Salt Lake City, UT 84102-2044

Dear Members of Utah Retirement Systems:

In 2018 we experienced a market correction. We had been anticipating it for some time, and it finally came to fruition, though not until the fourth quarter of the year.

The year began on an optimistic note, buoyed by the tax cut and strong earnings expectations. Unemployment was down, wages were growing, and small business sentiment was positive. Inflation was still in check, and economists could not see any recession in the near term, with positive Gross Domestic Product (GDP) forecasts for 2019. Through September 2018, people assumed that the market would continue with strong growth and excellent returns. However, third quarter earnings reports showed softer revenue growth and margin pressure. The softness was partly attributable to the trade dispute between the United States and China, but investors suspected other factors could be contributing. Manufacturing, automotive, and semiconductor industries were weak due to the trade dispute; housing appeared to soften as well. Certainly, lower oil prices and increases in short-term interest rates reinforced sentiment that the economy was slowing. Globally, things weren't much better, with the European Central Bank (ECB) discontinuing its monthly bond purchases, Brexit still uncertain, a slowdown in China, and various geopolitical worries. Thus, there were more sellers than buyers.

Fourth quarter equity volatility was high, and equity markets declined sharply. Although the Standard and Poor's (S&P) 500 was down only 4.4% for the year, the fourth quarter saw it drop 13.5%. For broad equity indexes, small company stocks performed

## Defined Benefit Investments *(Continued)*

worst in the fourth quarter, ending down 11% for the year. Although growth-style stocks also took a beating in the fourth quarter, the category displayed relative outperformance, finishing 2018 down 1.5%. This was quite a contrast from 2017, when the S&P 500 had a stellar year and growth-style stocks did exceptionally well. Value-style stocks continued to underperform, and energy stocks were off nearly 24% for the fourth quarter as oil prices fell.

The Treasury curve ended very flat for the year. The Federal Reserve increased short term interest rates by a quarter-point four times during 2018. Longer term interest rates decreased. The 10-year Treasury note reached a high of 3.24% in November but closed out the year at 2.69%. Fixed income markets, as measured by the Bloomberg Barclays U.S. Aggregate, were flat for the year, effectively no gain or loss compared to a 3.57% increase the previous year. Global bonds were negative by a little more than 1%.

Other asset classes that were negative for the year included Real Estate Investment Trusts, Commodities, Natural Resources, and Energy. The U.S. dollar strengthened against most currencies, with Japan being an exception.

Although URS did not have a positive investment year like 2017, we managed to lose very little against a market that was negative in every category except cash. Our alternative asset classes, including Absolute Return, Real Estate, and Private Equity, contributed positive numbers for the year. The most significant detractors were Public Equity and Private Energy. Public Equity is our largest alternative asset allocation, at 40%, and thus has a meaningful impact to the total portfolio.

Overall, we experienced a very small loss of 0.22% for the year, whereas our peers fared far worse. We were in the top 1% against our peer group, and our current funded status is 85.2%. We are still one of the top public pension plans in the country in regard to funded status.

We restructured the portfolio prior to the Great Recession of 2008-09 to emphasize greater diversification. This strategy helps protect in down markets and recover quickly when markets reverse their losses. The additional savings in down markets can then be put to work earning positive returns to create additional wealth and offset the loss. Although that means giving up some upside potential in positive equity markets (we generally underperform our peers during those times), it has proven to be very effective in down equity markets. The result is that the URS portfolio can compound more money than our peers in down markets. Our goal has always been to achieve our assumed actuarial return of 6.95% on average over a long period of time.

This year was challenging on many fronts, and for many investors there was nowhere to hide. We were pleased with a number of areas in our portfolio as well as our relative outperformance overall. We feel we have a solid strategy to deal with volatility through the years to produce the best possible outcome for our members. The Systems' investments reported in the investment section are presented in the same basis of accounting as described in Note 2 of the financial statements and prepared using a time-weighted rate of return based on the market rate of return except for private equity which is prepared using a dollar-weighted return.



Bruce H. Cundick  
Chief Investment Officer  
Utah Retirement Systems



Defined Benefit Investments *(Continued)*

## Outline of Investment Policies

The governing body of the Utah Retirement Systems (Systems) is the seven member Utah State Retirement Board (Board). The Board is composed of the Utah State Treasurer, who serves as an ex-officio member, and six trustees who are appointed by the Governor. Four board members are appointed for their investment expertise, and two members are appointed to represent employee and employer interests.



The Board has statutory authority to pool pension assets in the Utah Retirement Investment Fund (Fund). Statutes also establish that this Fund will be invested in accordance with the “prudent person rule.” The prudent person rule requires all members of the Board and investment staff to discharge their duties solely in the interest of Systems’ participants and beneficiaries and with the care, skill, prudence, and diligence that they would exercise in the conduct of their own affairs. To this end, a Statement of Investment Policy and Performance Objectives has been created for the Fund and adopted by the Board. The purpose of this Statement is to:

- » Outline the expected return and risk profile for the Fund;
- » Establish the target asset allocation mix and acceptable rebalancing ranges;

- » Describe plan and manager policies and objectives for performance evaluation;
- » Communicate investment performance standards to investment managers.

The primary investment objectives are to preserve Fund assets and generate an appropriate level of risk-adjusted return to meet future pension obligations. The Systems periodically complete an asset allocation and liability study to determine the optimal portfolio diversification to meet those obligations.

The Systems’ investment portfolio includes strategic, long-term commitments in the following asset classes: Equities, Debt Securities, Real Assets, Private Equity, and Absolute Return. Asset allocation is reviewed in conjunction with the plan liabilities at least every five years.

## 2018 Investment Summary

*(dollars in thousands)*

|                       | 2018<br>Beginning<br>Fair Value | Purchases          | Sales and<br>Redemptions | Increase<br>(Decrease)<br>in Fair Value | 2018<br>Ending Fair<br>Value Balance | Percent<br>of Total<br>Fair Value |
|-----------------------|---------------------------------|--------------------|--------------------------|---|--------------------------------------|-----------------------------------|
| Short-term securities | \$ 2,758,739                    | 110,999,660        | (112,176,244)            | 8,572                                   | 1,590,727                            | 5.07%                             |
| Equities              | 12,154,933                      | 3,679,715          | (2,790,589)              | (2,037,409)                             | 11,006,650                           | 35.08                             |
| Debt securities       | 4,557,137                       | 40,737,066         | (39,836,022)             | (145,149)                               | 5,313,032                            | 16.93                             |
| Real assets           | 4,744,525                       | 881,009            | (682,496)                | 263,191                                 | 5,206,229                            | 16.59                             |
| Private equity        | 3,450,900                       | 536,051            | (381,449)                | 55,854                                  | 3,661,356                            | 11.67                             |
| Absolute return       | 4,459,239                       | 1,527,492          | (1,360,261)              | (28,074)                                | 4,598,396                            | 14.66                             |
| <b>Totals</b>         | <b>\$ 32,125,473</b>            | <b>158,360,993</b> | <b>(157,227,061)</b>     | <b>(1,883,015)</b>                      | <b>31,376,390</b>                    | <b>100.00%</b>                    |

Defined Benefit Investments *(Continued)*

The Board’s policy is to establish a long-term strategic asset allocation that manages overall expected portfolio risk (volatility) and maximizes expected return without unduly constraining the discretionary, tactical decision-making process of the investment managers.

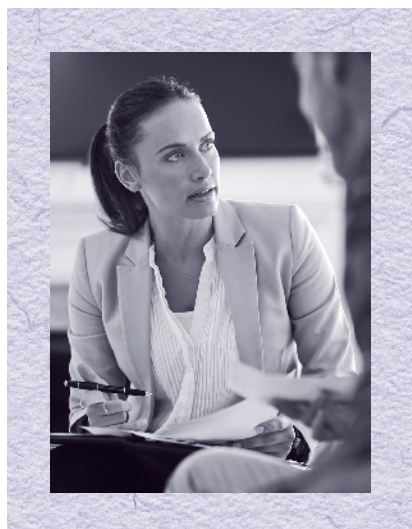
To implement the asset allocation plan, the Executive Director, supported by the Board, staff, and consultant, selects appropriate money management experts to invest the Fund assets. This selection process includes the creation of specific search criteria, completion and documentation of analysis, and due diligence on potential candidates, and interviews completed by the staff and/or Board. It is not the staff or Board’s intention to be involved with the day-to-day decisions made by external investment managers. Internal investment staff also manages segments of the portfolio.

All managers are expected to communicate with the staff at least quarterly.

Managers’ portfolios are evaluated both against appropriate market indices and similar manager style groups. The investment policy outlines appropriate benchmarks.

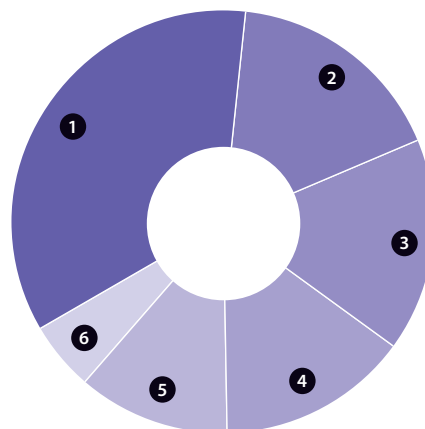
Investment return calculations are prepared using a time-weighted rate of return.

The allocation of assets as reported to the board are as follows: Equity securities 37.2%, Debt securities 20.2%, Absolute return 14.7%, Private equity 11.7% and Real assets 16.2%. These allocation percentages differ from investment asset percentages presented in the MD&A and Statement of Fiduciary Net Position as a result of different methodologies used to categorize investment assets and the impact of derivatives for investment purposes versus financial statement presentation purposes. For investment purposes the impact of derivatives used to rebalance the defined portfolio are expressed using the notional value of those derivatives.



**DEFINED BENEFIT SYSTEMS INVESTMENTS AT FAIR VALUE**

December 31, 2018



- 1 Equity Securities (35.1%)
- 2 Debt Securities (16.9%)
- 3 Real Assets (16.6%)
- 4 Absolute Return (14.6%)
- 5 Private Equity (11.7%)
- 6 Short Term (5.1%)

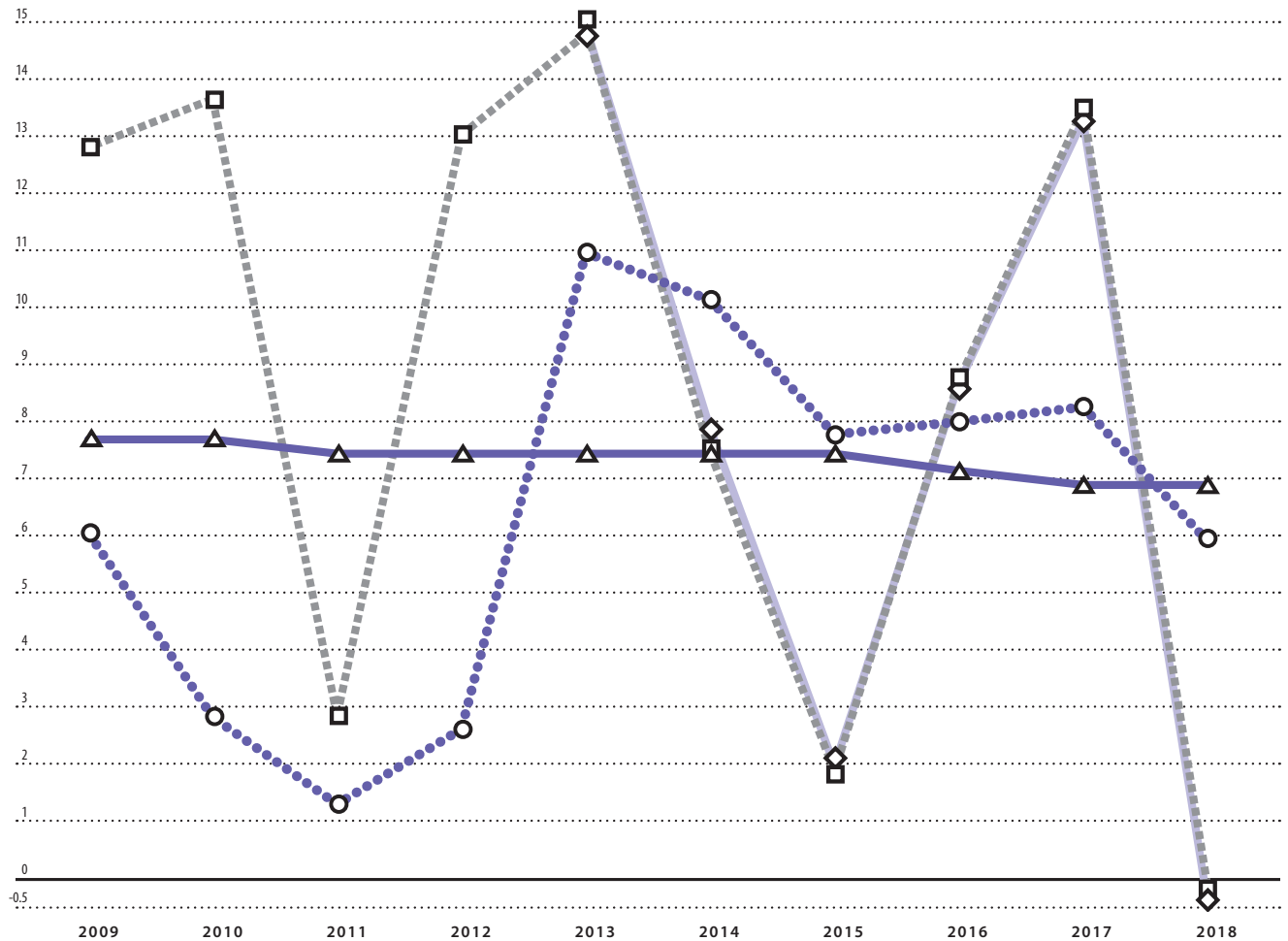
| December 31,           | 2009          | 2010         | 2011         | 2012         | 2013         | 2014         | 2015         | 2016         | 2017         | 2018         |
|------------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Equities securities    | 37.3%         | 35.8         | 35.2         | 36.2         | 37.5         | 35.5         | 33.9         | 35.2         | 37.8         | 35.1         |
| Debt securities        | 23.7          | 21.0         | 19.4         | 17.9         | 16.0         | 15.7         | 15.8         | 15.0         | 14.2         | 16.9         |
| Private equity         | 7.4           | 8.8          | 10.8         | 11.3         | 11.0         | 11.8         | 11.9         | 11.3         | 10.7         | 11.7         |
| Real assets            | 14.7          | 14.4         | 13.9         | 13.5         | 12.2         | 14.0         | 14.9         | 14.7         | 14.8         | 16.6         |
| Short-term securities  | 4.2           | 5.0          | 4.9          | 5.9          | 6.6          | 5.8          | 8.2          | 8.2          | 8.6          | 5.1          |
| Absolute return        | 12.7          | 15.0         | 15.8         | 15.2         | 16.7         | 17.2         | 15.3         | 15.6         | 13.9         | 14.6         |
| <b>Total portfolio</b> | <b>100.0%</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> | <b>100.0</b> |



## Defined Benefit Investments (Continued)

## 10-Year Total Pension Investment Rates of Return

(in percents)



(dollars in millions)

|      | Total Investment Portfolio Fair Value | (1) Smooth Expected Rate of Return | (2) Fair Value Rate of Return | (3) Actuarial Assumed Interest Rate | (4) Money Weighted Rate of Return |
|------|---------------------------------------|------------------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| 2009 | \$19,058                              | 6.11%                              | 12.88%                        | 7.75%                               | —                                 |
| 2010 | 20,992                                | 2.87%                              | 13.73%                        | 7.75%                               | —                                 |
| 2011 | 20,796                                | 1.34%                              | 2.89%                         | 7.50%                               | —                                 |
| 2012 | 22,871                                | 2.66%                              | 13.10%                        | 7.50%                               | —                                 |
| 2013 | 25,765                                | 11.03%                             | 14.89%                        | 7.50%                               | 14.55%                            |
| 2014 | 26,955                                | 10.20%                             | 7.52%                         | 7.50%                               | 7.94%                             |
| 2015 | 27,086                                | 7.84%                              | 1.92%                         | 7.50%                               | 2.02%                             |
| 2016 | 29,017                                | 8.06%                              | 8.79%                         | 7.20%                               | 8.73%                             |
| 2017 | 32,125                                | 8.32%                              | 13.57%                        | 6.95%                               | 13.38%                            |
| 2018 | 31,376                                | 5.99%                              | (0.22)%                       | 6.95%                               | (0.38)%                           |

- (1) **Smoothed Expected Rate of Return** consists of investment income in excess or shortfall of the expected 6.95% on fair value smoothed over a 5-year period with 20% of a year's excess or shortfall being recognized each year beginning with the current year.
- (2) **Fair Value Rate of Return** consists of cash income plus gains and losses due to changes in fair value, whether realized or unrealized (before deduction of investment fees). (For 2018, (0.39)% net of fees.)
- (3) **Actuarial Assumed Interest Rate** is the assumed rate of return on the fair value of assets, and is used in establishing retirement contribution rates and in determining current benefit reserve requirements.
- (4) **Money Weighted Rate of Return** is calculated as the internal rate of return on pension plan investments, net of investment expenses.

Defined Benefit Investments *(Continued)*Comparative Investment Results <sup>(1)(2)(3)(4)</sup>

Year Ended December 31, 2018

| Investment Option<br>Comparative Index                              | 1 Year          | 3 Year       | 5 Year       | 10 Year       |
|---|-----------------|--------------|--------------|---------------|
| <b>Global Equity</b> .....  | <b>(10.45)%</b> | <b>6.52%</b> | <b>4.32%</b> | <b>10.89%</b> |
| Russell Global Equity Index .....                                   | (10.09)         | 6.48         | 4.18         | 9.79          |
| <b>Global Debt Securities</b> .....                                 | <b>(0.01)</b>   | <b>2.81</b>  | <b>3.18</b>  | <b>4.82</b>   |
| Fund Benchmark.....   | 0.02            | 2.87         | 3.17         | 3.86          |
| <i>Benchmark consisting of:</i>                                     |                 |              |              |               |
| 60% Bloomberg Barclays U.S. Aggregate Bond Index                    |                 |              |              |               |
| 15% Bloomberg Barclays Global Aggregate Bond Index Hedged           |                 |              |              |               |
| 25% Bloomberg Barclays World Government Inflation-Linked Bond Index |                 |              |              |               |
| <b>Real Assets*</b> .....   | <b>10.94</b>    | <b>11.10</b> | <b>10.87</b> | <b>6.31</b>   |
| U.S. Consumer Price Index + 5.0% .....                              | 6.77            | 6.98         | 6.33         | 6.80          |
| <b>Private Equity</b> .....   | <b>18.63</b>    | <b>15.53</b> | <b>15.52</b> | <b>12.70</b>  |
| Private Equity Benchmark.....                                       | (2.58)          | 11.55        | 10.47        | 15.80         |
| <i>Benchmark consisting of:</i>                                     |                 |              |              |               |
| Russell 3000 + 2.5%   |                 |              |              |               |
| <b>Absolute Return</b> .....  | <b>2.24</b>     | <b>4.62</b>  | <b>3.63</b>  | <b>6.28</b>   |
| 3-Month Treasury Bills + 5.0%.....                                  | 6.87            | 6.02         | 5.63         | 5.38          |
| <b>Short Term</b> .....   | <b>2.24</b>     | <b>1.10</b>  | <b>0.70</b>  | <b>0.59</b>   |
| 3-Month Treasury Bills.....   | 1.87            | 1.02         | 0.63         | 0.37          |
| <b>Total Fund**</b> .....   | <b>(0.22)</b>   | <b>7.22</b>  | <b>6.17</b>  | <b>8.70</b>   |
| Fund Benchmark.....   | (2.08)          | 6.32         | 5.23         | 8.24          |
| <i>Benchmark consisting of:</i>                                     |                 |              |              |               |
| 40% Russell Global Equity Index                                     |                 |              |              |               |
| 16% 3-Month Treasury Bill + 5%                                      |                 |              |              |               |
| 15% CPI-W+5%  |                 |              |              |               |
| 12% Bloomberg Barclays U.S. Aggregate Bond Index                    |                 |              |              |               |
| 8% Russell 3000 Index + 2.5%  |                 |              |              |               |
| 5% Bloomberg Barclays World Government Inflation-Linked Bond Index  |                 |              |              |               |
| 3% Bloomberg Barclays Global Aggregate Bond Index Hedged            |                 |              |              |               |
| 0.4% Credit Suisse Leveraged Loan Index                             |                 |              |              |               |
| 0.4% Bloomberg Corporate High Yield Index                           |                 |              |              |               |
| 0.2% Russel 2000 Index  |                 |              |              |               |
| CAI Public Fund—Very Large Database Median.....                     | (3.29)          | 6.87         | 5.65         | 9.03          |
| <b>Inflation</b> .....  | <b>1.77</b>     | <b>1.98</b>  | <b>1.33</b>  | <b>1.80</b>   |

(1) Investment measurement services provided by Callan Associates Inc.

(2) Total rates of return include cash income plus gains and losses due to changes in fair value, where realized or unrealized.

(3) Investment return calculations were prepared using a time-weighted return except private equity which is prepared using a dollar weighted return.

(4) Global Equities and Debt Securities returns are reported gross of investment fees for comparability to the benchmark; whereas Real Assets, Private Equity, Absolute Return, and Short-Term returns are reported net of investment fees..

\*The non real estate portion of Real Assets only reflects returns for years 1, 3 and 5.  
Year 10 is for real estate only using a NCREIF Total Index Benchmark.

\*\*Total Fund return is a blended return that is based upon a gross return for Global Equities and Debt Securities and net return for Real Assets, Private Equity, Absolute Return and Short-term. The Total Fund net return is (0.39)%, 7.04%, 5.98%, and 8.50% on a 1, 3, 5, and 10-year basis.

## Defined Benefit Investments (Continued)

## List of Largest Assets Held

December 31, 2018

## LARGEST EQUITY HOLDINGS\*

(By Fair Value)

| Description         | Shares    | Fair Value    |
|---------------------|-----------|---------------|
| Alphabet Inc.       | 116,365   | \$121,154,684 |
| Microsoft Corp.     | 1,092,692 | 110,984,726   |
| Apple Inc.          | 696,895   | 109,928,217   |
| Amazon Inc.         | 66,538    | 99,938,080    |
| Citigroup           | 1,234,834 | 64,753,998    |
| Berkshire Hathaway  | 296,638   | 60,567,547    |
| Visa Inc.           | 393,304   | 51,892,530    |
| Nestle SA           | 636,632   | 51,535,031    |
| Johnson & Johnson   | 387,030   | 49,946,222    |
| United Health Group | 196,488   | 48,949,091    |

## LARGEST DEBT SECURITIES HOLDINGS

(By Fair Value)

| Description   | Par Value     | Fair Value    |
|---|---------------|---------------|
| US Treasury Note 2.875% Due 11-30-2023              | \$ 68,505,000 | \$ 69,698,494 |
| GNMA II Jumbos 4% 30 Year                           | 66,510,500    | 68,100,500    |
| US Treasury Note 2% Due 11-15-2026                  | 67,553,000    | 64,484,067    |
| US Treasury Bond 3.125% Due 11-15-2028              | 53,835,000    | 55,841,215    |
| US Treasury Note 0.375% Due 1-15-2027               | 55,252,000    | 54,934,539    |
| US Treasury Note 0.125% Due 4-15-2022               | 54,585,000    | 54,901,778    |
| US Treasury Note 2.875% Due 5-15-2028               | 52,200,000    | 53,001,374    |
| Government of Japan 0.1%<br>Index Linked Due 3-2027 | 5,078,600,000 | 48,731,740    |
| Government of Japan 0.1% Due 6-20-2021              | 4,713,000,000 | 43,222,783    |
| US Treasury Note 2.625% Due 7-15-2021               | \$ 42,075,000 | 42,224,577    |

\*As required by SEC Rule 13F, a list of publicly traded equity securities held by Utah Retirement Systems is available online through the SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR) website. This list is also available upon request.

## Schedules of Fees and Commissions

Year Ended December 31, 2018

## BROKER COMMISSION FEES

| Broker          | Total Commission Fees |
|-----------------|-----------------------|
| Instinet        | \$ 529,555            |
| Merrill Lynch   | 387,899               |
| Jefferies       | 229,740               |
| JP Morgan       | 193,860               |
| UBS             | 178,669               |
| RBC             | 158,716               |
| Frank Russell   | 134,826               |
| Cowen & Company | 118,820               |
| Barclays        | 136,386               |
| Morgan Stanley  | 104,566               |
| All Others      | 1,276,665             |
| <b>Total</b>    | <b>\$ 3,449,702</b>   |

## SCHEDULE OF INVESTMENT FEES AND COMMISSIONS

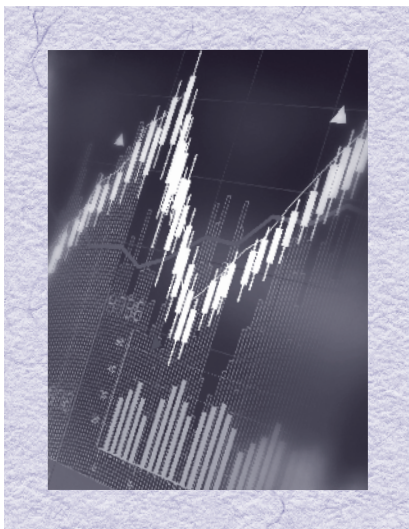
|                                      |                      |
|--------------------------------------|----------------------|
| Investment advisor fees:*            |                      |
| Absolute Return                      | \$ 8,301,508         |
| Equity                               | 29,225,831           |
| Fixed Income                         | 7,317,082            |
| Private Equity                       | 4,530,876            |
| Real Assets                          | 259,551              |
| Short Term                           | 897,152              |
| <b>Total investment advisor fees</b> | <b>50,532,000</b>    |
| Investment brokerage fees            | 3,449,702            |
| <b>Total fees and commissions</b>    | <b>\$ 53,981,702</b> |

\*Represents fees that are invoiced and paid directly by URS. These numbers do not represent all management, performance, carried interest, or other fees charged directly by investment advisors. These and other investment related fees are netted from returns.

Utah Retirement Systems uses a commission recapture program as part of its trading strategies. During the year ending December 31, 2018, Utah Retirement Systems recaptured approximately \$132,970 from the gross commission charges. This recaptured sum was used to cover or offset the \$197,347 in investment expenses that otherwise would have been paid for with investment funds.

**Defined Benefit Investments** *(Concluded)*

## Utah Retirement Investment Consultants



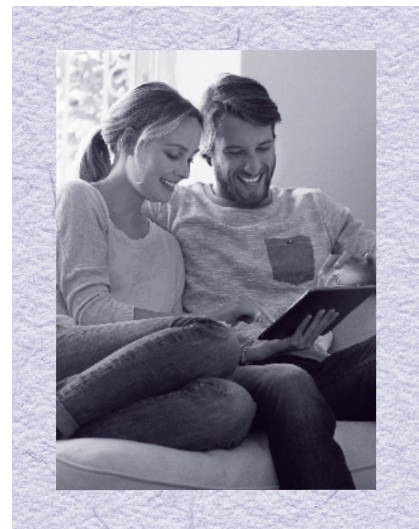
Albourne America LLC  
655 Montgomery Street  
San Francisco, CA 94111

Callan Associates, Inc.  
101 California Street  
Suite 3500  
San Francisco, CA 94111

Glass Lewis & Company  
One Sansome Street  
Suite 3300  
San Francisco, CA 94104

Russell Implementation  
Services, Inc.  
1301 Second Avenue  
18th Floor  
Seattle, WA 98101

The Northern Trust Company  
50 South LaSalle Street  
Chicago, IL 60675



# Defined Contribution Savings Plans Investments

## Investment Highlights

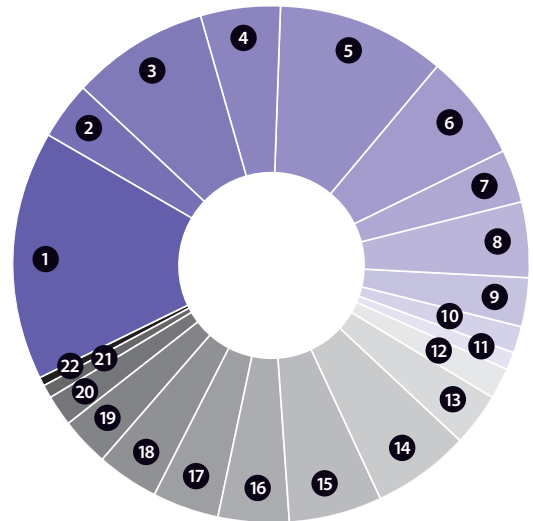
Utah Retirement Systems' 401(k), 457, Roth and Traditional IRAs are tax-advantaged retirement savings plans authorized under sections 401(k), 457(b), and 408 of the Internal Revenue Code. These plans are available to employees of the state, local government, and public education employers throughout Utah.

The participants of the plans have a choice of 20 core investment funds and a brokerage window in which their monies may be invested. Each participant may choose one or a combination of the core funds. The table to the right shows the total assets in the various investment options. The graph to the right and the table shows the asset distribution as of December 31, 2018.

## Investment and Administrative Expenses

There are no front-end load, redemption, or other hidden fees associated with these plans. All costs reflected in the table on page 148 are deducted from earnings prior to posting to participant accounts and do not appear as separate items on participant statements.

The administrative fee for the brokerage window account was a flat rate of \$25 per quarter. Investment fees and broker commissions are paid by the participant according to the trading and securities selected within the brokerage window.



## SAVINGS PLANS INVESTMENTS

December 31, 2018

(in thousands)

| Investment Options          | Total               |
|-----------------------------|---------------------|
| Income Fund                 | \$ 866,170          |
| Bond Fund                   | 205,752             |
| Balanced Fund               | 476,768             |
| Large Cap Stock Value Fund  | 277,596             |
| Large Cap Stock Index Fund  | 580,003             |
| Large Cap Stock Growth Fund | 374,273             |
| International Fund          | 180,003             |
| Small Cap Stock Fund        | 260,140             |
| Brokerage Window            | 172,028             |
| Tier 2 Nonvested Fund       | 94,684              |
| Target Retired Fund         | 65,429              |
| Target Date 2010 Fund       | 98,823              |
| Target Date 2015 Fund       | 192,627             |
| Target Date 2020 Fund       | 333,010             |
| Target Date 2025 Fund       | 323,870             |
| Target Date 2030 Fund       | 241,186             |
| Target Date 2035 Fund       | 234,887             |
| Target Date 2040 Fund       | 215,632             |
| Target Date 2045 Fund       | 173,881             |
| Target Date 2050 Fund       | 106,481             |
| Target Date 2055 Fund       | 46,837              |
| Target Date 2060 Fund       | 10,821              |
| <b>Totals</b>               | <b>\$ 5,530,901</b> |

- 1 Income Fund (15.66%)
- 2 Bond Fund (3.72%)
- 3 Balanced Fund (8.62%)
- 4 Large Cap Stock Value Fund (5.02%)
- 5 Large Cap Stock Index Fund (10.49%)
- 6 Large Cap Stock Growth Fund (6.77%)
- 7 International Fund (3.25%)
- 8 Small Cap Stock Fund (4.70%)
- 9 Brokerage Window (3.11%)
- 10 Tier 2 Nonvested Fund (1.71%)
- 11 Target Retired Fund (1.18%)
- 12 Target Date 2010 Fund (1.79%)
- 13 Target Date 2015 Fund (3.48%)
- 14 Target Date 2020 Fund (6.02%)
- 15 Target Date 2025 Fund (5.86%)
- 16 Target Date 2030 Fund (4.36%)
- 17 Target Date 2035 Fund (4.25%)
- 18 Target Date 2040 Fund (3.90%)
- 19 Target Date 2045 Fund (3.14%)
- 20 Target Date 2050 Fund (1.93%)
- 21 Target Date 2055 Fund (0.85%)
- 22 Target Date 2060 Fund (0.20%)

Defined Contribution Savings Plans Investments *(Continued)***2018 INVESTMENT SUMMARY AND INVESTMENT AND ADMINISTRATIVE FEES***(dollars in thousands)*

| Fund                        | 2018<br>Beginning<br>Fair Value | Purchases      | Sales and<br>Redemptions | Increase<br>(Decrease)<br>in Fair Value | 2018<br>Ending<br>Fair Value | Percent<br>of Total<br>Fair Value | Invest-<br>ment<br>Fees | Admin-<br>istrative<br>Fees | Total<br>Fees |
|-----------------------------|---------------------------------|----------------|--------------------------|---|------------------------------|-----------------------------------|-------------------------|-----------------------------|---------------|
| Income Fund                 | \$ 822,758                      | 114,346        | 77,950                   | 7,016                                   | 866,170                      | 15.66%                            | 0.26%                   | 0.16%                       | 0.42%         |
| Bond Fund                   | 219,220                         | 19,737         | 27,338                   | (5,867)                                 | 205,752                      | 3.72                              | 0.10                    | 0.16                        | 0.26          |
| Balanced Fund               | 505,758                         | 23,842         | 7,538                    | (45,294)                                | 476,768                      | 8.62                              | 0.24                    | 0.16                        | 0.40          |
| Large Cap Stock Value Fund  | 318,526                         | 16,314         | 19,814                   | (37,430)                                | 277,596                      | 5.02                              | 0.42                    | 0.16                        | 0.58          |
| Large Cap Stock Index Fund  | 636,315                         | 22,939         | 37,284                   | (41,967)                                | 580,003                      | 10.49                             | 0.03                    | 0.16                        | 0.19          |
| Large Cap Stock Growth Fund | 381,348                         | 50,430         | 31,819                   | (25,686)                                | 374,273                      | 6.77                              | 0.26                    | 0.16                        | 0.42          |
| International Fund          | 230,130                         | 9,263          | 20,345                   | (39,045)                                | 180,003                      | 3.25                              | 0.06                    | 0.16                        | 0.22          |
| Small Cap Stock Index Fund  | 319,648                         | 16,826         | 18,907                   | (57,427)                                | 260,140                      | 4.70                              | 0.37                    | 0.16                        | 0.53          |
| Brokerage Window            | 179,557                         | 26,168         | 17,056                   | (16,641)                                | 172,028                      | 3.11                              | N/A                     | N/A                         | N/A           |
| Tier 2 Nonvested            | 99,940                          | 23,780         | 19,093                   | (9,943)                                 | 94,684                       | 1.71                              | 0.18                    | 0.16                        | 0.34          |
| Target Date Retired Fund    | 63,688                          | 15,552         | 12,270                   | (1,541)                                 | 65,429                       | 1.18                              | 0.19                    | 0.16                        | 0.35          |
| Target Date 2010 Fund       | 98,431                          | 16,011         | 13,034                   | (2,585)                                 | 98,823                       | 1.79                              | 0.18                    | 0.16                        | 0.34          |
| Target Date 2015 Fund       | 193,774                         | 24,329         | 18,681                   | (6,795)                                 | 192,627                      | 3.48                              | 0.20                    | 0.16                        | 0.36          |
| Target Date 2020 Fund       | 323,541                         | 48,448         | 22,593                   | (16,386)                                | 333,010                      | 6.02                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2025 Fund       | 315,662                         | 42,533         | 15,816                   | (18,509)                                | 323,870                      | 5.86                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2030 Fund       | 234,217                         | 34,981         | 8,801                    | (19,211)                                | 241,186                      | 4.36                              | 0.22                    | 0.16                        | 0.38          |
| Target Date 2035 Fund       | 230,576                         | 30,335         | 5,220                    | (20,804)                                | 234,887                      | 4.25                              | 0.22                    | 0.16                        | 0.38          |
| Target Date 2040 Fund       | 214,593                         | 25,822         | 4,689                    | (20,094)                                | 215,632                      | 3.90                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2045 Fund       | 169,578                         | 24,290         | 2,225                    | (17,762)                                | 173,881                      | 3.14                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2050 Fund       | 97,339                          | 22,099         | 2,031                    | (10,926)                                | 106,481                      | 1.93                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2055 Fund       | 34,531                          | 17,555         | 358                      | (4,891)                                 | 46,837                       | 0.85                              | 0.21                    | 0.16                        | 0.37          |
| Target Date 2060 Fund       | 9,252                           | 5,164          | 2,524                    | (1,071)                                 | 10,821                       | 0.20                              | 0.21                    | 0.16                        | 0.37          |
| <b>Total</b>                | <b>\$ 5,698,382</b>             | <b>630,764</b> | <b>385,386</b>           | <b>(412,859)</b>                        | <b>5,530,901</b>             | <b>100.00%</b>                    |                         |                             |               |



By administering the savings plans internally rather than through a third party, expenses are kept at very low levels to maximize earnings to each participant. The table above shows these expenses to be nominal when compared to much higher fees on most annuities, mutual funds, and insurance contracts.

An annual account maintenance fee of \$15 is assessed to inactive accounts with combined 401(k), 457, Roth and Traditional IRA balances of less than \$5,000. (Inactive accounts are defined as accounts that have had no contribution or withdrawal activity for a period of at

least 12 months and the participant is no longer employed with a URS participating employer.) There is a \$60 one-time service fee for loans, and a 2% fee for short-term trading (more frequently than 30 days on amounts traded).

The investments described are not FDIC insured; not deposits or obligations of, or guaranteed by, any financial institution; and not guaranteed by the Utah Retirement Systems or any government agency.

The past performance of any of these funds does not guarantee future results.

## Defined Contribution Savings Plans Investments (Continued)

## Defined Contribution Plans Comparative Annualized Rates of Return

Year Ended December 31, 2018

| Investment Option<br>Comparative Index             | Annualized     |              |              |              |
|--|----------------|--------------|--------------|--------------|
|  | 1-Year         | 3-Year       | 5-Year       | 10-Year      |
| <b>Income Fund</b> .....                           | <b>2.16%</b>   | <b>1.83%</b> | <b>1.74%</b> | <b>1.88%</b> |
| 90-day Treasury Bills Index .....                  | 1.87           | 1.02         | 0.63         | 0.37         |
| <b>Bond Fund</b> .....                             | <b>(0.04)</b>  | <b>3.45</b>  | <b>3.18</b>  | <b>5.21</b>  |
| Bloomberg Aggregate Index .....                    | 0.01           | 2.06         | 2.52         | 3.48         |
| <b>Balanced Fund</b> .....                         | <b>(1.77)</b>  | <b>7.94</b>  | <b>6.79</b>  | <b>10.86</b> |
| Balanced Index <sup>(1)</sup> .....                | (2.59)         | 6.41         | 6.12         | 9.36         |
| <b>Large Cap Stock Value Fund</b> .....            | <b>(7.13)</b>  | <b>10.01</b> | <b>6.99</b>  | <b>13.07</b> |
| *Russell 1000 Value Index .....                    | (8.27)         | 6.95         | 5.95         | 11.18        |
| <b>Large Cap Stock Index Fund</b> .....            | <b>(5.00)</b>  | <b>8.86</b>  | <b>7.99</b>  | <b>12.73</b> |
| Large Cap Stock Blended Index <sup>(2)</sup> ..... | (4.78)         | 9.09         | 8.21         | 12.97        |
| <b>Large Cap Stock Growth Fund</b> .....           | <b>(0.91)</b>  | <b>10.11</b> | <b>10.21</b> | <b>14.75</b> |
| *Russell 1000 Growth Index .....                   | (1.51)         | 11.15        | 10.40        | 15.29        |
| <b>International Fund</b> .....                    | <b>(14.51)</b> | <b>4.43</b>  | <b>0.87</b>  | <b>5.56</b>  |
| International Blended Index <sup>(3)</sup> .....   | (14.76)        | 4.39         | 0.85         | 5.59         |
| <b>Small Cap Stock Fund</b> .....                  | <b>(13.28)</b> | <b>6.00</b>  | <b>3.70</b>  | <b>13.17</b> |
| *Russell 2000 Index .....                          | (11.01)        | 7.36         | 4.41         | 11.97        |
| <b>Target Retired Fund</b> .....                   | <b>(0.87)</b>  | <b>3.95</b>  | <b>N/A</b>   | <b>N/A</b>   |
| Target Date Retirement Index <sup>(4)</sup> .....  | (0.49)         | 3.34         | —            | —            |
| <b>Target Date 2010 Fund</b> .....                 | <b>(1.16)</b>  | <b>4.14</b>  | <b>N/A</b>   | <b>N/A</b>   |
| Target Date 2010 Index <sup>(5)</sup> .....        | (0.61)         | 3.70         | —            | —            |
| <b>Target Date 2015 Fund</b> .....                 | <b>(1.30)</b>  | <b>4.71</b>  | <b>N/A</b>   | <b>N/A</b>   |
| Target Date 2015 Index <sup>(6)</sup> .....        | (0.89)         | 4.29         | —            | —            |
| <b>Target Date 2020 Fund</b> .....                 | <b>(2.35)</b>  | <b>5.45</b>  | <b>N/A</b>   | <b>N/A</b>   |
| Target Date 2020 Index <sup>(7)</sup> .....        | (1.81)         | 5.02         | —            | —            |

Continued on page 150.

**Past performance does not guarantee future results.**

All fund returns are reported net of investment and administrative fees. All returns for periods greater than one year are annualized.

Investment return calculations were prepared using a time-weighted return. Comparative indexes below reflect current asset allocation targets.

(1) **Balanced Index:** 60% S&P 500, 40% Bloomberg Barclays US Aggregate Bond through 12/31/2014, 60% Russell 1000\*, 40% Bloomberg Barclays US Aggregate Bond thereafter

(2) **Large Cap Stock Blended Index:** S&P 500 through 6/30/2011, Russell 1000 Index\* thereafter

(3) **International Blended Index:** MSCI EAFE through 3/31/2011, MSCI ACWI ex US IMI thereafter

(4) **Target Date Retired Index:** 25% 90 Day T-Bills, 20% Bloomberg Barclays US Aggregate Bond, 14% Russell 1000 Index\*, 4% MSCI ACWI ex. US IMI, 1% Russell 2000 Index\*, 10% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 3% Bloomberg Commodity Index, 20% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 3% NFI-ODCE (Value Weighted)

(5) **Target Date 2010 Index:** 23% 90 Day T-Bills, 20% Bloomberg Barclays US Aggregate Bond, 16% Russell 1000 Index\*, 4% MSCI ACWI ex. US IMI, 1% Russell 2000 Index\*, 10% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 3% Bloomberg Commodity Index, 20% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 3% NFI-ODCE (Value Weighted)

(6) **Target Date 2015 Index:** 18% 90 Day T-Bills, 21% Bloomberg Barclays US Aggregate Bond, 18% Russell 1000 Index\*, 6% MSCI ACWI ex. US IMI, 2% Russell 2000 Index\*, 10% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 3% Bloomberg Commodity Index, 15% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 7% NFI-ODCE (Value Weighted)

(7) **Target Date 2020 Index:** 13% 90 Day T-Bills, 18% Bloomberg Barclays US Aggregate Bond, 23% Russell 1000 Index\*, 10% MSCI ACWI ex. US IMI, 3% Russell 2000 Index\*, 10% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 3% Bloomberg Commodity Index, 10% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 10% NFI-ODCE (Value Weighted)

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Defined Contribution Savings Plans Investments (Continued)

Defined Contribution Plans  
Comparative Annualized Rates of Return (Concluded)

Year Ended December 31, 2018

| Investment Option<br>Comparative Index       | Annualized     |              |              |            |
|--|----------------|--------------|--------------|------------|
|  | 1-Year         | 3-Year       | 5-Year       | 10-Year    |
| <b>Target Date 2025 Fund</b> .....           | <b>(3.78)%</b> | <b>6.06%</b> | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2025 Index <sup>(8)</sup> .....  | (3.19)         | 5.78         | —            | —          |
| <b>Target Date 2030 Fund</b> .....           | <b>(5.96)</b>  | <b>6.33</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2030 Index <sup>(9)</sup> .....  | (5.05)         | 6.25         | —            | —          |
| <b>Target Date 2035 Fund</b> .....           | <b>(7.35)</b>  | <b>6.68</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2035 Index <sup>(10)</sup> ..... | (6.90)         | 6.52         | —            | —          |
| <b>Target Date 2040 Fund</b> .....           | <b>(8.18)</b>  | <b>6.68</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2040 Index <sup>(11)</sup> ..... | (7.84)         | 6.57         | —            | —          |
| <b>Target Date 2045 Fund</b> .....           | <b>(8.50)</b>  | <b>6.71</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2045 Index <sup>(12)</sup> ..... | (8.21)         | 6.53         | —            | —          |
| <b>Target Date 2050 Fund</b> .....           | <b>(8.50)</b>  | <b>6.71</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2050 Index <sup>(13)</sup> ..... | (8.21)         | 6.53         | —            | —          |
| <b>Target Date 2055 Fund</b> .....           | <b>(8.50)</b>  | <b>6.71</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2055 Index <sup>(14)</sup> ..... | (8.21)         | 6.53         | —            | —          |
| <b>Target Date 2060 Fund</b> .....           | <b>(8.50)</b>  | <b>6.71</b>  | <b>N/A</b>   | <b>N/A</b> |
| Target Date 2060 Index <sup>(15)</sup> ..... | (8.21)         | 6.53         | —            | —          |
| <b>Tier 2 Nonvested Fund</b> .....           | <b>(5.29)</b>  | <b>5.17</b>  | <b>3.69%</b> | <b>N/A</b> |
| Tier 2 Nonvested Index <sup>(16)</sup> ..... | (4.49)         | 4.87         | 3.76         | —          |

Past performance does not guarantee future results.

(8) **Target Date 2025 Index:** 8% 90 Day T-Bills, 16% Bloomberg Barclays US Aggregate Bond, 2% Russell 1000 Value Index\*, 24% Russell 1000 Index\*, 2% Russell 1000 Growth Index\*, 15% MSCI ACWI ex. US IMI, 4% Russell 2000 Index\*, 9% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 2% Russell Fundamental US Select Real Estate Index\*\*, 3% Bloomberg Commodity Index, 5% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 10% NFI-ODCE (Value Weighted)

(9) **Target Date 2030 Index:** 3% 90 Day T-Bills, 11% Bloomberg Barclays US Aggregate Bond, 4% Russell 1000 Value Index\*, 24% Russell 1000 Index\*, 4% Russell 1000 Growth Index\*, 22% MSCI ACWI ex. US IMI, 6% Russell 2000 Index\*, 7% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 1% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged), 4% Bloomberg Commodity Index, 10% NFI-ODCE (Value Weighted)

(10) **Target Date 2035 Index:** 7% Bloomberg Barclays US Aggregate Bond, 6% Russell 1000 Value Index\*, 23% Russell 1000 Index\*, 6% Russell 1000 Growth Index\*, 29% MSCI ACWI ex. US IMI, 9% Russell 2000 Index, 4% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 8% NFI-ODCE (Value Weighted)

(11) **Target Date 2040 Index:** 4% Bloomberg Barclays US Aggregate Bond, 8.5% Russell 1000 Value Index\*, 21% Russell 1000 Index\*, 8.5% Russell 1000 Growth Index\*, 32% MSCI ACWI ex. US IMI, 10% Russell 2000 Index\*, 3% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 5% NFI-ODCE (Value Weighted)

(12) **Target Date 2045 Index:** 3% Bloomberg Barclays US Aggregate Bond, 10% Russell 1000 Value Index\*, 20% Russell 1000 Index\*, 10% Russell 1000 Growth Index\*, 33% MSCI ACWI ex. US IMI, 10% Russell 2000 Index\*, 2% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 4% NFI-ODCE (Value Weighted)

(13) **Target Date 2050 Index:** 3% Bloomberg Barclays US Aggregate Bond, 10% Russell 1000 Value Index\*, 20% Russell 1000 Index\*, 10% Russell 1000 Growth Index\*, 33% MSCI ACWI ex. US IMI, 10% Russell 2000 Index\*, 2% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 4% NFI-ODCE (Value Weighted)

(14) **Target Date 2055 Index:** 3% Bloomberg Barclays US Aggregate Bond, 10% Russell 1000 Value Index\*, 20% Russell 1000 Index\*, 10% Russell 1000 Growth Index\*, 33% MSCI ACWI ex. US IMI, 10% Russell 2000 Index\*, 2% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 4% NFI-ODCE (Value Weighted)

(15) **Target Date 2060 Index:** 3% Bloomberg Barclays US Aggregate Bond, 10% Russell 1000 Value Index\*, 20% Russell 1000 Index\*, 10% Russell 1000 Growth Index\*, 33% MSCI ACWI ex. US IMI, 10% Russell 2000 Index\*, 2% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 4% Bloomberg Commodity Index, 4% NFI-ODCE (Value Weighted)

(16) **Tier 2 Nonvested Index:** 30% Bloomberg Barclays US Aggregate Bond, 23% Russell 1000 Index\*, 18% MSCI ACWI ex. US IMI, 5% Russell 2000 Index\*, 10% Bloomberg Barclays Global Aggregate ex. US Bond Index (hedged), 4% Russell Fundamental US Select Real Estate Index\*\*, 5% Bloomberg Commodity Index, 5% Bloomberg Barclays Global Inflation-Linked Bond Index 1-10 Year (USD Hedged)

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## Defined Contribution Savings Plans Investments (Continued)

## List of Largest Assets Held

December 31, 2018

## LARGEST EQUITY HOLDINGS\*

(By Fair Value)

| Description     | Shares  | Fair Value    |
|-----------------|---------|---------------|
| Amazon Inc.     | 40,455  | \$ 60,762,196 |
| Alphabet Inc.   | 56,375  | 58,367,451    |
| Microsoft Corp. | 528,016 | 53,630,585    |
| Apple Inc.      | 313,313 | 49,421,993    |
| Visa Inc.       | 234,172 | 30,896,654    |
| Mastercard Inc. | 158,752 | 29,948,565    |
| Facebook Inc.   | 228,374 | 29,937,548    |
| Salesforce Inc. | 200,389 | 27,447,281    |
| Netflix Inc.    | 101,910 | 27,277,231    |
| Boeing Inc.     | 73,699  | 23,767,928    |

## LARGEST DEBT SECURITIES HOLDINGS

(By Fair Value)

| Description                          | Par Value     | Fair Value    |
|--------------------------------------|---------------|---------------|
| US Treasury Note 2.75% Due 5-31-2023 | \$ 25,000,000 | \$ 25,333,223 |
| US Treasury Note 1.75% Due 5-31-2022 | 20,330,000    | 19,878,612    |
| SLM Student Loan Due 1-25-2041       | 19,797,000    | 19,340,972    |
| SLM Student Loan Due 4-25-2040       | 18,274,000    | 17,920,338    |
| FNMA Pool 4% Due 10-1-2045           | 15,677,266    | 16,052,021    |
| FNMA Pool 4.5% Due 5-1-2048          | 14,601,097    | 15,125,787    |
| FHLMC Pool 4.5% Due 7-1-2047         | 13,563,095    | 14,100,732    |
| Government of Germany 2.5% 8-15-2046 | 8,450,000     | 13,703,062    |
| Government of Japan 0.5% 12-20-2024  | 1,136,600,000 | 10,761,202    |
| US Treasury Note 3% Due 10-31-2025   | 9,890,000     | 10,196,668    |

\*As required by SEC Rule 13F, a list of publicly traded equity securities held by Utah Retirement Systems is available online through the SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR) website. This list is also available upon request.

## Schedules of Fees and Commissions

Year Ended December 31, 2018

## BROKER COMMISSION FEES

| Broker            | Total Commission Fees |
|-------------------|-----------------------|
| Frank Russell     | \$ 30,838             |
| Merrill Lynch     | 24,660                |
| Morgan Stanley    | 19,206                |
| Bear Sterns       | 11,008                |
| Goldman Sachs     | 8,701                 |
| Instinet          | 7,155                 |
| Jefferies         | 7,039                 |
| Cowen & Company   | 3,004                 |
| RBC Dain Rauscher | 2,587                 |
| Allen & Company   | 2,582                 |
| All Others        | 24,253                |
| <b>Total</b>      | <b>\$ 141,033</b>     |

## SCHEDULE OF INVESTMENT FEES AND COMMISSIONS

|                                      |                     |
|--------------------------------------|---------------------|
| Investment advisor fees:*            |                     |
| Debt securities                      | \$ 1,898,465        |
| Equity securities                    | 3,145,768           |
| Real assets                          | 220,238             |
| <b>Total investment advisor fees</b> | <b>5,264,471</b>    |
| Investment brokerage fees            | 141,033             |
| <b>Total fees and commissions</b>    | <b>\$ 5,405,503</b> |

\*Represents fees that are invoiced and paid directly by URS. These numbers do not represent all management, wrap, or other fees charged directly by investment advisors. These and other fees are netted from returns.

Utah Retirement Systems uses a commission recapture program as part of its trading strategies. During the year ending December 31, 2018, Utah Retirement Systems recaptured \$29,296 from the gross commission charges. This recaptured sum was used to cover or offset the \$39,811 in investment expenses that otherwise would have been paid for with investment funds.

## Defined Contribution Savings Plans Investments *(Concluded)*

### Investment Professionals

#### Defined Contribution Plans Investment Professionals



Ameriprise Trust Company  
940 Ameriprise Financial Center  
Minneapolis, MN 55474

AQR  
2 Greenwich Plaza  
3rd Floor  
Greenwich, CT 06830

BlackRock Asset Management  
40 East 52nd Street  
New York, NY 10019

Charles Schwab  
101 Montgomery Street  
San Francisco, CA 94104

Dimensional Fund  
Advisors, Inc.  
6300 Bee Cave Road  
Austin, TX 78746

Dodge & Cox  
Investment Managers  
555 California Street  
40th Floor  
San Francisco, CA 94104

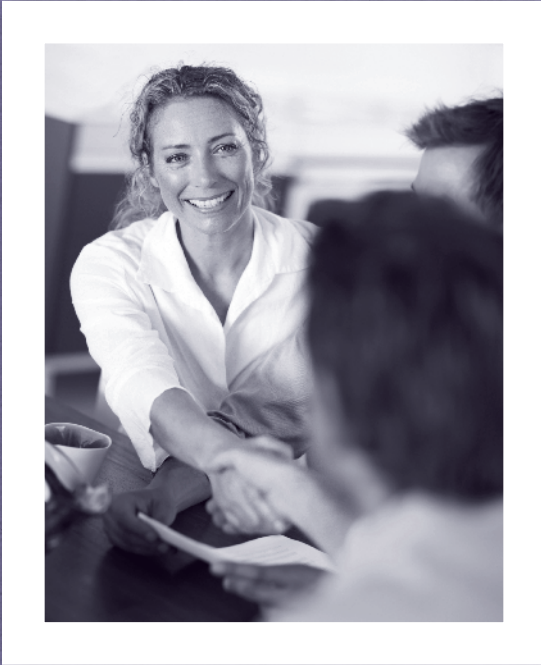
Jennison Associates, LLC  
466 Lexington Avenue  
New York, NY 10017

Standish  
201 Washington Street  
Suite 2900  
Boston, MA 02108

The Northern Trust Company  
50 South LaSalle Street  
Chicago, IL 60675

The Prudential Insurance  
Company of America  
751 Broad Street  
Newark, NJ 07102

Utah Retirement Systems  
560 East 200 South  
Salt Lake City, UT 84102



# Actuarial Section

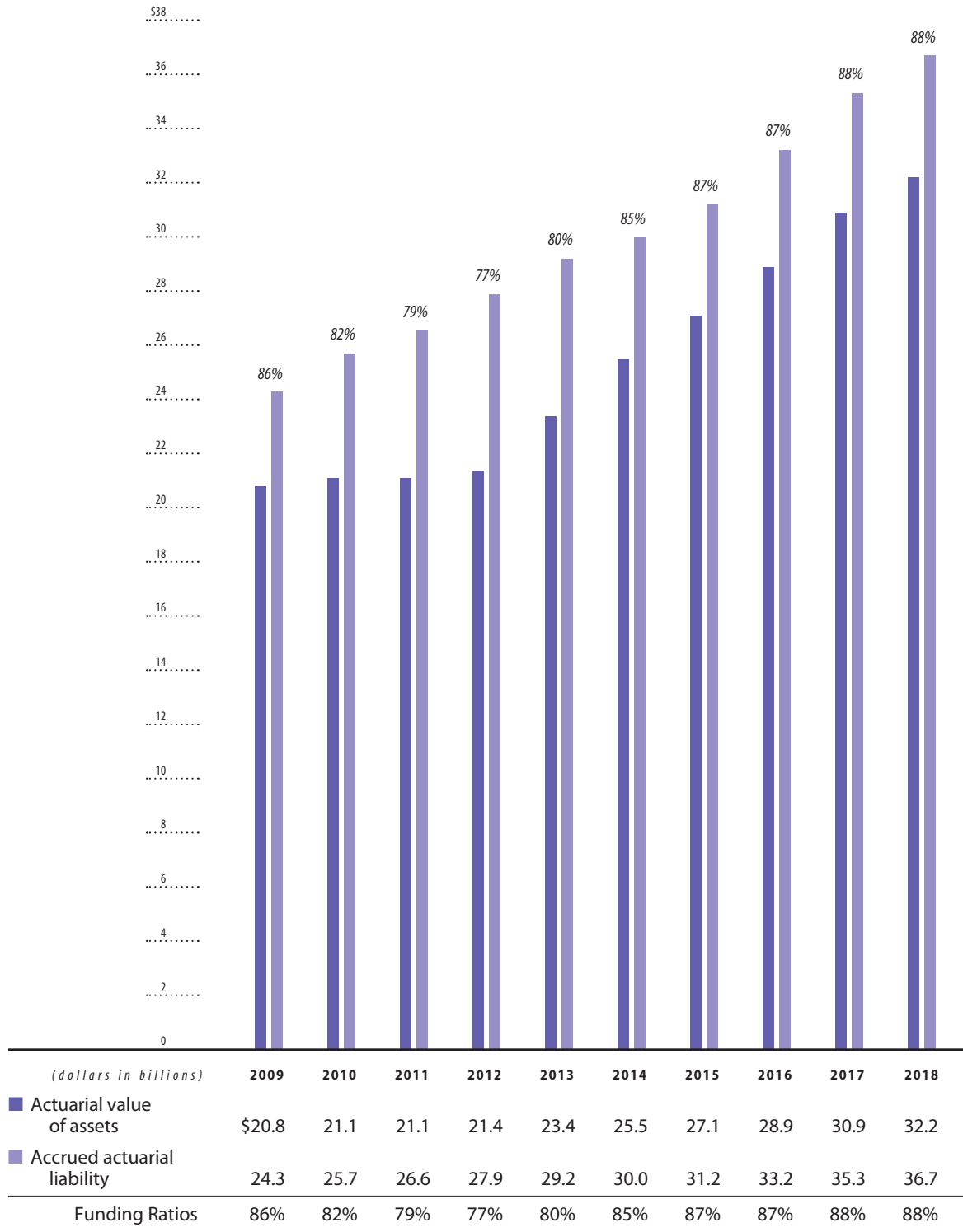
Utah Retirement Systems  
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## Utah Retirement Systems

# Funding Progress with Funding Ratios

(dollars in billions)



# Actuary's Certification Letter



P: 469.524.0000 | F: 469.524.0003 | [www.grsconsulting.com](http://www.grsconsulting.com)

August 9, 2018

Utah State Retirement Board  
540 East 200 South  
Salt Lake City, UT 84102

Dear Members of the Board:

## **Subject: Actuarial Valuation as of January 1, 2018**

This report describes the current actuarial condition of the Utah Retirement Systems (URS), determines the calculated employer contribution rates, and analyzes changes in these contribution rates. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of January 1, the first day of the URS plan year. This report was prepared at the request of the Board and is intended for use by the URS staff and those designated or approved by the Board. This report may be provided to parties other than URS staff only in its entirety and only with the permission of the Board.

Under URS statutes, the Board of Trustees must certify employer contribution rates annually. These rates are determined actuarially, based on the Board's funding policy, although, as discussed below, the Board may choose to maintain the current rate if it is greater than the actuarially calculated rate. Contribution rates determined by a given actuarial valuation become effective eighteen months after the valuation date. In other words, the rates determined by this January 1, 2018 actuarial valuation will be used by the Board when certifying the employer contribution rates for the 12-month period beginning July 1, 2019 and ending June 30, 2020. If new legislation is enacted between the valuation date and the date the contribution rates become effective, the Board certified contribution rates will be updated to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

## **Financing objectives and funding policy**

In setting contribution rates, the Board's principal objectives are:

- » To set rates so that the unfunded actuarial accrued liability (UAAL) will be amortized over a reasonable period from the current valuation date
- » To set rates so that they remain relatively level over time.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

## Actuary's Certification Letter *(Continued)*

To accomplish this, the Board's funding policy requires that the employer contribution rate be at least equal to the sum of the employer normal cost rate (which pays the current year's cost) and an amortization rate which results in the amortization of the UAAL over 20 years in installments that increase at the assumed rate of growth in payroll for URS.

Under this policy, the objective of maintaining a relatively level contribution rate over time is achieved in normal conditions such as consistent financial markets.

Section 49-11-301(5) of the Utah Code allows the Board to set the employer contribution rate at the prior year's rate, if the rate otherwise would decrease and if the funded ratio is less than 110%. In such a case, the rate set by the Board would be higher than the actuarially determined contribution rate. The purpose of this legislation is to enhance the Board's ability to maintain more level contribution rates while targeting a 100% -110% funded level. The Board has historically followed this policy, so the certified contribution rate may be greater than the actuarially determined rate.

### Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

Since the prior year's valuation, the funded ratio on a combined basis increased from 85.2% to 87.4%. The improvement in the funded ratio is due to investment gains on an actuarial value of asset basis and the current contribution effort to finance the unfunded actuarial accrued liability. Absent unfavorable actuarial experience, we expect the funded ratio to continue to increase in future years.

If market value had been used in the calculation instead of actuarial value, the aggregate funded ratio for all funds combined would have been 90.3% compared to 84.1% in the prior year. The increase in the funded ratio on a market value basis is attributable to the 13.3% return on the market value of assets during the prior year and the current contribution effort to finance the unfunded actuarial accrued liability

### Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2018. SB 21 was enacted during the 2018 legislative session that modified the death benefits for certain Tier I public safety members and firefighters. As a result, the certified contribution rates for those applicable funds were increased (from those shown in the prior valuation report) for the fiscal year beginning July 1, 2018, to finance these benefit improvements.

### Assumptions and methods

The economic and demographic assumptions and actuarial methods used to perform this valuation remain unchanged from the prior valuation. The actuary reviews the investment return assumption each year and provides consultation to the Board regarding its appropriateness. The Board has the authority to change this assumption each year. The demographic assumptions are reviewed in detail every three years. The next experience analysis to review the demographic assumptions is scheduled for 2020.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities and calculated contribution rates.



## Actuary's Certification Letter *(Concluded)*

It is our opinion that the assumptions used to perform this valuation are internally consistent and are reasonable based on past and anticipated future experience of the System. Also, these assumptions and methods used for funding purposes satisfy the parameters set by the Actuarial Standards of Practice.

### Data

Member data for retired, active and inactive members was supplied as of December 31, 2017 by the URS staff. The staff also supplied asset information as of December 31, 2017. We did not audit this data, but we did apply a number of tests to the data and concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by URS.

GRS prepared the following schedules in the actuarial section: *Summary of Actuarial Assumptions and Methods, Analysis of Financial Experience, and the Member and Employer Contribution Rates*. In addition, GRS prepared the following schedules in the financial section in accordance with GASB Statement No. 67: *Net Pension Liability of Employers, Changes in Discount Rate, Schedule of Changes in the Employers' Net Pension Liability, Schedule of Employers' Net Pension Liability, and the Schedules of Employer Contributions*.

URS relied upon the data prepared by GRS to prepare the following schedules: Calculation of Actuarial Value of Assets, Actuarial Value of Assets by System, Schedules of Funding Progress, Solvency Tests, Schedules of Active Member Valuation Data, and the Schedules of Retirants and Beneficiaries.

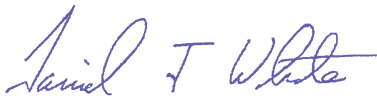
### Certification

We certify that the information presented herein is accurate and fairly portrays the actuarial position of URS as of January 1, 2018.

All of our work conforms with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Utah state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The undersigned are independent actuaries and consultants. Mr. White is an Enrolled Actuary and a Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Both consultants below are experienced in performing valuations for large public retirement systems.

Sincerely,



Daniel J. White, FSA, EA, MAAA  
Senior Consultant

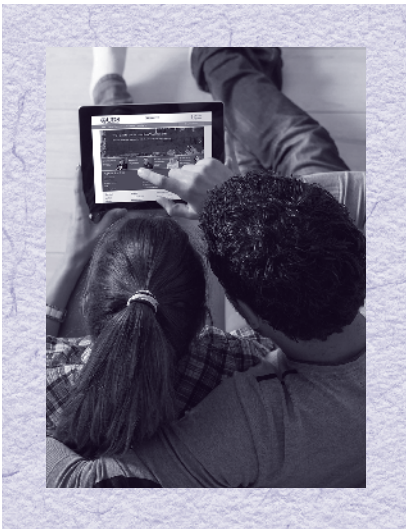


Lewis Ward  
Consultant



# Summary of Actuarial Assumptions and Methods

as of January 1, 2018



## Actuarial Assumptions and Methods

- a)** The actuarial valuation was prepared using the entry age actuarial cost method. As described in the certification letter, the contribution rates are set based on the board's funding policy, which states the contribution rate will not be less than the amount needed to amortize the unfunded actuarial accrued liability of each System over a 20-year period from the valuation date (January 1, 2018).

In calculating this minimum, amortization payments are designed to remain level as a percent of payroll, and payroll is assumed to increase 3.00% per year. Under this method, actuarial gains and losses are identified and amortized as part of the unfunded actuarial accrued liability over a period that does not exceed 20 years.

- b)** The future investment earnings of the assets of the Systems are assumed to accrue at an annual rate of 6.95%, compounded annually. This rate is made up of a 2.50% assumed inflation rate and a 4.45% assumed real rate of return. This assumption was adopted January 1, 2017.
- c)** The total rates of assumed annual salary increase are shown on the actuarial schedule on page 163. The rates include increases due to promotion and longevity and a 3.25% per annum rate of increase in the general wage level of the membership. Salaries of judges are assumed to increase at 3.25%. All of these assumptions were adopted January 1, 2017.

**d)** Post-retirement benefit increases are based on the consumer price index (CPI), limited by the provisions of each System. The increases are assumed to be 2.5% for all Systems. Increases are based on the member's original retirement allowance except in the Judges Retirement System where increases are compounded. For current retirees who have received cumulative COLAs less than the total of annual CPI increases since retirement, higher COLAs are assumed, subject to the annual maximum (2.5% or 4% for Public Safety and 4% for all other Systems), as long as the member has "banked" CPI increases remaining.

**e)** Tables of mortality rates for male members retired for service and beneficiaries were developed from actual experience of URS retirees. Mortality rates for female members retired for service and beneficiaries were developed from actual experience of the URS retirees.



Summary of Actuarial Assumptions and Methods *(Continued)*

as of January 1, 2018

**RETIRED MEMBER MORTALITY**

Class of Member

**Educators and Judges**

|       |                |
|-------|----------------|
| Men   | 2017URSM (90%) |
| Women | 2017URSF (90%) |

**Public Safety and Firefighters**

|       |                 |
|-------|-----------------|
| Men   | 2017URSM (110%) |
| Women | 2017URSF (110%) |

**Local Government, Public Employees**

|       |                 |
|-------|-----------------|
| Men   | 2017URSM (110%) |
| Women | 2017URSF (110%) |

*2017URSM = Constructed mortality table based on actual experience of male URS retirees multiplied by given percentage*

*2017URSF = Constructed mortality table based on actual experience of female URS retirees multiplied by given percentage*

The mortality basis is adjusted based upon the member's class and gender as shown above. These base rates are adjusted for future improvement in mortality using published Scale AA projected from the year 2017. All of these rates were adopted January 1, 2017. Mortality rates for active members use the RP2014 employees mortality tables with white collar adjustment as the underlying assumption with scaling factors applied based on employee group and gender. The assumptions were adopted effective January 1, 2017.

**f)** Mortality among disabled members is based on 110% of the RP2014 disabled mortality table for males, and 120% of the RP2014 disabled mortality table for females. The rates for males and females are also adjusted for future improvement in mortality using published Scale AA projected from the year 2006.

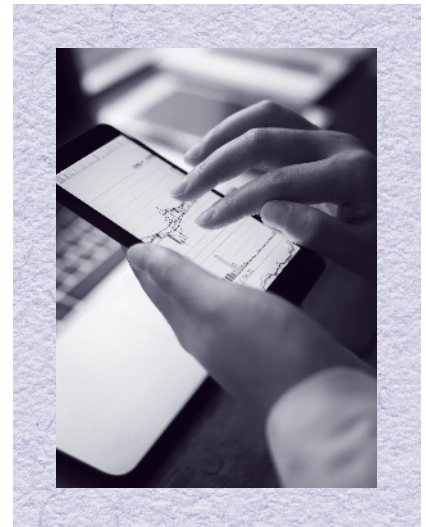
**g)** Other demographic assumptions regarding retirement, mortality, disablement, and termination from employment are illustrated in the following actuarial schedules.

The retirement assumptions illustrated are for members of the Systems who are eligible to retire with 30 years of service (35 years of service for Tier 2). For public employees the rates vary by age and eligibility for reduced or unreduced retirement. For Public Safety, Firefighters, and Judges the rates vary by age and service groupings.

Rates of assumed termination from employment are assumed to vary by years of service. All terminating members who are not eligible for vested benefits are assumed to withdraw their contributions immediately. Vested members are assumed to withdraw their contributions and forfeit the right to further benefits at the rates illustrated.

**h)** The Retirement Board uses the expected rate of return method for calculating the actuarial value of assets. This method is based on the total earnings of the co-mingled investments and spreads the excess/shortfall of actual investment returns over or under the expected return over five years. One-fifth of the excess/shortfall is recognized each year. The actuarial values of assets under this method were calculated and reported to us by the Systems' staff.

**i)** All of the actuarial assumptions were renewed or adopted by the Retirement Board in 2017, as recommended by the actuary. The assumptions for Tier 2 members are the same as the Tier 1 members, except for retirement rates.



Summary of Actuarial Assumptions and Methods (Continued)

as of January 1, 2018

|   | Retirement Age | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                  |                           |                           |                  |                           |        | Governors and Legislators Retirement Plan |
|---|----------------|--|------------------|---------------------------|---------------------------|------------------|---------------------------|--------|---|
|   |                | Male   |                  |                           | Female                    |                  |                           |        |   |
|   |                | State and School Division  |                  | Local Government Division | State and School Division |                  | Local Government Division |        |   |
|   |                | Educators  | Public Employees |                           | Educators                 | Public Employees |                           |        |   |
| <b>Tier 1 Noncontributory and Contributory Retirement Systems</b><br><i>Adopted January 1, 2017</i> | 50             | 20.00%   | 15.00%           | 15.00%                    | 30.00%                    | 17.00%           | 20.00%                    | 0.00%  |   |
|   | 51             | 20.00  | 15.00            | 15.00                     | 30.00                     | 16.00            | 20.00                     | 0.00   |   |
|   | 52             | 20.00  | 15.00            | 15.00                     | 30.00                     | 16.00            | 20.00                     | 0.00   |   |
|   | 53             | 20.00  | 15.00            | 15.00                     | 14.00                     | 16.00            | 20.00                     | 0.00   |   |
|   | 54             | 15.00  | 15.00            | 15.00                     | 14.00                     | 16.00            | 20.00                     | 0.00   |   |
|   | 55             | 15.00  | 16.00            | 15.00                     | 14.00                     | 16.00            | 25.00                     | 0.00   |   |
|   | 56             | 15.00  | 16.00            | 15.00                     | 18.00                     | 16.00            | 25.00                     | 0.00   |   |
|   | 57             | 15.00  | 16.00            | 15.00                     | 18.00                     | 16.00            | 25.00                     | 0.00   |   |
|   | 58             | 15.00  | 16.00            | 15.00                     | 18.00                     | 20.00            | 25.00                     | 0.00   |   |
|   | 59             | 15.00  | 16.00            | 15.00                     | 18.00                     | 20.00            | 25.00                     | 0.00   |   |
|   | 60             | 23.00  | 20.00            | 20.00                     | 30.00                     | 25.00            | 30.00                     | 0.00   |   |
|   | 61             | 23.00  | 20.00            | 20.00                     | 30.00                     | 25.00            | 30.00                     | 0.00   |   |
|   | 62             | 33.00  | 30.00            | 23.00                     | 35.00                     | 33.00            | 30.00                     | 100.00 |   |
|   | 63             | 33.00  | 30.00            | 23.00                     | 35.00                     | 33.00            | 30.00                     | 100.00 |   |
|   | 64             | 33.00  | 30.00            | 23.00                     | 35.00                     | 33.00            | 30.00                     | 100.00 |   |
|   | 65             | 33.00  | 22.00            | 23.00                     | 35.00                     | 28.00            | 25.00                     | 100.00 |   |
|   | 66             | 33.00  | 22.00            | 30.00                     | 35.00                     | 28.00            | 25.00                     | 100.00 |   |
|   | 67             | 30.00  | 22.00            | 22.00                     | 35.00                     | 28.00            | 25.00                     | 100.00 |   |
|   | 68             | 30.00  | 22.00            | 22.00                     | 23.00                     | 22.00            | 25.00                     | 100.00 |   |
|   | 69             | 25.00  | 22.00            | 22.00                     | 23.00                     | 22.00            | 25.00                     | 100.00 |   |
|   | 70             | 20.00  | 22.00            | 22.00                     | 23.00                     | 22.00            | 20.00                     | 100.00 |   |
|   | 71             | 20.00  | 22.00            | 18.00                     | 23.00                     | 22.00            | 15.00                     | 100.00 |   |
|   | 72             | 20.00  | 22.00            | 18.00                     | 23.00                     | 22.00            | 15.00                     | 100.00 |   |
|   | 73             | 20.00  | 22.00            | 18.00                     | 23.00                     | 22.00            | 15.00                     | 100.00 |   |
|   | 74             | 20.00  | 22.00            | 18.00                     | 23.00                     | 22.00            | 15.00                     | 100.00 |   |
|   | 75             | 100.00   | 100.00           | 100.00                    | 100.00                    | 100.00           | 100.00                    | 100.00 |   |

|   | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                |                |                |                |                |                |                |                |                |                |                |
|---|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|   | Retirement Age   | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age |
| <b>Tier 1 Public Safety Retirement System</b><br><i>Adopted January 1, 2017</i> | 45   | 15.00%         | 50             | 15.00%         | 55             | 15.00%         | 59             | 20.00%         | 63             | 35.00%         | 67             | 50.00%         |
|   | 46   | 15.00          | 51             | 15.00          | 56             | 15.00          | 60             | 20.00          | 64             | 35.00          | 68             | 50.00          |
|   | 47   | 15.00          | 52             | 15.00          | 57             | 15.00          | 61             | 20.00          | 65             | 35.00          | 69             | 50.00          |
|   | 48   | 15.00          | 53             | 15.00          | 58             | 15.00          | 62             | 35.00          | 66             | 50.00          | 70             | 100.00         |
|   | 49   | 15.00          | 54             | 15.00          |                |                |                |                |                |                |                |                |

|  | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                |                |                |                |                |                |                |                |                |                |                |
|--|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | Retirement Age   | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age |
| <b>Tier 1 Firefighters Retirement System</b><br><i>Adopted January 1, 2017</i> | 45   | 15.00%         | 50             | 15.00%         | 55             | 15.00%         | 59             | 20.00%         | 63             | 25.00%         | 67             | 50.00%         |
|  | 46   | 15.00          | 51             | 15.00          | 56             | 15.00          | 60             | 20.00          | 64             | 25.00          | 68             | 50.00          |
|  | 47   | 15.00          | 52             | 15.00          | 57             | 15.00          | 61             | 20.00          | 65             | 50.00          | 69             | 50.00          |
|  | 48   | 15.00          | 53             | 15.00          | 58             | 20.00          | 62             | 25.00          | 66             | 50.00          | 70             | 100.00         |
|  | 49   | 15.00          | 54             | 15.00          |                |                |                |                |                |                |                |                |

|   | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                |                |                |                |                |                |                |                |                |                |                |
|---|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|   | Retirement Age   | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age | Retirement Age |
| <b>Judges Retirement System</b><br><i>Adopted January 1, 2017</i> | 45   | 10.00%         | 50             | 10.00%         | 55             | 10.00%         | 59             | 10.00%         | 63             | 10.00%         | 67             | 20.00%         |
|   | 46   | 10.00          | 51             | 10.00          | 56             | 10.00          | 60             | 10.00          | 64             | 15.00          | 68             | 20.00          |
|   | 47   | 10.00          | 52             | 10.00          | 57             | 10.00          | 61             | 10.00          | 65             | 15.00          | 69             | 20.00          |
|   | 48   | 10.00          | 53             | 10.00          | 58             | 10.00          | 62             | 10.00          | 66             | 20.00          | 70             | 100.00         |
|   | 49   | 10.00          | 54             | 10.00          |                |                |                |                |                |                |                |                |

Summary of Actuarial Assumptions and Methods (Continued)

as of January 1, 2018

|   |                           | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                           |                           |                  |                           |        |        | Governors and Legislators Retirement Plan |
|---|---------------------------|--|---------------------------|---------------------------|------------------|---------------------------|--------|--------|---|
|   |                           | Male   |                           |                           | Female           |                           |        |        |   |
| Retirement Age                            | State and School Division |  | Local Government Division | State and School Division |                  | Local Government Division |        |        |   |
|   | Educators                 | Public Employees   |                           | Educators                 | Public Employees |                           |        |        |   |
| <b>Tier 2</b>                             | 50                        | 20.00%   | 15.00%                    | 15.00%                    | 30.00%           | 17.00%                    | 20.00% | 0.00%  |   |
| <b>Public Employees Retirement System</b> | 51                        | 20.00  | 15.00                     | 15.00                     | 30.00            | 16.00                     | 20.00  | 0.00   |   |
| <i>Adopted January 1, 2014</i>            | 52                        | 20.00  | 15.00                     | 15.00                     | 30.00            | 16.00                     | 20.00  | 0.00   |   |
|   | 53                        | 20.00  | 15.00                     | 15.00                     | 14.00            | 16.00                     | 20.00  | 0.00   |   |
|   | 54                        | 12.00  | 15.00                     | 15.00                     | 14.00            | 16.00                     | 20.00  | 0.00   |   |
|   | 55                        | 12.00  | 16.00                     | 15.00                     | 14.00            | 16.00                     | 25.00  | 0.00   |   |
|   | 56                        | 12.00  | 16.00                     | 15.00                     | 18.00            | 16.00                     | 25.00  | 0.00   |   |
|   | 57                        | 12.00  | 16.00                     | 15.00                     | 18.00            | 16.00                     | 25.00  | 0.00   |   |
|   | 58                        | 12.00  | 16.00                     | 15.00                     | 18.00            | 20.00                     | 25.00  | 0.00   |   |
|   | 59                        | 12.00  | 16.00                     | 15.00                     | 18.00            | 20.00                     | 25.00  | 0.00   |   |
|   | 60                        | 23.00  | 20.00                     | 20.00                     | 30.00            | 30.00                     | 30.00  | 0.00   |   |
|   | 61                        | 23.00  | 20.00                     | 20.00                     | 30.00            | 30.00                     | 30.00  | 0.00   |   |
|   | 62                        | 30.00  | 33.00                     | 23.00                     | 35.00            | 30.00                     | 30.00  | 100.00 |   |
|   | 63                        | 30.00  | 33.00                     | 23.00                     | 35.00            | 30.00                     | 30.00  | 100.00 |   |
|   | 64                        | 30.00  | 30.00                     | 23.00                     | 30.00            | 30.00                     | 30.00  | 100.00 |   |
|   | 65                        | 30.00  | 22.00                     | 23.00                     | 30.00            | 26.00                     | 25.00  | 100.00 |   |
|   | 66                        | 30.00  | 22.00                     | 30.00                     | 30.00            | 26.00                     | 25.00  | 100.00 |   |
|   | 67                        | 30.00  | 22.00                     | 22.00                     | 30.00            | 22.00                     | 25.00  | 100.00 |   |
|   | 68                        | 30.00  | 22.00                     | 22.00                     | 23.00            | 22.00                     | 25.00  | 100.00 |   |
|   | 69                        | 25.00  | 22.00                     | 22.00                     | 23.00            | 22.00                     | 25.00  | 100.00 |   |
|   | 70                        | 20.00  | 22.00                     | 22.00                     | 23.00            | 22.00                     | 20.00  | 100.00 |   |
|   | 71                        | 20.00  | 22.00                     | 18.00                     | 23.00            | 22.00                     | 15.00  | 100.00 |   |
|   | 72                        | 20.00  | 22.00                     | 18.00                     | 23.00            | 22.00                     | 15.00  | 100.00 |   |
|   | 73                        | 20.00  | 22.00                     | 18.00                     | 23.00            | 22.00                     | 15.00  | 100.00 |   |
|   | 74                        | 20.00  | 22.00                     | 18.00                     | 23.00            | 22.00                     | 15.00  | 100.00 |   |
|   | 75                        | 100.00   | 100.00                    | 100.00                    | 100.00           | 100.00                    | 100.00 | 100.00 |   |

Retirement rates at the age the member is first eligible for an unreduced retirement benefit prior to age 65 is increased by 30%.

|  |                | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                |       |                |       |                |       |                |       |        |        |
|--|----------------|--|----------------|-------|----------------|-------|----------------|-------|----------------|-------|--------|--------|
| Retirement Age   | Retirement Age |  | Retirement Age |       | Retirement Age |       | Retirement Age |       | Retirement Age |       |        |        |
|  | <b>Tier 2</b>  | 45   | 12.00%         | 50    | 12.00%         | 55    | 12.00%         | 59    | 12.00%         | 63    | 35.00% | 67     |
| <b>Public Safety and Firefighter Retirement System</b> | 46             | 12.00  | 51             | 12.00 | 56             | 12.00 | 60             | 25.00 | 64             | 35.00 | 68     | 50.00  |
| <b>Public Safety</b>                                   | 47             | 12.00  | 52             | 12.00 | 57             | 12.00 | 61             | 30.00 | 65             | 50.00 | 69     | 50.00  |
| <i>Adopted January 1, 2014</i>                         | 48             | 12.00  | 53             | 12.00 | 58             | 12.00 | 62             | 35.00 | 66             | 50.00 | 70     | 100.00 |
|  | 49             | 12.00  | 54             | 12.00 |                |       |                |       |                |       |        |        |

|                                |                     | Percent Retiring Within Next Year Among Active Members Eligible for Retirement |                |      |                |       |                |       |                |       |        |        |
|--------------------------------|---------------------|--|----------------|------|----------------|-------|----------------|-------|----------------|-------|--------|--------|
| Retirement Age                 | Retirement Age      |  | Retirement Age |      | Retirement Age |       | Retirement Age |       | Retirement Age |       |        |        |
|                                | <b>Firefighters</b> | 45   | 9.00%          | 50   | 9.00%          | 55    | 12.00%         | 59    | 12.00%         | 63    | 40.00% | 67     |
| <i>Adopted January 1, 2014</i> | 46                  | 9.00   | 51             | 9.00 | 56             | 12.00 | 60             | 40.00 | 64             | 40.00 | 68     | 60.00  |
|                                | 47                  | 9.00   | 52             | 9.00 | 57             | 12.00 | 61             | 40.00 | 65             | 60.00 | 69     | 60.00  |
|                                | 48                  | 9.00   | 53             | 9.00 | 58             | 12.00 | 62             | 40.00 | 66             | 60.00 | 70     | 100.00 |
|                                | 49                  | 9.00   | 54             | 9.00 |                |       |                |       |                |       |        |        |

Summary of Actuarial Assumptions and Methods (Continued)

as of January 1, 2018

| Other Termination of Employment Percent of Active Members Separating Within Next Year        |                           |                  |                           |                           |                  |                           |   |        |
|--|---------------------------|------------------|---------------------------|---------------------------|------------------|---------------------------|---|--------|
| Years of Service   | Male                      |                  |                           | Female                    |                  |                           | Governors and Legislators Retirement Plan |        |
|  | State and School Division |                  | Local Government Division | State and School Division |                  | Local Government Division |   |        |
|  | Educators                 | Public Employees |                           | Educators                 | Public Employees |                           |   |        |
| <b>Noncontributory and Contributory Retirement Systems</b><br><i>Adopted January 1, 2017</i> | 0                         | 14.00%           | 25.00%                    | 17.00%                    | 16.00%           | 28.00%                    | 22.00%                                    | 10.00% |
|  | 1                         | 11.00            | 20.00                     | 13.00                     | 15.00            | 23.00                     | 18.00                                     | 10.00  |
|  | 2                         | 8.00             | 14.00                     | 9.00                      | 12.00            | 17.00                     | 13.00                                     | 10.00  |
|  | 3                         | 7.00             | 10.00                     | 8.00                      | 10.00            | 13.00                     | 11.00                                     | 10.00  |
|  | 4                         | 6.50             | 10.00                     | 7.50                      | 9.00             | 12.50                     | 10.50                                     | 10.00  |
|  | 5                         | 6.00             | 10.00                     | 7.00                      | 8.00             | 11.00                     | 10.00                                     | 10.00  |
|  | 6                         | 5.50             | 9.00                      | 6.50                      | 7.50             | 10.00                     | 9.50                                      | 10.00  |
|  | 7                         | 4.00             | 7.50                      | 6.00                      | 6.00             | 7.50                      | 9.00                                      | 10.00  |
|  | 8                         | 3.50             | 6.00                      | 5.50                      | 5.00             | 6.50                      | 7.50                                      | 10.00  |
|  | 9                         | 3.00             | 5.50                      | 4.75                      | 4.50             | 6.00                      | 7.00                                      | 10.00  |
|  | 10                        | 2.75             | 5.00                      | 4.50                      | 4.00             | 5.50                      | 6.00                                      | 10.00  |
|  | 11                        | 2.50             | 4.50                      | 4.00                      | 3.50             | 4.75                      | 5.50                                      | 10.00  |
|  | 12                        | 2.50             | 4.00                      | 3.50                      | 3.25             | 4.50                      | 5.25                                      | 10.00  |
|  | 13                        | 2.25             | 3.75                      | 3.00                      | 3.00             | 4.25                      | 5.00                                      | 10.00  |
|  | 14                        | 2.00             | 3.50                      | 3.00                      | 2.50             | 3.75                      | 4.50                                      | 10.00  |
|  | 15                        | 2.00             | 3.00                      | 2.75                      | 2.25             | 3.50                      | 4.00                                      | 10.00  |
|  | 16                        | 1.75             | 2.75                      | 2.75                      | 2.00             | 3.00                      | 3.75                                      | 10.00  |
|  | 17                        | 1.75             | 2.50                      | 2.75                      | 1.75             | 2.75                      | 3.50                                      | 10.00  |
|  | 18                        | 1.75             | 2.00                      | 2.50                      | 1.50             | 2.75                      | 3.00                                      | 10.00  |
|  | 19                        | 1.50             | 2.00                      | 2.50                      | 1.25             | 2.75                      | 3.00                                      | 10.00  |
|  | 20                        | 1.00             | 2.00                      | 2.00                      | 1.25             | 2.75                      | 2.50                                      | 10.00  |
|  | 21                        | 1.00             | 2.00                      | 2.00                      | 1.25             | 2.50                      | 2.50                                      | 10.00  |
|  | 22                        | 1.00             | 2.00                      | 1.75                      | 1.25             | 2.25                      | 2.25                                      | 10.00  |
|  | 23                        | 1.00             | 1.50                      | 1.50                      | 1.25             | 2.00                      | 2.00                                      | 10.00  |
|  | 24                        | 1.00             | 1.50                      | 1.25                      | 1.25             | 2.00                      | 2.00                                      | 10.00  |
|  | 25+                       | 1.00             | 1.00                      | 1.00                      | 1.00             | 1.00                      | 1.00                                      | 10.00  |

| Other Termination of Employment of Active Members Separating Within Next Year |                  |        |                  |       |                  |       |                  |       |                  |       |
|---|------------------|--------|------------------|-------|------------------|-------|------------------|-------|------------------|-------|
|   | Years of Service |        | Years of Service |       | Years of Service |       | Years of Service |       | Years of Service |       |
| <b>Public Safety Retirement System</b><br><i>Adopted January 1, 2014</i>      | 0                | 12.00% | 5                | 4.50% | 9                | 3.25% | 13               | 2.25% | 17               | 1.50% |
|   | 1                | 6.50   | 6                | 4.25  | 10               | 3.00  | 14               | 1.50  | 18               | 1.50  |
|   | 2                | 5.50   | 7                | 4.00  | 11               | 2.75  | 15               | 1.50  | 19               | 1.50  |
|   | 3                | 5.25   | 8                | 3.50  | 12               | 2.50  | 16               | 1.50  | 20+              | 1.00  |
|   | 4                | 5.00   |                  |       |                  |       |                  |       |                  |       |

| Other Termination of Employment of Active Members Separating Within Next Year |                  |       |                  |       |                  |       |                  |       |                  |       |
|---|------------------|-------|------------------|-------|------------------|-------|------------------|-------|------------------|-------|
|   | Years of Service |       | Years of Service |       | Years of Service |       | Years of Service |       | Years of Service |       |
| <b>Firefighters Retirement System</b><br><i>Adopted January 1, 2010</i>       | 0                | 6.00% | 5                | 2.50% | 9                | 1.50% | 13               | 0.50% | 17               | 0.50% |
|   | 1                | 5.00  | 6                | 2.25  | 10               | 1.50  | 14               | 0.50  | 18               | 0.50  |
|   | 2                | 4.00  | 7                | 2.00  | 11               | 1.50  | 15               | 0.50  | 19               | 0.50  |
|   | 3                | 3.50  | 8                | 1.75  | 12               | 0.50  | 16               | 0.50  | 20+              | 0.50  |
|   | 4                | 3.00  |                  |       |                  |       |                  |       |                  |       |

| Other Termination of Employment of Active Members Separating Within Next Year |               |
|---|---------------|
| <b>Judges Retirement System</b><br><i>Adopted January 1, 1993</i>             | None assumed. |

Summary of Actuarial Assumptions and Methods (Concluded)

as of January 1, 2018

|   | Total Annual Increase in Salary<br>(Male and Female) |                           |                  |                  |                           |                                 |                                |                  |                           |                  |                  |                           |                                 |                                |
|---|--|---------------------------|------------------|------------------|---------------------------|---------------------------------|--------------------------------|------------------|---------------------------|------------------|------------------|---------------------------|---------------------------------|--------------------------------|
|   | Years of Service                                     | State and School Division |                  |                  | Local Government Division | Public Safety Retirement System | Firefighters Retirement System | Years of Service | State and School Division |                  |                  | Local Government Division | Public Safety Retirement System | Firefighters Retirement System |
|   |  | Educators                 | Public Employees | Public Employees |                           |                                 |                                |                  | Educators                 | Public Employees | Public Employees |                           |                                 |                                |
| <b>All Retirement Systems</b><br><i>Adopted January 1, 2017</i> | 0  | 9.75%                     | 8.50%            | 8.75%            | 7.25%                     | 8.75%                           | 13                             | 4.75%            | 4.25%                     | 4.00%            | 4.50%            | 4.50%                     | 4.50%                           |                                |
|   | 1  | 9.00                      | 7.75             | 7.25             | 6.25                      | 8.25                            | 14                             | 4.50             | 4.00                      | 4.00             | 4.25             | 4.50                      | 4.50                            |                                |
|   | 2  | 8.00                      | 6.75             | 6.50             | 6.00                      | 8.00                            | 15                             | 4.25             | 3.75                      | 4.00             | 4.25             | 4.50                      | 4.50                            |                                |
|   | 3  | 7.50                      | 6.00             | 6.00             | 5.75                      | 7.75                            | 16                             | 4.00             | 3.75                      | 3.75             | 4.25             | 4.50                      | 4.50                            |                                |
|   | 4  | 7.25                      | 5.75             | 5.50             | 5.75                      | 7.50                            | 17                             | 3.75             | 3.75                      | 3.75             | 4.00             | 4.25                      | 4.25                            |                                |
|   | 5  | 7.00                      | 5.25             | 5.25             | 5.75                      | 7.25                            | 18                             | 3.75             | 3.75                      | 3.75             | 4.00             | 4.00                      | 4.00                            |                                |
|   | 6  | 7.00                      | 5.00             | 5.00             | 5.75                      | 7.25                            | 19                             | 3.75             | 3.75                      | 3.75             | 4.00             | 4.00                      | 4.00                            |                                |
|   | 7  | 6.75                      | 4.75             | 4.75             | 5.50                      | 6.75                            | 20                             | 3.75             | 3.50                      | 3.50             | 4.00             | 4.00                      | 4.00                            |                                |
|   | 8  | 6.75                      | 4.75             | 4.50             | 5.25                      | 6.50                            | 21                             | 3.75             | 3.50                      | 3.50             | 3.75             | 3.75                      | 3.75                            |                                |
|   | 9  | 6.50                      | 4.50             | 4.50             | 5.25                      | 6.25                            | 22                             | 3.75             | 3.50                      | 3.50             | 3.75             | 3.50                      | 3.50                            |                                |
|   | 10   | 6.00                      | 4.50             | 4.25             | 5.00                      | 5.75                            | 23                             | 3.75             | 3.50                      | 3.25             | 3.50             | 3.50                      | 3.50                            |                                |
|   | 11   | 5.50                      | 4.25             | 4.00             | 4.75                      | 5.00                            | 24                             | 3.50             | 3.25                      | 3.25             | 3.50             | 3.50                      | 3.50                            |                                |
|   | 12   | 5.25                      | 4.25             | 4.00             | 4.50                      | 5.00                            | 25+                            | 3.25             | 3.25                      | 3.25             | 3.25             | 3.25                      | 3.25                            |                                |

|  | Probability of Mortality Within the Next Year for Active Members |           |                                       |                                       |           |                                       |                                       |         |           |                                       |                                       |           |                                       |                                       |
|--|--|-----------|---------------------------------------|---------------------------------------|-----------|---------------------------------------|---------------------------------------|---------|-----------|---------------------------------------|---------------------------------------|-----------|---------------------------------------|---------------------------------------|
|  | Age  | Male      |                                       |                                       | Female    |                                       |                                       | Age     | Male      |                                       |                                       | Female    |                                       |                                       |
|  |  | Educators | Local Government and Public Employees | Local Government and Public Employees | Educators | Local Government and Public Employees | Local Government and Public Employees |         | Educators | Local Government and Public Employees | Local Government and Public Employees | Educators | Local Government and Public Employees | Local Government and Public Employees |
| <b>Noncontributory and Contributory Retirement Systems</b><br><i>Adopted January 1, 2017</i> | 20   | 0.0228%   | 0.0285%                               | 0.0069%                               | 0.0110%   |                                       | 50                                    | 0.0946% | 0.1182%   | 0.0465%                               | 0.0744%                               |           |                                       |                                       |
|  | 25   | 0.0271    | 0.0339                                | 0.0073                                | 0.0117    |                                       | 55                                    | 0.1564  | 0.1955    | 0.0706                                | 0.1130                                |           |                                       |                                       |
|  | 30   | 0.0254    | 0.0317                                | 0.0092                                | 0.0147    |                                       | 60                                    | 0.2630  | 0.3288    | 0.1030                                | 0.1648                                |           |                                       |                                       |
|  | 35   | 0.0294    | 0.0367                                | 0.0121                                | 0.0193    |                                       | 65                                    | 0.4644  | 0.5805    | 0.1560                                | 0.2495                                |           |                                       |                                       |
|  | 40   | 0.0352    | 0.0440                                | 0.0167                                | 0.0267    |                                       | 70                                    | 0.8223  | 1.0279    | 0.2717                                | 0.4346                                |           |                                       |                                       |
|  | 45   | 0.0546    | 0.0682                                | 0.0277                                | 0.0443    |                                       |                                       |         |           |                                       |                                       |           |                                       |                                       |

|  | Percent Electing a Refund of Contributions Upon Termination While Vested |           |                  |                           |           |                  |                           |                  |           |                  |                           |           |                  |                           |
|--|--|-----------|------------------|---------------------------|-----------|------------------|---------------------------|------------------|-----------|------------------|---------------------------|-----------|------------------|---------------------------|
|  | Years of Service   | Male      |                  |                           | Female    |                  |                           | Years of Service | Male      |                  |                           | Female    |                  |                           |
|  |  | Educators | Public Employees | Local Government Division | Educators | Public Employees | Local Government Division |                  | Educators | Public Employees | Local Government Division | Educators | Public Employees | Local Government Division |
| <b>Noncontributory and Contributory Retirement Systems</b><br><i>Adopted January 1, 1993</i> | 0-3  | 100%      | 100%             | 100%                      | 100%      | 100%             | 100%                      | 100%             | 100%      | 100%             | 100%                      | 100%      | 100%             |                           |
|  | 4  | 75        | 86               | 75                        | 65        | 80               | 77                        |                  |           |                  |                           |           |                  |                           |
|  | 5  | 73        | 83               | 73                        | 64        | 79               | 75                        |                  |           |                  |                           |           |                  |                           |
|  | 10   | 54        | 73               | 61                        | 53        | 64               | 61                        |                  |           |                  |                           |           |                  |                           |
|  | 15   | 33        | 63               | 49                        | 32        | 52               | 40                        |                  |           |                  |                           |           |                  |                           |
|  | 19   | 9         | 29               | 23                        | 8         | 22               | 13                        |                  |           |                  |                           |           |                  |                           |
|  | 20   | 0         | 0                | 0                         | 0         | 0                | 0                         |                  |           |                  |                           |           |                  |                           |

|   | Probability of Mortality Within the Next Year for Active Members<br>Public Safety and Firefighters Employees |         |     |         |     |         |     |         |
|---|--|---------|-----|---------|-----|---------|-----|---------|
|   | Age  |         | Age |         | Age |         | Age |         |
|   | Age  | Age     | Age | Age     | Age | Age     | Age |         |
| <b>Public Safety Retirement System and Firefighters Retirement System</b><br><i>Adopted January 1, 2017</i> | 20   | 0.0285% | 35  | 0.0367% | 50  | 0.1182% | 65  | 0.5805% |
|   | 25   | 0.0339  | 40  | 0.0440  | 55  | 0.1955  | 70  | 1.0279  |
|   | 30   | 0.0317  | 45  | 0.0682  | 60  | 0.3288  |     |         |

|   | Percent Electing a Refund of Contributions Upon Termination While Vested<br>Public Safety and Firefighters Retirement Employees |                  |                  |                  |
|---|---|------------------|------------------|------------------|
|   | Years of Service  |                  | Years of Service |                  |
|   | Years of Service  | Years of Service | Years of Service | Years of Service |
| <b>Public Safety Retirement System and Firefighters Retirement System</b><br><i>Adopted January 1, 1993</i> | 0-3   | 100%             | 15               | 35%              |
|   | 4   | 76               | 19               | 15               |
|   | 5   | 74               | 20               | 0                |
|   | 10  | 57               |                  |                  |

## Calculation of Actuarial Value of Assets

| January 1, 2018<br>(dollars in thousands)   |      |                           |               | December 31, 2018<br>(dollars in thousands)   |  |                           |               |                 |
|---|------|---------------------------|---------------|---|--|---------------------------|---------------|-----------------|
| 1. Fair value of assets   |      |                           | \$ 31,878,618 | 1. Fair value of assets   |  |                           | \$ 31,259,522 |                 |
| 2. Deferral to smooth asset values based on (excess)/shortfall of expected investment income for: |      |                           |               | 2. Deferral to smooth asset values based on (excess)/shortfall of expected investment income for: |  |                           |               |                 |
|   | Year | Total Excess/ (Shortfall) | % Deferred    | Amount Deferred   | Year   | Total Excess/ (Shortfall) | % Deferred    | Amount Deferred |
| a. 2017   |      | \$ 1,792,941              | 80%           | \$ 1,434,354  | a. 2018  | \$(2,327,819)             | 80%           | \$(1,862,255)   |
| b. 2016   |      | 329,863                   | 60%           | 197,920   | b. 2017  | 1,792,944                 | 60%           | 1,075,766       |
| c. 2015   |      | (1,529,412)               | 40%           | (611,763)   | c. 2016  | 329,864                   | 40%           | 131,946         |
| d. 2014   |      | (95,447)                  | 20%           | (19,087)  | d. 2015  | (1,529,413)               | 20%           | (305,883)       |
| e. 2013   |      | 1,600,276                 | 0%            | —   | e. 2014  | (95,448)                  | 0%            | —               |
| f. Total deferred gains (losses)  |      |                           |               | 1,001,424   | f. Total deferred gains (losses)                     |                           |               | (960,426)       |
| g. Total deferred (gains) losses  |      |                           |               | (1,001,424)   | g. Total deferred (gains) losses                     |                           |               | 960,426         |
| 3. Actuarial value of assets available for benefits*  |      |                           |               | \$ 30,877,194   | 3. Actuarial value of assets available for benefits* |                           |               | \$ 32,219,948   |

\*Actuarial value of assets cannot exceed 125% of the fair value of assets or below 75% of the fair value of assets.

## Actuarial Value of Assets by System

| January 1, 2018<br>(in thousands)  |                        |                     |                      |                     |               |                           |                                |   |                   |
|--|------------------------|---------------------|----------------------|---------------------|---------------|---------------------------|--------------------------------|---|-------------------|
|  | Noncontributory System | Contributory System | Public Safety System | Firefighters System | Judges System | Governors and Legislators | Tier 2 Public Employees System | Tier 2 Public Safety and Firefighter System | Total All Systems |
| 1. Net assets available for benefits at fair value   | \$ 25,205,127          | 1,283,466           | 3,576,517            | 1,234,407           | 198,483       | 11,220                    | 329,218                        | 40,180                                      | 31,878,618        |
| 2. Adjustments to smooth asset values based on (excess)/shortfall of expected investment income on fair value for: | (775,039)              | (55,155)            | (113,598)            | (39,049)            | (6,446)       | (365)                     | (10,464)                       | (1,308)                                     | (1,001,424)       |
| 3. Actuarial value of assets available for benefits (1-2)  | \$ 24,430,088          | 1,228,311           | 3,462,919            | 1,195,358           | 192,037       | 10,855                    | 318,754                        | 38,872                                      | 30,877,194        |

| December 31, 2018<br>(in thousands)  |                        |                     |                      |                     |               |                           |                                |   |                   |
|--|------------------------|---------------------|----------------------|---------------------|---------------|---------------------------|--------------------------------|---|-------------------|
|  | Noncontributory System | Contributory System | Public Safety System | Firefighters System | Judges System | Governors and Legislators | Tier 2 Public Employees System | Tier 2 Public Safety and Firefighter System | Total All Systems |
| 1. Net assets available for benefits at fair value   | \$ 24,666,059          | 1,172,429           | 3,528,069            | 1,207,889           | 195,570       | 10,537                    | 424,633                        | 54,336                                      | 31,259,522        |
| 2. Adjustments to smooth asset values based on (excess)/shortfall of expected investment income on fair value for: | 758,492                | 36,831              | 107,756              | 36,807              | 5,755         | 315                       | 13,733                         | 1,737                                       | 960,426           |
| 3. Actuarial value of assets available for benefits (1-2)  | \$ 25,423,551          | 1,209,260           | 3,635,825            | 1,244,696           | 201,325       | 10,852                    | 438,366                        | 56,073                                      | 32,219,948        |

## Analysis of Financial Experience

(in thousands)

| System                                      | January 1, 2018<br>Unfunded Actuarial<br>Accrued Liability | Amortization<br>Payments | Liability<br>(Gain) Loss | Asset<br>(Gain) Loss | Changes in<br>Actuarial<br>Assumptions | Change in<br>Benefit<br>Provisions | Asset<br>Transfers | January 1, 2019<br>Unfunded<br>Actuarial<br>Accrued<br>Liability |
|---|--|--------------------------|--------------------------|----------------------|--|------------------------------------|--------------------|--|
| <b>Noncontributory</b>                      | \$ 4,170,251   | (185,981)                | 39,163                   | (312,934)            | —                                      | —                                  | (21,424)           | 3,689,075  |
| <b>Contributory</b>                         | 65,782   | (3,065)                  | (13,455)                 | (16,935)             | —                                      | —                                  | 21,424             | 53,751   |
| <b>Public Safety</b>                        | 691,571  | (19,769)                 | (4,850)                  | (43,593)             | 272                                    | —                                  | —                  | 623,631  |
| <b>Firefighters</b>                         | 22,404   | 4,492                    | (719)                    | (15,264)             | 332                                    | —                                  | —                  | 11,245   |
| <b>Judges</b>                               | 46,189   | (515)                    | 3,271                    | (2,549)              | —                                      | —                                  | —                  | 46,396   |
| <b>Utah Governors and Legislators</b>       | 2,674  | (159)                    | 36                       | (158)                | —                                      | —                                  | —                  | 2,393  |
| <b>Tier 2 Public Employees</b>              | 11,320   | 5,078                    | 3,361                    | (2,095)              | —                                      | —                                  | —                  | 17,664   |
| <b>Tier 2 Public Safety and Firefighter</b> | 421  | 590                      | (11)                     | (269)                | —                                      | —                                  | —                  | 731  |

## Member and Employer Contribution Rates

As of December 31

| System   | Year | Contributory                         |                  |   | Noncontributory  |  |   |
|--|------|--------------------------------------|------------------|---|------------------|--|---|
|  |      | Member                               | Employer         | Employer                                | Employer         | Employer                                       |   |
|  |      |                                      | State and School | Local Government                        | State and School | Local Government                               |   |
| <b>Noncontributory and Contributory Retirement Systems</b> | 2009 | 6.00%                                | 9.73%            | 7.65%                                   | 14.22%           | 11.66%   |   |
|  | 2010 | 6.00                                 | 11.83            | 9.36                                    | 16.32            | 13.37  |   |
|  | 2011 | 6.00                                 | 12.37            | 9.76                                    | 16.86            | 13.77  |   |
|  | 2012 | 6.00                                 | 14.27            | 12.03                                   | 18.76            | 16.04  |   |
|  | 2013 | 6.00                                 | 15.97            | 13.28                                   | 20.46            | 17.29  |   |
|  | 2014 | 6.00                                 | 17.70            | 14.46                                   | 22.19            | 18.47  |   |
|  | 2015 | 6.00                                 | 17.70            | 14.46                                   | 22.19            | 18.47  |   |
|  | 2016 | 6.00                                 | 17.70            | 14.46                                   | 22.19            | 18.47  |   |
|  | 2017 | 6.00                                 | 17.70            | 14.46                                   | 22.19            | 18.47  |   |
|  | 2018 | 6.00                                 | 17.70            | 14.46                                   | 22.19            | 18.47  |   |
|  |      | Division A<br>(with Social Security) |                  | Division B<br>(without Social Security) |                  | All Divisions<br>Fire Insurance<br>Premium Tax |   |
|  |      | Member                               | Employer         | Member                                  | Employer         |  |   |
| <b>Firefighters Retirement System</b>                      | 2009 | 13.49%                               | —                | 9.68%                                   | —                | 12.34%   |   |
|  | 2010 | 15.05                                | —                | 16.18                                   | —                | 11.87  |   |
|  | 2011 | 15.05                                | 0.50%            | 16.18                                   | —                | 12.29  |   |
|  | 2012 | 15.05                                | 2.66             | 16.71                                   | 2.08%            | 11.84  |   |
|  | 2013 | 15.05                                | 2.96             | 16.71                                   | 4.46             | 11.75  |   |
|  | 2014 | 15.05                                | 3.82             | 16.71                                   | 6.59             | 11.71  |   |
|  | 2015 | 15.05                                | 3.99             | 16.71                                   | 6.76             | 11.54  |   |
|  | 2016 | 15.05                                | 3.89             | 16.71                                   | 6.66             | 11.64  |   |
|  | 2017 | 15.05                                | 3.93             | 16.71                                   | 6.70             | 11.60  |   |
|  | 2018 | 15.05                                | 4.61             | 16.71                                   | 7.24             | 11.06  |   |
|  |      | Contributory                         |                  | Noncontributory                         | Judges           |  | Governors and<br>Legislators<br>Appropriation |
|  |      | Member                               | Employer         | Employer                                | Court Fees       |  |   |
| <b>Judges Retirement System</b>                            | 2009 | 2.00%                                | 15.09%           | 17.09%                                  | 13.83%           | \$   | —   |
|  | 2010 | —                                    | —                | 23.72                                   | 14.08            |  | —   |
|  | 2011 | —                                    | —                | 25.82                                   | 14.26            |  | 153,000                                       |
| <b>Utah Governors and Legislators Retirement Plan</b>      | 2012 | —                                    | —                | 32.87                                   | 14.02            |  | 214,000                                       |
|  | 2013 | —                                    | —                | 35.66                                   | 12.74            |  | 252,000                                       |
|  | 2014 | —                                    | —                | 40.01                                   | 11.90            |  | 411,489                                       |
|  | 2015 | —                                    | —                | 41.58                                   | 10.33            |  | 421,009                                       |
|  | 2016 | —                                    | —                | 42.12                                   | 9.79             |  | 404,409                                       |
|  | 2017 | —                                    | —                | 42.39                                   | 9.22             |  | 391,883                                       |
|  | 2018 | —                                    | —                | 43.68                                   | 8.23             |  | 384,103                                       |



**Member and Employer Contribution Rates** (Continued)

As of December 31

| System  | Year | State of Utah |          | 2.5% COLA<br>Other Division A<br>(with Social Security) |          | 4.0% COLA<br>Other Division A<br>(with Social Security) |          | Bountiful |          |
|---|------|---------------|----------|---|----------|---|----------|-----------|----------|
|   |      | Member        | Employer | Member  | Employer | Member  | Employer | Member    | Employer |
| <b>Public Safety Retirement System Noncontributory Division A</b> | 2009 | —             | 30.18%   | —   | 23.34%   | —   | 25.90%   | —         | 23.07%   |
|   | 2010 | —             | 32.75    | —   | 26.13    | —   | 28.82    | —         | 27.73    |
|   | 2011 | —             | 34.12    | —   | 27.07    | —   | 28.82    | —         | 29.19    |
|   | 2012 | —             | 37.29    | —   | 30.45    | —   | 33.65    | —         | 37.16    |
|   | 2013 | —             | 39.31    | —   | 32.14    | —   | 34.17    | —         | 42.79    |
|   | 2014 | —             | 41.35    | —   | 34.04    | —   | 35.71    | —         | 47.33    |
|   | 2015 | —             | 41.35    | —   | 34.04    | —   | 35.71    | —         | 47.33    |
|   | 2016 | —             | 41.35    | —   | 34.04    | —   | 35.71    | —         | 47.33    |
|   | 2017 | —             | 41.35    | —   | 34.04    | —   | 35.71    | —         | 49.58    |
| 2018  | —    | 41.35         | —        | 34.04   | —        | 35.71   | —        | 50.38     |          |
| <b>Public Safety Retirement System Contributory Division A</b>    | 2009 | 12.29%        | 19.01%   | 12.29%  | 12.47%   | 12.29%  | 15.01%   | —         | —        |
|   | 2010 | 12.29         | 21.68    | 12.29   | 14.86    | 12.29   | 18.34    | —         | —        |
|   | 2011 | 12.29         | 22.88    | 12.29   | 15.78    | 12.29   | 18.34    | —         | —        |
|   | 2012 | 12.29         | 25.52    | 12.29   | 19.08    | 12.29   | 22.34    | —         | —        |
|   | 2013 | 12.29         | 27.63    | 12.29   | 20.83    | 12.29   | 22.75    | —         | —        |
|   | 2014 | 12.29         | 29.70    | 12.29   | 22.75    | 12.29   | 24.33    | —         | —        |
|   | 2015 | 12.29         | 29.70    | 12.29   | 22.75    | 12.29   | 24.33    | —         | —        |
|   | 2016 | 12.29         | 29.70    | 12.29   | 22.75    | 12.29   | 24.33    | —         | —        |
|   | 2017 | 12.29         | 29.70    | 12.29   | 22.75    | 12.29   | 24.33    | —         | —        |
| 2018  | —*   | —*            | 12.29    | 22.79   | 12.29    | 24.37   | —        | —         |          |

| System  | Year | Salt Lake City |          | Ogden  |          | Logan  |          | Provo  |          | 2.5% COLA<br>Other Division B<br>(without Soc Sec) |          | 4.0% COLA<br>Other Division B<br>(without Soc Sec) |          |
|---|------|----------------|----------|--------|----------|--------|----------|--------|----------|--|----------|--|----------|
|   |      | Member         | Employer | Member | Employer | Member | Employer | Member | Employer | Member   | Employer | Member   | Employer |
| <b>Public Safety Retirement System Noncontributory Division B</b> | 2009 | —              | 35.71%   | —      | 33.11%   | —      | 27.74%   | —      | 30.91%   | —  | 26.21%   | —  | 28.73%   |
|   | 2010 | —              | 36.31    | —      | 34.93    | —      | 31.49    | —      | 32.98    | —  | 28.24    | —  | 32.70    |
|   | 2011 | —              | 36.71    | —      | 36.13    | —      | 31.91    | —      | 33.05    | —  | 28.64    | —  | 32.70    |
|   | 2012 | —              | 41.95    | —      | 42.21    | —      | 38.18    | —      | 38.54    | —  | 32.20    | —  | 36.97    |
|   | 2013 | —              | 44.83    | —      | 44.98    | —      | 39.84    | —      | 39.97    | —  | 32.20    | —  | 37.45    |
|   | 2014 | —              | 46.67    | —      | 48.68    | —      | 41.92    | —      | 42.16    | —  | 34.04    | —  | 38.94    |
|   | 2015 | —              | 46.67    | —      | 48.68    | —      | 41.92    | —      | 42.16    | —  | 34.04    | —  | 38.94    |
|   | 2016 | —              | 46.67    | —      | 48.68    | —      | 41.92    | —      | 42.16    | —  | 34.04    | —  | 38.94    |
|   | 2017 | —              | 46.67    | —      | 48.68    | —      | 41.92    | —      | 42.16    | —  | 34.04    | —  | 38.94    |
| 2018  | —    | 46.71          | —        | 48.72  | —        | 41.97  | —        | 42.23  | —        | 32.28  | —        | 38.97  |          |
| <b>Public Safety Retirement System Contributory Division B</b>    | 2009 | —              | —        | —      | —        | 11.13% | 17.81%   | —      | —        | 10.50%   | 16.67%   | 10.50%   | 19.17%   |
|   | 2010 | —              | —        | —      | —        | 11.13  | 20.95    | —      | —        | 10.50  | 18.98    | 10.50  | 23.22    |
|   | 2011 | —              | —        | —      | —        | 11.13  | 21.36    | —      | —        | 10.50  | 19.48    | 10.50  | 23.22    |
|   | 2012 | —              | —        | —      | —        | 11.13  | 27.95    | —      | —        | 10.50  | 22.29    | 10.50  | 27.29    |
|   | 2013 | —              | —        | —      | —        | 11.13  | 29.76    | —      | —        | 10.50  | 22.29    | 10.50  | 27.49    |
|   | 2014 | —              | —        | —      | —        | 11.13  | 31.80    | —      | —        | 10.50  | 22.29    | 10.50  | 28.95    |
|   | 2015 | —              | —        | —      | —        | 11.13  | 31.80    | —      | —        | 10.50  | 22.29    | 10.50  | 28.95    |
|   | 2016 | —              | —        | —      | —        | 11.13  | 31.80    | —      | —        | 10.50  | 22.29    | 10.50  | 28.95    |
|   | 2017 | —              | —        | —      | —        | 11.13  | 31.80    | —      | —        | 10.50  | 22.29    | 10.50  | 28.95    |
| 2018  | —    | —              | —        | —      | —*       | —*     | —        | —      | 10.50    | 22.81  | 10.50    | 28.98  |          |

\*No active participants in the system.

## Member and Employer Contribution Rates (Continued)

As of December 31

| System  | Year  | Contributory              |                       | Noncontributory   |   |        |
|---|---|---------------------------|-----------------------|---|---|--------|
|   |   | Employer                  | Employer              | Employer  | Employer  |        |
| <b>Tier 2 Public Employees<br/>Contributory<br/>Retirement System*</b>              |   | Local<br>Government       | State<br>and School   | Local<br>Government   |   |        |
|   | 2011  | 12.40%                    | 12.74%                | 10.33%  |   |        |
|   | 2012  | 14.51                     | 15.06                 | 12.74   |   |        |
|   | 2013  | 15.75                     | 16.75                 | 13.99   |   |        |
|   | 2014  | 16.70                     | 18.27                 | 14.94   |   |        |
|   | 2015  | 16.67                     | 18.24                 | 14.91   |   |        |
|   | 2016  | 16.67                     | 18.24                 | 14.91   |   |        |
|   | 2017  | 16.67                     | 18.44                 | 15.11   |   |        |
|   | 2018  | 17.30                     | 18.87                 | 15.54   |   |        |
| <b>Tier 2 Public Safety and<br/>Firefighter Contributory<br/>Retirement System*</b> |   | State of Utah<br>Employer | Bountiful<br>Employer | 2.5% COLA<br>Other Division A<br>(with Soc Sec)<br>Employer | 4% COLA<br>Other Division A<br>(with Soc Sec)<br>Employer |        |
|   | <b>Public Safety<br/>Noncontributory<br/>Division A</b> | 2011                      | 22.06%                | 18.15%  | 16.27%  | 17.18% |
|   |   | 2012                      | 25.46                 | 25.89   | 19.25   | 21.94  |
|   |   | 2013                      | 27.40                 | 31.38   | 20.85   | 22.37  |
|   |   | 2014                      | 29.26                 | 35.68   | 22.55   | 23.71  |
|   |   | 2015                      | 29.21                 | 35.63   | 22.50   | 23.66  |
|   |   | 2016                      | 29.21                 | 35.63   | 22.50   | 23.66  |
|   |   | 2017                      | 29.28                 | 37.71   | 22.57   | 23.73  |
|   |   | 2018                      | 29.80                 | 38.23   | 23.09   | 24.25  |
|   | <b>Public Safety<br/>Contributory<br/>Division A</b>    | 2011                      | —                     | —   | 16.27%  | 17.47% |
|   |   | 2012                      | —                     | —   | 19.25   | 21.94  |
|   |   | 2013                      | —                     | —   | 20.85   | 22.37  |
|   |   | 2014                      | —                     | —   | 20.66   | 23.71  |
|   |   | 2015                      | —                     | —   | 20.61   | 23.66  |
|   |   | 2016                      | —                     | —   | 20.61   | 23.66  |
|   |   | 2017                      | —                     | —   | 20.61   | 23.73  |
|   |   | 2018                      | —                     | —   | 23.11   | 24.27  |

\*Includes active member death benefit and Tier 1 amortization rate.  
Does not include the 401(k) component of the contribution rate.

**Member and Employer Contribution Rates** (Concluded)

As of December 31

**Tier 2 Public Safety and  
Firefighter Contributory  
Retirement System**  
(Continued)\*

|   | Year | Salt Lake City   | Ogden  | Logan    | Provo    | 2.5% COLA<br>Other Division B<br>(without Soc Sec) | 4% COLA<br>Other Division B<br>(without Soc Sec) |
|---|------|--|--|----------|----------|--|--|
|   |      | Employer   | Employer   | Employer | Employer | Employer   | Employer   |
| <b>Public Safety<br/>Noncontributory<br/>Division B</b> | 2011 | 25.82%   | 25.21%   | 21.15%   | 22.01%   | 17.72%   | 20.89%   |
|   | 2012 | 30.47  | 30.78  | 26.59    | 27.08    | 20.71  | 25.05  |
|   | 2013 | 33.27  | 33.47  | 28.19    | 28.19    | 20.77  | 25.38  |
|   | 2014 | 34.97  | 37.07  | 30.13    | 30.36    | 20.55  | 26.72  |
|   | 2015 | 34.92  | 37.02  | 30.08    | 30.31    | 20.39  | 26.67  |
|   | 2016 | 34.92  | 37.02  | 30.08    | 30.31    | 20.39  | 26.67  |
|   | 2017 | 34.99  | 37.09  | 30.38    | 30.38    | 20.50  | 26.74  |
|   | 2018 | 35.54  | 37.64  | 30.71    | 30.95    | 21.00  | 27.28  |
| <b>Public Safety<br/>Contributory<br/>Division B</b>    | 2011 | —  | —  | —        | —        | 17.72%   | 20.89%   |
|   | 2012 | —  | —  | —        | —        | 20.71  | 25.05  |
|   | 2013 | —  | —  | —        | —        | 20.77  | 25.38  |
|   | 2014 | —  | —  | —        | —        | 20.55  | 26.72  |
|   | 2015 | —  | —  | —        | —        | 20.50  | 26.67  |
|   | 2016 | —  | —  | —        | —        | 20.50  | 26.67  |
|   | 2017 | —  | —  | —        | —        | 20.57  | 26.74  |
|   | 2018 | —  | —  | —        | —        | 21.11  | 27.28  |
| <b>Firefighters</b>                                     |      |  |  |          |          |  |  |
|   | Year | Other Division A<br>(with Social Security)<br>Employer | Other Division B<br>(with Social Security)<br>Employer |          |          |  |  |
|   | 2011 | 10.64%   | 10.64%   |          |          |  |  |
|   | 2012 | 11.10  | 11.10  |          |          |  |  |
|   | 2013 | 11.02  | 11.02  |          |          |  |  |
|   | 2014 | 10.80  | 10.80  |          |          |  |  |
|   | 2015 | 10.75  | 10.75  |          |          |  |  |
|   | 2016 | 10.75  | 10.75  |          |          |  |  |
|   | 2017 | 10.82  | 10.82  |          |          |  |  |
|   | 2018 | 11.34  | 11.34  |          |          |  |  |

\*Includes active member death benefit and Tier 1 amortization rate. Does not include the 401(k) component of the contribution rate.

## Schedules of Funding Progress

*(dollars in thousands)*

Based on Actuarial Value of Assets

| System   | Date       | (1)<br>Actuarial Value<br>of Assets | (2)<br>Actuarial<br>Accrued Liability<br>(AAL) Entry Age | Based on Actuarial Value of Assets  |   | (5)<br>Projected<br>Annual<br>Covered<br>Payroll | (6)<br>UAAL as<br>a % of<br>Covered<br>Payroll<br>(3) / (5) |
|--|------------|-------------------------------------|--|---|---|--|---|
|  |            |                                     |  | (3)<br>Unfunded<br>AAL (UAAL)<br>Actuarial<br>Value of<br>Assets<br>(2) - (1) | (4)<br>Funded<br>Ratios<br>Based on<br>Actuarial<br>Value of<br>Assets<br>(1) / (2) |  |   |
| <b>Noncontributory<br/>Retirement<br/>System</b> | 1/01/10    | \$ 16,619,831                       | 19,384,503   | 2,764,672   | 85.7%   | \$ 3,955,040                                     | 69.9%   |
|  | 1/01/11    | 16,852,691                          | 20,388,759   | 3,536,068   | 82.7  | 3,888,179  | 90.9  |
|  | 1/01/12    | 16,805,952                          | 21,260,843   | 4,454,891   | 79.0  | 3,900,106  | 114.2   |
|  | 1/01/13    | 16,969,392                          | 22,200,896   | 5,231,504   | 76.4  | 3,794,929  | 137.9   |
|  | 1/01/14    | 18,601,513                          | 22,981,585   | 4,380,072   | 80.9  | 3,705,771  | 118.2   |
|  | 1/01/15    | 20,240,645                          | 23,868,225   | 3,627,580   | 84.8  | 3,570,912  | 101.6   |
|  | 1/01/16    | 21,528,737                          | 25,476,579   | 3,947,842   | 84.5  | 3,458,286  | 114.2   |
|  | 1/01/17    | 22,908,184                          | 27,078,436   | 4,170,252   | 84.6  | 3,406,567  | 122.4   |
|  | 1/01/18    | 24,430,088                          | 28,119,177   | 3,689,089   | 86.9  | 3,337,061  | 110.5   |
| 12/31/18   | 25,423,551 | 29,122,948                          | 3,699,397  | 87.3  | 3,330,548   | 111.1  |   |
| <b>Contributory<br/>Retirement<br/>System</b>    | 1/01/10    | \$ 1,116,736                        | 1,236,009  | 119,273   | 90.4%   | \$ 127,804                                       | 93.3%   |
|  | 1/01/11    | 1,132,661                           | 1,251,412  | 118,751   | 90.5  | 116,395  | 102.0   |
|  | 1/01/12    | 1,135,251                           | 1,269,042  | 133,791   | 89.5  | 110,103  | 121.5   |
|  | 1/01/13    | 1,133,433                           | 1,280,836  | 147,403   | 88.5  | 103,074  | 143.0   |
|  | 1/01/14    | 1,165,002                           | 1,285,851  | 120,849   | 90.6  | 98,023   | 123.3   |
|  | 1/01/15    | 1,198,862                           | 1,295,581  | 96,719  | 92.5  | 90,623   | 106.7   |
|  | 1/01/16    | 1,209,069                           | 1,282,510  | 73,441  | 94.3  | 82,426   | 89.1  |
|  | 1/01/17    | 1,227,072                           | 1,292,854  | 65,782  | 94.9  | 53,615   | 122.7   |
|  | 1/01/18    | 1,228,311                           | 1,282,052  | 53,741  | 95.8  | 45,177   | 119.0   |
| 12/31/18   | 1,209,260  | 1,284,009                           | 74,749   | 94.2  | 39,279  | 190.3  |   |
| <b>Public Safety<br/>Retirement<br/>System</b>   | 1/01/10    | \$ 2,137,027                        | 2,650,675  | 513,648   | 80.6%   | \$ 373,959                                       | 137.4%  |
|  | 1/01/11    | 2,194,015                           | 2,844,101  | 650,086   | 77.1  | 363,037  | 179.1   |
|  | 1/01/12    | 2,222,202                           | 2,948,481  | 726,279   | 75.4  | 374,293  | 194.0   |
|  | 1/01/13    | 2,283,911                           | 3,093,227  | 809,316   | 73.8  | 366,471  | 220.8   |
|  | 1/01/14    | 2,530,709                           | 3,191,506  | 660,797   | 79.3  | 365,998  | 180.5   |
|  | 1/01/15    | 2,781,314                           | 3,344,059  | 562,745   | 83.2  | 360,750  | 156.0   |
|  | 1/01/16    | 2,988,371                           | 3,622,965  | 634,594   | 82.5  | 355,172  | 178.7   |
|  | 1/01/17    | 3,217,221                           | 3,908,793  | 691,572   | 82.3  | 352,408  | 196.2   |
|  | 1/01/18    | 3,462,919                           | 4,086,551  | 623,632   | 84.7  | 350,782  | 177.8   |
| 12/31/18   | 3,635,825  | 4,258,247                           | 622,422  | 85.4  | 348,475   | 178.6  |   |
| <b>Firefighters<br/>Retirement<br/>System</b>    | 1/01/10    | \$ 802,576                          | 833,844  | 31,268  | 96.3  | \$ 107,625                                       | 29.1%   |
|  | 1/01/11    | 810,216                             | 872,133  | 61,917  | 92.9  | 105,275  | 58.8  |
|  | 1/01/12    | 810,764                             | 903,399  | 92,635  | 89.7  | 110,751  | 83.6  |
|  | 1/01/13    | 824,060                             | 944,791  | 120,731   | 87.2  | 110,608  | 109.2   |
|  | 1/01/14    | 903,627                             | 963,574  | 59,947  | 93.8  | 110,741  | 54.1  |
|  | 1/01/15    | 988,806                             | 1,006,646  | 17,840  | 98.2  | 111,305  | 16.0  |
|  | 1/01/16    | 1,060,312                           | 1,076,963  | 16,651  | 98.5  | 111,133  | 15.0  |
|  | 1/01/17    | 1,130,198                           | 1,152,602  | 22,404  | 98.1  | 112,322  | 19.9  |
|  | 1/01/18    | 1,195,358                           | 1,206,602  | 11,244  | 99.1  | 112,953  | 10.0  |
| 12/31/18   | 1,244,696  | 1,261,289                           | 16,593   | 98.7  | 113,587   | 14.6   |   |
| <b>Judges<br/>Retirement<br/>System</b>          | 1/01/10    | \$ 131,491                          | 158,303  | 26,812  | 83.1%   | 14,434   | 185.8%  |
|  | 1/01/11    | 131,869                             | 167,581  | 35,712  | 78.7  | 14,234   | 250.9   |
|  | 1/01/12    | 130,561                             | 167,982  | 37,421  | 77.7  | 14,981   | 249.8   |
|  | 1/01/13    | 131,217                             | 174,923  | 43,706  | 75.0  | 14,885   | 293.6   |
|  | 1/01/14    | 145,121                             | 185,113  | 39,992  | 78.4  | 15,195   | 263.2   |
|  | 1/01/15    | 156,956                             | 192,445  | 35,489  | 81.6  | 16,072   | 220.8   |
|  | 1/01/16    | 166,298                             | 203,540  | 37,242  | 81.7  | 15,832   | 235.2   |
|  | 1/01/17    | 177,782                             | 223,971  | 46,189  | 79.4  | 16,755   | 275.7   |
|  | 1/01/18    | 192,037                             | 238,433  | 46,396  | 80.5  | 18,661   | 248.6   |
| 12/31/18   | 201,325    | 244,209                             | 42,884   | 82.4  | 18,802  | 228.1  |   |

See accompanying notes to required supplementary information.

## Schedules of Funding Progress (Concluded)

(dollars in thousands)

| System  | Date     | Based on Actuarial Value of Assets  |  |   |   |  |   |
|---|----------|-------------------------------------|--|---|---|--|---|
|   |          | (1)<br>Actuarial Value<br>of Assets | (2)<br>Actuarial<br>Accrued Liability<br>(AAL) Entry Age | (3)<br>Unfunded<br>AAL (UAAL)<br>Actuarial<br>Value of<br>Assets<br>(2) - (1) | (4)<br>Funded<br>Ratios<br>Based on<br>Actuarial<br>Value of<br>Assets<br>(1) / (2) | (5)<br>Projected<br>Annual<br>Covered<br>Payroll | (6)<br>UAAL as<br>a % of<br>Covered<br>Payroll<br>(3) / (5) |
| <b>Governors and<br/>Legislators<br/>Retirement Plan</b>  | 1/01/10  | \$ 10,769                           | 11,305   | 536   | 95.3%   | \$ 910   | 58.9%   |
|   | 1/01/11  | 10,197                              | 11,513   | 1,316   | 88.6  | 910  | 144.6   |
|   | 1/01/12  | 9,565                               | 12,029   | 2,464   | 79.5  | 910  | 270.8   |
|   | 1/01/13  | 9,077                               | 11,925   | 2,848   | 76.1  | 910  | 313.0   |
|   | 1/01/14  | 9,457                               | 12,186   | 2,729   | 77.6  | 390  | 699.7   |
|   | 1/01/15  | 9,908                               | 12,223   | 2,315   | 81.1  | 928  | 249.5   |
|   | 1/01/16  | 10,173                              | 12,684   | 2,511   | 80.2  | 943  | 266.3   |
|   | 1/01/17  | 10,470                              | 13,144   | 2,674   | 79.7  | 799  | 334.7   |
|   | 1/01/18  | 10,856                              | 13,249   | 2,393   | 81.9  | 722  | 331.4   |
|   | 12/31/18 | 10,852                              | 13,177   | 2,325   | 82.4  | 639  | 363.8   |
| <b>Tier 2 Public<br/>Employees<br/>Contributory<br/>Retirement<br/>System*</b>                  | 1/01/12  | \$ 2,833                            | 3,055  | 222   | 92.7%   | \$ 36,821  | 0.6%  |
|   | 1/01/13  | 17,818                              | 16,755   | (1,063)   | 106.3   | 203,779  | (0.5)   |
|   | 1/01/14  | 46,241                              | 42,328   | (3,913)   | 109.2   | 353,227  | (1.1)   |
|   | 1/01/15  | 88,743                              | 81,624   | (7,119)   | 108.7   | 492,882  | (1.4)   |
|   | 1/01/16  | 145,518                             | 145,871  | 353   | 99.8  | 637,560  | 0.1   |
|   | 1/01/17  | 219,885                             | 231,205  | 11,320  | 95.1  | 822,196  | 1.4   |
|   | 1/01/18  | 318,755                             | 336,419  | 17,664  | 94.7  | 996,965  | 1.8   |
|   | 12/31/18 | 438,366                             | 467,461  | 29,095  | 93.8  | 1,171,543  | 2.5   |
| <b>Tier 2 Public<br/>Safety and<br/>Firefighter<br/>Contributory<br/>Retirement<br/>System*</b> | 1/01/12  | \$ 90                               | 101  | 11  | 89.1%   | \$ 855   | 1.3%  |
|   | 1/01/13  | 1,161                               | 1,042  | (119)   | 111.4   | 10,237   | (1.2)   |
|   | 1/01/14  | 3,822                               | 3,269  | (553)   | 116.9   | 20,215   | (2.7)   |
|   | 1/01/15  | 8,666                               | 7,432  | (1,234)   | 116.6   | 35,019   | (3.5)   |
|   | 1/01/16  | 15,618                              | 14,774   | (844)   | 105.7   | 53,276   | (1.6)   |
|   | 1/01/17  | 25,388                              | 25,809   | 421   | 98.4  | 74,834   | 0.6   |
|   | 1/01/18  | 38,872                              | 39,603   | 731   | 98.2  | 98,113   | 0.7   |
|   | 12/31/18 | 56,073                              | 56,841   | 768   | 98.6  | 123,439  | 0.6   |
| <b>All<br/>Retirement<br/>Systems</b>   | 1/01/10  | \$ 20,818,430                       | 24,274,639   | 3,456,209   | 85.8%   | \$ 4,579,772                                     | 75.5%   |
|   | 1/01/11  | 21,131,649                          | 25,535,499   | 4,403,850   | 82.8  | 4,488,030  | 98.1  |
|   | 1/01/12  | 21,117,218                          | 26,564,932   | 5,447,714   | 79.5  | 4,548,820  | 119.8   |
|   | 1/01/11  | 21,370,069                          | 27,724,395   | 6,354,326   | 77.1  | 4,604,893  | 138.0   |
|   | 1/01/14  | 23,405,492                          | 28,665,412   | 5,259,920   | 81.7  | 4,669,560  | 112.6   |
|   | 1/01/15  | 25,473,901                          | 29,808,235   | 4,334,334   | 85.5  | 4,678,491  | 92.6  |
|   | 1/01/16  | 27,124,096                          | 31,835,886   | 4,711,790   | 85.2  | 4,714,628  | 99.9  |
|   | 1/01/17  | 28,916,200                          | 33,926,814   | 5,010,614   | 85.2  | 4,839,496  | 103.5   |
|   | 1/01/18  | 30,877,196                          | 35,322,086   | 4,444,890   | 87.4  | 4,960,434  | 89.6  |
|   | 12/31/18 | 32,219,948                          | 36,708,181   | 4,488,233   | 87.8  | 5,146,312  | 87.2  |

\*New system additional years will be added as they become available.

See accompanying notes to required supplementary information.

## Solvency Tests

| System                                   | Date     | Actuarial Accrued Liabilities |                           |                                    |                                     | Actuarial Value of Assets | Portion of Actuarial Accrued Liabilities Covered by Assets |      |     |     |
|--|----------|-------------------------------|---------------------------|------------------------------------|-------------------------------------|---------------------------|--|------|-----|-----|
|  |          | (1)                           | (2)                       | (3) Active                         | (4)                                 |                           | (1)  | (2)  | (3) | (4) |
|  |          | Active Members Contributions  | Retired and Beneficiaries | Member (Employer Financed Portion) | Total Actuarial Accrued Liabilities |                           |  |      |     |     |
| <b>Noncontributory Retirement System</b> | 1/01/10  | \$ 618,209                    | 8,347,578                 | 10,418,716                         | 19,384,503                          | 16,619,831                | 100%   | 100% | 73% | 86% |
|  | 1/01/11  | 575,867                       | 8,958,451                 | 10,854,441                         | 20,388,759                          | 16,852,691                | 100  | 100  | 67  | 83  |
|  | 1/01/12  | 539,951                       | 9,875,383                 | 10,845,509                         | 21,260,843                          | 16,805,952                | 100  | 100  | 59  | 79  |
|  | 1/01/13  | 498,575                       | 10,075,732                | 11,626,589                         | 22,200,896                          | 16,969,392                | 100  | 100  | 55  | 76  |
|  | 1/01/14  | 455,136                       | 10,798,876                | 11,727,573                         | 22,981,585                          | 18,601,513                | 100  | 100  | 63  | 81  |
|  | 1/01/15  | 411,752                       | 11,446,753                | 12,009,720                         | 23,868,225                          | 20,240,645                | 100  | 100  | 70  | 85  |
|  | 1/01/16  | 383,017                       | 12,405,935                | 12,687,627                         | 25,476,579                          | 21,528,737                | 100  | 100  | 69  | 85  |
|  | 1/01/17  | 331,097                       | 13,201,269                | 13,546,070                         | 27,078,436                          | 22,908,184                | 100  | 100  | 69  | 85  |
|  | 1/01/18  | 292,923                       | 13,900,793                | 13,925,461                         | 28,119,177                          | 24,430,088                | 100  | 100  | 74  | 87  |
|  | 12/31/18 | 266,731                       | 14,397,010                | 14,459,207                         | 29,122,948                          | 25,424,399                | 100  | 100  | 74  | 87  |
| <b>Contributory Retirement System</b>    | 1/01/10  | \$ 318,205                    | 556,495                   | 361,309                            | 1,236,009                           | 1,116,736                 | 100%   | 100% | 67% | 90% |
|  | 1/01/11  | 307,896                       | 591,899                   | 351,617                            | 1,251,412                           | 1,132,661                 | 100  | 100  | 66  | 91  |
|  | 1/01/12  | 308,962                       | 630,747                   | 329,333                            | 1,269,042                           | 1,135,251                 | 100  | 100  | 59  | 89  |
|  | 1/01/13  | 294,317                       | 669,744                   | 316,775                            | 1,280,836                           | 1,133,433                 | 100  | 100  | 53  | 88  |
|  | 1/01/14  | 286,020                       | 717,842                   | 281,989                            | 1,285,851                           | 1,165,002                 | 100  | 100  | 57  | 91  |
|  | 1/01/15  | 272,720                       | 766,078                   | 256,783                            | 1,295,581                           | 1,198,862                 | 100  | 100  | 62  | 93  |
|  | 1/01/16  | 236,592                       | 838,922                   | 206,996                            | 1,282,510                           | 1,209,069                 | 100  | 100  | 65  | 94  |
|  | 1/01/17  | 206,024                       | 898,668                   | 188,162                            | 1,292,854                           | 1,227,072                 | 100  | 100  | 65  | 95  |
|  | 1/01/18  | 188,260                       | 928,948                   | 164,844                            | 1,282,052                           | 1,228,311                 | 100  | 100  | 67  | 96  |
|  | 12/31/18 | 173,928                       | 930,366                   | 179,715                            | 1,284,009                           | 1,209,301                 | 100  | 100  | 58  | 94  |
| <b>Public Safety Retirement System</b>   | 1/01/10  | \$ 81,677                     | 1,345,480                 | 1,223,518                          | 2,650,675                           | 2,137,027                 | 100%   | 100% | 58% | 81% |
|  | 1/01/11  | 76,375                        | 1,455,233                 | 1,312,493                          | 2,844,101                           | 2,194,015                 | 100  | 100  | 50  | 77  |
|  | 1/01/12  | 77,231                        | 1,501,102                 | 1,370,148                          | 2,948,481                           | 2,222,202                 | 100  | 100  | 47  | 75  |
|  | 1/01/13  | 74,661                        | 1,593,128                 | 1,425,438                          | 3,093,227                           | 2,283,911                 | 100  | 100  | 43  | 74  |
|  | 1/01/14  | 74,012                        | 1,682,390                 | 1,435,104                          | 3,191,506                           | 2,530,709                 | 100  | 100  | 54  | 79  |
|  | 1/01/15  | 70,992                        | 1,769,909                 | 1,503,158                          | 3,344,059                           | 2,781,314                 | 100  | 100  | 63  | 83  |
|  | 1/01/16  | 66,232                        | 1,937,777                 | 1,618,956                          | 3,622,965                           | 2,988,371                 | 100  | 100  | 61  | 82  |
|  | 1/01/17  | 61,343                        | 2,093,058                 | 1,754,392                          | 3,908,793                           | 3,217,221                 | 100  | 100  | 61  | 82  |
|  | 1/01/18  | 59,056                        | 2,202,058                 | 1,636,935                          | 3,898,049                           | 3,277,704                 | 100  | 100  | 62  | 84  |
|  | 12/31/18 | 54,621                        | 2,405,538                 | 1,798,088                          | 4,258,247                           | 3,635,948                 | 100  | 100  | 65  | 85  |
| <b>Firefighters Retirement System</b>    | 1/01/10  | \$ 96,734                     | 467,284                   | 269,826                            | 833,844                             | 802,576                   | 100%   | 100% | 88% | 96% |
|  | 1/01/11  | 103,678                       | 495,985                   | 272,470                            | 872,133                             | 810,216                   | 100  | 100  | 77  | 93  |
|  | 1/01/12  | 116,966                       | 516,105                   | 270,328                            | 903,399                             | 810,764                   | 100  | 100  | 66  | 90  |
|  | 1/01/13  | 127,442                       | 532,366                   | 284,983                            | 944,791                             | 824,060                   | 100  | 100  | 58  | 87  |
|  | 1/01/14  | 141,471                       | 544,643                   | 307,460                            | 993,574                             | 903,627                   | 100  | 100  | 71  | 91  |
|  | 1/01/15  | 152,667                       | 566,583                   | 287,396                            | 1,006,646                           | 988,806                   | 100  | 100  | 94  | 98  |
|  | 1/01/16  | 162,377                       | 600,565                   | 314,021                            | 1,076,963                           | 1,060,312                 | 100  | 100  | 95  | 98  |
|  | 1/01/17  | 171,328                       | 636,389                   | 344,885                            | 1,152,602                           | 1,130,198                 | 100  | 100  | 94  | 98  |
|  | 1/01/18  | 178,991                       | 669,170                   | 358,441                            | 1,206,602                           | 1,195,358                 | 100  | 100  | 97  | 99  |
|  | 12/31/18 | 187,332                       | 699,499                   | 374,458                            | 1,261,289                           | 1,244,737                 | 100  | 100  | 96  | 99  |

## Solvency Tests (Concluded)

| System  | Date     | Actuarial Accrued Liabilities |                           |                                    |                                     | Actuarial Value of Assets | Portion of Actuarial Accrued Liabilities Covered by Assets |      |      |     |
|---|----------|-------------------------------|---------------------------|------------------------------------|-------------------------------------|---------------------------|--|------|------|-----|
|   |          | (1)                           | (2)                       | (3) Active                         | (4)                                 |                           | (1)  | (2)  | (3)  | (4) |
|   |          | Active Members Contributions  | Retired and Beneficiaries | Member (Employer Financed Portion) | Total Actuarial Accrued Liabilities |                           |  |      |      |     |
| <b>Judges Retirement System</b>   | 1/01/10  | \$ 5,802                      | 81,582                    | 70,919                             | 158,303                             | 131,491                   | 100%   | 100% | 62%  | 83% |
|   | 1/01/11  | 4,309                         | 93,548                    | 69,724                             | 167,581                             | 131,869                   | 100  | 100  | 49   | 79  |
|   | 1/01/12  | 4,376                         | 97,460                    | 66,146                             | 167,982                             | 130,561                   | 100  | 100  | 47   | 78  |
|   | 1/01/13  | 4,102                         | 98,499                    | 72,322                             | 174,923                             | 131,217                   | 100  | 100  | 40   | 75  |
|   | 1/01/14  | 3,567                         | 111,132                   | 70,414                             | 185,113                             | 145,121                   | 100  | 100  | 43   | 78  |
|   | 1/01/15  | 3,374                         | 120,460                   | 68,611                             | 192,445                             | 156,956                   | 100  | 100  | 48   | 82  |
|   | 1/01/16  | 2,604                         | 129,958                   | 70,978                             | 203,540                             | 166,298                   | 100  | 100  | 48   | 82  |
|   | 1/01/17  | 2,540                         | 136,618                   | 84,813                             | 223,971                             | 177,782                   | 100  | 100  | 46   | 79  |
|   | 1/01/18  | 2,524                         | 152,585                   | 83,324                             | 238,433                             | 192,037                   | 100  | 100  | 44   | 81  |
|   | 12/31/18 | 1,329                         | 156,281                   | 86,599                             | 244,209                             | 201,332                   | 100  | 100  | 50   | 82  |
| <b>Utah Governors and Legislators Retirement Plan</b>                       | 1/01/10  | \$ 119                        | 6,508                     | 4,678                              | 11,305                              | 10,769                    | 100%   | 100% | 89%  | 95% |
|   | 1/01/11  | 102                           | 6,315                     | 5,096                              | 11,513                              | 10,197                    | 100  | 100  | 74   | 89  |
|   | 1/01/12  | 107                           | 6,482                     | 5,440                              | 12,029                              | 9,565                     | 100  | 100  | 55   | 80  |
|   | 1/01/13  | 104                           | 6,396                     | 5,425                              | 11,925                              | 9,077                     | 100  | 100  | 48   | 76  |
|   | 1/01/14  | 94                            | 7,037                     | 5,055                              | 12,186                              | 9,457                     | 100  | 100  | 46   | 78  |
|   | 1/01/15  | 62                            | 7,201                     | 4,960                              | 12,223                              | 9,908                     | 100  | 100  | 37   | 81  |
|   | 1/01/16  | 66                            | 7,619                     | 4,999                              | 12,684                              | 10,173                    | 100  | 100  | 50   | 80  |
|   | 1/01/17  | 46                            | 8,254                     | 4,844                              | 13,144                              | 10,470                    | 100  | 100  | 45   | 80  |
|   | 1/01/18  | 27                            | 8,537                     | 4,685                              | 13,249                              | 10,856                    | 100  | 100  | 49   | 82  |
|   | 12/31/18 | 27                            | 8,491                     | 4,659                              | 13,177                              | 10,853                    | 100  | 100  | 50   | 82  |
| <b>Tier 2 Public Employees Contributory Retirement System*</b>              | 1/01/12  | \$ —                          | —                         | 3,055                              | 3,055                               | 2,833                     | 100%   | 100% | 100% | 93% |
|   | 1/01/13  | —                             | —                         | 16,755                             | 16,755                              | 17,818                    | 100  | 100  | 106  | 106 |
|   | 1/01/14  | —                             | —                         | 42,328                             | 42,328                              | 46,241                    | 100  | 100  | 109  | 109 |
|   | 1/01/15  | —                             | —                         | 81,624                             | 81,624                              | 88,743                    | 100  | 100  | 109  | 109 |
|   | 1/01/16  | —                             | 12                        | 145,859                            | 145,871                             | 145,518                   | 100  | 100  | 100  | 100 |
|   | 1/01/17  | —                             | 181                       | 231,024                            | 231,205                             | 219,885                   | 100  | 100  | 95   | 95  |
|   | 1/01/18  | —                             | 651                       | 335,768                            | 336,419                             | 318,755                   | 100  | 100  | 95   | 95  |
| 12/31/18  | 56       | 905                           | 466,500                   | 467,461                            | 438,380                             | 100                       | 100  | 94   | 94   |     |
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System*</b> | 1/01/12  | \$ —                          | —                         | 101                                | 101                                 | 90                        | 100%   | 100% | 100% | 89% |
|   | 1/01/13  | —                             | —                         | 1,042                              | 1,042                               | 1,161                     | 100  | 100  | 100  | 100 |
|   | 1/01/14  | —                             | —                         | 3,269                              | 3,269                               | 3,822                     | 100  | 100  | 100  | 117 |
|   | 1/01/15  | —                             | —                         | 7,432                              | 7,432                               | 8,666                     | 100  | 100  | 100  | 117 |
|   | 1/01/16  | —                             | —                         | 14,774                             | 14,774                              | 15,618                    | 100  | 100  | 100  | 106 |
|   | 1/01/17  | —                             | —                         | 25,809                             | 25,809                              | 25,388                    | 100  | 100  | 98   | 98  |
|   | 1/01/18  | —                             | —                         | 39,603                             | 39,603                              | 38,872                    | 100  | 100  | 98   | 98  |
| 12/31/18  | —        | —                             | 56,841                    | 56,841                             | 56,076                              | 100                       | 100  | 99   | 99   |     |

\*New systems' additional years will be added as they become available.

## Schedules of Active Member Valuation Data

Year Ended December 31

| System                                   | Year | Number of Participating Employers | Active Members | Active Members           |             |                  | Inflation Increase (CPI) |
|--|------|-----------------------------------|----------------|--------------------------|-------------|------------------|--------------------------|
|  |      |                                   |                | Projected Annual Payroll | Average Pay | Percent Increase |                          |
| <b>Noncontributory Retirement System</b> | 2009 | 416                               | 92,766         | \$ 3,955,040,000         | 41,945      | 3.49%            | 2.70%                    |
|  | 2010 | 419                               | 92,392         | 3,881,790,000            | 41,854      | (0.22)           | 1.50                     |
|  | 2011 | 430                               | 87,901         | 3,900,106,000            | 43,308      | 3.47             | 3.20                     |
|  | 2012 | 436                               | 82,259         | 3,794,929,000            | 44,828      | 3.51             | 2.10                     |
|  | 2013 | 439                               | 76,845         | 3,675,331,000            | 46,294      | 3.27             | 1.50                     |
|  | 2014 | 437                               | 71,827         | 3,570,912,000            | 47,994      | 3.67             | 1.60                     |
|  | 2015 | 451                               | 68,273         | 3,458,286,000            | 50,002      | 4.18             | 0.10                     |
|  | 2016 | 453                               | 63,214         | 3,406,567,000            | 51,984      | 3.96             | 1.30                     |
|  | 2017 | 457                               | 59,578         | 3,375,321,000            | 54,845      | 5.50             | 2.10                     |
|  | 2018 | 463                               | 56,299         | 3,330,548,000            | 57,971      | 5.70             | 1.90                     |
| <b>Contributory Retirement System</b>    | 2009 | 160                               | 2,515          | \$ 127,804,000           | 47,941      | 2.37%            | 2.70%                    |
|  | 2010 | 159                               | 2,330          | 116,395,000              | 47,620      | (0.67)           | 1.50                     |
|  | 2011 | 159                               | 2,137          | 110,103,000              | 48,806      | 2.49             | 3.20                     |
|  | 2012 | 159                               | 1,937          | 103,074,000              | 50,504      | 3.48             | 2.10                     |
|  | 2013 | 159                               | 1,733          | 94,895,000               | 51,680      | 2.33             | 1.50                     |
|  | 2014 | 159                               | 1,503          | 90,623,000               | 54,003      | 4.49             | 1.60                     |
|  | 2015 | 158                               | 943            | 82,426,000               | 56,747      | 5.08             | 0.10                     |
|  | 2016 | 158                               | 738            | 53,615,000               | 60,936      | 7.38             | 1.30                     |
|  | 2017 | 158                               | 621            | 45,178,000               | 62,264      | 2.18             | 2.10                     |
|  | 2018 | 159                               | 519            | 39,279,000               | 64,824      | 4.11             | 1.90                     |
| <b>Public Safety Retirement System</b>   | 2009 | 130                               | 7,695          | \$ 373,959,000           | 47,145      | 2.57%            | 2.70%                    |
|  | 2010 | 130                               | 7,624          | 363,037,000              | 46,898      | (0.52)           | 1.50                     |
|  | 2011 | 130                               | 7,619          | 374,293,000              | 47,329      | 0.92             | 3.20                     |
|  | 2012 | 130                               | 7,313          | 366,471,000              | 48,416      | 2.30             | 2.10                     |
|  | 2013 | 130                               | 7,019          | 363,389,000              | 49,825      | 2.91             | 1.50                     |
|  | 2014 | 131                               | 6,672          | 360,751,000              | 51,603      | 3.57             | 1.60                     |
|  | 2015 | 131                               | 6,399          | 355,172,000              | 53,488      | 3.65             | 0.10                     |
|  | 2016 | 132                               | 6,032          | 352,408,000              | 57,381      | 7.28             | 1.30                     |
|  | 2017 | 133                               | 5,704          | 350,783,000              | 59,841      | 4.29             | 2.10                     |
|  | 2018 | 134                               | 5,305          | 348,476,000              | 62,721      | 4.81             | 1.90                     |
| <b>Firefighters Retirement System</b>    | 2009 | 55                                | 1,907          | \$ 107,625,000           | 54,466      | 0.66%            | 2.70%                    |
|  | 2010 | 56                                | 1,887          | 105,275,000              | 54,741      | 0.50             | 1.50                     |
|  | 2011 | 57                                | 1,932          | 110,751,000              | 55,240      | 0.91             | 3.20                     |
|  | 2012 | 57                                | 1,884          | 110,608,000              | 56,507      | 2.29             | 2.10                     |
|  | 2013 | 58                                | 1,845          | 112,158,000              | 58,193      | 2.98             | 1.50                     |
|  | 2014 | 59                                | 1,787          | 111,305,000              | 60,081      | 3.24             | 1.60                     |
|  | 2015 | 60                                | 1,735          | 111,133,000              | 62,628      | 4.24             | 0.10                     |
|  | 2016 | 62                                | 1,663          | 112,322,000              | 67,114      | 7.16             | 1.30                     |
|  | 2017 | 62                                | 1,602          | 112,954,000              | 69,242      | 3.17             | 2.10                     |
|  | 2018 | 62                                | 1,540          | 113,587,000              | 71,914      | 3.86             | 1.90                     |



## Schedules of Active Member Valuation Data (Concluded)

Year Ended December 31

| System  | Year | Number of Participating Employers | Active Members | Active Members           |             |                  | Inflation Increase (CPI) |
|---|------|-----------------------------------|----------------|--------------------------|-------------|------------------|--------------------------|
|   |      |                                   |                | Projected Annual Payroll | Average Pay | Percent Increase |                          |
| <b>Judges Retirement System</b>   | 2009 | 1                                 | 104            | \$ 14,434,000            | 131,742     | 2.36%            | 2.70%                    |
|   | 2010 | 1                                 | 109            | 14,234,000               | 133,692     | 1.48             | 1.50                     |
|   | 2011 | 1                                 | 111            | 14,918,000               | 132,615     | (0.80)           | 3.20                     |
|   | 2012 | 1                                 | 111            | 14,885,000               | 132,644     | 0.02             | 2.10                     |
|   | 2013 | 1                                 | 112            | 14,942,000               | 139,135     | 4.89             | 1.50                     |
|   | 2014 | 1                                 | 114            | 15,195,000               | 136,234     | (2.09)           | 1.60                     |
|   | 2015 | 1                                 | 112            | 15,832,000               | 145,112     | 6.52             | 0.10                     |
|   | 2016 | 1                                 | 115            | 16,755,000               | 155,852     | 7.40             | 1.30                     |
|   | 2017 | 1                                 | 114            | 18,661,000               | 162,345     | 4.17             | 2.10                     |
| 2018  | 1    | 116                               | 18,802,000     | 166,280                  | 2.42        | 1.90             |                          |
| <b>Utah Governors and Legislators Retirement Plan</b>                       | 2009 | 1                                 | 119            | \$ 910,000               | 7,647       | (21.85)%         | 2.70%                    |
|   | 2010 | 1                                 | 125            | 910,000                  | 7,280       | (4.80)           | 1.50                     |
|   | 2011 | 1                                 | 115            | 910,000                  | 7,913       | 8.70             | 3.20                     |
|   | 2012 | 1                                 | 113            | 910,000                  | 8,053       | 1.77             | 2.10                     |
|   | 2013 | 1                                 | 99             | 975,000                  | 10,172      | 26.31            | 1.50                     |
|   | 2014 | 1                                 | 105            | 1,032,000                | 9,526       | (6.35)           | 1.60                     |
|   | 2015 | 1                                 | 93             | 943,000                  | 10,099      | 6.02             | 0.10                     |
|   | 2016 | 1                                 | 61             | 799,000                  | 12,285      | 21.64            | 1.30                     |
|   | 2017 | 1                                 | 52             | 722,000                  | 12,285      | 0.00             | 2.10                     |
| 2018  | 1    | 52                                | 639,000        | 12,285                   | 0.00        | 1.90             |                          |
| <b>Tier 2 Public Employees Contributory Retirement System*</b>              | 2011 | 456                               | 4,777          | \$ 36,821,000            | 7,708       | 100.00%          | 1.50%                    |
|   | 2012 | 461                               | 10,356         | 203,779,000              | 27,030      | 250.68           | 2.10                     |
|   | 2013 | 461                               | 13,718         | 349,257,000              | 30,279      | 12.02            | 1.50                     |
|   | 2014 | 463                               | 17,225         | 353,227,000              | 32,388      | 6.97             | 1.60                     |
|   | 2015 | 465                               | 21,778         | 637,560,000              | 34,031      | 5.07             | 0.10                     |
|   | 2016 | 466                               | 24,372         | 822,196,000              | 30,809      | (9.47)           | 1.30                     |
|   | 2017 | 470                               | 27,152         | 996,965,000              | 39,229      | 27.33            | 2.10                     |
|   | 2018 | 476                               | 30,291         | 1,171,543,000            | 41,840      | 6.66             | 1.90                     |
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System*</b> | 2011 | 145                               | 99             | \$ 855,000               | 8,636       | 100.00%          | 1.50%                    |
|   | 2012 | 145                               | 477            | 10,237,000               | 33,394      | 286.68           | 2.10                     |
|   | 2013 | 145                               | 885            | 24,656,000               | 33,902      | 1.52             | 1.50                     |
|   | 2014 | 149                               | 1,331          | 35,019,000               | 35,871      | 5.81             | 1.60                     |
|   | 2015 | 149                               | 1,824          | 53,276,000               | 37,051      | 3.29             | 0.10                     |
|   | 2016 | 150                               | 2,240          | 74,834,000               | 35,363      | (4.56)           | 1.30                     |
|   | 2017 | 151                               | 2,699          | 98,113,000               | 41,946      | 18.62            | 2.10                     |
|   | 2018 | 151                               | 3,301          | 123,439,000              | 44,030      | 4.97             | 1.90                     |

\*New systems' additional years will be added as they become available.

## Schedules of Retirants and Beneficiaries

Year Ended December 31

| System                                   | Year | Added to Rolls |               | Removed from Rolls |               | Rolls End of Year |                | % Increase in Annual Allowances | Average Annual Allowances |
|--|------|----------------|---------------|--------------------|---------------|-------------------|----------------|---------------------------------|---------------------------|
|  |      | Number         | Allowances    | Number             | Allowances    | Number            | Allowances     |                                 |                           |
| <b>Noncontributory Retirement System</b> | 2009 | 2,540          | \$ 84,601,000 | 370                | \$ 21,340,000 | 33,901            | \$ 723,053,000 | 9.59%                           | \$ 20,039                 |
|  | 2010 | 2,697          | 101,281,000   | 459                | 30,530,000    | 36,139            | 793,804,000    | 9.79                            | 20,432                    |
|  | 2011 | 2,629          | 92,161,000    | 552                | 42,268,000    | 38,216            | 843,697,000    | 6.29                            | 20,618                    |
|  | 2012 | 2,745          | 99,170,000    | 505                | 42,739,000    | 40,456            | 900,128,000    | 6.69                            | 20,841                    |
|  | 2013 | 3,366          | 118,337,000   | 715                | 43,781,000    | 43,107            | 974,684,000    | 8.28                            | 21,063                    |
|  | 2014 | 3,680          | 123,894,000   | 866                | 54,780,000    | 45,921            | 1,043,798,000  | 7.09                            | 21,170                    |
|  | 2015 | 3,399          | 140,471,000   | 578                | 60,622,000    | 48,742            | 1,123,647,000  | 7.65                            | 21,363                    |
|  | 2016 | 3,965          | 141,910,000   | 1,352              | 81,240,000    | 51,355            | 1,184,317,000  | 5.40                            | 22,475                    |
|  | 2017 | 3,340          | 148,952,000   | 797                | 85,232,000    | 53,898            | 1,248,037,000  | 5.38                            | 22,576                    |
|  | 2018 | 3,445          | 149,257,000   | 939                | 77,080,000    | 56,404            | 1,320,214,000  | 5.78                            | 22,921                    |
| <b>Contributory Retirement System</b>    | 2009 | 181            | \$ 8,434,000  | 449                | \$ 5,681,000  | 4,971             | \$ 64,849,000  | 4.43%                           | \$ 11,961                 |
|  | 2010 | 218            | 9,641,000     | 425                | 6,925,000     | 4,764             | 67,565,000     | 4.19                            | 12,890                    |
|  | 2011 | 177            | 8,271,000     | 389                | 7,461,000     | 4,552             | 68,375,000     | 1.20                            | 13,777                    |
|  | 2012 | 184            | 9,403,000     | 366                | 6,928,000     | 4,370             | 70,850,000     | 3.62                            | 14,863                    |
|  | 2013 | 222            | 9,875,000     | 340                | 6,567,000     | 4,252             | 74,158,000     | 4.67                            | 15,996                    |
|  | 2014 | 209            | 10,036,000    | 146                | 7,179,000     | 4,315             | 77,015,000     | 3.85                            | 16,341                    |
|  | 2015 | 187            | 11,793,000    | 280                | 7,418,000     | 4,222             | 81,390,000     | 5.68                            | 17,497                    |
|  | 2016 | 227            | 10,463,000    | 284                | 8,406,000     | 4,165             | 83,447,000     | 2.53                            | 19,284                    |
|  | 2017 | 123            | 8,205,000     | 246                | 6,891,000     | 4,042             | 84,761,000     | 1.57                            | 19,831                    |
|  | 2018 | 110            | 7,241,000     | 235                | 5,207,000     | 3,917             | 86,795,000     | 2.40                            | 21,028                    |
| <b>Public Safety Retirement System</b>   | 2009 | 170            | \$ 11,925,000 | 105                | \$ 4,597,000  | 3,831             | \$ 106,272,000 | 7.41%                           | \$ 25,710                 |
|  | 2010 | 212            | 14,221,000    | 31                 | 4,662,000     | 4,012             | 115,831,000    | 8.99                            | 26,497                    |
|  | 2011 | 157            | 11,329,000    | 44                 | 6,591,000     | 4,125             | 120,569,000    | 4.09                            | 27,182                    |
|  | 2012 | 195            | 13,695,000    | 28                 | 5,725,000     | 4,292             | 128,539,000    | 6.61                            | 27,693                    |
|  | 2013 | 230            | 15,532,000    | 41                 | 6,585,000     | 4,481             | 137,486,000    | 6.96                            | 28,233                    |
|  | 2014 | 562            | 15,463,000    | 135                | 8,185,000     | 4,908             | 144,764,000    | 5.29                            | 27,226                    |
|  | 2015 | 268            | 18,681,000    | 12                 | 8,058,000     | 5,164             | 155,387,000    | 7.34                            | 27,550                    |
|  | 2016 | 368            | 18,523,000    | 120                | 9,402,000     | 5,412             | 164,508,000    | 5.87                            | 29,241                    |
|  | 2017 | 266            | 16,937,000    | 40                 | 8,575,000     | 5,638             | 172,870,000    | 5.08                            | 29,504                    |
|  | 2018 | 372            | 26,373,000    | 43                 | 10,829,000    | 5,967             | 188,414,000    | 8.99                            | 30,193                    |
| <b>Firefighters Retirement System</b>    | 2009 | 38             | \$ 4,503,000  | 9                  | \$ 1,547,000  | 1,112             | \$ 38,311,000  | 8.36%                           | \$ 30,158                 |
|  | 2010 | 44             | 5,173,000     | 7                  | 2,354,000     | 1,149             | 41,130,000     | 7.36                            | 31,044                    |
|  | 2011 | 32             | 3,171,000     | 8                  | 2,897,000     | 1,173             | 41,404,000     | 0.67                            | 31,874                    |
|  | 2012 | 35             | 4,114,000     | 4                  | 1,843,000     | 1,204             | 43,675,000     | 5.48                            | 32,584                    |
|  | 2013 | 46             | 4,552,000     | 20                 | 3,480,000     | 1,230             | 44,747,000     | 2.45                            | 33,292                    |
|  | 2014 | 119            | 4,664,000     | 51                 | 1,701,000     | 1,298             | 47,710,000     | 6.62                            | 32,763                    |
|  | 2015 | 55             | 4,788,000     | 20                 | 2,827,000     | 1,333             | 49,671,000     | 4.11                            | 33,319                    |
|  | 2016 | 72             | 4,715,000     | 33                 | 2,284,000     | 1,372             | 52,102,000     | 4.89                            | 36,574                    |
|  | 2017 | 62             | 5,126,000     | 11                 | 2,435,000     | 1,423             | 54,793,000     | 5.16                            | 37,191                    |
|  | 2018 | 61             | 5,365,000     | 20                 | 2,718,000     | 1,464             | 57,440,000     | 4.83                            | 37,777                    |

## Schedules of Retirants and Beneficiaries (Concluded)

Year Ended December 31

| System  | Year | Added to Rolls |              | Removed from Rolls |            | Rolls End of Year |              | % Increase in Annual Allowances | Average Annual Allowances |
|---|------|----------------|--------------|--------------------|------------|-------------------|--------------|---------------------------------|---------------------------|
|   |      | Number         | Allowances   | Number             | Allowances | Number            | Allowances   |                                 |                           |
| <b>Judges Retirement System</b>   | 2009 | 10             | \$ 1,015,000 | —                  | —          | 107               | \$ 7,595,000 | 15.43%                          | \$ 65,133                 |
|   | 2010 | 8              | 1,415,000    | —                  | —          | 115               | 9,010,000    | 18.63                           | 68,784                    |
|   | 2011 | 5              | 629,000      | 4                  | \$ 991,000 | 116               | 8,648,000    | (4.02)                          | 72,696                    |
|   | 2012 | 4              | 783,000      | 3                  | 296,000    | 117               | 9,135,000    | 5.63                            | 74,705                    |
|   | 2013 | 11             | 1,898,000    | 4                  | 844,000    | 124               | 10,189,000   | 11.54                           | 76,264                    |
|   | 2014 | 14             | 1,840,000    | 6                  | 668,000    | 132               | 11,361,000   | 11.50                           | 79,202                    |
|   | 2015 | 9              | 1,711,000    | 1                  | 672,000    | 140               | 12,400,000   | 9.15                            | 81,633                    |
|   | 2016 | 7              | 637,000      | 6                  | 707,000    | 141               | 12,330,000   | (0.56)                          | 84,793                    |
|   | 2017 | 10             | 2,315,000    | 3                  | 1,024,000  | 148               | 13,621,000   | 10.47                           | 87,512                    |
|   | 2018 | 10             | 2,560,000    | 3                  | 70,000     | 155               | 16,111,000   | 18.28                           | 92,753                    |
| <b>Utah Governors and Legislators Retirement Plan</b>                       | 2009 | 5              | \$ 73,000    | 3                  | \$ 52,000  | 224               | \$ 784,000   | 2.75%                           | \$ 3,030                  |
|   | 2010 | 5              | 60,000       | 9                  | 54,000     | 220               | 790,000      | 0.77                            | 3,076                     |
|   | 2011 | 7              | 56,000       | 7                  | 47,000     | 220               | 799,000      | 1.14                            | 3,151                     |
|   | 2012 | 8              | 52,000       | 4                  | 37,000     | 224               | 814,000      | 1.88                            | 3,160                     |
|   | 2013 | 21             | 119,000      | 6                  | 41,000     | 239               | 892,000      | 9.58                            | 3,167                     |
|   | 2014 | 9              | 80,000       | 12                 | 63,000     | 236               | 909,000      | 1.91                            | 3,287                     |
|   | 2015 | 12             | 73,000       | 7                  | 78,000     | 241               | 904,000      | (0.55)                          | 3,311                     |
|   | 2016 | 17             | 128,000      | 14                 | 91,000     | 244               | 941,000      | 4.09                            | 3,863                     |
|   | 2017 | 11             | 87,000       | 2                  | 55,000     | 253               | 973,000      | 3.40                            | 3,883                     |
| 2018  | 7    | 57,000         | 10           | 52,000             | 250        | 978,000           | 0.51         | 3,860                           |                           |
| <b>Tier 2 Public Employees Contributory Retirement System</b>               | 2011 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2012 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2013 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2014 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2015 | 1              | \$ 401,000   | —                  | \$ 68,000  | 1                 | \$ 333,000   | —                               | \$ 865                    |
|   | 2016 | 8              | 26,000       | —                  | 43,000     | 9                 | 316,000      | (5.11)%                         | 1,565                     |
|   | 2017 | 17             | 72,000       | —                  | (29,000)   | 26                | 417,000      | 31.96                           | 1,932                     |
|   | 2018 | 38             | 219,000      | —                  | (56,000)   | 64                | 692,000      | 65.95                           | 2,505                     |
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System*</b> | 2011 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2012 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2013 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2014 | —              | —            | —                  | —          | —                 | —            | —                               | —                         |
|   | 2015 | —              | \$ 30,000    | —                  | —          | —                 | \$ 30,000    | —                               | —                         |
|   | 2016 | —              | —            | —                  | \$ 2,000   | —                 | 28,000       | (6.67)%                         | —                         |
|   | 2017 | —              | —            | —                  | (33,000)   | —                 | 61,000       | 117.86                          | —                         |
|   | 2018 | —              | —            | —                  | 61,000     | —                 | —            | (100.00)                        | —                         |

\*There are currently no retirees in the system.

# Defined Benefit Systems Summary of Plan Provisions

as of January 1, 2018



## Noncontributory Retirement System

### Membership Eligibility

The Public Employees Noncontributory Retirement System was established on July 1, 1986. All eligible employees of the State and School entities hired subsequent to that date are automatically members of the Noncontributory System. Local government entities had the option of adopting the new System or remaining with the Contributory System. An employee is qualified for membership in the Noncontributory System if his or her employer participates in the System and the employee initially began full-time employment prior to July 1, 2011, and works at least 20 hours per week and receives benefits normally provided by his or her employer as approved by the Retirement Board, and teachers who teach half-time.

### Vesting

Retirement benefit becomes vested upon the member's completion of four years of qualifying service.

### Service Retirement

| Age     | Years of Service | Allowance Reduction†         |
|---------|------------------|------------------------------|
| Any age | 30               | None                         |
| Any age | 25               | Full actuarial before age 60 |
| 60-61   | 20               | 3% each year before age 65   |
| 62-64   | 10               | 3% each year before age 65   |
| 65      | 4                | None                         |

† With fewer than 30 years of service from any combination of Utah Retirement Systems, retiring before age 65 will reduce the monthly benefit approximately 7% for every year under age 60 and 3% for each year between ages 60 and 65.

### Service Benefit Formula

Number of years of service x 2.0% x FAS.\*

\* FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

### Cost-of-Living Allowance

Up to 4% annually on the original retirement benefit. Eligible after one year.

### Death Benefits

An active member's death benefit consists of a payment equal to 75% of the highest annual salary with a minimum of \$1,000 and a refund of transferred contributions plus interest, if applicable. The spouse of a deceased member is eligible for a monthly benefit if they have been married for at least six months and the member meets age and service

**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

*Noncontributory Retirement System (Concluded)*

qualifications or has 15 or more years of service credit.

An inactive member's death benefit for someone with fewer than 10 years of service consists of a refund of transferred contributions plus interest, if applicable. For those with 10 or more years of service credited to their account prior to July 1, 1987, and who have not withdrawn their contributions, the benefit is the same as for active members.

A retired member's death benefit depends on the retirement option selected at retirement. No death benefit is available without a reduced retirement benefit.

**Refunds**

A terminated member who transferred from the Contributory Retirement System is eligible for a 100% refund of transferred member contributions plus interest. There is a 60-day refund processing period after the last day of paid employment.

**Redeposits**

A redeposit with interest may be made in monthly installments, by a lump-sum payment, or by direct transfer from a qualified plan. A redeposit must be completed prior to retirement. Service credit is restored when the redeposit is completed.

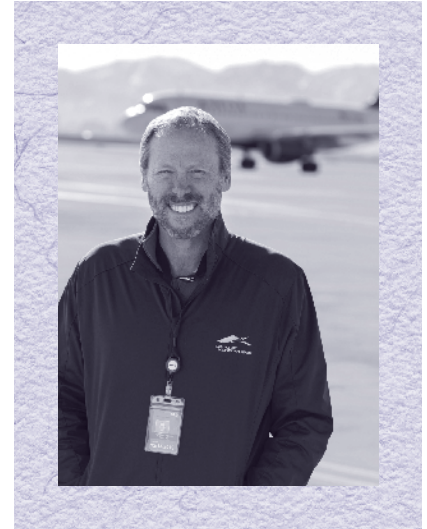
**Contribution Rates**

*(as of 12-31-2018)*

Employer rate for State and School (Level A) is 22.19% of covered salary and 18.47% for Local Government (Level B).

**Interest**

Up to 6.95% on member accounts transferred from the Contributory Retirement System.



**Contributory Retirement System**

**Membership Eligibility**

The Public Employees Contributory Retirement System includes eligible public employees of the State of Utah and its political subdivisions including public education employees of those entities covered by the System. An employee is qualified for membership in the Contributory System if his or her employer participates in the System and the employee initially began full-time employment prior to July 1, 2011, and works at least 20 hours per week and receives benefits normally provided by his or her employer as approved by the Retirement Board, and teachers who teach half-time.

**Vesting**

Retirement benefit becomes vested upon the member's completion of four years of qualifying service. Eligible member contributions and interest thereon vest immediately.

**Service Retirement**

| Age     | Years of Service | Allowance Reduction†       |
|---------|------------------|----------------------------|
| Any age | 30               | None                       |
| 60-61   | 20               | 3% each year before age 65 |
| 62-64   | 10               | 3% each year before age 65 |
| 65      | 4                | None                       |

† With fewer than 30 years of service from any combination of Utah Retirement Systems, retiring before age 65 will reduce the monthly benefit by 3% for each year between ages 60 and 65.

**Service Benefit Formula**

- 1) Number of years of service before 7-1-75 x 1.25% x FAS.\*
- 2) Number of years of service after 6-30-75 x 2.0% x FAS.\*
- 3) Plan 1 allowance = total of 1 and 2.

\* FAS (Final Average Salary) = highest five years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.

**Cost-of-Living Allowance**

Up to 4% annually on the original retirement benefit. Eligible after one year.

**Death Benefits**

An active member's death benefit consists of a payment equal to 75% of the highest annual salary with a minimum of \$1,000 and a refund of contributions plus interest. The spouse of a deceased member is eligible for a monthly benefit if they have been married for at least six

**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

*Contributory Retirement System (Concluded)*

months and the member meets age and service qualifications, or has 25 years of service.

An inactive member's death benefit for someone with fewer than 10 years of service consists of a refund of contributions plus interest. For those with 10 or more years of service credited to their account prior to July 1, 1987, and who have not withdrawn their contributions, the benefit is the same as for active members.

A retired member's death benefit depends on the retirement option selected at retirement. No death benefit is available without a reduced retirement benefit.

**Refunds**

A terminated member is eligible for a 100% refund of member contributions plus interest. There is a 60-day refund processing period after the last day of paid employment.

**Redeposits**

A redeposit with interest may be made in monthly installments, by a lump-sum payment, or by direct transfer from a qualified plan. A redeposit must be completed prior to retirement. Service credit is restored when the redeposit is completed.

**Contribution Rates**

*(as of 12-31-2018)*

Member contribution rate is 6%\* of covered salary. Employer rate for State and School (Level A) is 17.70% of covered salary and 14.46% for Local Government (Level B).

*\*Employers have the option of paying all or part of member contributions on behalf of their employees.*

**Interest**

Up to 6.95% on member accounts.



**Public Safety Retirement System**

**Membership Eligibility**

The Public Safety Retirement System includes eligible State and local government employees directly involved in law enforcement. The Public Safety System consists of the Contributory and Noncontributory divisions. Employees are qualified for membership in the Public Safety System if the employee initially began employment prior to July 1, 2011, and: (1) they are regularly scheduled to work and be compensated for 2,080 hours a year in a recognized public safety department; (2) they have completed a certified training program; (3) their primary duty is as a peace officer, correctional officer, special function officer, certified dispatcher whose employer elected coverage in the Public Safety System, or full-time member of the Board of Pardons and Parole; and (4) in the course of employment their life or personal safety is at risk.

**Vesting**

Retirement benefit becomes vested upon the member's completion of four years of service credit. Eligible member contributions vest immediately.

**Service Retirement**

| Age     | Years of Service | Allowance Reduction |
|---------|------------------|---------------------|
| Any age | ..... 20         | ..... None          |
| 60      | ..... 10         | ..... None          |
| 65      | ..... 4          | ..... None          |

**Service Benefit Formula**

- 1) 2.5% x FAS\* x years of service up to 20 years.
- 2) 2.0% x FAS\* x years of service over 20 years.
- 3) Monthly benefit = total of 1 and 2.

*\*FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.*

**Cost-of-Living Allowance**

Up to 2.5% annually on original retirement benefit. Specific employers have provided an enhanced cost-of-living (COLA) benefit to their Public Safety retirees that raise the maximum COLA from 2.5 to 4% based on the CPI. Eligible after one year.

**Defined Benefit Systems****Summary of Plan Provisions** *(Continued)**Public Safety Retirement System (Concluded)***Death Benefits****Division A  
(with Social Security coverage)  
Non-Retired Member (Active)**

If the member dies in the line of duty, the spouse at the time of death, will receive a lump-sum payment equal to six months of the member's final average salary plus a monthly benefit of 30% of the final average monthly salary. If the member's death is not in the line of duty and has fewer than 10 years of public safety service credit, the beneficiary(ies) will receive a \$1,000 lump-sum payment or a refund of member contributions, whichever is greater. If the member has 10 or more years, but less than 20, the spouse will receive a \$500 lump-sum payment, plus a monthly benefit of 2% of the member's final average monthly salary for each year of service, up to 30% of the final average monthly salary. If the member dies and has 20 or more years of public safety service credit, they will be considered retired. The spouse, at the time of death, will receive 65% of the member's monthly benefit.

**Division B  
(without Social Security coverage)  
Non-Retired Member (Active)**

If the member dies in the line of duty, the spouse, at the time of death, will receive a lump-sum-payment equal to six months of the member's final average salary, plus a monthly benefit of 37.5% of the final average monthly salary. Each unmarried child under age 18 or dependent unmarried child who is mentally or physically disabled will receive \$50 per month, if the member has two or more years of public safety service credit. Total monthly payments cannot exceed 75% of the final average monthly salary. If the member's death is not in the line of duty and has fewer than two years of public safety service credit, the spouse, at the time of death, will receive a refund of member contributions plus 50% of the last 12 months' salary. If the member has two or more years, the spouse, at the time of death, will receive a lump-sum

payment of \$1,500 plus a monthly benefit of 37.5% of the member's final average monthly salary. Each unmarried child under age 18 or dependent unmarried child who is mentally or physically disabled will receive \$50 per month, if the member has two or more years of public safety service credit. Total monthly payments to the beneficiary(ies) cannot exceed 75% of the final average monthly salary. If the member dies and has 20 or more years of public safety service credit, the spouse at the time of death, will receive 65% of the member's monthly benefit or a monthly benefit of 37.5% of the final average monthly salary, whichever is greater.

**Both Divisions  
Non-Retired Member (Active)**

If the member dies and leaves no spouse or minor children, the beneficiary(ies) will receive a 100% refund of member contributions or \$500, whichever is greater.

**Non-Retired Member (Inactive)**

If the member is inactive with less than 20 years of public safety service credit, the spouse, at the time of death, or if the member dies leaving no spouse or minor children, the beneficiary(ies) will receive a refund of member contributions or \$500 whichever is greater. If the member is inactive with 20 or more years of public safety service credit when the member dies, the spouse, at the time of death, will receive a benefit of 50% of the amount payable to the member had they retired on the first of the month, following the month, in which the member's death occurred.

**Retired Member**

After the member's death, the spouse, at the time of death, will receive a monthly benefit equal to 65% of the member's monthly benefit. If they elected a smaller monthly benefit at the time of retirement, the spouse will receive 75% of the monthly benefit.

**Refunds**

A terminated member is eligible for a 100% refund of member contributions. There is a 60-day refund processing period after the last day of paid employment.

**Redeposits**

A redeposit with interest may be made in monthly installments, by a lump-sum payment, or by direct transfer from a qualified plan. A redeposit must be completed prior to retirement. Service credit is restored when the redeposit is completed.

**Contribution Rates**

*(as of 12-31-2018)*

**Noncontributory Option**

Employer rates for Division A are: State units 41.35%; Bountiful 50.38%; other law enforcement units with a 2.5% COLA 34.04% and units with a 4.0% COLA 35.71% of salary. Employer rates for Division B are: Salt Lake City 46.71%; Ogden 48.72%; Provo 42.23%; Logan 41.97%; other law enforcement units with a 2.5% COLA 32.28% and units with a 4.0% COLA 38.97% of salary.

**Contributory Option**

Member rates in Division A are: State units 12.29%; all other law enforcement units with a 2.5% COLA 12.29% and units with a 4.0% COLA 12.29% of covered salary. Member rates in Division B are: other law enforcement units with a 2.5% COLA 10.5% and units with a 4.0% COLA 10.5% of salary.\*

Employer rates for Division A with a 2.5% COLA are 22.79% and units with a 4.0% COLA are 24.37% of covered salary. Employer rates for Division B are other law enforcement units with a 2.5% COLA 22.81% and units with a 4.0% COLA 28.98% of salary.

*\*Employers have the option of paying all or part of member contributions on behalf of their employees.*

**Interest**

Up to 6.95% on member accounts.

**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

## Firefighters Retirement System

### Membership Eligibility

The Firefighters Retirement System includes eligible State and local government employees directly involved in fire fighting and whose duties are classified as hazardous. If an employer does not classify the duties as hazardous, the employee will be enrolled in either the Public Employees Contributory or Noncontributory Retirement System.

Employees are qualified for membership in the Firefighters System if they initially began employment prior to July 1, 2011, and are regularly scheduled to work and be compensated for 2,080 hours a year in a regular constituted fire department and are regularly assigned to hazardous duty, or are the State Fire Marshall or a Deputy State Fire Marshall. Although volunteer firefighters who are on the rolls of a legally organized volunteer fire department do not contribute to the System and are not eligible for service retirement benefits, they or their beneficiaries receive benefits based on the salary of the lowest paid firefighters in a first-class city if they are disabled or killed in the line of duty.



### Vesting

Retirement benefit becomes vested upon the member's completion of four years of service credit. Eligible member contributions vest immediately.

### Service Retirement

| Age     | Years of Service | Allowance Reduction |
|---------|------------------|---------------------|
| Any age | 20               | None                |
| 60      | 10               | None                |
| 65      | 4                | None                |

### Service Benefit Formula

- 1) 2.5% x FAS\* x years of service up to 20 years.
- 2) 2.0% x FAS\* x years of service over 20 years.
- 3) Monthly benefit = total of 1 and 2.

*\*FAS (Final Average Salary) = highest three years' earnings converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.*

### Cost-of-Living Allowance

Up to 4.0% annually on original retirement benefit. Eligible after one year.

### Disability Benefits

If disability is in the line of duty, the benefit is 50% of the final average salary with no minimum age or service requirements. If disability is not in the line of duty, the benefit is a refund of contributions for members with fewer than five years of service. For members with more than five years of service, the benefit is the same as that for disability incurred in the line of duty. Benefits are suspended while receiving Workers Compensation.



**Defined Benefit Systems****Summary of Plan Provisions** *(Continued)**Firefighter Retirement System (Concluded)***Death Benefits**

For surviving spouse benefits, a member must have been married for at least six months prior to death.

**Division A  
(with Social Security coverage)  
Non-Retired Member (Active)**

If the member dies in the line of duty and has less than 20 years of firefighter service credit, the spouse at the time of death, will receive a lump-sum payment equal to six months of the member's final average salary plus a monthly benefit of 30% of the final average monthly salary. If the member's death is not in the line of duty and has less than 10 years of firefighter service credit, the beneficiary(ies) will receive a \$1,000 lump-sum payment or a refund of member contributions, whichever is greater. If the member has 10 or more, but less than 20 years of firefighter service credit, the spouse will receive a \$500 lump-sum payment, plus a monthly benefit of 2% of the member's final average monthly salary for each year of service, up to 30% of the final average monthly salary. If the member dies and has 20 or more years of firefighter service credit, they will be considered retired and the spouse, at the time of death, will receive the death benefit payable as a retired member.

**Division B  
(without Social Security coverage)  
Non-Retired Member (Active)**

If the member dies in the line of duty and the member has less than 20 years of firefighter service credit, the spouse, at the time of death, will receive a lump-sum payment equal to six months of the member's final average salary, plus a monthly benefit of 37.5% of the final average monthly salary. Each unmarried child under age 21 or dependent unmarried child who is mentally or physically disabled will receive \$75 per month, if the member has five or more years of firefighter service credit.

Total monthly payments to the beneficiary(ies) cannot exceed 75% of the final average monthly salary. If the member's death is in the line of duty and has 20 or more years of firefighter service credit, the member will be considered retired and the spouse at the time of death, will receive the death benefit payable as a retired member. If the member's death is not in the line of duty and has less than five years of firefighter service credit, the spouse, at the time of death, will receive a refund of member contributions plus 50% of the most recent 12 months' salary. If the member has five or more years of firefighter service credit, the spouse, at the time of death, will receive a lump-sum payment of \$1,500 plus a monthly benefit of 37.5% of the member's final average monthly salary. Each unmarried child under age 21 or dependent unmarried child who is mentally or physically disabled will receive \$75 per month, if the member has five or more years of firefighter service credit. Total monthly benefits to the beneficiaries cannot exceed 75% of the final average monthly salary.

**Both Divisions  
Non-Retired Member (Active)**

If the member dies and leaves no spouse or minor children, the beneficiary(ies) will be paid a 100% refund of member contributions or \$500, whichever is greater.

**Non-Retired Member (Inactive)**

If the member is inactive with less than 20 years of firefighter service credit, the spouse, at the time of death, or if the member dies leaving no spouse or minor children, the beneficiary(ies) will receive a refund of member contributions or \$500 whichever is greater. If the member is inactive with 20 or more years of firefighter service credit when the member dies, the spouse, at the time of death, will receive a benefit of 50% of the amount payable to the member had they retired on the first of the month, following the month, in which the member's death occurred.

**Retired Member**

After the member's death, the spouse, at the time of death, will receive 75% of the member's monthly benefit.

**Refunds**

A terminated member is eligible for a 100% refund of member contributions. There is a 60-day refund processing period after the last day of paid employment.

**Redeposits**

A redeposit with interest may be made in monthly installments, by a lump-sum payment, or by direct transfer from a qualified plan. A redeposit must be completed prior to retirement. Service credit is restored when the redeposit is completed.

**Contribution Rates**

*(as of 12-31-2018)*

Member rate in Division A is 15.05% of covered salary. Member rate in Division B is 16.71% of covered salary.\* Employer rate in Division A is 4.61% and in Division B is 7.24% of covered salary. A fire insurance premium tax equal to 11.06% of salaries is also an additional part of the employer contribution rates. Fire insurance premium taxes are collected by the Utah State Treasurer for the Firefighters Retirement System to help fund retirement benefits.

*\* Employers have the option of paying all or part of member contributions on behalf of their employees.*

**Interest**

Member contributions receive no interest.

**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

## Judges Retirement System

### Membership Eligibility

The Judges Retirement System includes justices and judges of the courts of record as authorized in state statutes.

### Vesting

Retirement benefit becomes vested upon the member's completion of 6 years of service credit. Eligible member contributions and interest thereon vest immediately.

### Service Retirement

| Age     | Years of Service | Allowance Reduction            |
|---------|------------------|--------------------------------|
| Any age | .....25          | ..... None                     |
| 55      | .....20          | ..... Full actuarial reduction |
| 62      | .....10          | ..... None                     |
| 70      | .....6           | ..... None                     |

### Service Benefit Formula

- 1)  $5.00\% \times \text{FAS}^* \times \text{years of service up to 10 yrs.}$
- 2)  $2.25\% \times \text{FAS}^* \times \text{years of service between 10 and 20 yrs.}$
- 3)  $1.00\% \times \text{FAS}^* \times \text{years of service over 20 yrs.}$
- 4) Monthly benefit = total of 1, 2, and 3.

*\*FAS (Final Average Salary) = highest two years' earnings in judicial service converted to a monthly average. Yearly salary increases are limited to 10% plus a COLA determined by the CPI.*

### Cost-of-Living Allowance

Up to 4% compounded annually, beginning one year after retirement.

### Death Benefits

For surviving spouse benefits, a member must have been married for at least six months prior to death.

An active or inactive member's death benefit to the surviving spouse consists of a refund of member contributions and interest plus 65% of the member's most recent 12 months' compensation prior to death, or a monthly allowance equal to 65% of the amount computed for a service retirement with no early retirement reduction.

A retired member's death benefit to the surviving spouse is 65% of the member's monthly benefit at the time of death. If the member elected a reduced monthly benefit, the surviving spouse will receive a death benefit of 75% of the member's monthly benefit.

### Refunds

A terminated member is eligible for a 100% refund of member contributions plus interest. There is a 60-day refund processing period after the last day of paid employment.

### Redeposits

A redeposit with interest may be made in monthly installments, by a lump-sum payment, or by direct transfer from a qualified plan. A redeposit must be completed prior to retirement. Service credit is restored when the redeposit is completed.

### Contribution Rates

*(as of 12-31-2018)*

Employer rate includes 43.68% of covered salary and 8.16% from court fees.

### Interest

Up to 6.95% on member accounts.



**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

## Utah Governors and Legislators Retirement Plan

### Membership Eligibility

The Utah Governors and Legislators Retirement Plan includes only governors and legislators of the State of Utah.



### Vesting

Retirement benefit becomes vested upon the member's completion of four years of service credit.

### Service Retirement for Governors

| Age     | Years of Service | Allowance Reduction        |
|---------|------------------|----------------------------|
| 65..... | 1 Term .....     | None                       |
| 62..... | 10 yrs.....      | 3% each year before age 65 |

### Service Retirement for Legislators

| Age     | Years of Service | Allowance Reduction        |
|---------|------------------|----------------------------|
| 65..... | 4.....           | None                       |
| 62..... | 10.....          | 3% each year before age 65 |

### Service Benefit Formula

**Governors:** \$500 per month per term increased semi-annually up to 2% based on the CPI. The amount as of 12-31-18 is \$1,400.

**Legislators:** \$10 per month per each year of service as a legislator increased semi-annually up to 2% based on the CPI. The amount as of 12-31-18 is \$30.40.

### Cost-of-Living Allowance

Up to 4% annually on the original retirement benefit. Eligible after one year.

An additional \$3.50 per month, for each year of service, is payable to elected and appointed legislators and governors who were members of this Plan before March 1, 2000.

### Death Benefits

An active or retired member's death benefit to a spouse consists of a monthly pension equal to 50% of the retirement allowance paid, or to which the member would have been entitled to upon reaching age 65, if the member has four or more years of service as a governor or legislator. The deceased member and surviving spouse must have been married at least six months.

### Contribution Rates

*(as of 12-31-2018)*

There was a 2018-19 appropriation payable by June 30, 2018, to the Utah Governors and Legislators Retirement Plan of \$384,103.

Defined Benefit Systems

Summary of Plan Provisions (Continued)

## Tier 2 Public Employees Contributory Retirement System

### Membership Eligibility

The Tier 2 Public Employees Contributory Retirement System, brought about by SB 63, became effective on July 1, 2011. All eligible employees beginning employment on or after July 1, 2011, who have no previous service credit with any of the Utah Retirement Systems, are members of the Tier 2 Retirement System. A person initially entering full-time employment with a participating employer on or after July 1, 2011, must make an election to participate in either the Tier 2 Hybrid Public Employees Retirement System or the Tier 2 Defined Contribution (DC) Plan, within one year of his or her employment date. The election made is irrevocable. If no election is made, the employee automatically becomes a member of the Tier 2 Hybrid Public Employees Retirement System.



.....

An employee is qualified for membership in the Tier 2 Public Employees Retirement System if his or her employer participates in this system, and one of the following: the employment, contemplated to continue during a fiscal or calendar year, normally requires an average of 20 hours or more per week and the employee receives benefits normally provided by the employer as approved by the Retirement Board; the employee is a classified school employee whose employment normally requires an average of 20 hours or more per week regardless of benefits; the employee is a teacher who teaches half-time or more and receives benefits normally provided by the employer as approved by the Retirement Board; the employee is an appointed officer\* whose position is full time as certified by the participating employer; the employee is in a probationary status and meets eligibility requirements; the employee performs services through an employee leasing or similar arrangement and meets eligibility requirements.

\*Appointed officers are employees appointed to a position for a definite and fixed term of office, and the position is recorded in the employer's charter, creation document, or similar document.

### Vesting

Retirement benefit is vested upon the member's completion of four years of qualifying service credit.

### Service Retirement

**Applies only to the Tier 2 Hybrid Retirement System**

| Age     | Years of Service | Allowance Reduction†               |
|---------|------------------|------------------------------------|
| Any age | .....35          | ..... None                         |
| 60-61   | .....20          | ..... Full actuarial before age 65 |
| 62-64   | .....10          | ..... Full actuarial before age 65 |
| 65      | ..... 4          | ..... None                         |

† When fewer than 35 years of service from any combination of Utah Retirement Systems, the allowance will be reduced by approximately 7% for each year between ages 60 and 63 and approximately 9% for each year between ages 64 and 65.

## Defined Benefit Systems

### Summary of Plan Provisions *(Continued)*

#### *Tier 2 Public Employees Contributory Retirement System (Concluded)*

### Service Benefit Formula

#### ***Applies only to the Tier 2 Hybrid Retirement System***

Service benefit formula is based upon number of years of service credit x 1.5% x highest five years' earnings converted to a monthly average.

### Cost-of-Living Allowance

The Tier 2 Hybrid Retirement System has a COLA up to 2.5% on the retirement allowance. There is no COLA in the Tier 2 Defined Contribution Plan.

### Death Benefits

#### **Death Benefits for Non-Retired Members — *Applies only to the Tier 2 Hybrid Public Employees Retirement System***

The spouse of a deceased member is eligible for a monthly benefit if they have been married for at least six months and the member meets age and service qualifications or has 15 or more years of service credit. If there are any member contributions in the employee's Tier 2 Hybrid Public Employees Retirement Account and the surviving spouse does not qualify for a career benefit, the beneficiary(ies) will receive a refund of the employee's contributions plus interest.

#### **Death Benefits — *Applies to both the Hybrid Public Employees Retirement System and the DC Plan***

If an employee is a non-retired member who is employed by a participating employer at the time of his or her death, his or her beneficiary(ies) will receive a payment representing 75% of the employee's highest annual salary. If the employee has less than 12 months of service, the benefit is prorated. The minimum insurance payment is \$1,000.

#### **Death Benefits for Non-Retired Members — *in the Tier 2 Retirement Plan***

After death, any money vested in the employee's URS Savings Plans (401(k), 457, IRAs) is payable to his or her beneficiary(ies).

### Refunds

If the employee has a balance in his or her Tier 2 Defined Contribution account, he or she may be able to withdraw funds under certain circumstances. When an employee has four years of eligible employment, the employer contributions in his or her 401(k) account become vested and he or she is able to take a refund of the account upon termination of employment.

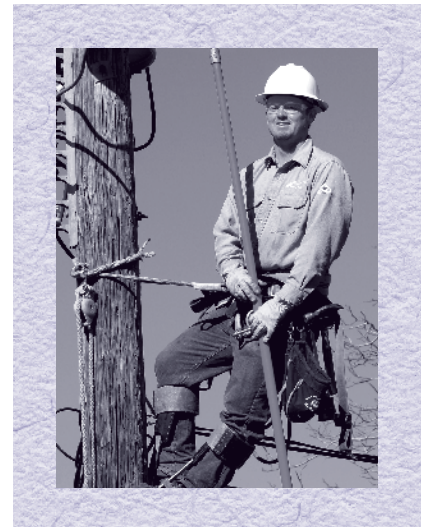
If the employee terminates employment prior to the vesting period and subsequently enters employment with a URS participating employer within 10 years of the previous termination date, all employer contributions will be reinstated upon completion of the vesting period. If he or she is not re-employed and eligible to participate in the DC Plan within 10 years of the previous termination date, the funds are forfeited. If the employee makes personal deferrals (i.e., payroll deductions) to the DC Plan, those deferrals are vested immediately and may be taken as a refund when terminating employment.

### Contribution Rates\*

*(as of 12-31-2018)*

Range from 16.69% to 18.45% of salary for local government employers. The rate for State and School Employers is 20.02%.

*\*Includes 401(k) portion of the contribution rate.*



**Defined Benefit Systems**

**Summary of Plan Provisions** *(Continued)*

## Tier 2 Public Safety and Firefighter Contributory Retirement System

### Membership Eligibility

The Tier 2 Public Safety and Firefighter Contributory Retirement System, brought about by SB 63, became effective on July 1, 2011. All eligible employees beginning employment on or after July 1, 2011, who have no previous service credit with any of the Utah Retirement Systems, are members of the Tier 2 Public Safety and Firefighter Retirement System. A person initially entering full-time employment with a participating employer on or after July 1, 2011, must make an election to participate in either the Tier 2 Public Safety and Firefighter Retirement System or the Tier 2 Defined Contribution (DC) Plan, within one year of his or her employment date. The election made is irrevocable. If no election is made, the employee automatically becomes a member of the Tier 2 Hybrid Public Safety and Firefighter Retirement System.



An employee qualifies for membership if: The employment normally requires an average of 2,080 hours of regularly scheduled employment per year in a recognized public safety department, as a law enforcement officer, correctional officer, special function officer, or full-time member of the Board of Pardons and Parole, and in the course of employment the employee's life or personal safety is at risk, and he or she has completed a certified training program, which is documented with our office, OR, if the employment normally requires an average of 2,080 hours of regularly scheduled employment per year in a regularly constituted fire department, the employee has been trained in firefighter techniques, and is assigned to a position of hazardous duty.

If the employee doesn't meet the eligibility requirements outlined in the previous explanation, based on the employer's participation, the employee will be enrolled in the Tier 2 Public Employees Contributory Retirement System as long as eligibility requirements are met.

### Vesting

Retirement benefit is vested upon the member's completion of four years of qualifying service credit.

### Service Retirement

***Applies only to the Tier 2 Hybrid Public Safety and Firefighter Retirement System***

| Age     | Years of Service | Allowance Reduction†               |
|---------|------------------|------------------------------------|
| Any age | .....25          | ..... None                         |
| 60-61   | .....20          | ..... Full actuarial before age 65 |
| 62-64   | ..... 10         | ..... Full actuarial before age 65 |
| 65      | ..... 4          | ..... None                         |

† When fewer than 25 years of service from any combination of Utah Retirement Systems, the allowance will be reduced by approximately 7% for each year between ages 60 and 63 and approximately 9% for each year between ages 64 and 65.

### Service Benefit Formula

***Applies only to the Tier 2 Hybrid Public Safety and Firefighter Retirement System***

Service benefit formula is based upon number of years of service credit x 1.5% x highest five years' earnings converted to a monthly average.

## Defined Benefit Systems

### Summary of Plan Provisions *(Concluded)*

#### *Tier 2 Public Safety and Firefighter Contributory Retirement System (Concluded)*

### Cost-of-Living Allowance

The Tier 2 Hybrid Public Safety and Firefighter Retirement System has a COLA up to 2.5% on the retirement allowance. There is no COLA in the Tier 2 Defined Contribution Plan.

### Death Benefits

#### ***Applies only to the Tier 2 Hybrid Public Safety and Firefighter Retirement System***

An active member's death benefit consists of a payment equal to 75% of the highest annual salary with a minimum of \$1,000. The spouse of a deceased member is eligible for a monthly benefit if they have been married for at least six months and the member meets age and service qualifications or has 15 or more years of service credit. If there are any member contributions in the employee's Tier 2 Hybrid Public Employees Retirement Account and the surviving spouse does not qualify for a career benefit, the beneficiary(ies) will receive a refund of the employee's contributions plus interest.

#### ***Line-of-Duty Death — Applies only to the Tier 2 Hybrid Public Safety and Firefighter Retirement System***

If an employee accrued less than 20 years of public safety or firefighter service credit, his or her spouse at the time of death will receive a lump-sum payment equal to six months of the final average salary and a monthly benefit equal to 30% of the employee's monthly final average salary.

If an employee accrued 20 or more years of public safety or firefighter service credit upon death, he or she will be considered to have retired with an option one selection, calculated without an actuarial reduction, and his or her spouse will receive the allowance that would have been payable to the employee.

#### ***Death Benefit — Applies to both the Hybrid Public Safety and Firefighter Retirement System and the Tier 2 DC Plan***

If an employee is a non-retired member who is employed by a participating employer at the time of his or her death, his or her beneficiary(ies) will receive a payment representing 75% of the employee's highest annual salary. If the employee has less than 12 months of service, the benefit is prorated. The minimum insurance payment is \$1,000.

#### ***Death Benefits for Non-Retired Members — in the Tier 2 DC Plan***

After death, any money vested in the employee's URS Savings Plans (401(k), 457, IRAs) is payable to his or her beneficiary(ies).

### Refunds

If the employee has a balance in his or her Tier 2 Defined Contribution account, he or she may be able to withdraw funds under certain circumstances. When an employee has four years of eligible employment, the employer contributions in his or her 401(k) account becomes vested and he or she is able to take a refund of the account upon termination of employment.

If the employee terminates employment prior to the vesting period and subsequently enters employment with a URS participating employer within 10 years of the previous termination date, all employer contributions will be reinstated upon completion of the vesting period. If he or she is not re-employed and eligible to participate in the DC Plan within 10 years of the previous termination date, the funds are forfeited. If the employee makes personal deferrals (i.e., payroll deductions) to the DC Plan, those deferrals are vested immediately and may be taken as a refund when terminating employment.

### Contribution Rates\*

*(as of 12-31-2018)*

Public Safety rates range from a low of 21.74% to a high of 38.97% of salary. The Firefighter rate is 12.08% of salary.

*\*Includes 401(k) portion of the contribution rate.*



# Changes in Plan Provisions



## 2018 Legislation

The following retirement-related bills were passed by the 2018 Utah Legislature:

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### Public Safety and Firefighter Retirement System

#### **S.B. 21: Public Safety and Firefighter Retirement Death Benefit Amendments**

Amends retirement death benefits for certain public safety and firefighter members to provide a minimum benefit equal to the amount the member's surviving spouse would have received if the member had retired the day before their death and then died.

#### **H.B. 146: Postretirement Reemployment Restrictions Act Amendments**

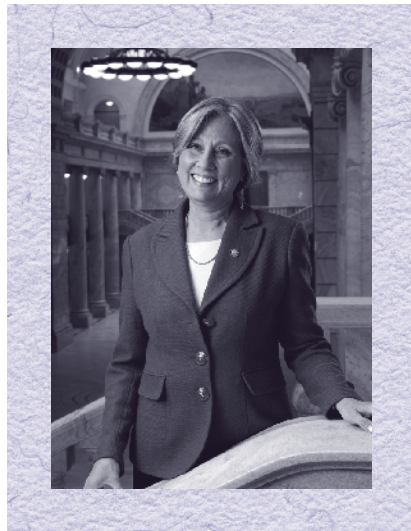
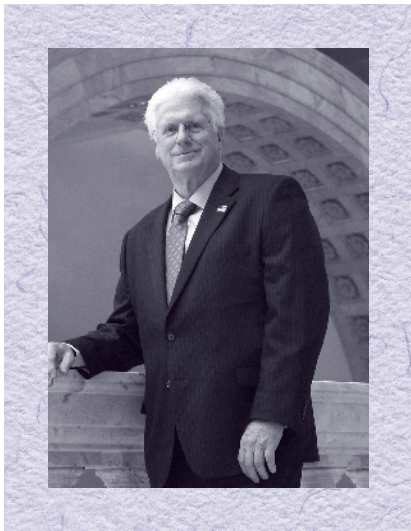
Repeals the requirement that for a retiree who is reemployed as an affiliated emergency services worker, the termination date of the reemployment is considered the retiree's retirement date for the purpose of calculating the one-year separation requirement.

### General

#### **H.B. 28: Retirement System Amendments**

The annual administrative and technical amendments to Title 49 recommended to the Legislature by URS. The changes in this bill include: Establishing when a Domestic Relations Order (DRO) must be received by URS to be valid for determining benefits following a member's death; Modifying cancellation, reinstatement, and calculation provisions for a retiree's retirement allowance affected by reemployment; and Correcting certain Public Safety death benefit payments.





# Defined Contributions Savings Plans Summary of Plan Provisions



## Defined Contribution Plans

### Introduction

The 401(k), 457, Roth and Traditional IRAs administered by the Board are Defined Contribution Savings Plans. These Plans are generally supplemental plans to the basic retirement benefits of the Retirement Systems, but may also be used as a primary retirement plan. These Plans are voluntary tax-advantaged retirement savings programs authorized under sections 401(k), 457(b), and 408 of the Internal Revenue Code and are available to state, local government, and education employees throughout Utah whose employers have adopted the plans.

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### Employer Contributions

In addition to accepting employee contributions, the 401(k) and 457 Plans also accept employer contributions on behalf of their employees. All state and public education employees participating in the Noncontributory Retirement System receive an amount equal to 1.5% of their salary in the 401(k) Plan. Tier 2 Public Employees and Tier 2 Public Safety and Firefighter Retirement Systems participants also receive contributions according to their retirement plan. In addition, some employers match a portion of their employees' elective deferrals.

### Social Security Substitute

Organizations that have exempted themselves from Social Security coverage and have part-time, temporary, or seasonal employees, who are not participating in a qualifying retirement system, must cover these employees with a substitute plan.

Employers may use the 401(k)/457 Plans as a qualifying retirement system for these employees, but must contribute a minimum of 7.5% of salary to the Plan(s) on their behalf for it to be considered a "qualifying system." The employer may contribute the 7.5% themselves, or they may require their employees to pay a portion or all of it.

**Defined Benefit Contribution Savings Plans**

**Summary of Plan Provisions** *(Continued)*



**Summary of Plan Provisions**

**Deferral Limits**

**401(k)** — Limited in 2018 to an annual maximum of \$18,500. Employer contributions and employee deferrals combined could not exceed the lesser of \$55,000 or 100% of compensation.

**457** — Limited to an annual maximum of \$18,500 or 100% of includable compensation.

**Roth and Traditional IRA** — Limited to an annual maximum of \$5,500 into all IRAs owned by the participant.

**Coordination of Deferrals**

**401(k)** — Deferrals to the 401(k) and 403(b) plans must be coordinated.

**457** — Contributions to the 457 must be coordinated with all 457(b) plans.

**Roth and Traditional IRA** — All Roth and traditional IRA contributions must be coordinated.

**Catch-up Provisions**

**401(k)** — An additional \$6,000 for participants 50 or older during the year.

**457** — An additional \$6,000 for participants age 50 or older during the year. There is an additional “special catch-up” provision that allows participants to double their contributions to a 457(b) plan during the three years immediately preceding the year they qualify for retirement. However, the special catch-up is limited to unused deferrals allowed in previous years.

**Roth and Traditional IRA** — An additional \$1,000 for participants 50 or older.

**Withdrawals**

**401(k)** — Vested balances upon termination of employment, age 59½, retirement, disability, death, or hardship caused by immediate and heavy financial needs. (Hardships from employee deferrals only.)

**457** — Allowable upon termination of employment, age 70½, retirement, death, or severe unforeseeable financial emergencies.

**Roth and Traditional IRA** — Allowable at any time, but with possible tax penalties if withdrawn prior to age 59½.

**Rollovers**

**401(k)** — Allowable from other eligible retirement plans, or to other eligible retirement plans upon termination of employment or other qualifying events. May be either a direct rollover by the Plan or an indirect rollover by the participant within 60 days after distribution.

**457** — Allowable to other eligible retirement plans or from another 457(b) plan.

**Roth and Traditional IRA** — Allowable from other eligible retirement plans or to other eligible plans (depending on acceptance of receiving plan).

**Vesting**

**401(k)** — Employee and other employer contributions are fully vested. Tier 2 employer required contributions are vested after four years of eligible service (except for elected officials).

**457** — Fully vested.

**Roth and Traditional IRA** — Fully vested.

**Loans**

**401(k) and 457** — Available up to 50% of member account balance, to a maximum of \$50,000 during a 12-month period. Only one outstanding loan allowed, per plan. Tier 2 employer required contributions are not eligible.

**Roth and Traditional IRA** — Not available.

## Defined Benefit Contribution Savings Plans

### Summary of Plan Provisions *(Continued)*

#### Short-Term Trading Fees

Each time money managers purchase or redeem stocks and bonds there are trading costs involved. Because of the costs generated by frequent or short-term trading, it became necessary to impose a short-term trading fee. Individuals who transfer any or all of their current account between core investment options more often than once every 30 days, are charged 2% of the amount transferred for each additional trade. Each transfer starts a new 30-day period.

#### Investment Transfer Options

Changes in deferral amounts and in the investment options for future contributions may be made at any time. Participants may make one transfer of accumulated balances within each plan no more frequently than every seven calendar days.

#### 2018 Core Investment Options

##### Income Fund

The Income Fund is a stable value option and the most conservative of the investment choices. Approximately 95% of its assets are invested in investment grade bonds, which are “wrapped” with book value contracts. The contracts are financial agreements from creditworthy banks and insurance companies, protecting against changes in interest rates and allowing the returns to be smoothed over the duration of the portfolio. The remaining 5% is invested in short-term instruments for liquidity.

##### Bond Fund

The Bond Fund invests in a diversified portfolio consisting of U.S. government securities, mortgage and asset-backed securities, corporate bonds, and short-term funds.

##### Balanced Fund

The Balanced Fund invests in a portfolio consisting of approximately 60% stocks and 40% bonds.

##### Large Cap Stock Value Fund

The Large Cap Stock Value Fund invests in a diversified portfolio of common stocks that appear to be undervalued by the stock market, but have a favorable outlook for long-term growth.

##### Large Cap Stock Index Fund

The Large Cap Stock Index Fund invests in stocks included in the Russell 1000 Index and is similarly weighted. This fund represents a broad range of industries in the U.S. economy.

##### Large Cap Stock Growth Fund

The Large Cap Stock Growth Fund emphasizes capital appreciation and seeks to identify companies with future relative earnings strength at a reasonable valuation.

##### International Fund

The International Fund tracks the performance of the MSCI All Country World Index – ex. U.S. – Investable Market Index (ACWI ex. U.S. IMI) as closely as possible. The index is designed as a measure of the global stock market performance of developed and emerging markets that excludes the United States.

##### Small Cap Stock Fund

The Small Cap Stock Fund invests in a broad cross-section of U.S. small companies whose size (market capitalization) falls within the smallest 10% of the market universe. The market universe is comprised of companies listed on the NYSE and NASDAQ.

#### Brokerage Window

The brokerage window is a self-directed brokerage account available through Charles Schwab. The brokerage account offers a wide variety of investment options with varying degrees of risk. The brokerage window allows the participant to choose from mutual funds, stocks, bonds, and exchange traded funds (ETFs).

#### Real Assets\*

##### U.S. REITs

U.S. REITs, real estate investment trusts, is a passively managed portfolio of real estate properties and mortgage related investments within the U.S. market. The U.S. REITs portfolio tracks the Russell Fundamental US Select Real Estate Index. REITs increase diversification within the Target Date Funds and also add long-term inflation protection.

##### Commodities

Commodities are bulk goods and raw materials, such as grains, metals, livestock, oil, cotton, coffee, sugar, and cocoa; goods used to produce consumer products. Commodities are bought and sold on the cash market, and they are also traded on the futures exchanges in the form of futures contracts. In addition to their diversification benefits, commodities are used as a long-term hedge against inflation.

##### Private Real Estate

Private Real Estate is a fund of funds that allows investors to gain exposure to portfolios of direct real estate investments. The fund will invest primarily in existing private real estate funds, publicly traded real estate securities, and other real estate related investments. These portfolios are comprised of institutional quality commercial real estate across a broad range of real estate asset types.

## Defined Benefit Contribution Savings Plans

## Summary of Plan Provisions (Concluded)

## TARGET DATE FUNDS ASSET ALLOCATION

| Asset Classes                      | Target Date Funds |             |             |             |             |             |             |             |             |             |             |             |
|------------------------------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                    | Retired           | 2010        | 2015        | 2020        | 2025        | 2030        | 2035        | 2040        | 2045        | 2050        | 2055        | 2060        |
| URS Income Fund                    | 25%               | 23%         | 18%         | 13%         | 8%          | 3%          | —           | —           | —           | —           | —           | —           |
| URS Bond Fund                      | 20                | 20          | 21          | 18          | 16          | 11          | 7%          | 4%          | 3%          | 3%          | 3%          | 3%          |
| URS Large Cap Stock Value Fund     | —                 | —           | —           | —           | 2           | 4           | 6           | 8.5         | 10          | 10          | 10          | 10          |
| URS Large Cap Stock Index Fund     | 14                | 16          | 18          | 23          | 24          | 24          | 23          | 21          | 20          | 20          | 20          | 20          |
| URS Large Cap Stock Growth Fund    | —                 | —           | —           | —           | 2           | 4           | 6           | 8.5         | 10          | 10          | 10          | 10          |
| URS International Stock Fund       | 4                 | 4           | 6           | 10          | 15          | 22          | 29          | 32          | 33          | 33          | 33          | 33          |
| URS Small Cap Stock Fund           | 1                 | 1           | 2           | 3           | 4           | 6           | 9           | 10          | 10          | 10          | 10          | 10          |
| International Bonds                | 10                | 10          | 10          | 10          | 9           | 7           | 4           | 3           | 2           | 2           | 2           | 2           |
| U.S. Real Estate Investment Trusts | —                 | —           | —           | —           | 2           | 4           | 4           | 4           | 4           | 4           | 4           | 4           |
| Commodities                        | 3                 | 3           | 3           | 3           | 3           | 4           | 4           | 4           | 4           | 4           | 4           | 4           |
| Global Inflation-Linked Bonds      | 20                | 20          | 15          | 10          | 5           | 1           | —           | —           | —           | —           | —           | —           |
| Private Real Estate                | 3                 | 3           | 7           | 10          | 10          | 10          | 8           | 5           | 4           | 4           | 4           | 4           |
| <b>Total</b>                       | <b>100%</b>       | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> |



### International Bonds\*

#### International Bonds

International Bonds are used to diversify the bond investments within the Target Date Funds. An international bond is a bond issued outside of the United States by a government or non-U.S. corporation.

#### Global Inflation-Linked Bonds

Global Inflation-linked bonds are debt instruments created to protect investors from the effects of inflation through inflation-linked bonds issued primarily by developed countries. An example of inflation-linked bonds are TIPS (Treasury Inflation-Protected Securities), which are issued by the U.S. Government and are designed to reduce the risk of inflation by indexing the principal of the bond to an inflation rate.

*\*The Real Assets and International Bonds asset classes are exclusive to the URS Target Date Funds and are not available as a stand-alone investment option.*

### URS Target Date Funds

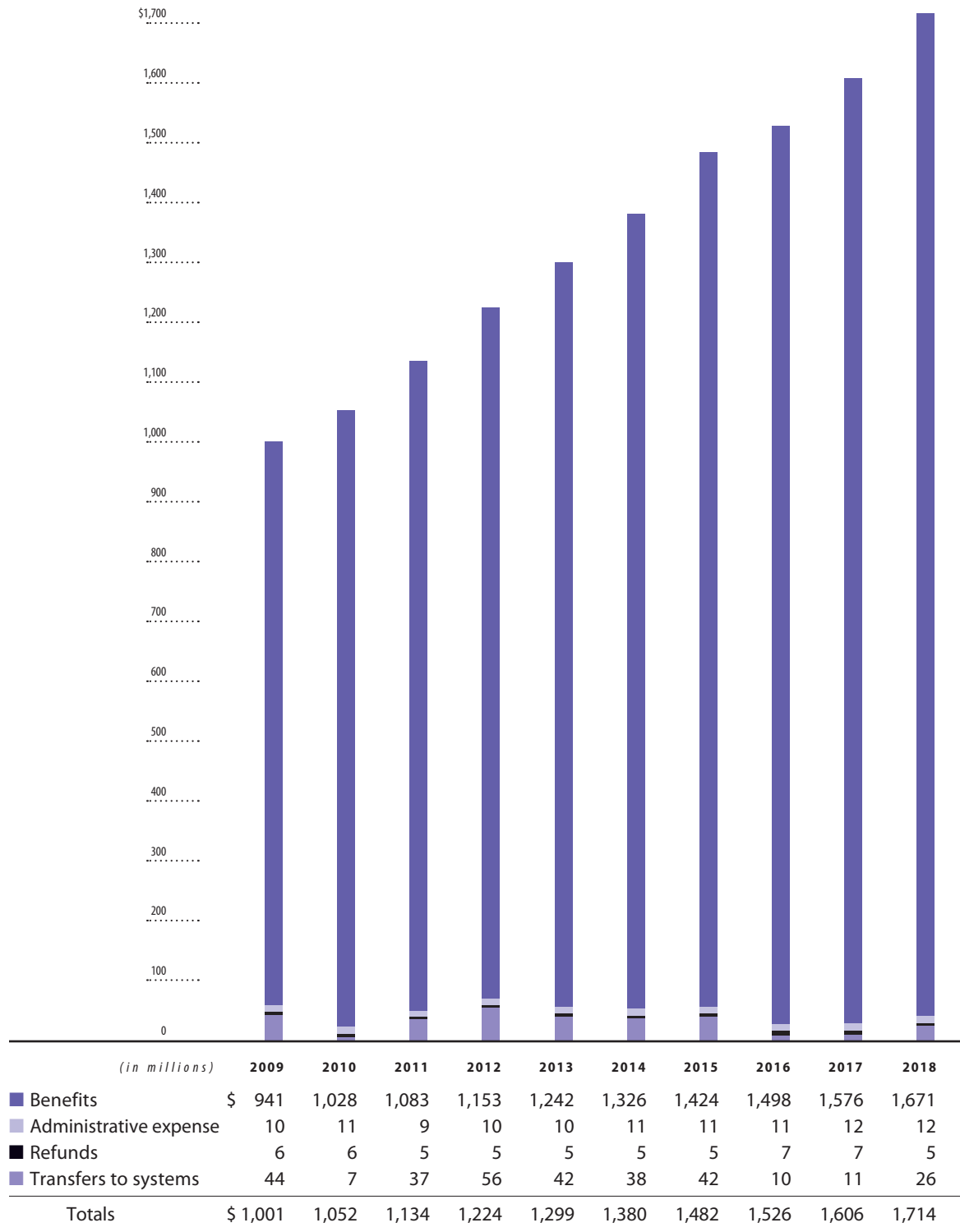
The URS Target Date Funds offer a one-fund approach to investing in the URS Savings Plans. A Target Date Fund will give participants a diversified portfolio through a single investment option. The funds will gradually adjust throughout the participant's career and into retirement. The investment mix – which includes stocks, bonds, and real assets – is automatically reallocated to be weighted more conservatively as the participant ages and enters into retirement.

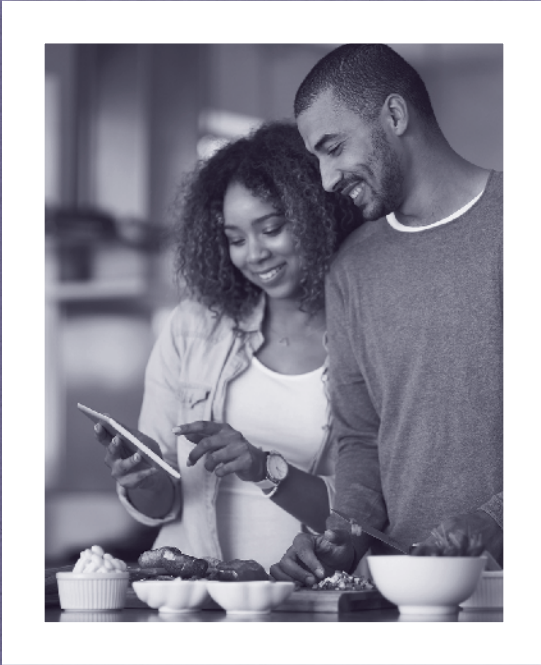
*The historical rates of returns for each investment fund are found on pages 149 and 150.*

## Utah Retirement Systems

# Deductions by Type

(in millions)





# Statistical Section

## Utah Retirement Systems 2018 Comprehensive Annual Financial Report

- 198 Schedules of Changes in Net Position — Defined Benefit Systems**  
These schedules allow readers to view changes in net assets and benefits over a 10-year period.
- 202 Schedules of Changes in Net Position — Defined Contribution Plans**  
These schedules allow readers to view changes in net assets and refunds over a 10-year period.
- 204 Schedules of Benefit Deductions by Type**  
These schedules provide readers with information regarding the type of benefit deductions for the last 10 years.
- 206 Schedules of Retired Members by Type of Benefit Option**  
These schedules provide readers with information regarding benefit payments by years of service.
- 208 Schedules of Average Benefit Payments**  
These schedules provide readers with information regarding benefit payments by years of service.
- 212 Schedules of Active Members by Age and Gender**  
These schedules provide readers with information regarding members by age and gender.
- 213 Schedules of Retirees by Age and Gender**  
These schedules provide readers with information regarding retirees by age and gender.
- 214 Schedules of Principal Participating Employers**  
These schedules provide readers with information regarding the largest participating employers.
- 220 Schedule of Utah Retirement Office Employees**  
This schedule provides readers with information regarding the number of Utah Retirement Systems' employees.
- 221 Schedules of Participating Employers**  
This schedule provides readers with information regarding the participating employers and the systems in which they participate.
- 227 Utah Retirement Systems — A Highlight History**  
This summary provides readers with historical highlights of the Utah Retirement Systems.

## Schedules of Changes in Net Position — Defined Benefit Systems

Year Ended December 31

*(dollars in thousands)*

| System   | Year       | Beginning<br>Net Position | Member<br>Contributions | Total Employer<br>Contributions |                                      | Contributions<br>as a Percent<br>of Covered<br>Payroll | Net<br>Investment<br>Income |
|--|------------|---------------------------|-------------------------|---------------------------------|--------------------------------------|--|-----------------------------|
|  |            |                           |                         | Employer<br>Contributions       | Court Fees/<br>Fire Insurance<br>Tax |  |                             |
| <b>Noncontributory<br/>Retirement<br/>System</b> | 2009       | \$ 12,714,371             | 14,109                  | 535,298                         | —                                    | 13.53%   | \$ 1,667,478                |
|  | 2010       | 14,152,562                | 33,528                  | 564,154                         | —                                    | 14.51  | 1,860,976                   |
|  | 2011       | 15,802,205                | 12,879                  | 610,270                         | —                                    | 15.65  | 401,105                     |
|  | 2012       | 15,935,472                | 15,014                  | 644,907                         | —                                    | 16.99  | 2,000,995                   |
|  | 2013       | 17,629,437                | 14,208                  | 710,933                         | —                                    | 19.18  | 2,588,981                   |
|  | 2014       | 19,915,815                | 13,587                  | 772,420                         | —                                    | 21.63  | 1,419,053                   |
|  | 2015       | 21,096,512                | 17,020                  | 813,449                         | —                                    | 23.26  | 366,748                     |
|  | 2016       | 21,192,437                | 16,308                  | 831,631                         | —                                    | 24.05  | 1,783,911                   |
|  | 2017       | 22,618,743                | 17,285                  | 854,255                         | —                                    | 25.31  | 2,987,282                   |
| 2018   | 25,205,127 | 14,602                    | 858,444                 | —                               | 25.77                                | (92,207)   |                             |
| <b>Contributory<br/>Retirement<br/>System</b>    | 2009       | \$ 835,370                | 8,655                   | 10,865                          | —                                    | 8.50%  | \$ 112,626                  |
|  | 2010       | 937,587                   | 10,299                  | 11,851                          | —                                    | 10.18  | 121,153                     |
|  | 2011       | 1,007,248                 | 7,300                   | 11,125                          | —                                    | 10.10  | 26,009                      |
|  | 2012       | 1,013,050                 | 6,962                   | 11,705                          | —                                    | 11.36  | 131,169                     |
|  | 2013       | 1,136,651                 | 6,376                   | 12,874                          | —                                    | 13.13  | 169,510                     |
|  | 2014       | 1,281,945                 | 5,461                   | 12,954                          | —                                    | 14.29  | 87,577                      |
|  | 2015       | 1,269,991                 | 4,771                   | 11,719                          | —                                    | 16.50  | 21,251                      |
|  | 2016       | 1,183,091                 | 3,420                   | 8,188                           | —                                    | 15.27  | 97,693                      |
|  | 2017       | 1,204,904                 | 2,675                   | 7,946                           | —                                    | 17.59  | 155,949                     |
| 2018   | 1,283,466  | 2,455                     | 6,027                   | —                               | 15.34                                | (4,513)  |                             |
| <b>Public Safety<br/>Retirement<br/>System</b>   | 2009       | \$ 1,614,057              | 1,556                   | 98,729                          | —                                    | 26.40%   | \$ 213,627                  |
|  | 2010       | 1,824,758                 | 1,713                   | 103,586                         | —                                    | 28.53  | 241,203                     |
|  | 2011       | 2,058,019                 | 1,070                   | 110,829                         | —                                    | 29.61  | 52,655                      |
|  | 2012       | 2,103,751                 | 1,155                   | 117,975                         | —                                    | 32.19  | 266,753                     |
|  | 2013       | 2,366,057                 | 1,258                   | 128,744                         | —                                    | 35.18  | 350,563                     |
|  | 2014       | 2,712,184                 | 835                     | 135,588                         | —                                    | 37.59  | 194,222                     |
|  | 2015       | 2,899,386                 | 905                     | 141,024                         | —                                    | 39.51  | 50,654                      |
|  | 2016       | 2,938,839                 | 830                     | 147,099                         | —                                    | 41.74  | 249,027                     |
|  | 2017       | 3,176,545                 | 793                     | 145,814                         | —                                    | 41.57  | 421,917                     |
| 2018   | 3,576,517  | 895                       | 147,101                 | —                               | 42.21                                | (13,134)   |                             |
| <b>Firefighters<br/>Retirement<br/>System</b>    | 2009       | \$ 612,699                | 11,273                  | —                               | 16,159                               | 15.01%   | \$ 79,811                   |
|  | 2010       | 682,219                   | 14,112                  | 238                             | 10,677                               | 10.37  | 89,122                      |
|  | 2011       | 756,260                   | 17,328                  | 316                             | 12,689                               | 11.74  | 19,218                      |
|  | 2012       | 765,524                   | 17,503                  | 1,264                           | 16,057                               | 15.66  | 96,255                      |
|  | 2013       | 853,778                   | 18,325                  | 3,494                           | 11,285                               | 13.35  | 125,685                     |
|  | 2014       | 968,661                   | 18,300                  | 5,514                           | 14,154                               | 17.67  | 69,070                      |
|  | 2015       | 1,031,039                 | 18,175                  | 6,690                           | 17,218                               | 21.08  | 17,934                      |
|  | 2016       | 1,043,059                 | 18,729                  | 6,954                           | 10,569                               | 15.60  | 87,746                      |
|  | 2017       | 1,115,726                 | 18,460                  | 6,715                           | 1,223                                | 7.03   | 146,736                     |
| 2018   | 1,234,407  | 18,305                    | 7,021                   | 8,747                           | 13.88                                | (4,509)  |                             |
| <b>Judges<br/>Retirement<br/>System</b>          | 2009       | \$ 100,895                | 67                      | 2,083                           | 2,101                                | 28.99%   | \$ 13,214                   |
|  | 2010       | 111,726                   | —                       | 2,771                           | 1,944                                | 33.12  | 14,597                      |
|  | 2011       | 123,037                   | —                       | 3,588                           | 1,815                                | 36.22  | 3,114                       |
|  | 2012       | 123,235                   | —                       | 4,232                           | 1,666                                | 39.62  | 15,485                      |
|  | 2013       | 136,127                   | —                       | 4,990                           | 1,498                                | 42.70  | 20,130                      |
|  | 2014       | 155,676                   | 317                     | 5,627                           | 1,486                                | 44.26  | 11,068                      |
|  | 2015       | 163,834                   | —                       | 6,555                           | 1,653                                | 49.78  | 2,842                       |
|  | 2016       | 163,747                   | —                       | 7,382                           | 1,470                                | 52.83  | 13,820                      |
|  | 2017       | 175,618                   | —                       | 7,563                           | 1,477                                | 48.44  | 23,435                      |
| 2018   | 198,483    | —                         | 8,091                   | 1,518                           | 51.11                                | (730)  |                             |



Utah Retirement Systems

| Transfers from Systems | Total Additions | Benefit Payments | Refunds | Administrative & Actuarial Expense | Transfers to Systems | Total Deductions | Changes in Net Position | Ending Net Position |
|------------------------|-----------------|------------------|---------|------------------------------------|----------------------|------------------|-------------------------|---------------------|
| —                      | 2,216,885       | 723,052          | 2,882   | 8,340                              | 44,420               | 778,694          | 1,438,191               | 14,152,562          |
| —                      | 2,458,658       | 793,804          | 3,620   | 8,389                              | 3,202                | 809,015          | 1,649,643               | 15,802,205          |
| —                      | 1,024,254       | 843,696          | 2,514   | 7,304                              | 37,473               | 890,987          | 133,267                 | 15,935,472          |
| —                      | 2,660,916       | 900,133          | 2,858   | 8,397                              | 55,563               | 966,951          | 1,693,965               | 17,629,437          |
| —                      | 3,314,122       | 974,684          | 2,454   | 8,329                              | 42,277               | 1,027,744        | 2,286,378               | 19,915,815          |
| 30,467                 | 2,235,527       | 1,043,798        | 2,204   | 8,828                              | —                    | 1,054,830        | 1,180,697               | 21,096,512          |
| 33,648                 | 1,230,865       | 1,123,647        | 2,496   | 8,797                              | —                    | 1,134,940        | 95,925                  | 21,192,437          |
| —                      | 2,631,850       | 1,184,317        | 4,366   | 8,856                              | 8,005                | 1,205,544        | 1,426,306               | 22,618,743          |
| —                      | 3,858,822       | 1,248,037        | 4,635   | 9,579                              | 10,187               | 1,272,438        | 2,586,384               | 25,205,127          |
| 13,035                 | 793,874         | 1,320,214        | 2,766   | 9,962                              | —                    | 1,332,942        | (539,068)               | 24,666,059          |
| 37,633                 | 169,779         | 64,849           | 2,158   | 555                                | —                    | 67,562           | 102,217                 | 937,587             |
| —                      | 143,303         | 67,565           | 1,632   | 535                                | 3,910                | 73,642           | 69,661                  | 1,007,248           |
| 32,064                 | 76,498          | 68,375           | 1,872   | 449                                | —                    | 70,696           | 5,802                   | 1,013,050           |
| 47,098                 | 196,934         | 70,855           | 1,975   | 503                                | —                    | 73,333           | 123,601                 | 1,136,651           |
| 33,094                 | 221,854         | 74,158           | 1,922   | 480                                | —                    | 76,560           | 145,294                 | 1,281,945           |
| —                      | 105,992         | 77,015           | 2,433   | 494                                | 38,004               | 117,946          | (11,954)                | 1,269,991           |
| —                      | 37,741          | 81,390           | 1,215   | 478                                | 41,558               | 124,641          | (86,900)                | 1,183,091           |
| —                      | 109,301         | 83,447           | 1,700   | 446                                | 1,895                | 87,488           | 21,813                  | 1,204,904           |
| —                      | 166,570         | 84,761           | 1,613   | 457                                | 1,177                | 88,008           | 78,562                  | 1,283,466           |
| —                      | 3,969           | 86,795           | 1,471   | 454                                | 26,286               | 115,006          | (111,037)               | 1,172,429           |
| 4,578                  | 318,490         | 106,272          | 390     | 1,127                              | —                    | 107,789          | 210,701                 | 1,824,758           |
| 4,248                  | 350,750         | 115,831          | 512     | 1,146                              | —                    | 117,489          | 233,261                 | 2,058,019           |
| 3,303                  | 167,857         | 120,570          | 536     | 1,019                              | —                    | 122,125          | 45,732                  | 2,103,751           |
| 6,411                  | 392,294         | 128,532          | 292     | 1,164                              | —                    | 129,988          | 262,306                 | 2,366,057           |
| 4,676                  | 485,241         | 137,486          | 467     | 1,161                              | —                    | 139,114          | 346,127                 | 2,712,184           |
| 2,746                  | 333,391         | 144,763          | 199     | 1,227                              | —                    | 146,189          | 187,202                 | 2,899,386           |
| 4,023                  | 196,606         | 155,387          | 533     | 1,233                              | —                    | 157,153          | 39,453                  | 2,938,839           |
| 6,701                  | 403,657         | 164,508          | 183     | 1,260                              | —                    | 165,951          | 237,706                 | 3,176,545           |
| 5,926                  | 574,450         | 172,870          | 226     | 1,382                              | —                    | 174,478          | 399,972                 | 3,576,517           |
| 6,982                  | 141,844         | 188,414          | 428     | 1,450                              | —                    | 190,292          | (48,448)                | 3,528,069           |
| 1,173                  | 108,416         | 38,311           | 231     | 354                                | —                    | 38,896           | 69,520                  | 682,219             |
| 1,784                  | 115,933         | 41,130           | 401     | 361                                | —                    | 41,892           | 74,041                  | 756,260             |
| 1,699                  | 51,250          | 41,406           | 268     | 312                                | —                    | 41,986           | 9,264                   | 765,524             |
| 1,325                  | 132,404         | 43,660           | 133     | 357                                | —                    | 44,150           | 88,254                  | 853,778             |
| 1,302                  | 160,091         | 44,747           | 106     | 355                                | —                    | 45,208           | 114,883                 | 968,661             |
| 3,713                  | 110,751         | 47,710           | 293     | 370                                | —                    | 48,373           | 62,378                  | 1,031,039           |
| 2,573                  | 62,590          | 49,671           | 528     | 371                                | —                    | 50,570           | 12,020                  | 1,043,059           |
| 1,611                  | 125,609         | 52,102           | 466     | 374                                | —                    | 52,942           | 72,667                  | 1,115,726           |
| 1,259                  | 174,393         | 54,793           | 511     | 408                                | —                    | 55,712           | 118,681                 | 1,234,407           |
| 1,917                  | 31,481          | 57,440           | 132     | 427                                | —                    | 57,999           | (26,518)                | 1,207,889           |
| 1,027                  | 18,492          | 7,595            | —       | 66                                 | —                    | 7,661            | 10,831                  | 111,726             |
| 1,078                  | 20,390          | 9,010            | —       | 69                                 | —                    | 9,079            | 11,311                  | 123,037             |
| 390                    | 8,907           | 8,649            | —       | 60                                 | —                    | 8,709            | 198                     | 123,235             |
| 710                    | 22,093          | 9,135            | —       | 66                                 | —                    | 9,201            | 12,892                  | 136,127             |
| 3,186                  | 29,804          | 10,189           | —       | 66                                 | —                    | 10,255           | 19,549                  | 155,676             |
| 1,092                  | 19,590          | 11,361           | —       | 71                                 | —                    | 11,432           | 8,158                   | 163,834             |
| 1,334                  | 12,384          | 12,400           | —       | 71                                 | —                    | 12,471           | (87)                    | 163,747             |
| 1,600                  | 24,272          | 12,340           | —       | 71                                 | —                    | 12,401           | 11,871                  | 175,618             |
| 4,090                  | 36,565          | 13,621           | —       | 79                                 | —                    | 13,700           | 22,865                  | 198,483             |
| 4,403                  | 13,282          | 16,111           | —       | 84                                 | —                    | 16,195           | (2,913)                 | 195,570             |

Continued on page 200.

## Schedules of Changes in Net Position — Defined Benefit Systems (Concluded)

Year Ended December 31

*(dollars in thousands)*

| System  | Year       | Beginning<br>Net Position | Member<br>Contributions | Employer<br>Contributions | Total Employer<br>Contributions      |       | Contributions<br>as a Percent<br>of Covered<br>Payroll | Net<br>Investment<br>Income |
|---|------------|---------------------------|-------------------------|---------------------------|--------------------------------------|-------|--|-----------------------------|
|   |            |                           |                         |                           | Court Fees/<br>Fire Insurance<br>Tax |       |  |                             |
| <b>Utah Governors<br/>and Legislators<br/>Retirement Plan</b>                                   | 2009       | \$ 8,675                  | —                       | —                         | —                                    | —     | —  | \$ 1,098                    |
|   | 2010       | 8,993                     | —                       | —                         | —                                    | —     | —  | 1,142                       |
|   | 2011       | 9,337                     | —                       | 153                       | —                                    | —     | 26.94%   | 231                         |
|   | 2012       | 8,933                     | —                       | 214                       | —                                    | —     | 46.22  | 1,100                       |
|   | 2013       | 9,445                     | —                       | 252                       | —                                    | —     | 64.62  | 1,346                       |
|   | 2014       | 10,166                    | —                       | 411                       | —                                    | —     | 44.29  | 717                         |
|   | 2015       | 10,366                    | —                       | 421                       | —                                    | —     | 44.50  | 181                         |
|   | 2016       | 10,039                    | —                       | 421                       | —                                    | —     | 52.69  | 849                         |
|   | 2017       | 10,352                    | —                       | 404                       | —                                    | —     | 55.96  | 1,353                       |
| 2018  | 11,220     | —                         | 392                     | —                         | —                                    | 61.35 | (41)   |                             |
| <b>Tier 2<br/>Public Employees<br/>Contributory<br/>Retirement<br/>System*</b>                  | 2011       | \$ —                      | —                       | 2,790                     | —                                    | —     | 7.58%  | \$ 9                        |
|   | 2012       | 2,799                     | —                       | 14,208                    | —                                    | —     | 6.97   | 922                         |
|   | 2013       | 17,933                    | —                       | 25,743                    | —                                    | —     | 7.29   | 4,017                       |
|   | 2014       | 47,690                    | —                       | 37,299                    | —                                    | —     | 7.57   | 4,320                       |
|   | 2015       | 89,291                    | —                       | 49,645                    | —                                    | —     | 7.64   | 1,963                       |
|   | 2016       | 140,539                   | —                       | 63,062                    | —                                    | —     | 7.67   | 14,059                      |
|   | 2017       | 217,293                   | —                       | 79,175                    | —                                    | —     | 7.94   | 33,249                      |
|   | 2018       | 329,218                   | —                       | 97,680                    | —                                    | —     | 8.34   | (1,454)                     |
| <b>Tier 2<br/>Public Safety<br/>and Firefighter<br/>Contributory<br/>Retirement<br/>System*</b> | 2011       | \$ —                      | —                       | 89                        | —                                    | —     | 10.41%   | \$ —                        |
|   | 2012       | 89                        | —                       | 1,031                     | —                                    | —     | 10.07  | 56                          |
|   | 2013       | 1,171                     | —                       | 2,451                     | —                                    | —     | 12.12  | 316                         |
|   | 2014       | 3,935                     | —                       | 4,365                     | —                                    | —     | 12.46  | 404                         |
|   | 2015       | 8,705                     | —                       | 6,221                     | —                                    | —     | 10.38  | 199                         |
|   | 2016       | 15,089                    | —                       | 8,488                     | —                                    | —     | 11.34  | 1,591                       |
|   | 2017       | 25,135                    | —                       | 11,126                    | —                                    | —     | 11.34  | 3,989                       |
|   | 2018       | 40,180                    | 55                      | 14,295                    | —                                    | —     | 11.58  | (180)                       |
| <b>All Retirement<br/>Systems</b>   | 2009       | \$ 15,886,067             | 35,660                  | 646,975                   | 18,260                               | —     | 14.53%   | \$ 2,087,854                |
|   | 2010       | 17,717,845                | 59,652                  | 682,600                   | 12,621                               | —     | 15.49  | 2,328,193                   |
|   | 2011       | 19,756,106                | 38,577                  | 739,160                   | 14,504                               | —     | 16.57  | 502,341                     |
|   | 2012       | 19,952,853                | 40,634                  | 795,536                   | 17,723                               | —     | 17.66  | 2,512,735                   |
|   | 2013       | 22,150,599                | 40,167                  | 889,481                   | 12,783                               | —     | 19.32  | 3,260,548                   |
|   | 2014       | 25,096,072                | 38,500                  | 974,178                   | 15,640                               | —     | 21.16  | 1,786,431                   |
|   | 2015       | 26,569,124                | 40,871                  | 1,035,724                 | 18,871                               | —     | 22.37  | 461,772                     |
|   | 2016       | 26,686,840                | 39,287                  | 1,073,225                 | 12,039                               | —     | 22.19  | 2,248,696                   |
|   | 2017       | 28,544,316                | 39,213                  | 1,112,998                 | 2,700                                | —     | 22.32  | 3,773,910                   |
| 2018  | 31,878,618 | 36,312                    | 1,139,051               | 10,265                    | —                                    | 22.33 | (116,768)  |                             |

\*Additional years will be added as they become available.

Utah Retirement Systems

| Transfers from Systems | Total Additions | Benefit Payments | Refunds | Administrative & Actuarial Expense | Transfers to Systems | Total Deductions | Changes in Net Position | Ending Net Position |
|------------------------|-----------------|------------------|---------|------------------------------------|----------------------|------------------|-------------------------|---------------------|
| 9                      | 1,107           | 784              | —       | 5                                  | —                    | 789              | 318                     | 8,993               |
| 2                      | 1,144           | 790              | 5       | 5                                  | —                    | 800              | 344                     | 9,337               |
| 17                     | 401             | 801              | —       | 4                                  | —                    | 805              | (404)                   | 8,933               |
| 19                     | 1,333           | 815              | 1       | 5                                  | —                    | 821              | 512                     | 9,445               |
| 19                     | 1,617           | 892              | —       | 4                                  | —                    | 896              | 721                     | 10,166              |
| —                      | 1,128           | 909              | —       | 5                                  | 14                   | 928              | 200                     | 10,366              |
| —                      | 602             | 904              | —       | 5                                  | 20                   | 929              | (327)                   | 10,039              |
| —                      | 1,270           | 941              | —       | 4                                  | 12                   | 957              | 313                     | 10,352              |
| 89                     | 1,846           | 973              | —       | 5                                  | —                    | 978              | 868                     | 11,220              |
| —                      | 351             | 978              | —       | 5                                  | 51                   | 1,034            | (683)                   | 10,537              |
| —                      | 2,799           | —                | —       | —                                  | —                    | —                | 2,799                   | 2,799               |
| 5                      | 15,135          | —                | —       | 1                                  | —                    | 1                | 15,134                  | 17,933              |
| 3                      | 29,763          | —                | —       | 6                                  | —                    | 6                | 29,757                  | 47,690              |
| —                      | 41,619          | —                | —       | 16                                 | 2                    | 18               | 41,601                  | 89,291              |
| 3                      | 51,611          | 333              | —       | 30                                 | —                    | 363              | 51,248                  | 140,539             |
| —                      | 77,121          | 316              | —       | 51                                 | —                    | 367              | 76,754                  | 217,293             |
| —                      | 112,424         | 417              | —       | 82                                 | —                    | 499              | 111,925                 | 329,218             |
| —                      | 96,226          | 692              | —       | 119                                | —                    | 811              | 95,415                  | 424,633             |
| —                      | 89              | —                | —       | —                                  | —                    | —                | 89                      | 89                  |
| —                      | 1,087           | —                | —       | —                                  | 5                    | 5                | 1,082                   | 1,171               |
| —                      | 2,767           | —                | —       | —                                  | 3                    | 3                | 2,764                   | 3,935               |
| 2                      | 4,771           | —                | —       | 1                                  | —                    | 1                | 4,770                   | 8,705               |
| —                      | 6,420           | 30               | —       | 3                                  | 3                    | 36               | 6,384                   | 15,089              |
| —                      | 10,079          | 28               | —       | 5                                  | —                    | 33               | 10,046                  | 25,135              |
| —                      | 15,115          | 61               | —       | 9                                  | —                    | 70               | 15,045                  | 40,180              |
| —                      | 14,170          | —                | —       | 14                                 | —                    | 14               | 14,156                  | 54,336              |
| 44,420                 | 2,833,169       | 940,863          | 5,661   | 10,447                             | 44,420               | 1,001,391        | 1,831,778               | 17,717,845          |
| 7,112                  | 3,090,178       | 1,028,130        | 6,170   | 10,505                             | 7,112                | 1,051,917        | 2,038,261               | 19,756,106          |
| 37,473                 | 1,332,055       | 1,083,497        | 5,190   | 9,148                              | 37,473               | 1,135,308        | 196,747                 | 19,952,853          |
| 55,568                 | 3,422,196       | 1,153,130        | 5,259   | 10,493                             | 55,568               | 1,224,450        | 2,197,746               | 22,150,599          |
| 42,280                 | 4,245,259       | 1,242,156        | 4,949   | 10,401                             | 42,280               | 1,299,786        | 2,945,473               | 25,096,072          |
| 38,020                 | 2,852,769       | 1,325,556        | 5,129   | 11,012                             | 38,020               | 1,379,717        | 1,473,052               | 26,569,124          |
| 41,581                 | 1,598,819       | 1,423,762        | 4,772   | 10,988                             | 41,581               | 1,481,103        | 117,716                 | 26,686,840          |
| 9,912                  | 3,383,159       | 1,497,988        | 6,715   | 11,067                             | 9,912                | 1,525,682        | 1,857,477               | 28,544,317          |
| 11,364                 | 4,940,185       | 1,575,533        | 6,985   | 12,001                             | 11,364               | 1,605,883        | 3,334,302               | 31,878,618          |
| 26,337                 | 1,095,197       | 1,670,644        | 4,797   | 12,515                             | 26,337               | 1,714,293        | (619,096)               | 31,259,522          |

## Schedules of Changes in Net Position — Defined Contribution Plans

Year Ended December 31

(in thousands)

| System                                    | Year | Beginning<br>Net Position | Contributions | Net Investment<br>Income / (Loss) | Total<br>Additions |
|---|------|---------------------------|---------------|-----------------------------------|--------------------|
| <b>401(k) Plan</b>                        | 2009 | \$ 2,131,945              | 222,369       | 386,989                           | 609,358            |
|   | 2010 | 2,607,287                 | 222,474       | 254,289                           | 476,763            |
|   | 2011 | 2,886,677                 | 210,592       | (14,864)                          | 195,728            |
|   | 2012 | 2,881,007                 | 218,888       | 313,374                           | 532,262            |
|   | 2013 | 3,212,874                 | 230,086       | 532,216                           | 762,302            |
|   | 2014 | 3,746,281                 | 255,044       | 213,230                           | 468,274            |
|   | 2015 | 3,956,751                 | 271,097       | 10,658                            | 281,755            |
|   | 2016 | 3,980,405                 | 290,632       | 332,672                           | 623,304            |
|   | 2017 | 4,338,973                 | 295,804       | 630,516                           | 926,320            |
|   | 2018 | 5,002,908                 | 317,548       | (202,398)                         | 115,150            |
| <b>457 Plan</b>                           | 2009 | \$ 229,469                | 26,617        | 41,581                            | 68,198             |
|   | 2010 | 283,619                   | 26,522        | 27,628                            | 54,150             |
|   | 2011 | 316,874                   | 26,441        | (2,422)                           | 24,019             |
|   | 2012 | 321,356                   | 24,501        | 35,065                            | 59,566             |
|   | 2013 | 360,381                   | 25,696        | 60,421                            | 86,117             |
|   | 2014 | 424,568                   | 26,711        | 23,342                            | 50,053             |
|   | 2015 | 450,974                   | 26,968        | 259                               | 27,227             |
|   | 2016 | 454,357                   | 27,326        | 39,252                            | 66,578             |
|   | 2017 | 494,419                   | 31,475        | 72,210                            | 103,685            |
|   | 2018 | 569,390                   | 32,589        | (24,212)                          | 8,377              |
| <b>Roth IRA Plan</b>                      | 2009 | \$ 7,088                  | 3,623         | 2,008                             | 5,631              |
|   | 2010 | 12,248                    | 8,116         | 1,827                             | 9,943              |
|   | 2011 | 20,571                    | 6,619         | (508)                             | 6,111              |
|   | 2012 | 24,400                    | 7,685         | 3,256                             | 10,941             |
|   | 2013 | 33,750                    | 9,113         | 6,870                             | 15,983             |
|   | 2014 | 47,763                    | 11,664        | 2,816                             | 14,480             |
|   | 2015 | 58,842                    | 14,073        | (308)                             | 13,765             |
|   | 2016 | 69,714                    | 16,585        | 7,200                             | 23,785             |
|   | 2017 | 89,165                    | 19,669        | 15,389                            | 35,058             |
|   | 2018 | 119,297                   | 25,280        | (7,353)                           | 17,927             |
| <b>Traditional IRA Plan</b>               | 2009 | \$ 19,194                 | 3,161         | 2,803                             | 5,964              |
|   | 2010 | 22,471                    | 6,097         | 1,692                             | 7,789              |
|   | 2011 | 26,251                    | 7,346         | (55)                              | 7,291              |
|   | 2012 | 30,013                    | 9,799         | 2,811                             | 12,610             |
|   | 2013 | 38,595                    | 11,213        | 5,050                             | 16,263             |
|   | 2014 | 49,852                    | 14,930        | 2,645                             | 17,575             |
|   | 2015 | 59,822                    | 17,206        | 211                               | 17,417             |
|   | 2016 | 68,986                    | 16,182        | 4,825                             | 21,007             |
|   | 2017 | 81,533                    | 20,593        | 9,465                             | 30,058             |
|   | 2018 | 102,409                   | 30,108        | (2,287)                           | 27,821             |
| <b>HRA Plan*</b>                          | 2009 | \$ 1,546                  | 1,974         | 7                                 | 1,981              |
|   | 2010 | 2,988                     | 4,274         | 11                                | 4,285              |
|   | 2011 | 6,275                     | 4,264         | 17                                | 4,281              |
|   | 2012 | 9,113                     | 4,092         | 22                                | 4,114              |
|   | 2013 | 11,469                    | 6,750         | 30                                | 6,780              |
|   | 2014 | 16,184                    | 6,393         | 24                                | 6,417              |
|   | 2015 | 19,880                    | 6,318         | 35                                | 6,353              |
|   | 2016 | 23,274                    | 6,796         | 36                                | 6,832              |
|   | 2017 | —                         | —             | —                                 | —                  |
|   | 2018 | —                         | —             | —                                 | —                  |
| <b>All Defined<br/>Contribution Plans</b> | 2009 | \$ 2,389,242              | 257,744       | 433,388                           | 691,132            |
|   | 2010 | 2,928,613                 | 267,483       | 285,447                           | 552,930            |
|   | 2011 | 3,256,648                 | 255,262       | (17,832)                          | 237,430            |
|   | 2012 | 3,265,889                 | 264,965       | 354,528                           | 619,493            |
|   | 2013 | 3,657,069                 | 282,858       | 604,587                           | 887,445            |
|   | 2014 | 4,284,648                 | 314,742       | 242,058                           | 556,800            |
|   | 2015 | 4,546,269                 | 335,662       | 10,857                            | 346,519            |
|   | 2016 | 4,596,736                 | 357,521       | 383,985                           | 741,506            |
|   | 2017 | 5,004,090                 | 367,541       | 727,580                           | 1,095,121          |
|   | 2018 | 5,794,004                 | 405,525       | (236,250)                         | 169,275            |

\*Administration of the HRA was transferred to PEHP in October 2016.

Utah Retirement Systems

| Refunds | Administrative Expenses | Total Deductions | Changes in Net Position | Ending Net Position |
|---------|-------------------------|------------------|-------------------------|---------------------|
| 127,675 | 6,341                   | 134,016          | 475,342                 | 2,607,287           |
| 190,963 | 6,410                   | 197,373          | 279,390                 | 2,886,677           |
| 194,933 | 6,465                   | 201,398          | (5,670)                 | 2,881,007           |
| 194,538 | 5,857                   | 200,395          | 331,867                 | 3,212,874           |
| 223,523 | 5,372                   | 228,895          | 533,407                 | 3,746,281           |
| 251,496 | 6,308                   | 257,804          | 210,470                 | 3,956,751           |
| 251,436 | 6,665                   | 258,101          | 23,654                  | 3,980,405           |
| 257,651 | 7,085                   | 264,736          | 358,568                 | 4,338,973           |
| 254,672 | 7,713                   | 262,385          | 663,935                 | 5,002,908           |
| 276,023 | 7,952                   | 283,975          | (168,825)               | 4,834,083           |
| 13,349  | 699                     | 14,048           | 54,150                  | 283,619             |
| 20,184  | 711                     | 20,895           | 33,255                  | 316,874             |
| 18,811  | 726                     | 19,537           | 4,482                   | 321,356             |
| 19,877  | 664                     | 20,541           | 39,025                  | 360,381             |
| 21,314  | 616                     | 21,930           | 64,187                  | 424,568             |
| 22,920  | 727                     | 23,647           | 26,406                  | 450,974             |
| 23,082  | 762                     | 23,844           | 3,383                   | 454,357             |
| 25,706  | 810                     | 26,516           | 40,062                  | 494,419             |
| 27,827  | 887                     | 28,714           | 74,971                  | 569,390             |
| 32,708  | 901                     | 33,609           | (25,233)                | 544,157             |
| 445     | 26                      | 471              | 5,160                   | 12,248              |
| 1,582   | 38                      | 1,620            | 8,323                   | 20,571              |
| 2,230   | 52                      | 2,282            | 3,829                   | 24,400              |
| 1,538   | 53                      | 1,591            | 9,350                   | 33,750              |
| 1,908   | 62                      | 1,970            | 14,013                  | 47,763              |
| 3,310   | 91                      | 3,401            | 11,079                  | 58,842              |
| 2,781   | 112                     | 2,893            | 10,872                  | 69,714              |
| 4,192   | 142                     | 4,334            | 19,451                  | 89,165              |
| 4,752   | 174                     | 4,926            | 30,132                  | 119,297             |
| 5,230   | 206                     | 5,436            | 12,494                  | 131,791             |
| 2,635   | 52                      | 2,687            | 3,277                   | 22,471              |
| 3,954   | 55                      | 4,009            | 3,780                   | 26,251              |
| 3,469   | 60                      | 3,529            | 3,762                   | 30,013              |
| 3,967   | 61                      | 4,028            | 8,582                   | 38,595              |
| 4,940   | 66                      | 5,006            | 11,257                  | 49,852              |
| 7,514   | 91                      | 7,605            | 9,970                   | 59,822              |
| 8,148   | 105                     | 8,253            | 9,164                   | 68,986              |
| 8,332   | 128                     | 8,460            | 12,547                  | 81,533              |
| 9,035   | 147                     | 9,182            | 20,876                  | 102,409             |
| 10,156  | 169                     | 10,325           | 17,496                  | 119,905             |
| 533     | 6                       | 539              | 1,442                   | 2,988               |
| 987     | 11                      | 998              | 3,287                   | 6,275               |
| 1,426   | 17                      | 1,443            | 2,838                   | 9,113               |
| 1,736   | 22                      | 1,758            | 2,356                   | 11,469              |
| 2,041   | 24                      | 2,065            | 4,715                   | 16,184              |
| 2,690   | 31                      | 2,721            | 3,696                   | 19,880              |
| 2,924   | 35                      | 2,959            | 3,394                   | 23,274              |
| 30,075  | 31                      | 30,106           | (23,274)                | —                   |
| —       | —                       | —                | —                       | —                   |
| —       | —                       | —                | —                       | —                   |
| 144,637 | 7,124                   | 151,761          | 539,371                 | 2,928,613           |
| 217,670 | 7,225                   | 224,895          | 328,035                 | 3,256,648           |
| 220,869 | 7,320                   | 228,189          | 9,241                   | 3,265,889           |
| 221,656 | 6,657                   | 228,313          | 391,180                 | 3,657,069           |
| 253,726 | 6,140                   | 259,866          | 627,579                 | 4,284,648           |
| 287,922 | 7,256                   | 295,178          | 261,622                 | 4,546,270           |
| 288,373 | 7,679                   | 296,052          | 50,467                  | 4,596,736           |
| 325,956 | 8,196                   | 334,152          | 407,354                 | 5,004,090           |
| 296,286 | 8,921                   | 305,207          | 789,914                 | 5,794,004           |
| 324,117 | 9,228                   | 333,345          | (164,068)               | 5,629,936           |

## Schedules of Benefit Deductions by Type

Year Ended December 31

*(in thousands)*

| System                                   | Year      | Service and Disability Benefits | Cost-of-Living Benefits | Supplemental Benefits | Total Benefits |
|--|-----------|---------------------------------|-------------------------|-----------------------|----------------|
| <b>Noncontributory Retirement System</b> | 2009      | \$ 599,456                      | 123,596                 | —                     | 723,052        |
|  | 2010      | 661,718                         | 132,086                 | —                     | 793,804        |
|  | 2011      | 709,359                         | 134,337                 | —                     | 843,696        |
|  | 2012      | 753,155                         | 146,978                 | —                     | 900,133        |
|  | 2013      | 812,550                         | 162,134                 | —                     | 974,684        |
|  | 2014      | 871,999                         | 171,799                 | —                     | 1,043,798      |
|  | 2015      | 943,591                         | 180,056                 | —                     | 1,123,647      |
|  | 2016      | 1,001,451                       | 182,866                 | —                     | 1,184,317      |
|  | 2017      | 1,063,894                       | 184,143                 | —                     | 1,248,037      |
| 2018                                     | 1,125,160 | 195,054                         | —                       | 1,320,214             |                |
| <b>Contributory Retirement System</b>    | 2009      | \$ 47,319                       | 17,086                  | 444                   | 64,849         |
|  | 2010      | 50,822                          | 16,389                  | 353                   | 67,564         |
|  | 2011      | 52,933                          | 15,160                  | 282                   | 68,375         |
|  | 2012      | 55,884                          | 14,746                  | 225                   | 70,855         |
|  | 2013      | 59,203                          | 14,778                  | 177                   | 74,158         |
|  | 2014      | 62,560                          | 14,328                  | 127                   | 77,015         |
|  | 2015      | 67,510                          | 13,785                  | 95                    | 81,390         |
|  | 2016      | 70,137                          | 13,232                  | 78                    | 83,447         |
|  | 2017      | 72,073                          | 12,624                  | 64                    | 84,761         |
| 2018                                     | 74,106    | 12,638                          | 51                      | 86,795                |                |
| <b>Public Safety Retirement System</b>   | 2009      | \$ 88,632                       | 17,186                  | 454                   | 106,272        |
|  | 2010      | 96,331                          | 19,068                  | 433                   | 115,832        |
|  | 2011      | 99,685                          | 20,482                  | 403                   | 120,570        |
|  | 2012      | 105,780                         | 22,372                  | 380                   | 128,532        |
|  | 2013      | 112,470                         | 24,662                  | 354                   | 137,486        |
|  | 2014      | 118,030                         | 26,407                  | 326                   | 144,763        |
|  | 2015      | 127,285                         | 27,807                  | 295                   | 155,387        |
|  | 2016      | 135,697                         | 28,547                  | 264                   | 164,508        |
|  | 2017      | 143,774                         | 28,854                  | 242                   | 172,870        |
| 2018                                     | 157,682   | 30,517                          | 215                     | 188,414               |                |
| <b>Firefighters Retirement System</b>    | 2009      | \$ 30,097                       | 7,792                   | 422                   | 38,311         |
|  | 2010      | 32,490                          | 8,242                   | 401                   | 41,133         |
|  | 2011      | 32,716                          | 8,313                   | 377                   | 41,406         |
|  | 2012      | 34,445                          | 8,871                   | 344                   | 43,660         |
|  | 2013      | 34,951                          | 9,485                   | 311                   | 44,747         |
|  | 2014      | 37,597                          | 9,844                   | 269                   | 47,710         |
|  | 2015      | 39,340                          | 10,095                  | 236                   | 49,671         |
|  | 2016      | 41,687                          | 10,195                  | 220                   | 52,102         |
|  | 2017      | 44,331                          | 10,258                  | 204                   | 54,793         |
| 2018                                     | 46,547    | 10,700                          | 193                     | 57,440                |                |

Schedules of Benefit Deductions by Type *(Concluded)*

Year Ended December 31

*(in thousands)*

| System  | Year   | Service and Disability Benefits | Cost-of-Living Benefits | Supplemental Benefits | Total Benefits |
|---|--------|---------------------------------|-------------------------|-----------------------|----------------|
| <b>Judges Retirement System</b>   | 2009   | \$ 6,046                        | 1,549                   | —                     | 7,595          |
|   | 2010   | 7,317                           | 1,693                   | —                     | 9,010          |
|   | 2011   | 6,974                           | 1,675                   | —                     | 8,649          |
|   | 2012   | 7,364                           | 1,771                   | —                     | 9,135          |
|   | 2013   | 8,248                           | 1,941                   | —                     | 10,189         |
|   | 2014   | 9,305                           | 2,056                   | —                     | 11,361         |
|   | 2015   | 10,252                          | 2,148                   | —                     | 12,400         |
|   | 2016   | 10,070                          | 2,260                   | —                     | 12,330         |
|   | 2017   | 11,405                          | 2,216                   | —                     | 13,621         |
| 2018  | 13,805 | 2,306                           | —                       | 16,111                |                |
| <b>Utah Governors and Legislators Retirement Plan</b>                       | 2009   | \$ 619                          | 165                     | —                     | 784            |
|   | 2010   | 625                             | 165                     | —                     | 790            |
|   | 2011   | 639                             | 162                     | —                     | 801            |
|   | 2012   | 647                             | 168                     | —                     | 815            |
|   | 2013   | 718                             | 174                     | —                     | 892            |
|   | 2014   | 734                             | 175                     | —                     | 909            |
|   | 2015   | 731                             | 173                     | —                     | 904            |
|   | 2016   | 773                             | 168                     | —                     | 941            |
|   | 2017   | 808                             | 165                     | —                     | 973            |
| 2018  | 814    | 164                             | —                       | 978                   |                |
| <b>Tier 2 Public Employees Contributory Retirement System*</b>              | 2011   | —                               | —                       | —                     | —              |
|   | 2012   | —                               | —                       | —                     | —              |
|   | 2013   | —                               | —                       | —                     | —              |
|   | 2014   | —                               | —                       | —                     | —              |
|   | 2015   | \$ 333                          | —                       | —                     | 333            |
|   | 2016   | 316                             | —                       | —                     | 316            |
|   | 2017   | 417                             | —                       | —                     | 417            |
| 2018  | 691    | 1                               | —                       | 692                   |                |
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System*</b> | 2011   | —                               | —                       | —                     | —              |
|   | 2012   | —                               | —                       | —                     | —              |
|   | 2013   | —                               | —                       | —                     | —              |
|   | 2014   | —                               | —                       | —                     | —              |
|   | 2015   | \$ 30                           | —                       | —                     | 30             |
|   | 2016   | 28                              | —                       | —                     | 28             |
|   | 2017   | 61                              | —                       | —                     | 61             |
| 2018  | —      | —                               | —                       | —                     |                |

\*Additional years will be added as they become available.

## Schedules of Retired Members by Type of Benefit Option

Year Ended December 31, 2018

| System                                   | Amount of Monthly Benefit | Number of Retirees by Benefit Option |     |       |     |       |       |   |       |     |
|--|---------------------------|--------------------------------------|-----|-------|-----|-------|-------|---|-------|-----|
|  |                           | 1                                    | 2   | 3     | 4   | 5     | 6     | 7 | 8     | 9   |
| <b>Noncontributory Retirement System</b> | \$ 1-1,000                | 10,253                               | 634 | 3,673 | 395 | 3,700 | 928   | — | —     | —   |
|  | 1,001-2,000               | 5,107                                | 696 | 2,583 | 460 | 3,219 | 1,079 | — | —     | —   |
|  | 2,001-3,000               | 3,207                                | 748 | 2,381 | 299 | 3,030 | 869   | — | —     | —   |
|  | 3,001-4,000               | 2,419                                | 695 | 1,976 | 242 | 2,212 | 634   | — | —     | —   |
|  | 4,001-5,000               | 927                                  | 247 | 931   | 142 | 730   | 229   | — | —     | —   |
|  | Over 5,000                | 414                                  | 115 | 663   | 72  | 371   | 124   | — | —     | —   |
| <b>Contributory Retirement System</b>    | \$ 1-1,000                | 485                                  | 207 | 226   | 45  | 261   | 92    | — | —     | —   |
|  | 1,001-2,000               | 314                                  | 175 | 238   | 31  | 246   | 57    | — | —     | —   |
|  | 2,001-3,000               | 217                                  | 162 | 204   | 33  | 219   | 43    | — | —     | —   |
|  | 3,001-4,000               | 114                                  | 79  | 87    | 17  | 113   | 29    | — | —     | —   |
|  | 4,001-5,000               | 34                                   | 32  | 34    | 7   | 21    | 19    | — | —     | —   |
|  | Over 5,000                | 18                                   | 14  | 32    | 2   | 7     | 3     | — | —     | —   |
| <b>Public Safety Retirement System</b>   | \$ 1-1,000                | —                                    | —   | 2     | —   | —     | —     | — | 552   | 138 |
|  | 1,001-2,000               | —                                    | —   | 2     | —   | —     | —     | — | 925   | 296 |
|  | 2,001-3,000               | —                                    | —   | 2     | —   | —     | —     | — | 1,526 | 784 |
|  | 3,001-4,000               | —                                    | —   | —     | —   | —     | —     | — | 712   | 324 |
|  | 4,001-5,000               | —                                    | —   | —     | —   | —     | —     | — | 288   | 167 |
|  | Over 5,000                | —                                    | —   | —     | —   | —     | —     | — | 157   | 92  |
| <b>Firefighters Retirement System</b>    | \$ 1-1,000                | —                                    | —   | 1     | —   | —     | —     | — | —     | 68  |
|  | 1,001-2,000               | —                                    | —   | 1     | —   | —     | —     | — | —     | 219 |
|  | 2,001-3,000               | —                                    | —   | —     | —   | —     | —     | — | —     | 425 |
|  | 3,001-4,000               | —                                    | —   | —     | —   | —     | —     | — | —     | 370 |
|  | 4,001-5,000               | —                                    | —   | —     | —   | —     | —     | — | —     | 229 |
|  | Over 5,000                | —                                    | —   | —     | —   | —     | —     | — | —     | 151 |

- 1– A maximum monthly benefit for the retiree’s life. No benefit to a beneficiary.
- 2– A reduced lifetime benefit to the retiree. A beneficiary receives the balance in retiree’s account after the monthly annuity payments are deducted.
- 3– A reduced lifetime benefit to a retiree and a lifetime benefit equal to the retiree’s benefit payable to the retiree’s lawful spouse at the time of retirement.
- 4– A reduced lifetime benefit to the retiree and a lifetime benefit equal to half of the retiree’s benefit to the retiree’s lawful spouse at the time of retirement.
- 5– Approximately 95% of the benefit in type 3 and the same lifetime benefit for retiree’s lawful spouse at the time of retirement. Benefit reverts to 100% at time of spouse’s death.

- 6– Approximately 98% of the benefit in type 4 and a lifetime benefit equal to half of the retiree’s for retiree’s lawful spouse at the time of the retirement. Benefit reverts to 100% at time of spouse’s death.
- 7– Refund of reserves for members whose monthly benefit would be \$25 or less.
- 8– Normal retirement for age and service and a lifetime benefit of 65% of the retiree’s benefit to the retiree’s lawful spouse at the time of the retiree’s death.
- 9– Normal retirement for age and service and a lifetime benefit of 75% of the retiree’s benefit to the retiree’s lawful spouse at the time of the retiree’s death.



## Schedules of Retired Members by Type of Benefit Option (Concluded)

Year Ended December 31, 2018

| System   | Amount of Monthly Benefit | Number of Retirees by Benefit Option |   |    |     |    |   |   |    |    |
|--|---------------------------|--------------------------------------|---|----|-----|----|---|---|----|----|
|  |                           | 1                                    | 2 | 3  | 4   | 5  | 6 | 7 | 8  | 9  |
| <b>Judges Retirement System</b>  | \$ 1-1,000                | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 1,001-2,000               | —                                    | — | —  | —   | —  | — | — | 4  | 1  |
|  | 2,001-3,000               | —                                    | — | —  | —   | —  | — | — | 5  | 3  |
|  | 3,001-4,000               | —                                    | — | —  | —   | —  | — | — | 4  | 1  |
|  | 4,001-5,000               | —                                    | — | —  | —   | —  | — | — | 3  | 4  |
|  | Over 5,000                | —                                    | — | —  | —   | —  | — | — | 64 | 66 |
| <b>Utah Governors and Legislators Retirement Plan*</b>                 | \$ 1-1,000                | —                                    | — | 3  | 239 | 1  | — | — | —  | —  |
|  | 1,001-2,000               | —                                    | — | —  | 6   | —  | — | — | —  | —  |
|  | 2,001-3,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 3,001-4,000               | —                                    | — | —  | 1   | —  | — | — | —  | —  |
|  | 4,001-5,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | Over 5,000                | —                                    | — | —  | —   | —  | — | — | —  | —  |
| <b>Tier 2 Public Employees Retirement System</b>                       | \$ 1-1,000                | 30                                   | — | 17 | —   | 13 | 4 | — | —  | —  |
|  | 1,001-2,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 2,001-3,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 3,001-4,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 4,001-5,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | Over 5,000                | —                                    | — | —  | —   | —  | — | — | —  | —  |
| <b>Tier 2 Public Public Safety and Firefighter Retirement System**</b> | \$ 1-1,000                | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 1,001-2,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 2,001-3,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 3,001-4,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | 4,001-5,000               | —                                    | — | —  | —   | —  | — | — | —  | —  |
|  | Over 5,000                | —                                    | — | —  | —   | —  | — | — | —  | —  |

\*Governors & Legislative Pension Plan provides a normal lifetime pension to the retiree and 50% of the retiree's benefit to the retiree's lawful spouse at the time of death if the retiree had four or more years of service.

\*\*There are currently no retirees in the system.

## Schedules of Average Benefit Payments

December 31

| System                                   |      | Years of Credited Service    |         |       |       |       |       |       |
|--|------|------------------------------|---------|-------|-------|-------|-------|-------|
|  |      | 4-10                         | 11-15   | 16-20 | 21-25 | 26-30 | 31+   |       |
| <b>Noncontributory Retirement System</b> | 2013 | Average Monthly Benefit      | \$ 366  | 811   | 1,290 | 1,626 | 2,522 | 3,532 |
|  |      | Monthly Final Average Salary | \$2,611 | 3,405 | 3,990 | 4,102 | 4,841 | 5,611 |
|  |      | Number of Active Retired     | 719     | 484   | 479   | 535   | 607   | 541   |
|  | 2014 | Average Monthly Benefit      | \$ 373  | 837   | 1,274 | 1,742 | 2,610 | 3,743 |
|  |      | Monthly Final Average Salary | \$2,498 | 3,300 | 3,792 | 4,093 | 4,809 | 5,687 |
|  |      | Number of Active Retired     | 665     | 410   | 468   | 434   | 588   | 467   |
|  | 2015 | Average Monthly Benefit      | \$ 376  | 811   | 1,294 | 1,742 | 2,692 | 3,736 |
|  |      | Monthly Final Average Salary | \$2,587 | 3,275 | 3,675 | 4,148 | 4,907 | 5,530 |
|  |      | Number of Active Retired     | 704     | 443   | 468   | 514   | 737   | 533   |
|  | 2016 | Average Monthly Benefit      | \$ 263  | 583   | 831   | 1,196 | 2,563 | 3,525 |
|  |      | Monthly Final Average Salary | \$1,998 | 2,453 | 2,572 | 3,023 | 4,766 | 5,460 |
|  |      | Number of Active Retired     | 793     | 551   | 592   | 609   | 784   | 636   |
|  | 2017 | Average Monthly Benefit      | \$ 402  | 856   | 1,277 | 1,800 | 2,668 | 3,688 |
|  |      | Monthly Final Average Salary | \$2,745 | 3,466 | 3,903 | 4,363 | 5,042 | 5,682 |
|  |      | Number of Active Retired     | 640     | 438   | 466   | 456   | 779   | 561   |
|  | 2018 | Average Monthly Benefit      | \$ 399  | 851   | 1,321 | 1,829 | 2,728 | 3,738 |
|  |      | Monthly Final Average Salary | \$2,674 | 3,567 | 3,919 | 4,428 | 5,148 | 5,862 |
|  |      | Number of Active Retired     | 759     | 447   | 485   | 490   | 734   | 530   |
| <b>Contributory Retirement System</b>    | 2013 | Average Monthly Benefit      | \$ 600  | 796   | 797   | 1,454 | 2,085 | 2,817 |
|  |      | Monthly Final Average Salary | \$4,494 | 3,238 | 2,447 | 3,446 | 4,034 | 4,743 |
|  |      | Number of Active Retired     | 7       | 9     | 12    | 9     | 109   | 76    |
|  | 2014 | Average Monthly Benefit      | \$ 300  | 735   | 1,219 | 1,376 | 2,066 | 2,840 |
|  |      | Monthly Final Average Salary | \$2,098 | 3,447 | 4,234 | 3,650 | 3,993 | 4,359 |
|  |      | Number of Active Retired     | 11      | 8     | 3     | 8     | 75    | 79    |
|  | 2015 | Average Monthly Benefit      | \$ 482  | 699   | 1,208 | 1,612 | 2,311 | 3,297 |
|  |      | Monthly Final Average Salary | \$3,043 | 3,010 | 3,801 | 3,855 | 4,228 | 4,801 |
|  |      | Number of Active Retired     | 5       | 9     | 6     | 11    | 71    | 85    |
|  | 2016 | Average Monthly Benefit      | \$ 398  | 587   | 964   | 1,132 | 2,489 | 2,928 |
|  |      | Monthly Final Average Salary | \$2,299 | 2,405 | 3,045 | 2,937 | 4,486 | 4,476 |
|  |      | Number of Active Retired     | 12      | 10    | 4     | 6     | 64    | 131   |
|  | 2017 | Average Monthly Benefit      | \$ 339  | 604   | 1,031 | 3,758 | 2,243 | 3,249 |
|  |      | Monthly Final Average Salary | \$2,456 | 2,227 | 2,974 | 7,936 | 4,098 | 5,063 |
|  |      | Number of Active Retired     | 9       | 9     | 3     | 5     | 7     | 90    |
|  | 2018 | Average Monthly Benefit      | \$ 270  | 424   | 1,348 | 2,280 | 3,263 | 3,097 |
|  |      | Monthly Final Average Salary | \$2,267 | 1,942 | 4,049 | 5,001 | 5,459 | 4,924 |
|  |      | Number of Active Retired     | 7       | 4     | 4     | 3     | 6     | 86    |

## Schedules of Average Benefit Payments (Continued)

December 31

| System                                 |      |                              | Years of Credited Service |       |       |       |       |       |
|--|------|------------------------------|---------------------------|-------|-------|-------|-------|-------|
|  |      |                              | 4-10                      | 11-15 | 16-20 | 21-25 | 26-30 | 31+   |
| <b>Public Safety Retirement System</b> | 2013 | Average Monthly Benefit      | \$ 413                    | 1,339 | 2,156 | 2,509 | 3,676 | 4,584 |
|  |      | Monthly Final Average Salary | \$ 2,676                  | 4,287 | 4,709 | 4,813 | 5,716 | 6,178 |
|  |      | Number of Active Retired     | 7                         | 8     | 88    | 76    | 25    | 24    |
|  | 2014 | Average Monthly Benefit      | \$ 617                    | 1,301 | 2,206 | 2,828 | 3,518 | 4,179 |
|  |      | Monthly Final Average Salary | \$ 3,125                  | 3,855 | 4,665 | 5,007 | 5,307 | 5,574 |
|  |      | Number of Active Retired     | 16                        | 14    | 80    | 96    | 18    | 23    |
|  | 2015 | Average Monthly Benefit      | \$ 586                    | 2,070 | 2,358 | 2,768 | 3,683 | 3,900 |
|  |      | Monthly Final Average Salary | \$ 2,796                  | 4,799 | 4,557 | 4,919 | 5,368 | 5,373 |
|  |      | Number of Active Retired     | 13                        | 12    | 115   | 77    | 31    | 20    |
|  | 2016 | Average Monthly Benefit      | \$ 198                    | 560   | 588   | 2,176 | 3,192 | 4,120 |
|  |      | Monthly Final Average Salary | \$ 1,420                  | 1,768 | 1,271 | 3,978 | 5,556 | 5,576 |
|  |      | Number of Active Retired     | 11                        | 20    | 123   | 128   | 55    | 31    |
|  | 2017 | Average Monthly Benefit      | \$ 776                    | 1,344 | 2,354 | 2,879 | 3,559 | 4,219 |
|  |      | Monthly Final Average Salary | \$ 3,160                  | 3,834 | 4,961 | 5,205 | 5,542 | 5,793 |
|  |      | Number of Active Retired     | 13                        | 13    | 104   | 92    | 31    | 13    |
|  | 2018 | Average Monthly Benefit      | \$ 602                    | 1,537 | 2,541 | 3,043 | 3,708 | 5,255 |
|  |      | Monthly Final Average Salary | \$ 3,075                  | 4,251 | 5,241 | 5,706 | 5,983 | 6,971 |
|  |      | Number of Active Retired     | 14                        | 18    | 143   | 114   | 56    | 27    |
| <b>Firefighters Retirement System</b>  | 2013 | Average Monthly Benefit      | \$ 1,800                  | 2,301 | 2,248 | 3,078 | 3,706 | 4,425 |
|  |      | Monthly Final Average Salary | \$ 3,600                  | 4,602 | 5,337 | 5,893 | 5,747 | 6,012 |
|  |      | Number of Active Retired     | 1                         | 3     | 4     | 10    | 18    | 10    |
|  | 2014 | Average Monthly Benefit      | \$ 2,052                  | 2,929 | 2,844 | 3,332 | 3,801 | 6,065 |
|  |      | Monthly Final Average Salary | \$ 3,661                  | 5,227 | 5,292 | 5,560 | 6,169 | 7,451 |
|  |      | Number of Active Retired     | 1                         | 4     | 14    | 13    | 9     | 10    |
|  | 2015 | Average Monthly Benefit      | \$ 807                    | 1,697 | 2,407 | 2,635 | 5,034 | 4,238 |
|  |      | Monthly Final Average Salary | \$ 1,239                  | 4,780 | 4,870 | 5,025 | 6,771 | 5,484 |
|  |      | Number of Active Retired     | 6                         | 2     | 12    | 10    | 11    | 14    |
|  | 2016 | Average Monthly Benefit      | \$ 1,616                  | 1,814 | 400   | 3,177 | 4,260 | 5,038 |
|  |      | Monthly Final Average Salary | \$ 3,232                  | 5,054 | 800   | 6,468 | 6,294 | 7,757 |
|  |      | Number of Active Retired     | 4                         | 7     | 19    | 9     | 16    | 17    |
|  | 2017 | Average Monthly Benefit      | \$ 1,427                  | 5,958 | 2,365 | 3,447 | 3,926 | 6,650 |
|  |      | Monthly Final Average Salary | \$ 4,571                  | 6,402 | 5,801 | 6,841 | 7,186 | 7,220 |
|  |      | Number of Active Retired     | 5                         | 2     | 21    | 14    | 14    | 6     |
|  | 2018 | Average Monthly Benefit      | \$ 1,590                  | 4,064 | 2,863 | 4,009 | 3,890 | 5,815 |
|  |      | Monthly Final Average Salary | \$ 3,871                  | 5,786 | 5,662 | 7,341 | 6,982 | 7,755 |
|  |      | Number of Active Retired     | 2                         | 2     | 24    | 14    | 12    | 7     |

Continued on page 210.

## Schedules of Average Benefit Payments (Continued)

December 31

| System  |      |                              | Years of Credited Service |        |        |        |        |        |
|---|------|------------------------------|---------------------------|--------|--------|--------|--------|--------|
|   |      |                              | 4-10                      | 11-15  | 16-20  | 21-25  | 26-30  | 31+    |
| <b>Judges Retirement System</b>                       | 2013 | Average Monthly Benefit      | \$ —                      | —      | 7,204  | 8,215  | 6,647  | 11,006 |
|   |      | Monthly Final Average Salary | \$ —                      | —      | 11,151 | 11,163 | 11,688 | 11,132 |
|   |      | Number of Active Retired     | —                         | —      | 2      | 4      | 1      | 4      |
|   | 2014 | Average Monthly Benefit      | \$ —                      | —      | 9,263  | 8,850  | 9,836  | 9,180  |
|   |      | Monthly Final Average Salary | \$ —                      | —      | 11,201 | 11,149 | 11,225 | 11,180 |
|   |      | Number of Active Retired     | —                         | —      | 2      | 2      | 2      | 1      |
|   | 2015 | Average Monthly Benefit      | \$ 3,747                  | 4,162  | 7,807  | —      | 8,884  | 12,033 |
|   |      | Monthly Final Average Salary | \$ 9,556                  | 7,570  | 11,635 | —      | 11,252 | 11,690 |
|   |      | Number of Active Retired     | 2                         | 1      | 3      | —      | 1      | 2      |
|   | 2016 | Average Monthly Benefit      | \$ —                      | —      | —      | 8,736  | —      | 11,741 |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | 11,988 | —      | 11,638 |
|   |      | Number of Active Retired     | —                         | 2      | —      | 3      | —      | 2      |
|   | 2017 | Average Monthly Benefit      | \$ —                      | 7,184  | 8,109  | 8,849  | —      | 12,045 |
|   |      | Monthly Final Average Salary | \$ —                      | 13,279 | 13,374 | 12,736 | —      | 12,653 |
|   |      | Number of Active Retired     | —                         | 2      | 2      | 2      | —      | 4      |
|   | 2018 | Average Monthly Benefit      | \$ —                      | —      | 7,697  | 8,980  | —      | 12,221 |
|   |      | Monthly Final Average Salary | \$ —                      | —      | 13,233 | 13,429 | —      | 13,287 |
|   |      | Number of Active Retired     | —                         | —      | 2      | 2      | —      | 6      |
| <b>Utah Governors and Legislators Retirement Plan</b> | 2013 | Average Monthly Benefit      | \$ 216                    | 314    | 475    | 555    | —      | —      |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 13                        | 3      | 4      | 1      | —      | —      |
|   | 2014 | Average Monthly Benefit      | \$ 256                    | 342    | —      | 846    | —      | —      |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 4                         | 2      | —      | 1      | —      | —      |
|   | 2015 | Average Monthly Benefit      | \$ 223                    | 347    | 319    | —      | —      | —      |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 7                         | 4      | 1      | —      | —      | —      |
|   | 2016 | Average Monthly Benefit      | \$ 594                    | —      | —      | —      | —      | —      |
|   |      | Monthly Final Average Salary | \$ 1,634                  | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 17                        | —      | —      | —      | —      | —      |
|   | 2017 | Average Monthly Benefit      | \$ 201                    | 365    | 491    | —      | —      | 1,016  |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 7                         | 2      | 1      | —      | —      | 1      |
|   | 2018 | Average Monthly Benefit      | \$ 263                    | 311    | —      | 734    | —      | —      |
|   |      | Monthly Final Average Salary | \$ —                      | —      | —      | —      | —      | —      |
|   |      | Number of Active Retired     | 5                         | 1      | —      | 1      | —      | —      |

## Schedules of Average Benefit Payments (Concluded)

December 31

| System  |      |                              | Years of Credited Service |       |       |       |       |     |
|---|------|------------------------------|---------------------------|-------|-------|-------|-------|-----|
|   |      |                              | 4-10                      | 11-15 | 16-20 | 21-25 | 26-30 | 31+ |
| <b>Tier 2<br/>Public<br/>Employees<br/>Contributory<br/>Retirement<br/>System</b>               | 2013 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2014 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2015 | Average Monthly Benefit      | \$ 72                     | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ 1,479                  | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | 1                         | —     | —     | —     | —     | —   |
|   | 2016 | Average Monthly Benefit      | \$ 138                    | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ 2,066                  | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | 8                         | —     | —     | —     | —     | —   |
|   | 2017 | Average Monthly Benefit      | \$ 176                    | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ 2,710                  | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | 17                        | —     | —     | —     | —     | —   |
|   | 2018 | Average Monthly Benefit      | \$ 240                    | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ 2,829                  | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | 38                        | —     | —     | —     | —     | —   |
| <b>Tier 2<br/>Public Safety<br/>and Firefighter<br/>Contributory<br/>Retirement<br/>System*</b> | 2013 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2014 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2015 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2016 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2017 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |
|   | 2018 | Average Monthly Benefit      | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Monthly Final Average Salary | \$ —                      | —     | —     | —     | —     | —   |
|   |      | Number of Active Retired     | —                         | —     | —     | —     | —     | —   |

\*There are currently no retirees in the system.

## Schedules of Active Members by Age and Gender

Year Ended December 31, 2018

| System                                   | Ages     | Male   | Female | Total  |
|--|----------|--------|--------|--------|
| <b>Noncontributory Retirement System</b> | Under 20 | —      | —      | —      |
|  | 20 to 29 | 255    | 350    | 605    |
|  | 30 to 39 | 4,249  | 6,177  | 10,426 |
|  | 40 to 49 | 6,758  | 10,689 | 17,447 |
|  | 50 to 54 | 3,243  | 5,710  | 8,953  |
|  | 55 to 59 | 3,233  | 6,473  | 9,706  |
|  | 60 to 69 | 2,929  | 5,676  | 8,605  |
| 70 and Older                             | 261      | 296    | 557    |        |
| Total                                    | 20,928   | 35,371 | 56,299 |        |

|                                       |          |     |     |     |
|---------------------------------------|----------|-----|-----|-----|
| <b>Contributory Retirement System</b> | Under 20 | —   | —   | —   |
|                                       | 20 to 29 | 1   | 2   | 3   |
|                                       | 30 to 39 | 5   | 16  | 21  |
|                                       | 40 to 49 | 11  | 24  | 35  |
|                                       | 50 to 54 | 34  | 40  | 74  |
|                                       | 55 to 59 | 93  | 92  | 185 |
|                                       | 60 to 69 | 102 | 87  | 189 |
| 70 and Older                          | 7        | 5   | 12  |     |
| Total                                 | 253      | 266 | 519 |     |

|  |          |       |       |       |
|--|----------|-------|-------|-------|
| <b>Public Safety Retirement System</b> | Under 20 | —     | —     | —     |
|  | 20 to 29 | 69    | 12    | 81    |
|  | 30 to 39 | 1,714 | 198   | 1,912 |
|  | 40 to 49 | 2,024 | 260   | 2,284 |
|  | 50 to 54 | 455   | 88    | 543   |
|  | 55 to 59 | 267   | 51    | 318   |
|  | 60 to 69 | 132   | 31    | 163   |
| 70 and Older                           | 3        | 1     | 4     |       |
| Total                                  | 4,664    | 641   | 5,305 |       |

|                                       |          |     |       |     |
|---------------------------------------|----------|-----|-------|-----|
| <b>Firefighters Retirement System</b> | Under 20 | —   | —     | —   |
|                                       | 20 to 29 | 21  | —     | 21  |
|                                       | 30 to 39 | 512 | 19    | 531 |
|                                       | 40 to 49 | 673 | 17    | 690 |
|                                       | 50 to 54 | 160 | 5     | 165 |
|                                       | 55 to 59 | 86  | 1     | 87  |
|                                       | 60 to 69 | 46  | —     | 46  |
| 70 and Older                          | —        | —   | —     |     |
| Total                                 | 1,498    | 42  | 1,540 |     |

|                                 |          |    |     |    |
|---------------------------------|----------|----|-----|----|
| <b>Judges Retirement System</b> | Under 20 | —  | —   | —  |
|                                 | 20 to 29 | —  | —   | —  |
|                                 | 30 to 39 | 1  | —   | 1  |
|                                 | 40 to 49 | 24 | 14  | 38 |
|                                 | 50 to 54 | 17 | 8   | 25 |
|                                 | 55 to 59 | 15 | 7   | 22 |
|                                 | 60 to 69 | 26 | 2   | 28 |
| 70 and Older                    | 2        | —  | 2   |    |
| Total                           | 85       | 31 | 116 |    |

| System  | Ages     | Male | Female | Total |
|---|----------|------|--------|-------|
| <b>Utah Governors and Legislators Retirement Plan</b> | Under 20 | —    | —      | —     |
|   | 20 to 29 | —    | —      | —     |
|   | 30 to 39 | —    | 1      | 1     |
|   | 40 to 49 | 11   | 1      | 12    |
|   | 50 to 54 | 6    | 1      | 7     |
|   | 55 to 59 | 4    | 3      | 7     |
|   | 60 to 69 | 19   | 3      | 22    |
| 70 and Older  | 3        | —    | 3      |       |
| Total   | 43       | 9    | 52     |       |

|   |          |        |        |        |
|---|----------|--------|--------|--------|
| <b>Tier 2 Public Employees Contributory Retirement System</b> | Under 20 | 230    | 174    | 404    |
|   | 20 to 29 | 3,671  | 7,058  | 10,729 |
|   | 30 to 39 | 3,857  | 4,904  | 8,761  |
|   | 40 to 49 | 1,846  | 4,230  | 6,076  |
|   | 50 to 54 | 622    | 1,162  | 1,784  |
|   | 55 to 59 | 576    | 840    | 1,416  |
|   | 60 to 69 | 555    | 476    | 1,031  |
| 70 and Older  | 70       | 20     | 90     |        |
| Total   | 11,427   | 18,864 | 30,291 |        |

|  |          |       |       |       |
|--|----------|-------|-------|-------|
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System</b> | Under 20 | 8     | 2     | 10    |
|  | 20 to 29 | 1,700 | 215   | 1,915 |
|  | 30 to 39 | 1,013 | 122   | 1,135 |
|  | 40 to 49 | 180   | 29    | 209   |
|  | 50 to 54 | 14    | 4     | 18    |
|  | 55 to 59 | 4     | 4     | 8     |
|  | 60 to 69 | 6     | —     | 6     |
| 70 and Older   | —        | —     | —     |       |
| Total  | 2,925    | 376   | 3,301 |       |

|   |          |       |       |       |
|---|----------|-------|-------|-------|
| <b>Tier 2 DC Only Public Employees Contributory Retirement System</b> | Under 20 | 10    | 2     | 12    |
|   | 20 to 29 | 547   | 1,432 | 1,979 |
|   | 30 to 39 | 917   | 947   | 1,864 |
|   | 40 to 49 | 376   | 802   | 1,178 |
|   | 50 to 54 | 113   | 246   | 359   |
|   | 55 to 59 | 113   | 207   | 320   |
|   | 60 to 69 | 142   | 101   | 243   |
| 70 and Older  | 18       | 5     | 23    |       |
| Total   | 2,236    | 3,742 | 5,978 |       |

|  |          |     |     |     |
|--|----------|-----|-----|-----|
| <b>Tier 2 DC Only Public Safety and Firefighter Contributory Retirement System</b> | Under 20 | —   | —   | —   |
|  | 20 to 29 | 159 | 30  | 189 |
|  | 30 to 39 | 155 | 12  | 167 |
|  | 40 to 49 | 40  | 8   | 48  |
|  | 50 to 54 | 7   | 1   | 8   |
|  | 55 to 59 | 5   | 1   | 6   |
|  | 60 to 69 | 1   | —   | 1   |
| 70 and Older   | —        | —   | —   |     |
| Total  | 367      | 52  | 419 |     |

## Schedules of Retirees by Age and Gender

Year Ended December 31, 2018

| System                                   | Ages      | Male   | Female | Total  |
|--|-----------|--------|--------|--------|
| <b>Noncontributory Retirement System</b> | Under 55  | 189    | 269    | 458    |
|  | 55 to 59  | 645    | 929    | 1,574  |
|  | 60 to 64  | 1,962  | 3,665  | 5,627  |
|  | 65 to 69  | 4,705  | 9,630  | 14,335 |
|  | 70 to 74  | 4,763  | 8,977  | 13,740 |
|  | 75 to 79  | 3,481  | 5,980  | 9,461  |
|  | 80 to 84  | 2,288  | 3,902  | 6,190  |
|  | 85 to 89  | 1,291  | 2,175  | 3,466  |
|  | 90 to 94  | 439    | 904    | 1,343  |
|  | 95 to 100 | 50     | 148    | 198    |
| Over 100                                 | 1         | 11     | 12     |        |
|  | Total     | 19,814 | 36,590 | 56,404 |
| <b>Contributory Retirement System</b>    | Under 55  | 18     | 24     | 42     |
|  | 55 to 59  | 104    | 119    | 223    |
|  | 60 to 64  | 214    | 280    | 494    |
|  | 65 to 69  | 317    | 438    | 755    |
|  | 70 to 74  | 255    | 461    | 716    |
|  | 75 to 79  | 192    | 347    | 539    |
|  | 80 to 84  | 107    | 263    | 370    |
|  | 85 to 89  | 69     | 195    | 264    |
|  | 90 to 94  | 82     | 202    | 284    |
|  | 95 to 100 | 28     | 181    | 209    |
| Over 100                                 | 1         | 20     | 21     |        |
|  | Total     | 1,387  | 2,530  | 3,917  |
| <b>Public Safety Retirement System</b>   | Under 55  | 945    | 266    | 1,211  |
|  | 55 to 59  | 501    | 148    | 649    |
|  | 60 to 64  | 717    | 211    | 928    |
|  | 65 to 69  | 813    | 242    | 1,055  |
|  | 70 to 74  | 729    | 226    | 955    |
|  | 75 to 79  | 390    | 162    | 552    |
|  | 80 to 84  | 226    | 133    | 359    |
|  | 85 to 89  | 94     | 90     | 184    |
|  | 90 to 94  | 20     | 33     | 53     |
|  | 95 to 100 | 3      | 17     | 20     |
| Over 100                                 | —         | 1      | 1      |        |
|  | Total     | 4,438  | 1,529  | 5,967  |
| <b>Firefighters Retirement System</b>    | Under 55  | 147    | 48     | 195    |
|  | 55 to 59  | 109    | 26     | 135    |
|  | 60 to 64  | 196    | 43     | 239    |
|  | 65 to 69  | 265    | 53     | 318    |
|  | 70 to 74  | 190    | 38     | 228    |
|  | 75 to 79  | 132    | 38     | 170    |
|  | 80 to 84  | 57     | 33     | 90     |
|  | 85 to 89  | 28     | 23     | 51     |
|  | 90 to 94  | 14     | 13     | 27     |
|  | 95 to 100 | 1      | 9      | 10     |
| Over 100                                 | —         | 1      | 1      |        |
|  | Total     | 1,139  | 325    | 1,464  |

| System  | Ages      | Male | Female | Total |
|---|-----------|------|--------|-------|
| <b>Judges Retirement System</b>   | Under 55  | —    | 2      | 2     |
|   | 55 to 59  | 1    | 2      | 3     |
|   | 60 to 64  | 8    | 3      | 11    |
|   | 65 to 69  | 26   | 9      | 35    |
|   | 70 to 74  | 26   | 8      | 34    |
|   | 75 to 79  | 17   | 7      | 24    |
|   | 80 to 84  | 12   | 6      | 18    |
|   | 85 to 89  | 7    | 7      | 14    |
|   | 90 to 94  | 7    | 3      | 10    |
|   | 95 to 100 | —    | 4      | 4     |
| Over 100  | —         | —    | —      |       |
|   | Total     | 104  | 51     | 155   |
| <b>Utah Governors and Legislators Retirement Plan</b>                       | Under 55  | —    | 1      | 1     |
|   | 55 to 59  | 1    | —      | 1     |
|   | 60 to 64  | 1    | 5      | 6     |
|   | 65 to 69  | 35   | 12     | 47    |
|   | 70 to 74  | 30   | 17     | 47    |
|   | 75 to 79  | 22   | 18     | 40    |
|   | 80 to 84  | 26   | 11     | 37    |
|   | 85 to 89  | 19   | 19     | 38    |
|   | 90 to 94  | 6    | 16     | 22    |
|   | 95 to 100 | 3    | 6      | 9     |
| Over 100  | 1         | 1    | 2      |       |
|   | Total     | 144  | 106    | 250   |
| <b>Tier 2 Public Employees Contributory Retirement System</b>               | Under 55  | —    | —      | —     |
|   | 55 to 59  | —    | —      | —     |
|   | 60 to 64  | —    | —      | —     |
|   | 65 to 69  | 24   | 25     | 49    |
|   | 70 to 74  | 12   | 1      | 13    |
|   | 75 to 79  | 1    | 1      | 2     |
|   | 80 to 84  | —    | —      | —     |
|   | 85 to 89  | —    | —      | —     |
|   | 90 to 94  | —    | —      | —     |
|   | 95 to 100 | —    | —      | —     |
| Over 100  | —         | —    | —      |       |
|   | Total     | 37   | 27     | 64    |
| <b>Tier 2 Public Safety and Firefighter Contributory Retirement System*</b> | Under 55  | —    | —      | —     |
|   | 55 to 59  | —    | —      | —     |
|   | 60 to 64  | —    | —      | —     |
|   | 65 to 69  | —    | —      | —     |
|   | 70 to 74  | —    | —      | —     |
|   | 75 to 79  | —    | —      | —     |
|   | 80 to 84  | —    | —      | —     |
|   | 85 to 89  | —    | —      | —     |
|   | 90 to 94  | —    | —      | —     |
|   | 95 to 100 | —    | —      | —     |
| Over 100  | —         | —    | —      |       |
|   | Total     | —    | —      | —     |

\*There are no retirees in this system.

## Schedules of Principal Participating Employers

Year Ended December 31

| System/<br>Employer                                    | 2018              |      |   | 2017              |      |   | 2016              |      |  | 2015              |      |  |
|--|-------------------|------|---|-------------------|------|---|-------------------|------|--|-------------------|------|--|
|  | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members |
| <b>Noncontributory Retirement System</b>               |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah  | 9,587             | 1    | 17.03%                                  | 10,277            | 1    | 17.25%                                  | 10,898            | 1    | 17.24%                                   | 11,788            | 1    | 17.27%                                   |
| Davis School District                                  | 3,453             | 2    | 6.13                                    | 3,668             | 2    | 6.16                                    | 3,904             | 2    | 6.18                                     | 4,090             | 2    | 5.99                                     |
| Granite School District                                | 3,283             | 3    | 5.83                                    | 3,460             | 3    | 5.81                                    | 3,740             | 3    | 5.92                                     | 4,044             | 3    | 5.92                                     |
| Alpine School District                                 | 3,155             | 4    | 5.60                                    | 3,305             | 4    | 5.55                                    | 3,458             | 4    | 5.47                                     | 3,711             | 4    | 5.44                                     |
| Jordan School District                                 | 2,243             | 5    | 3.98                                    | 2,329             | 5    | 3.91                                    | 2,424             | 5    | 3.83                                     | 2,635             | 5    | 3.86                                     |
| Weber County School District                           | 1,891             | 6    | 3.36                                    | 2,006             | 6    | 3.37                                    | 2,130             | 6    | 3.37                                     | 2,286             | 6    | 3.35                                     |
| Salt Lake County                                       | 1,842             | 7    | 3.27                                    | 1,962             | 7    | 3.29                                    | 2,079             | 7    | 3.29                                     | 2,194             | 7    | 3.21                                     |
| Nebo School District                                   | 1,546             | 8    | 2.75                                    | 1,614             | 9    | 2.71                                    | 1,753             | 9    | 2.77                                     | 1,868             | 9    | 2.74                                     |
| University of Utah                                     | 1,518             | 9    | 2.70                                    | 1,620             | 8    | 2.72                                    | 1,774             | 8    | 2.81                                     | 1,864             | 10   | 2.73                                     |
| Salt Lake School District                              | 1,479             | 10   | 2.63                                    | —                 | —    | —                                       | 1,684             | 10   | 2.66                                     | —                 | —    | —  |
| Canyons School District                                | —                 | —    | —                                       | 1,588             | 10   | 2.67                                    | —                 | —    | —  | 1,880             | 8    | 2.75                                     |
| Other  | 26,302            |      | 46.72                                   | 27,749            |      | 46.58                                   | 29,370            |      | 46.46                                    | 31,913            |      | 46.74                                    |
| <b>Total Noncontributory System<br/>active members</b> | <b>56,299</b>     |      | <b>100.00%</b>                          | <b>59,578</b>     |      | <b>100.00%</b>                          | <b>63,214</b>     |      | <b>100.00%</b>                           | <b>68,273</b>     |      | <b>100.00%</b>                           |
| <b>Contributory Retirement System</b>                  |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah  | 76                | 1    | 14.64%                                  | 101               | 1    | 16.26%                                  | 117               | 1    | 15.85%                                   | 152               | 1    | 16.13%                                   |
| DDI Vantage  | 61                | 2    | 11.75                                   | 65                | 2    | 10.47                                   | 68                | 2    | 9.21                                     | 70                | 2    | 7.42                                     |
| University of Utah                                     | 31                | 3    | 5.97                                    | 36                | 4    | 5.80                                    | 44                | 3    | 5.96                                     | 60                | 3    | 6.36                                     |
| University of Utah Hospital                            | 30                | 4    | 5.78                                    | 33                | 6    | 5.31                                    | 38                | 6    | 5.15                                     | 42                | 6    | 4.45                                     |
| Granite School District                                | 28                | 5    | 5.39                                    | 34                | 5    | 5.48                                    | 39                | 5    | 5.28                                     | 53                | 4    | 5.62                                     |
| Salt Lake City Corp.                                   | 27                | 6    | 5.20                                    | 36                | 3    | 5.80                                    | 44                | 3    | 5.96                                     | 53                | 4    | 5.62                                     |
| Salt Lake County                                       | 21                | 7    | 4.05                                    | 23                | 7    | 3.70                                    | 26                | 7    | 3.52                                     | 37                | 7    | 3.92                                     |
| Davis School District                                  | 16                | 8    | 3.08                                    | 18                | 8    | 2.90                                    | 23                | 8    | 3.12                                     | 30                | 8    | 3.18                                     |
| Duchesne County  | 15                | 9    | 2.89                                    | 16                | 10   | 2.58                                    | 17                | 10   | 2.30                                     | 24                | 10   | 2.55                                     |
| Orem City  | 14                | 10   | 2.70                                    | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Salt Lake School District                              | —                 | —    | —                                       | 17                | 9    | 2.74                                    | 20                | 9    | 2.71                                     | 25                | 9    | 2.65                                     |
| South Jordan City                                      | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Uintah County  | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Other  | 200               |      | 38.54                                   | 242               |      | 38.97                                   | 302               |      | 40.92                                    | 397               |      | 42.10                                    |
| <b>Total Contributory System<br/>active members</b>    | <b>519</b>        |      | <b>100.00%</b>                          | <b>621</b>        |      | <b>100.00%</b>                          | <b>738</b>        |      | <b>100.00%</b>                           | <b>943</b>        |      | <b>100.00%</b>                           |
| <b>Public Safety Retirement System</b>                 |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah  | 1,678             | 1    | 31.63%                                  | 1,789             | 1    | 31.36%                                  | 1,881             | 1    | 31.18%                                   | 2,006             | 1    | 31.35%                                   |
| Salt Lake City Corp.                                   | 381               | 2    | 7.18                                    | 400               | 2    | 7.01                                    | 424               | 2    | 7.03                                     | 412               | 2    | 6.44                                     |
| Salt Lake County                                       | 344               | 3    | 6.48                                    | 371               | 3    | 6.50                                    | 381               | 3    | 6.32                                     | 397               | 3    | 6.205                                    |
| Unified Police Department                              | 297               | 4    | 5.60                                    | 337               | 4    | 5.91                                    | 355               | 4    | 5.89                                     | 359               | 4    | 5.61                                     |
| Utah County  | 203               | 5    | 3.83                                    | 220               | 5    | 3.86                                    | 232               | 5    | 3.85                                     | 236               | 5    | 3.69                                     |
| Weber County Corp.                                     | 160               | 6    | 3.02                                    | 185               | 6    | 3.24                                    | 194               | 6    | 3.22                                     | 211               | 6    | 3.30                                     |
| Davis County   | 111               | 7    | 2.09                                    | 135               | 7    | 2.37                                    | 145               | 7    | 2.40                                     | 163               | 7    | 2.55                                     |
| West Valley City                                       | 103               | 8    | 1.94                                    | 118               | 8    | 2.07                                    | 127               | 8    | 2.11                                     | 145               | 8    | 2.27                                     |
| Washington County                                      | 84                | 9    | 1.58                                    | 87                | 9    | 1.53                                    | 96                | 9    | 1.59                                     | 109               | 9    | 1.70                                     |
| St. George City  | 75                | 10   | 1.41                                    | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Ogden City Corp.                                       | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | 97                | 10   | 1.52                                     |
| Sandy City   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| West Jordan City                                       | —                 | —    | —                                       | 80                | 10   | 1.40                                    | 89                | 10   | 1.48                                     | —                 | —    | —  |
| Other  | 1,869             |      | 35.23                                   | 1,982             |      | 34.75                                   | 2,108             |      | 34.95                                    | 2,264             |      | 35.38                                    |
| <b>Total Public Safety System<br/>active members</b>   | <b>5,305</b>      |      | <b>100.00%</b>                          | <b>5,704</b>      |      | <b>100.00%</b>                          | <b>6,032</b>      |      | <b>100.00%</b>                           | <b>6,399</b>      |      | <b>100.00%</b>                           |



Utah Retirement Systems

| 2014           |      |                                 | 2013           |      |                                 | 2012           |      |                                 | 2011           |      |                                 | 2010           |      |                                 | 2009           |      |                                 |
|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|
| Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members |
| 12,550         | 1    | 17.47%                          | 13,510         | 1    | 17.58%                          | 14,450         | 1    | 17.57%                          | 15,273         | 1    | 17.38%                          | 16,071         | 1    | 17.39%                          | 16,435         | 1    | 17.72%                          |
| 4,338          | 2    | 6.04                            | 4,624          | 3    | 6.02                            | 4,871          | 3    | 5.92                            | 5,113          | 3    | 5.82                            | 5,330          | 4    | 5.77                            | 5,433          | 4    | 5.86                            |
| 4,337          | 3    | 6.04                            | 4,702          | 2    | 6.12                            | 5,012          | 2    | 6.09                            | 5,400          | 2    | 6.14                            | 5,781          | 2    | 6.26                            | 6,148          | 2    | 6.63                            |
| 3,938          | 4    | 5.48                            | 4,280          | 4    | 5.57                            | 4,659          | 4    | 5.66                            | 5,095          | 4    | 5.80                            | 5,551          | 3    | 6.01                            | 5,487          | 3    | 5.91                            |
| 2,747          | 5    | 3.82                            | 2,943          | 5    | 3.83                            | 3,099          | 5    | 3.77                            | 3,239          | 6    | 3.68                            | 3,366          | 6    | 3.64                            | 3,560          | 6    | 3.84                            |
| 2,360          | 6    | 3.29                            | 2,503          | 6    | 3.26                            | 2,660          | 6    | 3.23                            | 2,784          | 8    | 3.17                            | 2,861          | 8    | 3.10                            | 2,875          | 8    | 3.10                            |
| 2,352          | 7    | 3.27                            | 2,476          | 7    | 3.22                            | 2,605          | 8    | 3.17                            | 2,813          | 7    | 3.20                            | 2,869          | 7    | 3.11                            | 2,968          | 7    | 3.20                            |
| 1,941          | 10   | 2.70                            | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 2,039          | 8    | 2.84                            | 2,290          | 8    | 2.98                            | 2,646          | 7    | 3.22                            | 3,895          | 5    | 4.43                            | 4,217          | 5    | 4.56                            | 4,274          | 5    | 4.61                            |
| 1,977          | 9    | 2.75                            | 2,144          | 9    | 2.79                            | 2,343          | 9    | 2.85                            | 2,520          | 9    | 2.87                            | 2,683          | 9    | 2.90                            | 2,842          | 9    | 3.06                            |
| —              | —    | —                               | 2,076          | 10   | 2.70                            | 2,281          | 10   | 2.77                            | 2,460          | 10   | 2.80                            | 2,637          | 10   | 2.85                            | 2,572          | 10   | 2.77                            |
| 33,248         |      | 46.29                           | 35,297         |      | 45.93                           | 37,633         |      | 45.75                           | 39,309         |      | 44.72                           | 41,026         |      | 44.40                           | 40,172         |      | 43.30                           |
| 71,827         |      | 100.00%                         | 76,845         |      | 100.00%                         | 82,259         |      | 100.00%                         | 87,901         |      | 100.00%                         | 92,392         |      | 100.00%                         | 92,766         |      | 100.00%                         |
| 186            | 1    | 12.38%                          | 237            | 1    | 13.68%                          | 269            | 1    | 13.89%                          | 293            | 1    | 13.71%                          | 325            | 1    | 13.95%                          | 387            | 1    | 15.39%                          |
| 70             | 5    | 4.66                            | 76             | 6    | 4.39                            | 85             | 6    | 4.39                            | 94             | 7    | 4.40                            | 91             | 8    | 3.91                            | 82             | 8    | 3.26                            |
| 68             | 6    | 4.52                            | 75             | 7    | 4.33                            | 84             | 7    | 4.34                            | 153            | 4    | 7.16                            | 162            | 4    | 6.95                            | 178            | 4    | 7.08                            |
| 47             | 9    | 3.13                            | 50             | 9    | 2.89                            | 56             | 9    | 2.89                            | —              | —    | —                               | —              | —    | —                               | —              | —    |                                 |
| 67             | 8    | 4.46                            | 81             | 5    | 4.67                            | 91             | 5    | 4.70                            | 102            | 6    | 4.77                            | 114            | 5    | 4.89                            | 131            | 5    | 5.21                            |
| 73             | 4    | 4.86                            | 84             | 4    | 4.85                            | 93             | 4    | 4.80                            | 104            | 5    | 4.87                            | 112            | 6    | 4.81                            | 128            | 6    | 5.09                            |
| 45             | 10   | 2.99                            | 47             | 10   | 2.71                            | 52             | 10   | 2.68                            | 59             | 9    | 2.76                            | 61             | 9    | 2.62                            | 80             | 9    | 3.18                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 68             | 6    | 4.52                            | 73             | 8    | 4.21                            | 77             | 8    | 3.98                            | 82             | 8    | 3.84                            | 104            | 7    | 4.46                            | 90             | 7    | 3.58                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | 55             | 10   | 2.57                            | 58             | 10   | 2.49                            | 67             | 10   | 2.66                            |
| 153            | 2    | 10.18                           | 167            | 2    | 9.64                            | 177            | 2    | 9.14                            | 196            | 2    | 9.17                            | 203            | 2    | 8.71                            | 208            | 2    | 8.27                            |
| 136            | 3    | 9.05                            | 146            | 3    | 8.42                            | 158            | 3    | 8.16                            | 168            | 3    | 7.86                            | 187            | 3    | 8.03                            | 193            | 3    | 7.67                            |
| 590            |      | 39.25                           | 697            |      | 40.22%                          | 795            |      | 41.04                           | 831            |      | 38.89                           | 913            |      | 39.18                           | 971            |      | 38.61                           |
| 1,503          |      | 100.00%                         | 1,733          |      | 100.00%                         | 1,937          |      | 100.00%                         | 2,137          |      | 100.00%                         | 2,330          |      | 100.00%                         | 2,515          |      | 100.00%                         |
| 2,076          | 1    | 31.12%                          | 2,211          | 1    | 31.50%                          | 2,317          | 1    | 31.68%                          | 2,390          | 1    | 31.37%                          | 2,380          | 1    | 31.22%                          | 2,448          | 1    | 31.81%                          |
| 423            | 3    | 6.34                            | 432            | 3    | 6.15                            | 452            | 3    | 6.18                            | 463            | 3    | 6.08                            | 480            | 3    | 6.30                            | 480            | 3    | 6.24                            |
| 424            | 2    | 6.35                            | 459            | 2    | 6.54                            | 494            | 2    | 6.76                            | 540            | 2    | 7.09                            | 547            | 2    | 7.17                            | 828            | 2    | 10.76                           |
| 365            | 4    | 5.47                            | 378            | 4    | 5.39                            | 377            | 4    | 5.16                            | 329            | 4    | 4.32                            | 293            | 4    | 3.84                            | —              | —    | —                               |
| 239            | 5    | 3.58                            | 237            | 5    | 3.38                            | 239            | 5    | 3.27                            | 236            | 6    | 3.10                            | 233            | 6    | 3.06                            | 238            | 5    | 3.09                            |
| 221            | 6    | 3.31                            | 228            | 6    | 3.25                            | 237            | 6    | 3.24                            | 249            | 5    | 3.27                            | 246            | 5    | 3.23                            | 252            | 4    | 3.27                            |
| 179            | 7    | 2.68                            | 193            | 7    | 2.75                            | 201            | 7    | 2.75                            | 208            | 7    | 2.73                            | 209            | 7    | 2.74                            | 209            | 6    | 2.72                            |
| 169            | 8    | 2.53                            | 162            | 8    | 2.31                            | 172            | 8    | 2.35                            | 177            | 8    | 2.32                            | 177            | 8    | 2.32                            | 175            | 7    | 2.27                            |
| 113            | 9    | 1.69                            | 120            | 9    | 1.71                            | 129            | 9    | 1.76                            | 129            | 9    | 1.69                            | 126            | 9    | 1.65                            | 123            | 8    | 1.60                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 110            | 10   | 1.65                            | 116            | 10   | 1.65                            | 122            | 10   | 1.67                            | 127            | 10   | 1.67                            | 119            | 10   | 1.56                            | 117            | 9    | 1.52                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | 109            | 10   | 1.42                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 2,353          |      | 35.27                           | 2,483          |      | 35.38%                          | 2,573          |      | 35.18                           | 2,771          |      | 36.37                           | 2,814          |      | 36.91                           | 2,716          |      | 35.30                           |
| 6,672          |      | 100.00%                         | 7,019          |      | 100.00%                         | 7,313          |      | 100.00%                         | 7,619          |      | 100.00%                         | 7,624          |      | 100.00%                         | 7,695          |      | 100.00%                         |

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## Schedules of Principal Participating Employers (Continued)

Year Ended December 31

| System/<br>Employer   | 2018              |      |   | 2017              |      |   | 2016              |      |  | 2015              |      |  |
|---|-------------------|------|---|-------------------|------|---|-------------------|------|--|-------------------|------|--|
|   | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members |
| <b>Firefighters Retirement System</b>                             |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| Unified Fire Authority  | 334               | 1    | 21.69%                                  | 354               | 1    | 22.10%                                  | 380               | 1    | 22.85%                                   | 386               | 1    | 22.25%                                   |
| Salt Lake City Corp.  | 268               | 2    | 17.40                                   | 273               | 2    | 17.04                                   | 274               | 2    | 16.48                                    | 295               | 2    | 17.00                                    |
| West Valley City  | 76                | 3    | 4.94                                    | 79                | 3    | 4.93                                    | 80                | 4    | 4.81                                     | 80                | 4    | 4.61                                     |
| Ogden City Corp.  | 67                | 4    | 4.35                                    | 72                | 4    | 4.49                                    | 82                | 3    | 4.93                                     | 85                | 3    | 4.90                                     |
| Provo City  | 59                | 5    | 3.83                                    | 60                | 6    | 3.75                                    | 63                | 6    | 3.79                                     | 67                | 5    | 3.86                                     |
| West Jordan City  | 58                | 6    | 3.77                                    | 62                | 5    | 3.87                                    | 64                | 5    | 3.85                                     | 66                | 6    | 3.80                                     |
| Park City Fire Service  | 50                | 7    | 3.25                                    | 56                | 7    | 3.50                                    | 63                | 6    | 3.79                                     | 65                | 7    | 3.75                                     |
| South Davis Metro Fire Agency                                     | 47                | 8    | 3.05                                    | 48                | 9    | 3.00                                    | —                 | —    | —  | —                 | —    | —  |
| Sandy City  | 46                | 9    | 2.99                                    | 51                | 8    | 3.18                                    | 57                | 8    | 3.43                                     | 59                | 8    | 3.40                                     |
| Orem City   | 45                | 10   | 2.92                                    | —                 | —    | —                                       | 49                | 10   | 2.95                                     | 52                | 10   | 3.00                                     |
| Murray City   | —                 | —    | —                                       | 47                | 10   | 2.93                                    | —                 | —    | —  | —                 | —    | —  |
| Weber Fire District   | —                 | —    | —                                       | —                 | —    | —                                       | 51                | 9    | 3.07                                     | 53                | 9    | 3.05                                     |
| Other   | 490               |      | 31.82%                                  | 500               |      | 31.21                                   | 500               |      | 30.07                                    | 527               |      | 30.37                                    |
| Total Firefighters System<br>active members                       | 1,540             |      | 100.00%                                 | 1,602             |      | 100.00%                                 | 1,663             |      | 100.00%                                  | 1,735             |      | 100.00%                                  |
| <b>Judges Retirement System</b>                                   |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 116               | 1    | 100.00%                                 | 114               | 1    | 100.00%                                 | 115               | 1    | 100.00%                                  | 112               | 1    | 100.00%                                  |
| <b>Utah Governors and Legislators<br/>Retirement Plan</b>         |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 52                | 1    | 100.00%                                 | 52                | 1    | 100.00%                                 | 61                | 1    | 100.00%                                  | 93                | 1    | 100.00%                                  |
| <b>Tier 2 Public Employees<br/>Contributory Retirement System</b> |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 5,474             | 1    | 18.07%                                  | 4,951             | 1    | 18.23%                                  | 4,345             | 1    | 17.83%                                   | 3,642             | 1    | 16.72%                                   |
| Alpine School District  | 1,729             | 2    | 5.71                                    | 1,524             | 2    | 5.61                                    | 1,361             | 2    | 5.58                                     | 1,232             | 3    | 5.66                                     |
| Davis School District   | 1,605             | 3    | 5.30                                    | 1,426             | 3    | 5.25                                    | 1,263             | 4    | 5.18                                     | 980               | 5    | 4.50                                     |
| Granite School District   | 1,599             | 4    | 5.28                                    | 1,408             | 4    | 5.19                                    | 1,302             | 3    | 5.34                                     | 1,028             | 4    | 4.72                                     |
| Jordan School District  | 1,456             | 5    | 4.81                                    | 1,205             | 5    | 4.44                                    | 1,095             | 6    | 4.49                                     | 962               | 6    | 4.42                                     |
| Canyons School District   | 1,128             | 6    | 3.72                                    | 1,003             | 6    | 3.69                                    | 858               | 7    | 3.52                                     | 781               | 7    | 3.59                                     |
| Salt Lake County  | 992               | 7    | 3.27                                    | 870               | 8    | 3.20                                    | 786               | 8    | 3.23                                     | 655               | 8    | 3.01                                     |
| Nebo School District  | 852               | 8    | 2.81                                    | 836               | 9    | 3.08                                    | 692               | 9    | 2.84                                     | 624               | 9    | 2.87                                     |
| University of Utah  | 713               | 9    | 2.35                                    | 887               | 7    | 3.27                                    | 1,181             | 5    | 4.85                                     | 1,458             | 2    | 6.69                                     |
| Washington School District  | 684               | 10   | 2.26                                    | 635               | 10   | 2.34                                    | —                 | —    | —  | —                 | —    | —  |
| Provo School District   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Salt Lake City District   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | 479               | 10   | 2.20                                     |
| Weber County School District                                      | —                 | —    | —                                       | —                 | —    | —                                       | 494               | 10   | 2.03                                     | —                 | —    | —  |
| Other   | 14,059            |      | 46.41%                                  | 12,407            |      | 45.69                                   | 10,995            |      | 45.11                                    | 9,937             |      | 45.63                                    |
| Total Tier 2 Public Employees<br>System active members            | 30,291            |      | 100.00%                                 | 27,152            |      | 100.00%                                 | 24,372            |      | 100.00%                                  | 21,778            |      | 100.00%                                  |

Additional information will be added when it becomes available.

Utah Retirement Systems

| 2014           |      |                                 | 2013           |      |                                 | 2012           |      |                                 | 2011           |      |                                 | 2010           |      |                                 | 2009           |      |                                 |
|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|
| Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members |
| 395            | 1    | 22.10%                          | 398            | 1    | 21.57%                          | 404            | 1    | 21.44%                          | 404            | 1    | 20.91%                          | 356            | 1    | 18.87%                          | 365            | 1    | 19.14%                          |
| 302            | 2    | 16.90                           | 309            | 2    | 16.75                           | 309            | 2    | 16.40                           | 314            | 2    | 16.25                           | 312            | 2    | 16.53                           | 309            | 2    | 16.20                           |
| 87             | 4    | 4.87                            | 89             | 4    | 4.82                            | 92             | 4    | 4.88                            | 96             | 4    | 4.97                            | 100            | 4    | 5.30                            | 97             | 4    | 5.09                            |
| 90             | 3    | 5.04                            | 102            | 3    | 5.53                            | 109            | 3    | 5.79                            | 110            | 3    | 5.69                            | 111            | 3    | 5.88                            | 113            | 3    | 5.93                            |
| 70             | 5    | 3.92                            | 72             | 5    | 3.90                            | 74             | 5    | 3.93                            | 78             | 5    | 4.04                            | 64             | 9    | 3.39                            | 76             | 6    | 3.99                            |
| 66             | 7    | 3.69                            | 68             | 8    | 3.69                            | 72             | 6    | 3.82                            | 73             | 7    | 3.78                            | 73             | 6    | 3.87                            | 70             | 8    | 3.67                            |
| 68             | 6    | 3.81                            | 71             | 6    | 3.85                            | 72             | 6    | 3.82                            | 74             | 6    | 3.83                            | 77             | 5    | 4.08                            | 80             | 5    | 4.20                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 64             | 8    | 3.58                            | 69             | 7    | 3.74                            | 69             | 8    | 3.66                            | 70             | 8    | 3.62                            | 70             | 7    | 3.71                            | 72             | 7    | 3.78                            |
| 56             | 9    | 3.13                            | 62             | 9    | 3.36                            | 67             | 9    | 3.56                            | 68             | 9    | 3.52                            | 68             | 10   | 3.60                            | 69             | 9    | 3.62                            |
| 51             | 10   | 2.85                            | 55             | 10   | 2.98                            | —              | —    | —                               | 56             | 10   | 2.90                            | 60             | 10   | 3.18                            | 59             | 10   | 3.09                            |
| —              | —    | —                               | —              | —    | —                               | 56             | 10   | 2.97                            | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 538            |      | 30.11                           | 550            |      | 29.81                           | 560            |      | 29.75                           | 589            |      | 30.49                           | 596            |      | 31.58                           | 597            |      | 31.31                           |
| 1,787          |      | 100.00%                         | 1,845          |      | 100.00%                         | 1,884          |      | 100.00%                         | 1,932          |      | 100.00%                         | 1,887          |      | 100.00%                         | 1,907          |      | 100.00%                         |
| 114            | 1    | 100.00%                         | 112            | 1    | 100.00%                         | 111            | 1    | 100.00%                         | 111            | 1    | 100.00%                         | 109            | 1    | 100.00%                         | 104            | 1    | 100.00%                         |
| 105            | 1    | 100.00%                         | 99             | 1    | 100.00%                         | 113            | 1    | 100.00%                         | 115            | 1    | 100.00%                         | 125            | 1    | 100.00%                         | 119            | 1    | 100.00%                         |
| 2,772          | 1    | 16.09%                          | 2,173          | 1    | 15.84%                          | 1,523          | 1    | 14.71%                          | 600            | 1    | 12.56%                          |                |      |                                 |                |      |                                 |
| 1,090          | 3    | 6.33                            | 1,080          | 2    | 7.87                            | 1,072          | 2    | 10.35                           | 574            | 2    | 12.02                           |                |      |                                 |                |      |                                 |
| 778            | 5    | 4.52                            | 591            | 7    | 4.31                            | 463            | 5    | 4.47                            | 235            | 6    | 4.92                            |                |      |                                 |                |      |                                 |
| 829            | 4    | 4.81                            | 664            | 4    | 4.84                            | 638            | 4    | 6.16                            | 336            | 3    | 7.03                            |                |      |                                 |                |      |                                 |
| 755            | 6    | 4.38                            | 661            | 5    | 4.82                            | 417            | 6    | 4.03                            | 238            | 5    | 4.98                            |                |      |                                 |                |      |                                 |
| 614            | 7    | 3.56                            | 593            | 6    | 4.32                            | 387            | 7    | 3.74                            | 177            | 8    | 3.71                            |                |      |                                 |                |      |                                 |
| 484            | 9    | 2.81                            | 378            | 9    | 2.76                            | —              | —    | —                               | —              | —    | —                               |                |      |                                 |                |      |                                 |
| 549            | 8    | 3.19                            | 403            | 8    | 2.94                            | 327            | 8    | 3.16                            | 165            | 9    | 3.45                            |                |      |                                 |                |      |                                 |
| 1,223          | 2    | 7.10                            | 944            | 3    | 6.88                            | 738            | 3    | 7.13                            | 323            | 4    | 6.76                            |                |      |                                 |                |      |                                 |
| 360            | 10   | 2.09                            | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |                |      |                                 |                |      |                                 |
| —              | —    | —                               | —              | —    | —                               | 310            | 9    | 2.99                            | 186            | 7    | 3.89                            |                |      |                                 |                |      |                                 |
| —              | —    | —                               | 363            | 10   | 2.65                            | 302            | 10   | 2.92                            | 165            | 10   | 3.45                            |                |      |                                 |                |      |                                 |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |                |      |                                 |                |      |                                 |
| 7,771          |      | 45.11                           | 5,868          |      | 42.78                           | 4,179          |      | 40.34                           | 1,778          |      | 37.22                           |                |      |                                 |                |      |                                 |
| 17,225         |      | 100.00%                         | 13,718         |      | 100.00%                         | 10,356         |      | 100.00%                         | 4,777          |      | 100.00%                         |                |      |                                 |                |      |                                 |

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## Schedules of Principal Participating Employers (Concluded)

Year Ended December 31

| System/<br>Employer   | 2018              |      |   | 2017              |      |   | 2016              |      |  | 2015              |      |  |
|---|-------------------|------|---|-------------------|------|---|-------------------|------|--|-------------------|------|--|
|   | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Member | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members | Active<br>Members | Rank | Percent<br>of Total<br>Active<br>Members |
| <b>Tier 2 Public Safety and Firefighter<br/>Contributory Retirement System</b>      |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 821               | 1    | 24.87%                                  | 705               | 1    | 26.12%                                  | 626               | 1    | 27.95%                                   | 523               | 1    | 28.67%                                   |
| Salt Lake County  | 218               | 2    | 6.60                                    | 203               | 2    | 7.52                                    | 176               | 2    | 7.86                                     | 132               | 2    | 7.24                                     |
| Salt Lake City Corp.  | 161               | 3    | 4.88                                    | 116               | 3    | 4.30                                    | 95                | 3    | 4.24                                     | 58                | 3    | 3.18                                     |
| West Valley City  | 125               | 4    | 3.79                                    | 88                | 4    | 3.26                                    | 68                | 4    | 3.04                                     | 32                | 7    | 1.75                                     |
| Ogden City Corp.  | 92                | 5    | 2.79                                    | 76                | 5    | 2.82                                    | 54                | 5    | 2.41                                     | 29                | 9    | 1.59                                     |
| Davis County  | 79                | 6    | 2.39                                    | 51                | 8    | 1.89                                    | 48                | 7    | 2.14                                     | 43                | 5    | 2.36                                     |
| Unified Fire Authority  | 77                | 7    | 2.33                                    | 49                | 9    | 1.82                                    | 53                | 6    | 2.37                                     | 44                | 4    | 2.41                                     |
| Weber County Corp.  | 64                | 8    | 1.94                                    | 56                | 7    | 2.07                                    | 41                | 9    | 1.83                                     | 39                | 6    | 2.14                                     |
| West Jordan City  | 63                | 9    | 1.91                                    | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Sandy City  | 61                | 10   | 1.85                                    | 58                | 6    | 2.15                                    | 46                | 8    | 2.05                                     | —                 | —    | —  |
| Cache County  | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | 31                | 8    | 1.70                                     |
| Duchesne County   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Grand County  | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Iron County   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Layton City   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Murray City   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Park City Fire Service  | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| South Jordan City   | —                 | —    | —                                       | 46                | 10   | 1.70                                    | 35                | 10   | 1.56                                     | —                 | —    | —  |
| St. George City   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Unified Police Department   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | 29                | 9    | 1.59                                     |
| Utah County   | —                 | —    | —                                       | —                 | —    | —                                       | —                 | —    | —  | —                 | —    | —  |
| Other   | 1,540             |      | 46.65                                   | 1,251             |      | 46.35                                   | 998               |      | 44.55                                    | 864               |      | 47.37                                    |
| <b>Total Tier 2 Public Safety and<br/>Firefighter System active members</b>         | <b>3,301</b>      |      | <b>100.00%</b>                          | <b>2,699</b>      |      | <b>100.00%</b>                          | <b>2,240</b>      |      | <b>100.00%</b>                           | <b>1,824</b>      |      | <b>100.00%</b>                           |
| <b>Tier 2 DC Only Public Employees System</b>                                       |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 1,390             | 1    | 23.25%                                  |                   |      |   |                   |      |  |                   |      |  |
| Jordan School District  | 302               | 2    | 5.05                                    |                   |      |   |                   |      |  |                   |      |  |
| Alpine School District  | 278               | 3    | 4.65                                    |                   |      |   |                   |      |  |                   |      |  |
| Granite School District   | 272               | 4    | 4.55                                    |                   |      |   |                   |      |  |                   |      |  |
| Canyons School District   | 248               | 5    | 4.15                                    |                   |      |   |                   |      |  |                   |      |  |
| Davis School District   | 245               | 6    | 4.10                                    |                   |      |   |                   |      |  |                   |      |  |
| Salt Lake County  | 231               | 7    | 3.86                                    |                   |      |   |                   |      |  |                   |      |  |
| University of Utah  | 188               | 8    | 3.14                                    |                   |      |   |                   |      |  |                   |      |  |
| Salt Lake City Corp.  | 164               | 9    | 2.74                                    |                   |      |   |                   |      |  |                   |      |  |
| Salt Lake School District   | 140               | 10   | 2.34                                    |                   |      |   |                   |      |  |                   |      |  |
| Other   | 2,520             |      | 42.15                                   |                   |      |   |                   |      |  |                   |      |  |
| <b>Total Tier 2 DC only Public<br/>Employees System active members</b>              | <b>5,978</b>      |      | <b>100.00%</b>                          |                   |      |   |                   |      |  |                   |      |  |
| <b>Tier 2 DC Only Public Safety<br/>and Firefighter System</b>                      |                   |      |   |                   |      |   |                   |      |  |                   |      |  |
| State of Utah   | 112               | 1    | 26.73%                                  |                   |      |   |                   |      |  |                   |      |  |
| Salt Lake City Corp.  | 36                | 2    | 8.59                                    |                   |      |   |                   |      |  |                   |      |  |
| Salt Lake County  | 26                | 3    | 6.21                                    |                   |      |   |                   |      |  |                   |      |  |
| Ogden City Corp.  | 19                | 4    | 4.53                                    |                   |      |   |                   |      |  |                   |      |  |
| West Valley City  | 17                | 5    | 4.06                                    |                   |      |   |                   |      |  |                   |      |  |
| Unified Fire Authority  | 11                | 6    | 2.63                                    |                   |      |   |                   |      |  |                   |      |  |
| Logan City  | 11                | 7    | 2.63                                    |                   |      |   |                   |      |  |                   |      |  |
| Cache County  | 10                | 8    | 2.39                                    |                   |      |   |                   |      |  |                   |      |  |
| Unified Police Department   | 10                | 9    | 2.39                                    |                   |      |   |                   |      |  |                   |      |  |
| Provo City Corp.  | 10                | 10   | 2.39                                    |                   |      |   |                   |      |  |                   |      |  |
| Other   | 157               |      | 37.47                                   |                   |      |   |                   |      |  |                   |      |  |
| <b>Total Tier 2 DC only Public Safety<br/>and Firefighter System active members</b> | <b>419</b>        |      | <b>100.00%</b>                          |                   |      |   |                   |      |  |                   |      |  |

Additional information will be added when it becomes available.

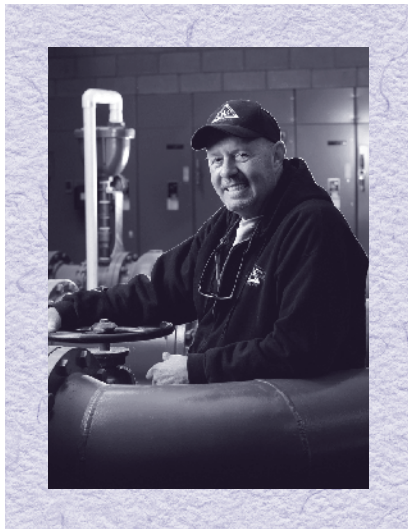
Utah Retirement Systems

| 2014           |      |                                 | 2013           |      |                                 | 2012           |      |                                 | 2011           |      |                                 |
|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|----------------|------|---------------------------------|
| Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members | Active Members | Rank | Percent of Total Active Members |
| 371            | 1    | 27.87%                          | 274            | 1    | 30.96%                          | 144            | 1    | 30.19%                          | 3              | 9    | 3.03%                           |
| 122            | 2    | 9.17                            | 93             | 2    | 10.51                           | 46             | 2    | 9.64                            | 17             | 1    | 17.17                           |
| 51             | 3    | 3.83                            | 38             | 3    | 4.29                            | 34             | 3    | 7.13                            | 6              | 3    | 6.06                            |
| 22             | 7    | 1.65                            | —              | —    | —                               | —              | —    | —                               | 4              | 8    | 4.04                            |
| 21             | 9    | 1.58                            | 11             | 9    | 1.24                            | —              | —    | —                               | 4              | 7    | 4.04                            |
| 31             | 5    | 2.33                            | 22             | 4    | 2.49                            | 12             | 4    | 2.52                            | 4              | 5    | 4.04                            |
| 40             | 4    | 3.01                            | 13             | 7    | 1.47                            | —              | —    | —                               | —              | —    | —                               |
| 22             | 7    | 1.65                            | 15             | 6    | 1.69                            | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| 26             | 6    | 1.95                            | 22             | 4    | 2.49                            | 8              | 6    | 1.68                            | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | 8              | 6    | 1.68                            | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | 3              | 10   | 3.03                            |
| —              | —    | —                               | 11             | 9    | 1.24                            | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | 6              | 9    | 1.26                            | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | 9              | 5    | 1.89                            | —              | —    | —                               |
| —              | —    | —                               | 12             | 8    | 1.36                            | —              | —    | —                               | 8              | 2    | 8.08                            |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | —              | —    | —                               | 4              | 6    | 4.04                            |
| 20             | 10   | 1.50                            | —              | —    | —                               | —              | —    | —                               | —              | —    | —                               |
| —              | —    | —                               | —              | —    | —                               | 7              | 8    | 1.47                            | 5              | 4    | 5.05                            |
| 605            |      | 45.45                           | 374            |      | 42.26                           | 197            |      | 41.28                           | 41             |      | 41.41                           |
| 1,331          |      | 100.00%                         | 885            |      | 100.00%                         | 477            |      | 100.00%                         | 99             |      | 100.00%                         |

## Schedule of Utah Retirement Office Employees

Year Ended December 31

| Year                | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---------------------|------|------|------|------|------|------|------|------|------|------|
| Number of employees | 172  | 171  | 176  | 169  | 162  | 168  | 163  | 161  | 161  | 165  |



## Schedules of Participating Employers

**N** / Public Employees Retirement System — Noncontributory • **C** / Public Employees Retirement System — Contributory  
**PS** / Public Safety Retirement System • **F** / Firefighters Retirement System • **T** / Tier 2 Retirement Systems  
**D** / 457 Plan • **K** / 401(k) Plan

| Employer   | N | C | PS | F | T | D | K | Employer   | N | C | PS | F | T | D | K |
|--|---|---|----|---|---|---|---|--|---|---|----|---|---|---|---|
| <b>School Districts and Education Employers</b>                      |   |   |    |   |   |   |   | North Summit School District .....   | N | C |    |   | T | D | K |
| Academy for Math, Engineering and Science Charter School (AMES)..... | N |   |    |   | T | D | K | Northern Utah Academy of Math, Engineering and Science Charter School (NUAMES) ..... | N |   |    |   | T | D | K |
| Active Re-Entry Incorporated.....                                    | N |   |    |   | T |   | K | Ogden School District.....   | N | C |    |   | T | D | K |
| Alpine School District .....   | N | C |    |   | T | D | K | Ogden-Weber Applied Technical Center .....   | N | C |    |   | T | D | K |
| Alpine Uniserv .....   | N |   |    |   | T | D | K | Ogden Weber/NEA/UEA Uniserv .....  | N |   |    |   | T | D | K |
| American Leadership Academy .....                                    | N |   |    |   | T |   | K | Park City School District.....   | N | C |    |   | T | D | K |
| Beaver School District.....  | N |   |    |   | T | D | K | Piute School District .....  | N | C |    |   | T |   | K |
| Bonneville Uniserv .....   | N |   |    |   | T | D | K | Provo School District.....   | N | C |    |   | T | D | K |
| Box Elder School District.....                                       | N | C |    |   | T | D | K | Recreation and Habilitation Services .....   | N |   |    |   | T |   | K |
| Bridgerland Applied Technology Center.....                           | N |   |    |   | T | D | K | Rich School District.....  | N | C |    |   | T | D | K |
| Cache School District .....  | N | C |    |   | T | D | K | Salt Lake Arts Academy.....  | N |   |    |   | T | D | K |
| Canyons School District .....  | N |   |    |   | T | D | K | Salt Lake Community College.....   | N | C |    |   | T | D | K |
| Carbon School District.....  | N | C |    |   | T | D | K | Salt Lake School District.....   | N | C |    |   | T | D | K |
| Color Country Uniserv .....  | N |   |    |   | T | D | K | San Juan School District.....  | N | C |    |   | T | D | K |
| Daggett School District.....   | N | C |    |   | T | D | K | Sevier School District .....   | N | C |    |   | T | D | K |
| Davis Applied Technology College.....                                | N |   |    |   | T | D | K | Snow College.....  | N | C |    |   | T | D | K |
| Davis School District.....   | N | C |    |   | T | D | K | Soldier Hollow Charter School.....   | N |   |    |   | T |   | K |
| Davis Uniserv .....  | N |   |    |   | T | D | K | South Sanpete School District.....   | N | C |    |   | T | D | K |
| Dixie Applied Technology College .....                               | N |   |    |   | T |   | K | South Summit School District.....  | N |   |    |   | T | D | K |
| Dixie State University.....  | N | C | PS |   | T | D | K | Southern Utah University .....   | N | C | PS |   | T | D | K |
| Duchesne School District .....                                       | N | C |    |   | T | D | K | Southwest Applied Technology Center .....  | N |   |    |   | T |   | K |
| East Hollywood High School.....                                      | N |   |    |   | T | D | K | Southwest Educational Development Center ...   | N |   |    |   | T |   | K |
| Educators Mutual Insurance.....                                      | N | C |    |   | T | D | K | Space Dynamics Lab/USU .....   | N |   |    |   | T | D | K |
| Emery School District.....   | N | C |    |   | T | D | K | Success Academy .....  | N |   |    |   | T |   | K |
| Fast Forward Charter High School .....                               | N |   |    |   | T |   | K | Summit Academy Charter School .....  | N |   |    |   | T | D | K |
| Garfield School District.....  | N | C |    |   | T |   | K | Summit Academy High School .....   | N |   |    |   | T |   | K |
| Grand School District .....  | N | C |    |   | T | D | K | Tintic School District .....   | N | C |    |   | T | D | K |
| Granite School District.....   | N | C |    |   | T | D | K | Tooele Applied Technology College.....   | N |   |    |   | T |   | K |
| Granite Uniserv.....   | N |   |    |   | T | D | K | Tooele School District.....  | N | C |    |   | T | D | K |
| High Desert Uniserv.....   | N |   |    |   | T | D | K | Tuacahn High School.....   | N |   |    |   | T |   | K |
| High School Activity Association.....                                | N | C |    |   | T |   | K | Uintah Basin Applied Technology Center .....   | N | C |    |   | T | D | K |
| Intech Collegiate High School .....                                  | N |   |    |   | T |   | K | Uintah School District.....  | N | C |    |   | T | D | K |
| Iron School District .....   | N | C |    |   | T | D | K | University of Utah.....  | N | C | PS |   | T |   | K |
| Itineris High School.....  | N |   |    |   | T |   | K | University of Utah Hospital.....   | N | C |    |   |   |   | K |
| Jordan School District.....  | N | C |    |   | T | D | K | Utah County Academy of Sciences.....   | N |   |    |   | T |   | K |
| Jordan Uniserv.....  | N |   |    |   | T | D | K | Utah Education Association .....   | N | C |    |   | T | D | K |
| Juab School District.....  | N | C |    |   | T | D | K | Utah School Boards Association .....   | N |   |    |   | T |   | K |
| Kane School District .....   | N | C |    |   | T | D | K | Utah School Boards Risk Man Mut Ins Assn .....                                       | N |   |    |   | T | D | K |
| Liberty Academy Charter School.....                                  | N |   |    |   | T |   | K | Utah School Employee Association .....   | N |   |    |   | T | D | K |
| Logan School District.....   | N | C |    |   | T | D | K | Utah State University .....  | N | C | PS |   | T | D | K |
| Master Academy, Inc.....   | N |   |    |   | T |   | K | Utah Uniserv.....  | N | C |    |   | T | D | K |
| Millard School District.....   | N | C |    |   | T | D | K | Utah Valley University.....  | N | C |    |   | T | D | K |
| Monticello Academy .....   | N |   |    |   | T | D | K | Wasatch School District .....  | N | C |    |   | T | D | K |
| Morgan School District.....  | N |   |    |   | T | D | K | Wasatch Uniserv .....  | N |   |    |   | T | D | K |
| Mountainland Applied Technology Center .....                         | N |   |    |   | T | D | K | Washington School District.....  | N | C |    |   | T | D | K |
| Murray School District .....   | N | C |    |   | T | D | K | Wayne School District.....   | N |   |    |   | T | D | K |
| Nebo School District.....  | N | C |    |   | T | D | K | Weber County School District.....  | N | C |    |   | T | D | K |
| Noah Webster Academy, Inc.....                                       | N |   |    |   | T | D | K | Weber State University.....  | N | C |    |   | T | D | K |
| North Sanpete School District .....                                  | N | C |    |   | T | D | K | Woodland Peaks Uniserv.....  | N |   |    |   | T |   | K |

Schedules of Participating Employers (Continued)

| Employer  | N | C | PS | F | T | D | K |
|---|---|---|----|---|---|---|---|
| <b>State and Other Employers</b>  |   |   |    |   |   |   |   |
| Heber Valley Historic Railroad .....  | N |   |    |   | T |   | K |
| State of Utah (also participates in the<br>Judges Retirement System and the Utah<br>Governors and Legislators Retirement Plan). | N | C | PS | F | T | D | K |
| Utah Communications Authority .....   | N |   |    |   | T | D | K |
| Utah Dairy Council .....  | N |   |    |   | T |   | K |
| Utah Housing Corporation .....  | N | C |    |   | T | D | K |
| Utah Retirement Systems.....  | N |   |    |   | T | D | K |
| Utah Safety Council .....   | N |   |    |   | T |   | K |
| Utah State Fair Corporation.....  | N |   |    |   | T |   | K |
| Workers Compensation Fund.....  | N | C |    |   | T | D | K |
| <b>Counties and County Organizations</b>  |   |   |    |   |   |   |   |
| Beaver County .....   | N |   | PS |   | T | D | K |
| Box Elder County.....   | N | C | PS |   | T | D | K |
| Cache County .....  | N | C | PS | F | T | D | K |
| Carbon County .....   | N | C | PS |   | T | D | K |
| Daggett County .....  | N |   | PS |   | T |   | K |
| Davis County.....   | N |   | PS |   | T | D | K |
| Duchesne County.....  | N | C | PS |   | T | D | K |
| Emery County .....  | N | C | PS |   | T | D | K |
| Garfield County.....  | N | C | PS |   | T | D | K |
| Grand County .....  | N | C | PS |   | T | D | K |
| Iron County.....  | N | C | PS |   | T | D | K |
| Juab County .....   | N | C | PS |   | T |   | K |
| Juab Special Service District.....  | N |   |    |   | T | D | K |
| Kane County.....  | N |   | PS |   | T | D | K |
| Millard County.....   | N | C | PS |   | T | D | K |
| Morgan County.....  | N |   | PS |   | T | D | K |
| Piute County .....  | N |   | PS |   | T |   | K |
| Rich County.....  |   | C | PS |   | T |   | K |
| Salt Lake County .....  | N | C | PS | F | T | D | K |
| San Juan County.....  | N | C | PS |   | T | D | K |
| Sanpete County.....   | N | C | PS |   | T |   | K |
| Sevier County.....  | N | C | PS |   | T | D | K |
| Summit County.....  | N | C | PS |   | T |   | K |
| Tooele County .....   | N | C | PS | F | T | D | K |
| Uintah County .....   | N | C | PS |   | T | D | K |
| Unified Fire Authority .....  | N |   | PS | F | T | D | K |
| Utah County .....   | N | C | PS |   | T | D | K |
| Wasatch County.....   | N |   | PS |   | T | D | K |
| Wasatch Co. Fire District .....   | N |   |    | F | T |   | K |
| Washington County .....   | N |   | PS |   | T | D | K |
| Wayne County .....  | N |   | PS |   | T |   | K |
| Weber County.....   | N | C | PS |   | T | D | K |
| Weber Fire District .....   | N | C |    | F | T | D | K |
| <b>Cities and Towns</b>   |   |   |    |   |   |   |   |
| Alpine City.....  | N |   |    |   | T | D | K |
| Alta Town .....   | N |   |    |   | T |   | K |
| American Fork City.....   | N |   | PS | F | T |   | K |
| Annabella Town.....   | N |   |    |   | T |   | K |
| Apple Valley Town .....   | N |   |    |   | T |   | K |
| Aurora City.....  | N |   |    |   | T |   | K |

| Employer                       | N | C | PS | F | T | D | K |
|--------------------------------|---|---|----|---|---|---|---|
| Ballard City.....              | N |   |    |   | T | D | K |
| Beaver City.....               | N |   |    |   | T | D | K |
| Bicknell Town.....             | N |   |    |   | T |   |   |
| Big Water Municipal Corp ..... | N |   | PS |   | T |   | K |
| Blanding City.....             | N |   | PS |   | T |   | K |
| Bluffdale City.....            | N | C | PS |   | T | D | K |
| Bountiful City.....            | N | C | PS | F | T | D | K |
| Brian Head Town .....          | N | C | PS |   | T | D | K |
| Brigham City.....              | N | C | PS | F | T | D | K |
| Castle Dale City.....          | N |   |    |   | T |   | K |
| Cedar City.....                | N |   | PS | F | T | D | K |
| Cedar Hills City .....         | N |   |    |   | T | D | K |
| Centerfield City .....         | N |   | PS |   | T | D | K |
| Centerville City .....         | N | C | PS |   | T | D | K |
| Clearfield City.....           | N |   | PS | F | T | D | K |
| Cleveland Town .....           | N |   |    |   | T |   | K |
| Clinton City.....              | N | C | PS | F | T | D | K |
| Coalville City.....            | N |   |    |   | T |   | K |
| Corinne City.....              |   | C |    |   | T |   |   |
| Cottonwood Heights City.....   | N |   | PS |   | T | D | K |
| Daniel Town .....              | N |   |    |   | T |   | K |
| Delta City.....                | N | C |    |   | T |   | K |
| Draper City.....               | N |   |    |   | T | D | K |
| Duchesne City.....             | N |   |    |   | T |   | K |
| Eagle Mountain City .....      | N |   |    | F | T | D | K |
| East Carbon City.....          | N |   | PS |   | T | D | K |
| Elk Ridge Town.....            | N |   |    |   | T |   | K |
| Emery Town.....                |   | C |    |   | T |   | K |
| Enoch City.....                | N |   | PS |   | T |   | K |
| Enterprise City .....          | N |   |    |   | T |   | K |
| Ephraim City.....              | N |   | PS |   | T | D | K |
| Escalante Town .....           | N |   | PS |   | T | D | K |
| Eureka City.....               | N |   |    |   | T | D | K |
| Fairview City.....             | N |   | PS |   | T | D | K |
| Farmington City.....           | N |   | PS | F | T | D | K |
| Farr West City.....            | N |   |    |   | T | D | K |
| Ferron City .....              | N |   |    |   | T |   | K |
| Fillmore City .....            | N |   |    |   | T | D | K |
| Fountain Green City .....      | N |   | PS |   | T |   |   |
| Francis Town .....             | N |   |    |   | T |   | K |
| Fruit Heights City.....        | N |   |    |   | T | D | K |
| Garden City.....               | N |   |    |   | T |   | K |
| Garland City.....              |   | C | PS |   | T | D | K |
| Genola Town.....               | N |   |    |   | T |   | K |
| Goshen Town.....               | N |   |    |   | T |   | K |
| Grantsville City .....         | N |   | PS |   | T | D | K |
| Green River City .....         | N |   |    |   | T |   | K |
| Gunnison City.....             | N |   | PS |   | T | D | K |
| Harrisville City.....          | N | C | PS |   | T | D | K |
| Heber City .....               | N |   | PS |   | T | D | K |
| Helper City .....              | N |   | PS |   | T |   | K |
| Herriman City.....             | N |   | PS |   | T | D | K |
| Highland City .....            | N |   |    |   | T | D | K |
| Hinckley Town .....            | N |   |    |   | T |   | K |
| Holden Town .....              | N |   |    |   | T |   |   |
| Holladay City.....             | N |   |    |   | T | D | K |



Schedules of Participating Employers (Continued)

| Employer                  | N | C | PS | F | T | D | K |
|---------------------------|---|---|----|---|---|---|---|
| Hooper City               | N |   |    |   | T |   | K |
| Huntington City           | N |   |    |   | T | D | K |
| Hurricane City            | N |   | PS | F | T | D | K |
| Hyde Park City            | N |   |    |   | T |   | K |
| Hyrum City                | N |   |    |   | T | D | K |
| Ivins City                | N |   | PS | F | T | D | K |
| Kamas City                | N |   | PS |   | T | D | K |
| Kanab City                | N |   | PS | F | T | D | K |
| Kaysville City            | N | C | PS |   | T |   | K |
| LaVerkin City             |   | C | PS |   | T |   | K |
| Layton City               | N | C | PS | F | T | D | K |
| Lehi City                 | N | C | PS | F | T | D | K |
| Levan Town                | N |   |    |   | T |   |   |
| Lewiston City             | N |   |    |   | T |   | K |
| Lindon City               | N |   | PS |   | T | D | K |
| Logan City                | N | C | PS | F | T | D | K |
| Manila Town               | N | C |    |   | T |   | K |
| Manti City                | N |   |    |   | T |   | K |
| Mantua City               | N |   | PS |   | T |   | K |
| Mapleton City             | N |   | PS |   | T | D | K |
| Marriott/Slaterville City | N |   |    |   | T |   | K |
| Mayfield Town             | N |   |    |   | T |   | K |
| Meadow Town               | N |   |    |   | T |   | K |
| Mendon City               | N |   |    |   | T |   | K |
| Midvale City              | N | C | PS | F | T | D | K |
| Midway City               | N | C |    |   | T | D | K |
| Milford City              | N |   | PS |   | T |   | K |
| Millcreek City            | N |   |    |   | T | D | K |
| Millville City            | N |   |    |   | T | D | K |
| Minersville Town          | N |   |    |   | T |   | K |
| Moab City                 | N | C | PS |   | T | D | K |
| Monroe City               | N |   |    |   | T |   | K |
| Monticello City           | N |   | PS |   | T | D | K |
| Morgan City               | N |   |    |   | T |   | K |
| Moroni City               | N |   | PS |   | T |   | K |
| Mt Pleasant City          | N | C | PS |   | T |   | K |
| Murray City               | N | C | PS | F | T | D | K |
| Myton City                | N |   |    |   | T |   | K |
| Naples City               | N | C | PS |   | T | D | K |
| Nephi City                | N |   | PS |   | T | D | K |
| Nibley City               | N |   |    |   | T | D | K |
| North Logan City          | N | C | PS | F | T | D | K |
| North Ogden City          | N | C | PS | F | T |   | K |
| North Salt Lake City      | N |   | PS |   | T | D | K |
| Oakley City               |   | C |    |   | T | D | K |
| Ogden City                | N | C | PS | F | T | D | K |
| Orangeville City          | N |   |    |   | T |   | K |
| Orderville Town           | N |   |    |   | T |   | K |
| Orem City                 | N | C | PS | F | T | D | K |
| Panguitch City            | N |   |    |   | T | D | K |
| Paragonah Town            |   | C |    |   | T |   |   |
| Park City                 | N | C | PS |   | T |   | K |
| Parowan City              | N | C | PS |   | T | D | K |
| Payson City               | N |   | PS | F | T | D | K |
| Perry City                | N |   | PS |   | T | D | K |

| Employer                | N | C | PS | F | T | D | K |
|-------------------------|---|---|----|---|---|---|---|
| Plain City              | N |   |    |   | T | D | K |
| Pleasant Grove City     | N |   | PS | F | T |   | K |
| Pleasant View City      | N | C | PS |   | T | D | K |
| Price City              | N | C | PS | F | T | D | K |
| Providence City         | N |   |    |   | T | D | K |
| Provo City              | N | C | PS | F | T | D | K |
| Randolph Town           | N |   |    |   | T |   |   |
| Redmond Town            | N |   |    |   | T |   |   |
| Richfield City          | N | C | PS |   | T | D | K |
| Richmond City           | N |   |    |   | T |   | K |
| Riverdale City          | N | C | PS | F | T | D | K |
| Riverton City           | N | C |    | F | T | D | K |
| Roosevelt City          | N |   | PS | F | T | D | K |
| Roy City                | N | C | PS | F | T | D | K |
| Salem City              | N |   | PS |   | T | D | K |
| Salina City             | N |   | PS |   | T | D | K |
| Salt Lake City          | N | C | PS | F | T | D | K |
| Sandy City              | N | C | PS | F | T | D | K |
| Santa Clara City        | N |   | PS | F | T | D | K |
| Santaquin City          | N |   | PS |   | T | D | K |
| Saratoga Springs Town   | N |   | PS | F | T | D | K |
| Smithfield City         | N |   | PS | F | T |   | K |
| South Jordan City       | N | C | PS | F | T | D | K |
| South Ogden City        | N |   | PS | F | T | D | K |
| South Salt Lake City    | N |   | PS | F | T | D | K |
| South Weber City        | N |   |    |   | T |   | K |
| Spanish Fork City       | N |   | PS |   | T |   | K |
| Spring City             | N | C | PS |   | T |   | K |
| Springdale Town         | N |   | PS |   | T | D | K |
| Springville City        | N | C | PS | F | T |   | K |
| St. George City         | N | C | PS |   | T | D | K |
| Stockton Town           | N |   |    |   | T |   | K |
| Sunset City             | N | C | PS |   | T | D | K |
| Syracuse City           | N |   | PS | F | T | D | K |
| Taylorsville City       | N |   | PS |   | T | D | K |
| Tooele City             | N | C | PS |   | T | D | K |
| Toquerville City        | N |   |    |   | T | D | K |
| Torrey Town             | N |   |    |   | T |   | K |
| Tremonton City          | N | C | PS |   | T | D | K |
| Uintah City             | N |   |    |   | T |   | K |
| Vernal City             | N | C | PS |   | T | D | K |
| Vineyard Town           | N |   |    |   | T |   | K |
| Washington City         | N |   |    | F | T | D | K |
| Washington Terrace City | N |   | PS | F | T | D | K |
| Wellington City         | N |   | PS |   | T |   | K |
| Wellsville City         | N |   |    |   | T |   | K |
| Wendover City           | N |   | PS |   | T | D | K |
| West Bountiful City     | N | C | PS |   | T | D | K |
| West Haven City         | N |   |    |   | T | D | K |
| West Jordan City        | N | C | PS | F | T | D | K |
| West Point City         | N |   |    |   | T | D | K |
| West Valley City        | N | C | PS | F | T | D | K |
| Willard City            | N |   | PS |   | T | D | K |
| Woods Cross City        | N | C | PS |   | T | D | K |

Schedules of Participating Employers (Continued)

| Employer   | N | C | PS | F | T | D | K |
|--|---|---|----|---|---|---|---|
| <b>Other Government Entities</b>   |   |   |    |   |   |   |   |
| Ash Creek Special Service District .....                                     | N |   |    |   | T | D | K |
| Ashley Valley Sewer Management Board.....                                    | N |   |    |   | T | D | K |
| Ashley Valley Improvement District .....                                     | N |   |    |   | T |   | K |
| Bear Lake Special Service District .....                                     | N |   |    |   | T |   | K |
| Bear River Association of Governments.....                                   | N |   |    |   | T | D | K |
| Bear River Health Department.....  | N | C |    |   | T | D | K |
| Bear River Mental Health .....   | N |   |    |   | T | D | K |
| Bear River Water District .....  | N |   |    |   | T |   | K |
| Beaver Housing Authority.....  | N |   |    |   | T |   | K |
| Beaver Valley Hospital .....   | N |   |    |   | T | D | K |
| Benchland Water Company.....   | N |   |    |   | T |   | K |
| Big Plains Water and Sewer<br>Special Service District.....                  | N |   |    |   | T | D | K |
| Bona Vista Water Improvement.....  | N |   |    |   | T | D | K |
| Bountiful Irrigation District.....   | N |   |    |   | T | D | K |
| Box Elder County Mosquito District .....                                     | N |   |    |   | T |   | K |
| Cache Metro Planning Organization.....                                       | N |   |    |   | T |   | K |
| Carbon County Recreation and<br>Transportation Special Service District..... | N |   |    |   | T |   | K |
| Castle Valley Special Service District.....                                  | N | C |    |   | T | D | K |
| Cedar City Housing Authority.....  | N |   |    |   | T | D | K |
| Cedar Mountain Fire Protection District.....                                 | N |   | F  |   | T |   | K |
| Central Iron County Water Conservancy Dist ....                              | N |   |    |   | T |   | K |
| Central Davis Sewer District .....   | N |   |    |   | T | D | K |
| Central Utah Counseling Center.....  | N |   |    |   | T | D | K |
| Central Utah Public Health .....   | N |   |    |   | T | D | K |
| Central Utah Water District.....   | N |   |    |   | T | D | K |
| Central Wasatch Commission.....  | N |   |    |   | T | D | K |
| Central Weber Sewer District.....  | N | C |    |   | T | D | K |
| Children's Aid Society—Utah .....  | N |   |    |   | T |   | K |
| Cottonwood Heights P&R Services.....   | N |   |    |   | T | D | K |
| Cottonwood Improvement District.....   | N |   |    |   | T | D | K |
| Council on Aging —<br>Golden Age Center Special Service District...          | N |   |    |   | T | D | K |
| Davis & Weber Counties Canal Company.....                                    | N | C |    |   | T | D | K |
| Davis Behavioral Health .....  | N |   |    |   | T | D | K |
| Davis County Housing Authority.....  | N | C |    |   | T |   | K |
| Davis County Mosquito Abatement.....   | N |   |    |   | T |   | K |
| Davis County Solid Waste Management .....                                    | N |   |    |   | T | D | K |
| DDI Advantage.....   | N | C |    |   | T |   | K |
| Duchesne County Mosquito District.....                                       | N | C |    |   | T |   | K |
| Duchesne County Water<br>Conservancy District.....                           | N |   |    |   | T | D | K |
| East Duchesne Culinary Water Imp District .....                              | N |   |    |   | T |   | K |
| Emery County Care and<br>Rehabilitation Center .....                         | N | C |    |   | T | D | K |
| Emery County Recreation<br>Special Service District.....                     | N |   |    |   | T |   | K |
| Emery Water Conservancy District.....  | N |   |    |   | T |   | K |
| Five-County Association of Governments .....                                 | N | C |    |   | T | D | K |
| Four Corners Regional Care Center .....                                      | N | C |    |   | T | D | K |
| Fox Hollow Golf Course.....  | N |   |    |   | T |   | K |
| Garden City Fire District .....  | N |   | F  |   | T |   | K |
| Grand County Cemetery Maintenance District.                                  | N |   |    |   | T |   | K |

| Employer   | N | C | PS | F | T | D | K |
|--|---|---|----|---|---|---|---|
| Grand County Water Sewer/Service.....                        | N |   |    |   | T |   | K |
| Granger-Hunter Improvement District.....                     | N |   |    |   | T | D | K |
| Gunnison Valley Fire Department.....                         | N |   | PS |   | T | D | K |
| Gunnison Valley Hospital .....                               | N | C |    |   | T | D | K |
| Heber Light & Power .....                                    | N |   |    |   | T | D | K |
| Heber Valley Special District.....                           | N |   |    |   | T |   | K |
| Hooper Water Improvement District .....                      | N |   |    |   | T | D | K |
| Housing Authority of Carbon County .....                     | N |   |    |   | T |   | K |
| Housing Authority of Ogden City.....                         | N |   |    |   | T |   | K |
| Housing Authority of Salt Lake City.....                     | N | C |    |   | T | D | K |
| Housing Authority of Salt Lake County .....                  | N |   |    |   | T |   | K |
| Hurricane Valley Fire Spec. Service District.....            | N |   |    | F | T |   | K |
| Impact Mitigation Special Service District.....              | N |   |    |   | T |   | K |
| Jordan River Commission.....                                 | N |   |    |   | T | D | K |
| Jordan Valley Water Conservancy District.....                | N | C |    |   | T | D | K |
| Jordanelle Special Service District.....                     | N |   |    |   | T | D | K |
| Kane Water Conservancy District .....                        | N |   |    |   | T |   | K |
| Kearns Improvement District .....                            | N | C |    |   | T | D | K |
| Leeds Area Special Service District .....                    | N |   |    | F | T |   | K |
| Lone Peak Safety District .....                              | N |   | PS | F | T | D | K |
| Maesar Water Improvement District.....                       | N |   |    |   | T |   | K |
| Magna Mosquito Abatement.....                                | N |   |    |   | T |   | K |
| Metro Water District—SLC/Sandy.....                          | N |   |    |   | T | D | K |
| Midvalley Improvement District .....                         | N |   |    |   | T |   | K |
| Military Installation Development Authority ....             | N |   |    |   | T |   | K |
| Millard County Care and Rehabilitation, Inc.....             | N |   |    |   | T |   | K |
| Moab Valley Fire Protection .....                            | N |   |    | F | T |   | K |
| Mountain Regional Water<br>Special Service District.....     | N |   |    |   | T |   | K |
| Mountainland Association of Governments .....                | N | C |    |   | T | D | K |
| Mt. Olympus Improvement District.....                        | N |   |    |   | T |   | K |
| Nebo Credit Union .....                                      | N |   |    |   | T |   | K |
| North Davis County Sewer District .....                      | N | C |    |   | T |   | K |
| North Davis Fire District .....                              | N |   |    | F | T |   | K |
| North East Counseling Center .....                           | N |   |    |   | T | D | K |
| North Emery Water Users<br>Special Service District.....     | N |   |    |   | T |   | K |
| North Fork Special Service District.....                     | N |   |    |   | T |   | K |
| North Park Police Agency.....                                | N |   | PS |   | T | D | K |
| North Pointe Solid Waste<br>Special Service District.....    | N |   |    |   | T | D | K |
| North Tooele County Fire Protection<br>Service District..... | N |   |    | F | T | D | K |
| North View Fire District .....                               | N |   |    | F | T |   | K |
| Northern Utah Environmental<br>Resource Agency .....         | N |   |    |   | T | D | K |
| Oquirrh Recreation and Parks District .....                  | N |   |    |   | T | D | K |
| Park City Fire Service District.....                         | N |   |    | F | T | D | K |
| Price River Water Improvement.....                           | N |   |    |   | T | D | K |
| Provo Housing Authority.....                                 | N |   |    |   | T |   | K |
| Provo River Water Users.....                                 | N |   |    |   | T | D | K |
| Roosevelt City Housing Authority .....                       | N |   |    |   | T |   | K |
| Roy Water Conservancy District.....                          | N |   |    |   | T | D | K |
| Salt Lake County Service Area 3.....                         | N |   |    |   | T |   | K |
| Salt Lake City Library .....                                 | N |   |    |   | T | D | K |
| Salt Lake City Mosquito Abatement.....                       | N |   |    |   | T |   | K |

Schedules of Participating Employers (Continued)

| Employer  | N | C | PS | F | T | D | K |
|---|---|---|----|---|---|---|---|
| Salt Lake City Sub. Sanitation #1.....                          | N |   |    |   | T |   | K |
| San Juan Mental Health/Substance Abuse District.....            | N |   |    |   | T |   | K |
| Sandy Suburban Improvement District.....                        | N |   |    |   | T | D | K |
| Six-County Association of Governments.....                      | N | C |    |   | T | D | K |
| Six-County Infrastructure Coalition.....                        | N |   |    |   | T |   | K |
| Snyderville Basin Special Reclamation District..                | N | C |    |   | T | D | K |
| Snyderville Basin Water Reclamation District....                | N | C |    |   | T | D | K |
| Solid Waste Management<br>Special Service District #1.....      | N |   |    |   | T |   | K |
| Solitude Improvement District.....                              | N |   |    |   | T |   | K |
| South Davis County Sewer Improvement District.....              | N | C |    |   | T | D | K |
| South Davis County Water Improvement District.....              | N |   |    |   | T | D | K |
| South Davis Metro Fire Agency.....                              | N |   |    | F | T | D | K |
| South Davis Recreation Center.....                              | N |   |    |   | T | D | K |
| South Ogden Conservancy District.....                           | N |   |    |   | T | D | K |
| South Utah Valley Animal Services Special Service District..... | N |   |    |   | T |   | K |
| South Utah Valley Electric Service District.....                | N |   |    |   | T |   | K |
| South Utah Valley Solid Waste.....                              | N |   |    |   | T |   | K |
| South Valley Sewer District.....                                | N | C |    |   | T | D | K |
| South Valley Water Reclamation Facility.....                    | N |   |    |   | T |   | K |
| Southeastern Utah Assoc. of Governments.....                    | N | C |    |   | T | D | K |
| Southeastern Utah Health.....                                   | N | C |    |   | T |   | K |
| Southern Salt Lake Valley Mosquito Abatement.                   | N |   |    |   | T | D | K |
| Southern Utah Valley Power System.....                          | N |   |    |   | T | D | K |
| Southwest Behavioral Health Center.....                         | N |   |    |   | T | D | K |
| Southwest Mosquito Abatement and Control District.....          | N |   |    |   | T |   | K |
| Southwest Utah Public Health Department.....                    | N | C |    |   | T | D | K |
| St. George Housing Authority.....                               | N |   |    |   | T |   | K |
| Stansbury Park Improvement District.....                        | N |   |    |   | T | D | K |
| Stansbury Service Agency.....                                   | N |   |    |   |   |   | K |
| Summit Mosquito Abatement District.....                         | N |   |    |   | T |   | K |
| Taylor West Weber Water Improvement District.....               | N |   |    |   |   |   | K |
| Taylorsville – Bennion Improvement.....                         | N |   |    |   | T | D | K |
| Timber Lakes Special Service District.....                      | N |   |    |   | T |   | K |
| Timpanogos Special Service District.....                        | N | C |    |   | T |   | K |
| Tooele County Housing.....                                      | N |   |    |   | T | D | K |
| Tooele Valley Mosquito Abatement District.....                  | N |   |    |   | T |   | K |
| Trans-Jordan Cities.....  | N |   |    |   | T | D | K |
| Tridell-Lapoint Water District.....                             | N |   |    |   | T |   | K |
| Uintah Animal Control and Shelter Special Service District..... | N |   |    |   | T |   | K |
| Uintah Basin Assistance Council.....                            | N |   |    |   | T |   | K |
| Uintah Basin Association of Government.....                     | N |   |    |   | T | D | K |
| Uintah County Care Center.....                                  | N |   |    |   | T | D | K |
| Uintah County Mosquito Abatement.....                           | N |   |    |   | T |   | K |
| Uintah Fire Suppression Special Service District.....           | N |   |    | F | T |   | K |
| Uintah Highlands Improvement District.....                      | N |   |    |   | T |   | K |
| Uintah Recreation District.....                                 | N |   |    |   | T | D | K |
| Uintah Transportation   | N |   |    |   | T | D | K |

| Employer  | N | C | PS | F | T | D | K |
|---|---|---|----|---|---|---|---|
| Special Service District.....                                   | N |   |    |   | T |   | K |
| Uintah Water Conservancy District.....                          | N |   |    |   | T |   | K |
| Unified Police Department.....                                  | N |   | PS |   | T | D | K |
| Upper Country Water District.....                               | N |   |    |   |   | D |   |
| Utah Association of Counties.....                               | N |   |    |   | T |   | K |
| Utah Counties Indemnity Pool.....                               | N |   |    |   | T |   | K |
| Utah County Housing Authority.....                              | N | C |    |   | T | D | K |
| Utah Local Government Service Trust.....                        | N |   |    |   | T | D | K |
| Utah Lake Commission.....                                       | N |   |    |   | T |   | K |
| Utah League of Cities & Towns.....                              | N | C |    |   | T |   | K |
| Utah Municipal Power Agency.....                                | N |   |    |   | T |   | K |
| Utah Public Employees Association.....                          | N | C |    |   | T | D | K |
| Utah Telecommunication Open Infrastructure Agency (UTOPIA)..... | N |   |    |   | T | D | K |
| Utah Valley Dispatch Special Services District.....             | N |   |    |   | T |   | K |
| Utah Zoological Society.....                                    | N | C |    |   | T |   | K |
| Valley Emergency Communication Center.....                      | N |   |    |   | T | D | K |
| Wasatch Front Regional Council.....                             | N | C |    |   | T | D | K |
| Wasatch Front Waste and Recycling District.....                 | N |   |    |   | T | D | K |
| Wasatch Integrated Waste Management.....                        | N |   |    |   | T | D | K |
| Wasatch Mental Health Special Services District.....            | N | C |    |   | T | D | K |
| Washington County Solid Waste #1.....                           | N |   |    |   | T | D | K |
| Washington County Water District.....                           | N | C |    |   | T |   | K |
| Waste Management Service District #5.....                       | N |   |    |   | T |   | K |
| Weber Area Dispatch 911 & Emergency Services District.....      | N |   |    |   | T | D | K |
| Weber Basin Water Conservancy.....                              | N |   |    |   | T | D | K |
| Weber County Mosquito Abatement.....                            | N |   |    |   | T | D | K |
| Weber Human Services.....                                       | N |   |    |   | T | D | K |
| Weber River Water Users.....                                    | N | C |    |   | T |   | K |
| Western Kane County Special Service District #1.....            | N |   |    |   | T |   | K |
| White City Water Improvement District.....                      | N |   |    |   | T | D | K |

**Total Participating Employers**

|   |     |
|---|-----|
| Noncontributory.....                      | 463 |
| Contributory.....                         | 158 |
| Public Safety.....                        | 134 |
| Firefighters.....                         | 62  |
| Judges.....                               | 1   |
| Governor and Legislators.....             | 1   |
| Tier 2 Public Employees.....              | 476 |
| Tier 2 Public Safety and Firefighter..... | 152 |
| 457 Plan.....                             | 293 |
| 401(k) Plan.....                          | 466 |

Schedules of Participating Employers *(Concluded)*

## Employer

**Inactive Units**

|  |  |   |
|--|--|---|
| American Fork Hospital                       | Leeds Town                                 | Timpanogos Academy                                |
| Bay Area Refuse Disposal                     | Marysville Town                            | Tooele Council on Aging                           |
| Bear River City                              | Master Academy Inc                         | Tooele Valley Hospital                            |
| Bingham City                                 | Meadow Town                                | Trail Incorporated                                |
| Bonneville Uniserv                           | Metro Water District -- Orem               | Twin Creeks Special Service District              |
| Box Elder County Nursing Home                | Metro Water District – Provo               | U of U Research Institute                         |
| Canyonlands Care Center                      | Midvale Wastewater Treatment               | U S H Patients Fund                               |
| Carbon County Hospital                       | Midway Sanitation District                 | Uintah Basin Counseling                           |
| Carbon Nursing Home                          | Milford Valley Hospital                    | Uintah Basin District Health                      |
| Cedar City Library                           | Morgan County Historical Society           | Uintah Basin Medical Center                       |
| Central Utah Ed Serv                         | Morgan County Library                      | Uintah County Council on Aging                    |
| Children’s Aid Society                       | Mountain America Credit Union              | Uintah County Hospital                            |
| Circleville Town                             | Nebo Credit Union                          | USU Community Credit Union                        |
| Coalville Health Center                      | New Harmony Town                           | USU Credit Union                                  |
| College Of Eastern Utah                      | Northern Utah Crime                        | UT Association of Secondary<br>School Principals  |
| Copperton Improvement District               | Payson City Hospital                       | UT County Council of Governments                  |
| Cottage Program                              | Pioneer Care Center                        | UT Partnership for Education Economics            |
| Davis County Department<br>of Human Services | Reg 2 Law Enforcement Plan Agency          | Utah College of Applied Technology                |
| Department of Employment Security            | S L City Credit Union                      | Utah Industries for the Blind                     |
| Dixie Center at St. George                   | Salt Lake County Fair                      | Utah Local Governments Trust                      |
| Dixie Hospital                               | Salt Lake School Credit Union              | Utah Risk Management Mutual Association           |
| East Layton                                  | Salt Lake School District Credit Union     | Utah Technical Finance Corporation                |
| Emery Medical Center                         | San Juan County Hospital                   | Utah Uniserv                                      |
| Four Corners Regional Care Center            | Six-County Economic Development            | Valley Mental Health                              |
| Golden Hours Homemaker                       | Snow College South                         | Wasatch County Hospital                           |
| Grand County Road Special Services District  | South Davis Fire Department                | Wasatch County Special Service<br>District Area 1 |
| Hiawatha Town                                | Southeastern Utah Economic Development     | Washington County A.R.C.                          |
| Holden Town                                  | Statewide Association of Prosecutors       | Weber County Hospital                             |
| I W Allen Hospital                           | Sugarhouse Park Authority                  | Weber Economic Development Corporation            |
| Juab County Hospital                         | Summit Employment                          | Weber River Water Quality Council                 |
| Kanosh Town Corporation                      | Summit Mosquito Abatement District         | West Millard Hospital                             |
| Leeds Area Special Service District          | Summit Park Water Speical Service District | West Millard Recreation                           |
|  | Sunnyside City                             |   |
|  | Thomas Edison Charter                      |   |

# A Highlight History 1907-2018



**1907** | The Legislature authorizes the organization of local teacher retirement associations.

**1908** | Salt Lake City institutes the first teacher retirement commission. Ogden follows in 1933 and Provo in 1934.

**1919** | First statewide pension plan for all full-time paid and volunteer firemen. Actuarially unsound, the system would be transferred to the Retirement Office in 1965.

**1921** | First police pension plans in Salt Lake, Ogden, Provo, and Logan. Actuarially unsound, these plans would be transferred to the Public Safety Retirement System in 1969.

**1927** | The Prison and Industrial School Guards Retirement System is enacted. Industrial school guards join the teachers retirement system in 1937. Prison guards transfer to the Public Safety Retirement System in 1970.

**1934** | The Utah Education Association prepares a teacher retirement plan to present to the Legislature. This plan will form much of the basis for a new retirement system.

**1937** | First statewide teachers retirement system. Seven member board hires Ray L. Lillywhite as the first executive secretary.

**1943** | Utah Supreme Court rules that a retiree's statutory retirement benefit cannot be reduced, affirming the principle of vested rights. The Court would later affirm that a vested retirement benefit may not be reduced without providing a "substantial substitute."

**1947** | The State Officers' and Employees' Retirement System is created with a 3% contribution rate each by employee and employer.

Teachers in local systems are required to join the State Teachers Retirement System.

**1948** | The Utah Supreme Court permits service credit for prior service in parochial schools.

**1949** | The State Officers and Employees Retirement System is renamed The Public Employees Retirement System; it will cover all public employees and judges. Retirement benefit ceiling is \$100 a month.

**1952** | Ray Lillywhite resigns; Leonard W. McDonald is hired as second executive secretary of the Teachers Retirement System.

**1953** | The short-lived Teachers Retirement System is liquidated in favor of Social Security.

**1954** | The Teachers Retirement System is replaced by the Utah School Employees Retirement System and integrated with Social Security to preserve its solvency. Local teacher retirement associations are terminated.

**1957** | Minimum monthly retirement benefit is \$85.

**1959** | The Utah State Public Employees Association is formed with the intent to produce a comprehensive plan for a statewide public employee retirement system.

A Highlight History 1907-2018 (Continued)



**1961** | The Public Employees Retirement System is created with a seven member board.

The public employees and teachers retirement systems retain separate boards but unite under a single administrator and office.

**1963** | Creation of a single board for all retirement systems is the crowning achievement in Utah public retirement history and the birth of today's Utah Retirement Systems.

**1967** | The heretofore separate school and public retirement systems are consolidated into a single Utah State Retirement System.

**1969** | The Utah Public Safety Retirement Act covers all public safety employees engaged full time in hazardous duty. Benefits were uniform in each jurisdiction, but contribution rates varied.

**1971** | Members gain a salary deferral program.

**1975** | Current service formula rises from 1.25% to 2%. The cost-of-living ceiling rises to 4%.

**1976** | Leonard W. McDonald retires. Bert D. Hunsaker becomes executive director.

**1977** | Governor Scott Matheson dedicates the new Leonard W. McDonald Building for the Utah Retirement Systems.

**1979** | Board gains custody of the retirement fund and greater investment authority.

**1982** | The court affirms that the Board is independent of the executive department and has authority to hire its own legal counsel.

**1983** | The Retirement Board sees its first actuarial surplus as new investments prove their worth; hires a full-time investment manager.

**1986** | Public Employees Noncontributory Retirement System debuts: employers pay all contributions; 3-year final average salary; State and education employers pay 1.5% of salary into URS' 401(k) Plan. Employees forfeit access to contributions, but the new system portends a superior career retirement.

**1987** | A "25-and-out" retirement incentive plan permits public employees to retire after 25 years with no actuarial reduction; and increases to 2% the value of each year of service. Over 3,000 employees take advantage of its 6-month window.

**1989** | The U.S. Supreme Court rules that if federal retirement benefits are taxable, then state-provided retirement benefits cannot be exempt. Legislature grants a 3% substantial substitute benefit for affected members.

Bert Hunsaker steps down. Dee Williams becomes executive director.

The Public Safety Noncontributory Retirement System is created.

The Systems' assets nearly quadruple from \$1 billion to \$3.85 billion during the 1980s.

**1990** | Public Employees Noncontributory Retirement members receive 2% for all years of service.

**1994** | URS begins dividing pension, death, and DC benefits after court rules that a former spouse may be awarded death and retirement benefits, whether or not the spouse remarries.

**1995** | Members with 25 years of service in the Public Employees Noncontributory System may buy future service credit to permit immediate retirement.

**A Highlight History 1907-2018** *(Continued)*

**1996** | URS recovers 100% of member assets originally invested in Guaranteed Investment Contracts that failed when Confederation Life Insurance Company of Canada was declared insolvent in August 1994.

**1997** | Judges Noncontributory Retirement System is created.

The URS DC video receives a Telly Award — the commercial equivalent of an “Oscar” for motion pictures; URS’ publication for retirees, *Cycles*, places second worldwide among corporate and institutional newsletters.

Legislature affirms the Board’s authority to define provisions and terms of the retirement code.

**1998** | The 401(k) Plan launches a bold marketing program to help members better map a retirement investment strategy. Investment options are enhanced and expanded.

State employees at retirement may defer 25% of accumulated sick leave to the 401(k) Plan, convert it to paid-up health or Medicare supplement insurance or take it as cash.

**1999** | Members may buy up to five years of future service credit, even if it exceeds the years required to retire.

Leonard W. McDonald, director of the Utah Retirement Systems 1952-1976 and to whom much of the structure of the Systems can be attributed, dies.

Dee Williams retires. Robert V. Newman becomes executive director.

Systems’ assets rise from \$3.85 billion to over \$13 billion during the 1990s.

**2000** | 401(k) Plan participants may now apply for a fixed rate loan for any purpose of up to 50% of his or her 401(k) account balance.

**2001** | A value stock fund joins the menu of DC investment options.

URS website calculators invite members to estimate pension benefits and compute potential 401(k)/457 earnings.

**2002** | The Olympic Winter Games are staged in Salt Lake City. URS adopts telecommuting.

457 Plan permits deferrals up to 100% of includable compensation; offers a new catch-up feature; drops irrevocable withdrawal decisions; allows rollovers to any acceptant 457, 403(b), 401(k), or IRA; allows use for URS pension redeposits or to buy URS service credit.

Internet-based personal retirement account manager, myURS, lets members view and transfer account balances, alter deferrals, estimate payouts, integrate Social Security, and more.

**2003** | To protect 401(k) and 457 investors from the costs of others’ adverse trading activities, URS restricts frequent trading privileges. Systems’ assets are \$14.2 billion.

**2004** | Ray L. Lillywhite, executive secretary of the Teachers Retirement System from 1937 to 1952, dies.

**2005** | Legislature repeals 1998 benefit allowing 25% of a state employee’s accumulated sick leave to be converted to other retirement benefits.

**2006** | Members gain a partial lump-sum payment option (PLSO) at retirement.

**2007** | Retirement Systems’ assets reached \$23.9 billion.

Members of the Public Safety Contributory Retirement System gain a window to convert to the Public Safety Noncontributory System.

**2008** | The Retirement Systems pay over \$1,000,000,000 in annual benefits.

**2009** | New online enrollment feature at urs.org offers simple, convenient way to enroll for benefits electronically.

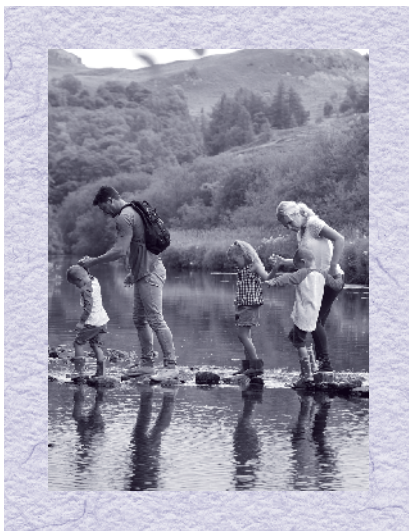
IRS Private Letter Ruling confirms URS 457 Plan is an eligible deferred compensation plan as defined in IRC Section 457(b).

**2010** | Retirees who resume work for a URS employer within a year after retiring will be returned to active status to earn further service credit and may thereafter choose between retirement allowance options.

**2011** | URS creates the Tier 2 Retirement System for members initially entering full-time employment with a participating employer on or after July 1, 2011. These employees choose to participate in either the Tier 2 Hybrid Retirement System or the Tier 2 Defined Contribution (DC) Plan.

The URS Defined Contribution Department introduces a new and expanded set of asset classes within the Horizon Funds. The changes bring a broader, more diversified mix of securities to the Horizon Funds and offer inflation protection as well as exposure to real estate and commodities.

## A Highlight History 1907-2018 *(Concluded)*



**2012** | Legislative bills brought about four noteworthy changes for the Utah Retirement Systems. First, executive director of the Department of Corrections is now allowed to exempt from the Noncontributory Retirement System. Second, Tier 2 firefighters, including volunteers, are covered under the PEHP long-term disability policy. Third, certain Tier 2 Retirement Systems at-will employees are allowed to exempt from the 4-year vesting requirements. And fourth, new legislators and governors will not receive post-retirement health benefits.

**2013** | Robert V. Newman retires. Daniel D. Andersen becomes executive director.

**2014** | URS received a No-Action Letter from the Utah Division of Securities in preparation for its new Investment Advice Program to be offered in 2015.

After the close of business on December 31, 2014, all assets held in the DC Plan Horizon Funds were transferred into the new Target Date Funds. The assets were allocated according to the Target Date that corresponded with the participant's age.

**2015** | URS rolled out its retirement planning advisory program. In 2015, advisors conducted more than 1,600 sessions across the state. In satisfaction surveys, 98% of members were at least satisfied with their session, with 85% giving the highest satisfaction rating.

**2016** | S.B. 19: establishes an optional "Phased Retirement" program that allows continuing employment on a half-time basis of a retiree with the same participating employer after the retiree's retirement date while the retiree receives 50% of the retiree's monthly retirement allowance. This new program is offered beginning on January 1, 2017.

**2017** | URS broadened the scope of member education. The "Your Benefits, Your Way" campaign debuted, encouraging members to learn about their benefits in the way that best fits their learning style. Options include publications, videos, live trainings and, new for 2017, regular webinars. The online Message Center debuted, allowing members to send secure messages to URS through their myURS account. URS published targeted editions of the member newsletter *ViewPoint*, tailored to three specific audiences, Tier 1 members, Tier 2 members, and members within their first year of employment. URS continued to increase participation in individual retirement planning sessions. More than 3,700 members attended such sessions in 2017.

**2018** | The University of Utah's Kem C. Gardner Policy Institute conducted a study demonstrating how URS pension payments bolstered the Utah economy in 2018. According to the study the economic activity generated by URS pension payments in 2018 supported almost 9,000 Utah jobs, \$360 million in wages, and \$59 million in state and local tax revenue. In 2018, URS paid more than \$1.5 billion in pension benefits to more than 60,000 Utahns, an amount so large, it was equivalent to 1.1 percent of the state's total personal income.





# **GASB Schedule** of Employer Allocation and Pension Reporting Section

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# Independent Auditor's Report for Agent Plans



## INDEPENDENT AUDITORS' REPORT

To the Board of Directors  
Utah State Retirement Board  
Salt Lake City, Utah

Utah State Retirement Board:

### REPORT ON THE SCHEDULE

We have audited the fiduciary net position as of December 31, 2018, and the changes in fiduciary net position for the year then ended, including the accompanying Schedule of Changes in Fiduciary Net Position by Employer – Pension Trust Fund by Division (the Schedule) of the Public Safety Retirement System of Utah Retirements Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, and the related notes.

#### *Management's Responsibility for the Schedule*

Management is responsible for the preparation and fair presentation of the Schedule in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the Schedule that is free from material misstatement, whether due to fraud or error.

#### *Auditors' Responsibility*

Our responsibility is to express an opinion on the fiduciary net position and the changes in fiduciary net position included in the Schedule based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the fiduciary net position and the changes in fiduciary net position included in the Schedule are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts in the Schedule. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the fiduciary net position and the changes in fiduciary net position included in the Schedule, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the fiduciary net position and the changes in fiduciary net position included in the Schedule in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express

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## Independent Auditors' Report for Agent Plans *(Concluded)*

no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the fiduciary net position and the changes in fiduciary net position included in the Schedule.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### **Opinion**

In our opinion, the Schedule referred to above presents fairly, in all material respects, the fiduciary net position of the Public Safety Retirement System of Utah Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, as of December 31, 2018, and the changes in fiduciary net position for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

### **Other Matters**

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of Utah Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, which includes the Public Safety Retirement System, as of and for the year ended December 31, 2018, and our report thereon, dated April 30, 2019, expressed an unmodified opinion on those financial statements and included an emphasis-of-matter paragraph regarding the fair value of investments where a publicly listed price is not available.

Our audit of the financial statements of Utah Retirement Systems was conducted for the purpose of forming an opinion on the financial statements as a whole. The individual employer information presented in each of the individual columns of the accompanying Schedule is presented for purposes of additional analysis and is not a required part of the financial statements. The individual employer information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Each column of individual employer information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the individual employer information presented in each individual column of the accompanying Schedule is stated fairly, in all material respects, in relation to the financial statements of Utah Retirement Systems, a component unit of the State of Utah, administered by the Utah State Retirement Board, which includes the Public Safety Retirement System, as a whole. We do not express an opinion on the fiduciary net position or changes in fiduciary net position of each individual employer.

### **Restrictions on Use**

Our report is intended solely for the information and use of Utah Retirement Systems' management, the Utah State Retirement Board, the participating employers of the Public Safety Retirement System of Utah Retirement Systems and their auditors and is not intended to be and should not be used by anyone other than these specified parties.



Salt Lake City, Utah  
April 30, 2019

## Public Safety Retirement System

## Schedule of Changes in Fiduciary Net Position — Pension Trust Fund by Division

Year Ended December 31, 2018

With Comparative Totals for Year Ended December 31, 2017

*(in thousands)*

|  | Salt Lake City | Ogden   | Provo   |
|--|----------------|---------|---------|
| <b>Additions:</b>                                      |                |         |         |
| Contributions:   |                |         |         |
| Member   | \$ —           | —       | —       |
| Employer   | 15,294         | 2,970   | 2,266   |
| Total contributions                                    | 15,294         | 2,970   | 2,266   |
| Investment income:                                     |                |         |         |
| Net appreciation in fair value of investments          | (6,873)        | (1,534) | (1,214) |
| Interest, dividends, and other investment income       | 6,318          | 1,410   | 1,116   |
| Total income from investment activity                  | (555)          | (124)   | (98)    |
| Less investment expenses                               | 585            | 131     | 103     |
| Net income from investment activity                    | (1,140)        | (255)   | (201)   |
| Income from security lending activity                  | 75             | 17      | 13      |
| Less security lending expense                          | 10             | 2       | 2       |
| Net income from security lending activity              | 65             | 15      | 11      |
| Net investment income                                  | (1,075)        | (240)   | (190)   |
| Transfers from (to) affiliated systems                 | 2,259          | 106     | 97      |
| Total additions  | 16,478         | 2,836   | 2,173   |
| <b>Deductions:</b>                                     |                |         |         |
| Retirement benefits                                    | 16,113         | 3,894   | 2,640   |
| Cost-of-living benefits                                | 4,079          | 949     | 595     |
| Supplemental retirement benefits                       | 33             | 3       | 5       |
| Refunds  | 39             | —       | —       |
| Administrative expenses                                | 135            | 30      | 23      |
| Total deductions                                       | 20,399         | 4,876   | 3,263   |
| Increase from operations                               | (3,921)        | (2,040) | (1,090) |
| Net position restricted for pensions beginning of year | 292,943        | 65,911  | 51,884  |
| Net position restricted for pensions end of year       | \$ 289,022     | 63,871  | 50,794  |

Utah Retirement Systems

| Agent Plans |           | Cost Sharing Plans             |  |   | Total All Divisions |           |
|-------------|-----------|--------------------------------|--|---|---------------------|-----------|
|             |           | State of Utah<br>Public Safety | Other<br>Division A<br>(with Social<br>Security) | Other<br>Division B<br>(without<br>Social Security) |                     |           |
| Logan       | Bountiful |                                |  |   |                     |           |
| —           | —         | 264                            | 545  | 86  | 895                 | 793       |
| 1,068       | 964       | 50,030                         | 53,057   | 21,452  | 147,101             | 145,814   |
| 1,068       | 964       | 50,294                         | 53,602   | 21,538  | 147,996             | 146,607   |
| (683)       | (489)     | (28,261)                       | (33,963)   | (10,949)  | (83,966)            | 362,177   |
| 628         | 449       | 25,978                         | 31,218   | 10,064  | 77,181              | 65,430    |
| (55)        | (40)      | (2,283)                        | (2,745)  | (885)   | (6,785)             | 427,607   |
| 58          | 42        | 2,405                          | 2,891  | 932   | 7,147               | 6,357     |
| (113)       | (82)      | (4,688)                        | (5,636)  | (1,817)   | (13,932)            | 421,250   |
| 7           | 5         | 309                            | 372  | 120   | 918                 | 756       |
| 1           | 1         | 40                             | 48   | 16  | 120                 | 89        |
| 6           | 4         | 269                            | 324  | 104   | 798                 | 667       |
| (107)       | (78)      | (4,419)                        | (5,312)  | (1,713)   | (13,134)            | 421,917   |
| 185         | 35        | 738                            | (8,899)  | 12,461  | 6,982               | 5,926     |
| 1,146       | 921       | 46,613                         | 39,391   | 32,286  | 141,844             | 574,450   |
| 1,327       | 1,306     | 56,695                         | 56,506   | 19,201  | 157,682             | 143,774   |
| 298         | 263       | 11,687                         | 10,625   | 2,021   | 30,517              | 28,854    |
| —           | 1         | 97                             | 76   | —   | 215                 | 242       |
| —           | —         | 113                            | 85   | 191   | 428                 | 226       |
| 12          | 10        | 487                            | 569  | 184   | 1,450               | 1,382     |
| 1,637       | 1,580     | 69,079                         | 67,861   | 21,597  | 190,292             | 174,478   |
| (491)       | (659)     | (22,466)                       | (28,470)   | 10,689  | (48,448)            | 399,972   |
| 29,138      | 21,062    | 1,206,584                      | 1,450,921  | 458,074   | 3,576,517           | 3,176,545 |
| 28,647      | 20,403    | 1,184,118                      | 1,422,451  | 468,763   | 3,528,069           | 3,576,517 |

# Independent Auditor's Report for Cost Sharing Plans



## INDEPENDENT AUDITORS' REPORT

To the Board of Directors  
Utah State Retirement Board  
Salt Lake City, Utah

### REPORT ON SCHEDULE THE SCHEDULES

We have audited the employer allocations and the total for all entities of the columns titled employer contributions, net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer net pension expense excluding that attributable to employer-paid member contributions (specified column totals) including in the accompanying schedules of employer allocations and pension amounts of the Noncontributory Retirement System, Contributory Retirement System, Firefighters Retirement System, Judges Retirement System, Utah Governors and Legislators Retirement Plan, Tier 2 Public Employees Contributory Retirement System, and Tier 2 Public Safety and Firefighters Contributory Retirement System (Defined Benefit Pension Plans) of Utah Retirement Systems (URS or the System), a component unit of the State of Utah, administered by the Utah State Retirement Board, as of and for the year ended December 31, 2018, and the related notes.

### Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of the Schedules in accordance with accounting principles generally accepted in the United States of America; this includes design, implementation,

and maintenance of internal control relevant to the preparation and fair presentation of the Schedules that is free from material misstatement, whether due to fraud or error.

### Auditors' Responsibility

Our responsibility is to express opinions on the employer allocations and the specified column totals included in the schedules of employer allocations and pension amounts based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the employer allocations and specified column totals included in the schedule of employer allocations and pension amounts are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of employer allocations and pension amounts. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of employer allocations and the specified column

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## Independent Auditors' Report for Cost Sharing Plans *(Concluded)*

totals included in the schedules of employer allocations, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and pension amounts in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of employer allocations and pension amounts.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

### Opinion

In our opinion, the Schedules referred to above present fairly, in all material respects, the employer allocations and the total employer contributions, net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer net pension expense excluding that attributable to employer-paid member contributions for the total of all participating entities for the Noncontributory Retirement System, Contributory Retirement System, Public Safety Retirement System, Firefighters Retirement

System, Judges Retirement System, Utah Governors and Legislators Retirement Plan, Tier 2 Public Employees Contributory Retirement System and Tier 2 Public Safety and Firefighters Contributory Retirement System of URS, a component unit of the State of Utah, administered by the Utah State Retirement board as of and for the year ended December 31, 2018, in accordance with accounting principles generally accepted in the United States of America.

### Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of Utah Retirement Systems as of and for the year ended December 31, 2018, and our report thereon, dated April 30, 2019, expressed an unmodified opinion on those financial statements.

### Restrictions on Use

Our report is intended solely for the information and use of the Utah Retirement Systems management, the Utah State Retirement Board, the employers of the Defined Benefit Pension Plans of Utah Retirement Systems and their auditors and is not intended to be and should not be used by anyone other than these specified parties.



Salt Lake City, Utah  
April 30, 2019

**Noncontributory Retirement System  
Local Government Division**

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer                     | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--|------------------------|--------------------------------|---|--|--|--|---|
| 4 Corners Comm Behavior Health             | \$ 417,342             | 0.2384364%                     | \$ 1,755,780                                      | 3,598,401  | 221,363  | 22,582   | 801,982   |
| Alpine City                                | 133,672                | 0.0763697                      | 562,365   | 1,152,545  | 70,901   | 7,233  | 256,870   |
| American Fork City                         | 777,251                | 0.4440602                      | 3,269,937   | 6,701,605  | 412,263  | 42,056   | 1,493,598   |
| Annabella Town                             | 15,310                 | 0.0087471                      | 64,411  | 132,008  | 8,121  | 828  | 29,421  |
| Ash Creek SS District                      | 170,228                | 0.0972550                      | 716,159   | 1,467,739  | 90,291   | 9,211  | 327,118   |
| Ashley Valley Improv Dist                  | 140,224                | 0.0801128                      | 589,929   | 1,209,035  | 74,376   | 7,587  | 269,460   |
| Ashley Valley Sewer Mgmt Board             | 74,670                 | 0.0426605                      | 314,140   | 643,818  | 39,606   | 4,040  | 143,489   |
| Ballard Town                               | 31,631                 | 0.0180717                      | 133,075   | 272,732  | 16,778   | 1,712  | 60,784  |
| Bear Lake SSD                              | 22,339                 | 0.0127627                      | 93,981  | 192,610  | 11,849   | 1,209  | 42,927  |
| Bear River Assn of Govts                   | 215,792                | 0.1232865                      | 907,848   | 1,860,598  | 114,459  | 11,676   | 414,675   |
| Bear River Health Dept                     | 760,831                | 0.4346791                      | 3,200,857   | 6,560,029  | 403,554  | 41,167   | 1,462,045   |
| Bear River Mental Health                   | 588,705                | 0.3363397                      | 2,476,713   | 5,075,924  | 312,256  | 31,854   | 1,131,280   |
| Bear River Water District                  | 30,251                 | 0.0172831                      | 127,268   | 260,831  | 16,046   | 1,637  | 58,132  |
| Beaver City                                | 173,183                | 0.0989431                      | 728,590   | 1,493,215  | 91,858   | 9,371  | 332,796   |
| Beaver County                              | 327,942                | 0.1873602                      | 1,379,669   | 2,827,576  | 173,944  | 17,744   | 630,187   |
| Beaver Housing Authority                   | 20,156                 | 0.0115155                      | 84,797  | 173,788  | 10,691   | 1,091  | 38,732  |
| Beaver Valley Hospital                     | 753,368                | 0.4304154                      | 3,169,460   | 6,495,682  | 399,595  | 40,764   | 1,447,704   |
| Benchland Water Company                    | 72,455                 | 0.0413949                      | 304,821   | 624,718  | 38,431   | 3,920  | 139,232   |
| Bicknell Town                              | 5,849                  | 0.0033417                      | 24,607  | 50,432   | 3,102  | 316  | 11,240  |
| Big Cottonwood Canyon Imp Dist             | 11,821                 | 0.0067534                      | 49,730  | 101,920  | 6,270  | 640  | 22,715  |
| Big Plains Water & Sewer Spec Service Dist | 5,575                  | 0.0031853                      | 23,456  | 48,071   | 2,957  | 302  | 10,714  |
| Blanding City                              | 143,709                | 0.0821038                      | 604,590   | 1,239,083  | 76,225   | 7,776  | 276,156   |
| Bluffdale City                             | 251,966                | 0.1439537                      | 1,060,035   | 2,172,500  | 133,646  | 13,634   | 484,189   |
| Bona Vista Water Improve                   | 81,727                 | 0.0466924                      | 343,830   | 704,666  | 43,349   | 4,422  | 157,050   |
| Bountiful Irrigation District              | 83,146                 | 0.0475034                      | 349,802   | 716,905  | 44,102   | 4,499  | 159,778   |
| Box Elder Co Mosq Dist                     | 43,275                 | 0.0247237                      | 182,058   | 373,122  | 22,953   | 2,342  | 83,158  |
| Box Elder County                           | 786,147                | 0.4491424                      | 3,307,361   | 6,778,304  | 416,982  | 42,537   | 1,510,692   |
| Brigham City                               | 733,052                | 0.4188080                      | 3,083,986   | 6,320,507  | 388,819  | 39,664   | 1,408,662   |
| Cache County                               | 1,043,931              | 0.5964200                      | 4,391,872   | 9,000,967  | 553,713  | 56,486   | 2,006,061   |
| Cache Metro Planning Org                   | 15,802                 | 0.0090282                      | 66,481  | 136,251  | 8,382  | 855  | 30,366  |
| Carbon County                              | 684,263                | 0.3909340                      | 2,878,730   | 5,899,842  | 362,941  | 37,024   | 1,314,908   |
| Carbon County Rec/Trans SSD                | 8,302                  | 0.0047430                      | 34,926  | 71,580   | 4,403  | 449  | 15,953  |
| Castle Dale City                           | 19,380                 | 0.0110723                      | 81,533  | 167,099  | 10,279   | 1,049  | 37,242  |
| Castle Valley SSD                          | 78,711                 | 0.0449694                      | 331,142   | 678,663  | 41,749   | 4,259  | 151,255   |
| Cedar City                                 | 718,727                | 0.4106241                      | 3,023,722   | 6,196,999  | 381,221  | 38,889   | 1,381,136   |
| Cedar City Housing Auth                    | 30,461                 | 0.0174028                      | 128,149   | 262,637  | 16,157   | 1,648  | 58,534  |
| Cedar Mtn Fire Protection Dist             | 1,711                  | 0.0009775                      | 7,198   | 14,752   | 908  | 93   | 3,288   |
| Centerfield City                           | 11,704                 | 0.0066865                      | 49,238  | 100,910  | 6,208  | 633  | 22,490  |
| Centerville City                           | 300,624                | 0.1717530                      | 1,264,742   | 2,592,038  | 159,455  | 16,266   | 577,692   |
| Central Davis Sewer Dist                   | 171,696                | 0.0980936                      | 722,334   | 1,480,395  | 91,070   | 9,290  | 329,938   |
| Central Iron Co Water Conserv              | 26,333                 | 0.0150448                      | 110,786   | 227,051  | 13,968   | 1,425  | 50,603  |
| Central Ut Public Health                   | 253,779                | 0.1449893                      | 1,067,661   | 2,188,129  | 134,607  | 13,732   | 487,672   |
| Central Utah Counseling Center             | 460,232                | 0.2629401                      | 1,936,218   | 3,968,202  | 244,112  | 24,902   | 884,400   |
| Central Utah Water Dist                    | 1,281,214              | 0.7319850                      | 5,390,135   | 11,046,868   | 679,571  | 69,325   | 2,462,035   |
| Central Wasatch Commission                 | 8,622                  | 0.0049258                      | 36,272  | 74,338   | 4,573  | 467  | 16,568  |
| Central Weber Sewer Dist                   | 272,059                | 0.1554333                      | 1,144,568   | 2,345,746  | 144,303  | 14,721   | 522,801   |
| City of Aurora                             | 13,533                 | 0.0077314                      | 56,932  | 116,680  | 7,178  | 732  | 26,005  |
| City of Bountiful                          | 1,433,979              | 0.8192627                      | 6,032,824   | 12,364,033   | 760,599  | 77,591   | 2,755,594   |
| City of Cedar Hills                        | 177,899                | 0.1016374                      | 748,430   | 1,533,877  | 94,360   | 9,626  | 341,858   |
| City of Draper                             | 1,095,657              | 0.6259723                      | 4,609,487   | 9,446,960  | 581,150  | 59,284   | 2,105,461   |
| City of Duchesne                           | 44,223                 | 0.0252654                      | 186,047   | 381,297  | 23,456   | 2,393  | 84,980  |
| City of Enterprise                         | 66,946                 | 0.0382475                      | 281,644   | 577,218  | 35,509   | 3,622  | 128,646   |
| City of Green River                        | 59,123                 | 0.0337780                      | 248,732   | 509,766  | 31,359   | 3,199  | 113,612   |
| City of Harrisville                        | 106,196                | 0.0606721                      | 446,773   | 915,643  | 56,328   | 5,746  | 204,071   |
| City of Helper                             | 40,244                 | 0.0229925                      | 169,310   | 346,995  | 21,346   | 2,178  | 77,335  |



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 235,207                        | 23,958  | 1,083,729                            | 32,747   | 436,624  | —                      | 11,046  | 480,417   | 486,053   | (4,732)   | —  | 481,321  |
| 75,335                         | 10,452  | 349,890                              | 10,489   | 139,848  | —                      | 25,617  | 175,954   | 155,680   | 1,506   | —  | 157,186  |
| 438,045                        | 62,592  | 2,036,291                            | 60,988   | 813,162  | —                      | 131,422   | 1,005,572   | 905,218   | (15,797)  | —  | 889,421  |
| 8,629                          | 1,440   | 40,318                               | 1,201  | 16,018   | —                      | 224   | 17,443  | 17,831  | 562   | —  | 18,393   |
| 95,938                         | 46,209  | 478,476                              | 13,357   | 178,093  | —                      | —   | 191,450   | 198,255   | 21,646  | —  | 219,901  |
| 79,028                         | 3,005   | 359,080                              | 11,003   | 146,702  | —                      | 23,104  | 180,809   | 163,310   | (7,717)   | —  | 155,593  |
| 42,083                         | 6,188   | 195,800                              | 5,859  | 78,120   | —                      | 1,110   | 85,089  | 86,964  | 1,644   | —  | 88,608   |
| 17,827                         | 618   | 80,941                               | 2,482  | 33,093   | —                      | 2,541   | 38,116  | 36,839  | (592)   | —  | 36,247   |
| 12,590                         | 3,262   | 59,988                               | 1,753  | 23,371   | —                      | 601   | 25,725  | 26,017  | 1,501   | —  | 27,518   |
| 121,617                        | 2,759   | 550,727                              | 16,932   | 225,762  | —                      | 48,014  | 290,708   | 251,320   | (15,677)  | —  | 235,643  |
| 428,791                        | 11,810  | 1,943,813                            | 59,699   | 795,983  | —                      | 27,219  | 882,901   | 886,094   | 3,993   | —  | 890,087  |
| 331,784                        | —   | 1,494,918                            | 46,193   | 615,904  | —                      | 71,414  | 733,511   | 685,629   | (58,679)  | —  | 626,950  |
| 17,049                         | 1,429   | 78,247                               | 2,374  | 31,649   | —                      | 4,039   | 38,062  | 35,232  | 64  | —  | 35,296   |
| 97,603                         | 10,785  | 450,555                              | 13,589   | 181,184  | —                      | 34,034  | 228,807   | 201,696   | (23,796)  | —  | 177,900  |
| 184,822                        | 14,921  | 847,674                              | 25,732   | 343,093  | —                      | 33,086  | 401,911   | 381,934   | (10,506)  | —  | 371,428  |
| 11,360                         | 5,342   | 56,525                               | 1,582  | 21,087   | —                      | —   | 22,669  | 23,474  | 2,715   | —  | 26,189   |
| 424,585                        | 80,082  | 1,993,135                            | 59,114   | 788,175  | —                      | 33,320  | 880,609   | 877,403   | 25,449  | —  | 902,852  |
| 40,834                         | 15,964  | 199,950                              | 5,685  | 75,802   | —                      | —   | 81,487  | 84,384  | 9,913   | —  | 94,297   |
| 3,296                          | 523   | 15,375                               | 459  | 6,119  | —                      | 658   | 7,236   | 6,812   | 175   | —  | 6,987  |
| 6,662                          | 1,378   | 31,395                               | 928  | 12,367   | —                      | 965   | 14,260  | 13,767  | 126   | —  | 13,893   |
| 3,142                          | 10,689  | 24,847                               | 437  | 5,833  | —                      | —   | 6,270   | 6,493   | 3,962   | —  | 10,455   |
| 80,992                         | 3,234   | 368,158                              | 11,276   | 150,348  | —                      | 10,962  | 172,586   | 167,369   | (12,376)  | —  | 154,993  |
| 142,004                        | 151,779   | 791,606                              | 19,771   | 263,608  | —                      | —   | 283,379   | 293,450   | 144,957   | —  | 438,407  |
| 46,060                         | 2,582   | 210,114                              | 6,413  | 85,503   | —                      | 23,084  | 115,000   | 95,183  | (7,101)   | —  | 88,082   |
| 46,860                         | 524   | 211,661                              | 6,524  | 86,988   | —                      | 9,713   | 103,225   | 96,836  | (6,671)   | —  | 90,165   |
| 24,389                         | 3,788   | 113,677                              | 3,396  | 45,274   | —                      | —   | 48,670  | 50,399  | 1,928   | —  | 52,327   |
| 443,059                        | 54,669  | 2,050,957                            | 61,686   | 822,468  | —                      | 17,515  | 901,669   | 915,578   | 21,622  | —  | 937,200  |
| 413,135                        | 19,526  | 1,880,987                            | 57,520   | 766,920  | —                      | 17,235  | 841,675   | 853,741   | (9,891)   | —  | 843,850  |
| 588,341                        | 64,904  | 2,715,792                            | 81,913   | 1,092,162  | —                      | —   | 1,174,075   | 1,215,804   | 42,225  | —  | 1,258,029  |
| 8,906                          | 1,326   | 41,453                               | 1,240  | 16,532   | —                      | —   | 17,772  | 18,404  | 867   | —  | 19,271   |
| 385,639                        | —   | 1,737,571                            | 53,691   | 715,877  | —                      | 282,440   | 1,052,008   | 796,920   | (135,126)   | —  | 661,794  |
| 4,679                          | 540   | 21,621                               | 651  | 8,685  | —                      | 574   | 9,910   | 9,669   | (153)   | —  | 9,516  |
| 10,922                         | 2,054   | 51,267                               | 1,521  | 20,276   | —                      | 303   | 22,100  | 22,571  | 612   | —  | 23,183   |
| 44,360                         | 1,189   | 201,063                              | 6,176  | 82,348   | —                      | 23,618  | 112,142   | 91,670  | (8,301)   | —  | 83,369   |
| 405,062                        | 5,540   | 1,830,627                            | 56,396   | 751,933  | —                      | 37,249  | 845,578   | 837,058   | (34,377)  | —  | 802,681  |
| 17,167                         | 3,109   | 80,458                               | 2,390  | 31,868   | —                      | 771   | 35,029  | 35,476  | 1,427   | —  | 36,903   |
| 964                            | 3,280   | 7,625                                | 134  | 1,790  | —                      | —   | 1,924   | 1,993   | 1,216   | —  | 3,209  |
| 6,596                          | —   | 29,719                               | 918  | 12,244   | —                      | 9,666   | 22,828  | 13,630  | (5,173)   | —  | 8,457  |
| 169,427                        | 7,061   | 770,446                              | 23,589   | 314,514  | —                      | 92,338  | 430,441   | 350,119   | (35,470)  | —  | 314,649  |
| 96,765                         | —   | 435,993                              | 13,472   | 179,629  | —                      | 18,369  | 211,470   | 199,964   | (13,916)  | —  | 186,048  |
| 14,841                         | 4,864   | 71,733                               | 2,066  | 27,550   | —                      | —   | 29,616  | 30,669  | 3,102   | —  | 33,771   |
| 143,025                        | 8,441   | 652,870                              | 19,913   | 265,504  | —                      | 34,128  | 319,545   | 295,561   | (6,353)   | —  | 289,208  |
| 259,379                        | 35,685  | 1,204,366                            | 36,112   | 481,495  | —                      | 79,919  | 597,526   | 536,004   | (3,980)   | —  | 532,024  |
| 722,070                        | 74,589  | 3,328,019                            | 100,532  | 1,340,408  | —                      | 37,090  | 1,478,030   | 1,492,153   | (4,162)   | —  | 1,487,991  |
| 4,859                          | 16,529  | 38,423                               | 677  | 9,020  | —                      | —   | 9,697   | 10,041  | 6,126   | —  | 16,167   |
| 153,328                        | 18,504  | 709,354                              | 21,347   | 284,629  | —                      | 25,952  | 331,928   | 316,851   | (7,562)   | —  | 309,289  |
| 7,627                          | 728   | 35,092                               | 1,062  | 14,158   | —                      | 134   | 15,354  | 15,760  | 359   | —  | 16,119   |
| 808,166                        | 25,802  | 3,667,153                            | 112,518  | 1,500,231  | —                      | 144,615   | 1,757,364   | 1,670,069   | (76,580)  | —  | 1,593,489  |
| 100,261                        | 2,062   | 453,807                              | 13,959   | 186,118  | —                      | 26,659  | 226,736   | 207,188   | (9,610)   | —  | 197,578  |
| 617,493                        | 124,354   | 2,906,592                            | 85,972   | 1,146,278  | —                      | 52,435  | 1,284,685   | 1,276,046   | 13,701  | —  | 1,289,747  |
| 24,923                         | 1,833   | 114,129                              | 3,470  | 46,266   | —                      | 10,409  | 60,145  | 51,504  | (2,550)   | —  | 48,954   |
| 37,729                         | 8,497   | 178,494                              | 5,253  | 70,039   | —                      | 2,018   | 77,310  | 77,968  | 1,733   | —  | 79,701   |
| 33,320                         | 15,017  | 165,148                              | 4,639  | 61,854   | —                      | 5,424   | 71,917  | 68,857  | 3,318   | —  | 72,175   |
| 59,850                         | 15,620  | 285,287                              | 8,333  | 111,103  | —                      | 1,854   | 121,290   | 123,680   | 9,428   | —  | 133,108  |
| 22,681                         | 525   | 102,719                              | 3,158  | 42,104   | —                      | 13,322  | 58,584  | 46,870  | (5,828)   | —  | 41,042   |

**Noncontributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** *(Continued)*

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| City of Holladay               | \$ 184,663             | 0.1055020%                     | \$ 776,888  | 1,592,200  | 97,948   | 9,992  | 354,856   |
| City of Kanab                  | 85,484                 | 0.0488386                      | 359,634   | 737,055  | 45,342   | 4,625  | 164,269   |
| City of Milford                | 47,453                 | 0.0271111                      | 199,639   | 409,151  | 25,170   | 2,568  | 91,188  |
| City of Moab                   | 528,676                | 0.3020442                      | 2,224,170   | 4,558,348  | 280,416  | 28,606   | 1,015,927   |
| City of Monticello             | 62,877                 | 0.0359230                      | 264,527   | 542,138  | 33,351   | 3,402  | 120,827   |
| City of Naples                 | 58,475                 | 0.0334079                      | 246,007   | 504,181  | 31,016   | 3,164  | 112,368   |
| City of North Salt Lake        | 440,286                | 0.2515451                      | 1,852,309   | 3,796,233  | 233,533  | 23,823   | 846,073   |
| City of Orem                   | 2,049,687              | 1.1710300                      | 8,623,141   | 17,672,785   | 1,087,178  | 110,906  | 3,938,764   |
| City of Riverton               | 883,896                | 0.5049889                      | 3,718,599   | 7,621,120  | 468,829  | 47,826   | 1,698,532   |
| City of Santa Clara            | 270,704                | 0.1546589                      | 1,138,865   | 2,334,059  | 143,585  | 14,647   | 520,196   |
| City of Saratoga Springs       | 553,587                | 0.3162762                      | 2,328,971   | 4,773,132  | 293,629  | 29,954   | 1,063,796   |
| City of South Jordan           | 1,811,196              | 1.0347750                      | 7,619,797   | 15,616,471   | 960,680  | 98,001   | 3,480,470   |
| City of South Salt Lake        | 811,943                | 0.4638804                      | 3,415,887   | 7,000,725  | 430,664  | 43,933   | 1,560,264   |
| City of St George              | 3,806,294              | 2.1746171                      | 16,013,280  | 32,818,579   | 2,018,904  | 205,953  | 7,314,334   |
| City of Taylorsville           | 336,326                | 0.1921505                      | 1,414,943   | 2,899,870  | 178,392  | 18,198   | 646,299   |
| City of Uintah                 | 20,194                 | 0.0115374                      | 84,958  | 174,119  | 10,711   | 1,093  | 38,806  |
| City of Washington Terrace     | 160,023                | 0.0914244                      | 673,224   | 1,379,746  | 84,878   | 8,659  | 307,506   |
| City of Wendover               | 42,607                 | 0.0243421                      | 179,248   | 367,363  | 22,599   | 2,305  | 81,875  |
| City of West Haven             | 115,822                | 0.0661714                      | 487,268   | 998,636  | 61,433   | 6,267  | 222,568   |
| City of West Jordan            | 2,182,352              | 1.2468246                      | 9,181,272   | 18,816,651   | 1,157,546  | 118,084  | 4,193,700   |
| City of Woodland Hills         | 44,111                 | 0.0252014                      | 185,576   | 380,331  | 23,397   | 2,387  | 84,765  |
| Clearfield City                | 563,939                | 0.3221902                      | 2,372,520   | 4,862,385  | 299,120  | 30,514   | 1,083,688   |
| Cleveland Town                 | 2,089                  | 0.0011934                      | 8,788   | 18,010   | 1,108  | 113  | 4,014   |
| Clinton City                   | 294,996                | 0.1685376                      | 1,241,064   | 2,543,512  | 156,469  | 15,962   | 566,877   |
| Coalville City                 | 47,873                 | 0.0273507                      | 201,403   | 412,767  | 25,392   | 2,590  | 91,994  |
| Cottonwood Heights City        | 310,253                | 0.1772544                      | 1,305,252   | 2,675,063  | 164,562  | 16,787   | 596,196   |
| Cottonwood Heights P&R Srv     | 157,369                | 0.0899081                      | 662,058   | 1,356,862  | 83,470   | 8,515  | 302,406   |
| Cottonwood Imp District        | 343,630                | 0.1963233                      | 1,445,671   | 2,962,844  | 182,266  | 18,593   | 660,334   |
| Council On Aging Golden Age SS | 46,257                 | 0.0264275                      | 194,605   | 398,835  | 24,535   | 2,503  | 88,889  |
| Daggett County                 | 92,253                 | 0.0527063                      | 388,115   | 795,425  | 48,932   | 4,992  | 177,278   |
| Davis Behavioral Health Inc    | 1,477,332              | 0.8440316                      | 6,215,216   | 12,737,837   | 783,595  | 79,936   | 2,838,904   |
| Davis Co Housing Authority     | 63,153                 | 0.0360808                      | 265,689   | 544,519  | 33,497   | 3,417  | 121,358   |
| Davis Co Mosquito Abate        | 43,167                 | 0.0246622                      | 181,606   | 372,194  | 22,896   | 2,336  | 82,951  |
| Davis County                   | 4,625,756              | 2.6427938                      | 19,460,803  | 39,884,142   | 2,453,556  | 250,293  | 8,889,048   |
| Delta City                     | 102,698                | 0.0586737                      | 432,057   | 885,483  | 54,472   | 5,557  | 197,349   |
| Duchesne Co Water Conserv Dist | 36,939                 | 0.0211042                      | 155,405   | 318,497  | 19,593   | 1,999  | 70,984  |
| Duchesne County                | 564,353                | 0.3224271                      | 2,374,264   | 4,865,960  | 299,340  | 30,536   | 1,084,485   |
| E Duchesne Cul Water Imp Dist  | 11,891                 | 0.0067936                      | 50,026  | 102,527  | 6,307  | 643  | 22,850  |
| Eagle Mountain City            | 458,407                | 0.2618979                      | 1,928,544   | 3,952,474  | 243,145  | 24,804   | 880,895   |
| East Carbon City               | 35,150                 | 0.0200820                      | 147,878   | 303,071  | 18,644   | 1,902  | 67,546  |
| Elk Ridge City                 | 23,755                 | 0.0135720                      | 99,940  | 204,824  | 12,600   | 1,285  | 45,649  |
| Emery County                   | 456,265                | 0.2606737                      | 1,919,529   | 3,933,998  | 242,008  | 24,688   | 876,777   |
| Emery County Recreation SSD    | 2,792                  | 0.0015950                      | 11,745  | 24,071   | 1,481  | 151  | 5,365   |
| Emery Water Conserv Dist       | 45,455                 | 0.0259695                      | 191,232   | 391,923  | 24,110   | 2,460  | 87,349  |
| Enoch City                     | 76,220                 | 0.0435459                      | 320,660   | 657,180  | 40,428   | 4,124  | 146,467   |
| Ephraim City                   | 193,399                | 0.1104928                      | 813,638   | 1,667,520  | 102,581  | 10,465   | 371,643   |
| Escalante City                 | 33,852                 | 0.0193404                      | 142,417   | 291,879  | 17,956   | 1,832  | 65,052  |
| Eureka City Corporation        | 15,895                 | 0.0090812                      | 66,871  | 137,050  | 8,431  | 860  | 30,545  |
| Fairview City                  | 41,756                 | 0.0238559                      | 175,668   | 360,025  | 22,148   | 2,259  | 80,239  |
| Farmington City                | 428,171                | 0.2446235                      | 1,801,340   | 3,691,774  | 227,107  | 23,168   | 822,792   |
| Farr West City                 | 70,574                 | 0.0403204                      | 296,908   | 608,502  | 37,433   | 3,819  | 135,618   |
| Ferron City                    | 17,132                 | 0.0097880                      | 72,076  | 147,717  | 9,087  | 927  | 32,922  |
| Fillmore City                  | 68,252                 | 0.0389938                      | 287,140   | 588,481  | 36,202   | 3,693  | 131,156   |
| Five-County Assn of Govts      | 270,860                | 0.1547481                      | 1,139,522   | 2,335,405  | 143,667  | 14,656   | 520,496   |
| Fountain Green City            | 16,593                 | 0.0094802                      | 69,810  | 143,072  | 8,801  | 898  | 31,887  |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   |   |  |  |
| 48,177                         | 101   | 217,172                              | 6,708  | 89,433   | —                      | 13,135  | 109,276   | 99,558  | (7,088)   | —  | 92,470   |
| 26,744                         | 9,733   | 130,233                              | 3,723  | 49,646   | —                      | —   | 53,369  | 55,266  | 5,288   | —  | 60,554   |
| 297,953                        | 252,441   | 1,594,927                            | 41,483   | 553,102  | —                      | 34,451  | 629,036   | 615,718   | 75,179  | —  | 690,897  |
| 35,436                         | 3,855   | 163,520                              | 4,934  | 65,782   | —                      | 25,815  | 96,531  | 73,229  | (5,961)   | —  | 67,268   |
| 32,955                         | 47,773  | 196,260                              | 4,588  | 61,176   | —                      | —   | 65,764  | 68,102  | 34,520  | —  | 102,622  |
| 248,138                        | 30,179  | 1,148,213                            | 34,547   | 460,629  | —                      | 23,203  | 518,379   | 512,775   | 8,923   | —  | 521,698  |
| 1,155,168                      | 81,966  | 5,286,804                            | 160,830  | 2,144,386  | —                      | 71,694  | 2,376,910   | 2,387,148   | (13,746)  | —  | 2,373,402  |
| 498,149                        | 13,243  | 2,257,750                            | 69,356   | 924,734  | —                      | 102,478   | 1,096,568   | 1,029,421   | (34,788)  | —  | 994,633  |
| 152,564                        | 61,790  | 749,197                              | 21,241   | 283,211  | —                      | 12,737  | 317,189   | 315,273   | 14,051  | —  | 329,324  |
| 311,992                        | 104,549   | 1,510,291                            | 43,438   | 579,164  | —                      | —   | 622,602   | 644,730   | 53,149  | —  | 697,879  |
| 1,020,759                      | 1,176,779                                       | 5,776,009                            | 142,117  | 1,894,876  | —                      | —   | 2,036,993   | 2,109,392   | 1,051,363   | —  | 3,160,755  |
| 457,957                        | 15,957  | 2,077,751                            | 63,710   | 849,456  | —                      | 56,762  | 969,928   | 945,621   | (33,037)  | —  | 912,584  |
| 2,145,161                      | 95,080  | 9,760,528                            | 298,664  | 3,982,151  | —                      | 26,938  | 4,307,753   | 4,432,963   | 74,039  | —  | 4,507,002  |
| 189,548                        | 77,606  | 931,651                              | 26,390   | 351,865  | —                      | 67,141  | 445,396   | 391,699   | (12,243)  | —  | 379,456  |
| 11,381                         | 11,214  | 62,494                               | 1,585  | 21,127   | —                      | 1,295   | 24,007  | 23,519  | 4,180   | —  | 27,699   |
| 90,186                         | 5,948   | 412,299                              | 12,556   | 167,416  | —                      | 1,727   | 181,699   | 186,369   | 2,981   | —  | 189,350  |
| 24,012                         | 18,454  | 126,646                              | 3,343  | 44,575   | —                      | 7,469   | 55,387  | 49,621  | 5,841   | —  | 55,462   |
| 65,275                         | 20,873  | 314,983                              | 9,088  | 121,173  | —                      | 2,926   | 133,187   | 134,891   | 6,116   | —  | 141,007  |
| 1,229,936                      | 141,611   | 5,683,331                            | 171,240  | 2,283,181  | —                      | 99,523  | 2,553,944   | 2,541,655   | 62,550  | —  | 2,604,205  |
| 24,860                         | 48,583  | 160,595                              | 3,461  | 46,149   | —                      | 88  | 49,698  | 51,373  | 21,173  | —  | 72,546   |
| 317,826                        | 42,186  | 1,474,214                            | 44,250   | 589,994  | —                      | 24,218  | 658,462   | 656,786   | (12,633)  | —  | 644,153  |
| 1,177                          | 154   | 5,458                                | 164  | 2,185  | —                      | 1,539   | 3,888   | 2,433   | (1,548)   | —  | 885  |
| 166,255                        | 15,005  | 764,099                              | 23,147   | 308,625  | —                      | 7,334   | 339,106   | 343,564   | (254)   | —  | 343,310  |
| 26,980                         | 5,089   | 126,653                              | 3,756  | 50,085   | —                      | 291   | 54,132  | 55,754  | 2,080   | —  | 57,834   |
| 174,853                        | 61,870  | 849,706                              | 24,344   | 324,588  | —                      | 50,733  | 399,665   | 361,334   | 30,004  | —  | 391,338  |
| 88,690                         | 13,130  | 412,741                              | 12,348   | 164,639  | —                      | 10,813  | 187,800   | 183,278   | 11,033  | —  | 194,311  |
| 193,664                        | 4,323   | 876,914                              | 26,963   | 359,507  | —                      | 75,433  | 461,903   | 400,206   | (29,148)  | —  | 371,058  |
| 26,070                         | —   | 117,462                              | 3,630  | 48,394   | —                      | 17,503  | 69,527  | 53,873  | (10,545)  | —  | 43,328   |
| 51,992                         | —   | 234,262                              | 7,239  | 96,516   | —                      | 69,865  | 173,620   | 107,442   | (40,567)  | —  | 66,875   |
| 832,599                        | 185,734   | 3,937,173                            | 115,920  | 1,545,588  | —                      | 71,562  | 1,733,070   | 1,720,561   | 43,085  | —  | 1,763,646  |
| 35,592                         | 41,960  | 202,327                              | 4,955  | 66,071   | —                      | 17,037  | 88,063  | 73,551  | 34,772  | —  | 108,323  |
| 24,328                         | 7,670   | 117,285                              | 3,387  | 45,161   | —                      | 1,919   | 50,467  | 50,274  | 45  | —  | 50,319   |
| 2,606,997                      | 151,995   | 11,898,333                           | 362,964  | 4,839,475  | —                      | 215,588   | 5,418,027   | 5,387,342   | (57,700)  | —  | 5,329,642  |
| 57,879                         | 5,834   | 266,619                              | 8,058  | 107,443  | —                      | 10,976  | 126,477   | 119,606   | (8,133)   | —  | 111,473  |
| 20,818                         | 14,627  | 108,428                              | 2,898  | 38,646   | —                      | 965   | 42,509  | 43,021  | 6,242   | —  | 49,263   |
| 318,060                        | 388,529   | 1,821,610                            | 44,282   | 590,427  | —                      | 21,143  | 655,852   | 657,268   | 317,476   | —  | 974,744  |
| 6,702                          | 880   | 31,075                               | 933  | 12,440   | —                      | 348   | 13,721  | 13,849  | 316   | —  | 14,165   |
| 258,350                        | 32,347  | 1,196,396                            | 35,969   | 479,587  | —                      | 86,965  | 602,521   | 533,880   | (83,891)  | —  | 449,989  |
| 19,810                         | 1,799   | 91,057                               | 2,758  | 36,774   | —                      | 41,651  | 81,183  | 40,937  | (15,836)  | —  | 25,101   |
| 13,388                         | 13,989  | 74,311                               | 1,864  | 24,853   | —                      | 12,602  | 39,319  | 27,667  | (7,652)   | —  | 20,015   |
| 257,143                        | 9,832   | 1,168,440                            | 35,801   | 477,345  | —                      | 131,276   | 644,422   | 531,384   | (74,934)  | —  | 456,450  |
| 1,573                          | 186   | 7,275                                | 219  | 2,921  | —                      | 1,904   | 5,044   | 3,251   | (902)   | —  | 2,349  |
| 25,618                         | 6,750   | 122,177                              | 3,567  | 47,555   | —                      | 3,818   | 54,940  | 52,939  | 2,186   | —  | 55,125   |
| 42,956                         | —   | 193,547                              | 5,981  | 79,741   | —                      | 2,826   | 88,548  | 88,768  | (1,476)   | —  | 87,292   |
| 108,996                        | 39,337  | 530,441                              | 15,175   | 202,334  | —                      | 914   | 218,423   | 225,240   | 18,939  | —  | 244,179  |
| 19,078                         | 1,637   | 87,599                               | 2,656  | 35,416   | —                      | 2,105   | 40,177  | 39,425  | (1,653)   | —  | 37,772   |
| 8,958                          | 2,949   | 43,312                               | 1,247  | 16,629   | —                      | 7,583   | 25,459  | 18,512  | (1,435)   | —  | 17,077   |
| 23,533                         | 2,022   | 108,053                              | 3,276  | 43,685   | —                      | 35,725  | 82,686  | 48,630  | (12,596)  | —  | 36,034   |
| 241,310                        | 33,612  | 1,120,882                            | 33,597   | 447,954  | —                      | 40,113  | 521,664   | 498,666   | 6,684   | —  | 505,350  |
| 39,774                         | 15,539  | 194,750                              | 5,538  | 73,835   | —                      | 1,064   | 80,437  | 82,193  | 8,513   | —  | 90,706   |
| 9,655                          | —   | 43,504                               | 1,344  | 17,924   | —                      | 18,392  | 37,660  | 19,953  | (9,804)   | —  | 10,149   |
| 38,466                         | 8,480   | 181,795                              | 5,355  | 71,405   | —                      | 4,311   | 81,071  | 79,489  | 3,523   | —  | 83,012   |
| 152,652                        | 5,181   | 692,985                              | 21,253   | 283,374  | —                      | 19,618  | 324,245   | 315,454   | (17,095)  | —  | 298,359  |
| 9,352                          | 74  | 42,211                               | 1,302  | 17,360   | —                      | 5,251   | 23,913  | 19,325  | (2,637)   | —  | 16,688   |

**Noncontributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer             | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Fox Hollow Golf Course             | \$ 27,957              | 0.0159724%                     | \$ 117,616  | 241,050  | 14,829   | 1,513  | 53,723  |
| Francis City                       | 26,181                 | 0.0149577                      | 110,144   | 225,737  | 13,887   | 1,417  | 50,310  |
| Fruit Heights City                 | 71,373                 | 0.0407770                      | 300,271   | 615,393  | 37,857   | 3,862  | 137,154   |
| Garfield County                    | 328,176                | 0.1874938                      | 1,380,653   | 2,829,592  | 174,068  | 17,757   | 630,636   |
| Genola Town                        | 17,759                 | 0.0101460                      | 74,712  | 153,120  | 9,419  | 961  | 34,126  |
| Grand Co Cemetery Mtce Dist        | 17,588                 | 0.0100483                      | 73,993  | 151,646  | 9,329  | 952  | 33,797  |
| Grand County                       | 739,734                | 0.4226258                      | 3,112,100   | 6,378,124  | 392,364  | 40,026   | 1,421,504   |
| Grand Water/Sewer Service          | 47,608                 | 0.0271994                      | 200,289   | 410,484  | 25,252   | 2,576  | 91,485  |
| Granger-Hunter Imp Dist            | 662,004                | 0.3782173                      | 2,785,088   | 5,707,926  | 351,135  | 35,820   | 1,272,136   |
| Grantsville City                   | 186,660                | 0.1066429                      | 785,289   | 1,609,418  | 99,007   | 10,100   | 358,694   |
| Gunnison City                      | 44,201                 | 0.0252528                      | 185,955   | 381,107  | 23,445   | 2,392  | 84,938  |
| Gunnison Valley Hospital           | 948,034                | 0.5416321                      | 3,988,429   | 8,174,127  | 502,849  | 51,297   | 1,821,782   |
| Gunnison Valley Police Dept        | 11,866                 | 0.0067793                      | 49,921  | 102,311  | 6,294  | 642  | 22,802  |
| Heber City                         | 442,178                | 0.2526255                      | 1,860,264   | 3,812,538  | 234,536  | 23,926   | 849,707   |
| Heber Light & Power                | 516,642                | 0.2951687                      | 2,173,541   | 4,454,585  | 274,033  | 27,955   | 992,801   |
| Heber Valley SSD                   | 34,216                 | 0.0195482                      | 143,948   | 295,015  | 18,148   | 1,851  | 65,750  |
| Herriman City                      | 907,245                | 0.5183287                      | 3,816,829   | 7,822,440  | 481,214  | 49,090   | 1,743,401   |
| Highland City                      | 219,738                | 0.1255408                      | 924,448   | 1,894,619  | 116,551  | 11,890   | 422,257   |
| Hinckley Town                      | 12,097                 | 0.0069110                      | 50,891  | 104,298  | 6,416  | 655  | 23,245  |
| Hooper City                        | 48,982                 | 0.0279846                      | 206,071   | 422,334  | 25,981   | 2,650  | 94,126  |
| Hooper Water Improv Dist           | 87,637                 | 0.0500689                      | 368,694   | 755,623  | 46,484   | 4,742  | 168,407   |
| Housing Auth of Carbon Co          | 44,109                 | 0.0252005                      | 185,570   | 380,317  | 23,396   | 2,387  | 84,762  |
| Housing Auth of SI County          | 520,665                | 0.2974673                      | 2,190,467   | 4,489,275  | 276,167  | 28,172   | 1,000,533   |
| Housing Authority of SLC           | 553,357                | 0.3161449                      | 2,328,004   | 4,771,151  | 293,507  | 29,941   | 1,063,355   |
| Housing Authority Ogden City       | 116,826                | 0.0667449                      | 491,491   | 1,007,291  | 61,966   | 6,321  | 224,497   |
| Huntington City                    | 31,311                 | 0.0178888                      | 131,728   | 269,972  | 16,608   | 1,694  | 60,169  |
| Hurricane City                     | 618,819                | 0.3535448                      | 2,603,406   | 5,335,577  | 328,229  | 33,483   | 1,189,149   |
| Hurricane Valley Fire SSD          | 16,395                 | 0.0093666                      | 68,973  | 141,358  | 8,696  | 887  | 31,505  |
| Hyde Park City                     | 87,506                 | 0.0499939                      | 368,141   | 754,491  | 46,414   | 4,735  | 168,155   |
| Hyrum City                         | 241,575                | 0.1380172                      | 1,016,321   | 2,082,908  | 128,134  | 13,071   | 464,221   |
| Impact Mitigation SSD              | 18,890                 | 0.0107925                      | 79,473  | 162,877  | 10,020   | 1,022  | 36,301  |
| Iron County                        | 755,345                | 0.4315446                      | 3,177,775   | 6,512,724  | 400,644  | 40,871   | 1,451,502   |
| Ivins City                         | 243,496                | 0.1391147                      | 1,024,402   | 2,099,472  | 129,153  | 13,175   | 467,913   |
| Jordan River Commission            | 16,550                 | 0.0094553                      | 69,626  | 142,696  | 8,778  | 895  | 31,803  |
| Jordan Valley Water Conserv        | 1,516,395              | 0.8663487                      | 6,379,552   | 13,074,639   | 804,314  | 82,050   | 2,913,968   |
| Jordanville SSD                    | 265,995                | 0.1519688                      | 1,119,056   | 2,293,461  | 141,087  | 14,393   | 511,148   |
| Juab County                        | 320,829                | 0.1832967                      | 1,349,746   | 2,766,251  | 170,172  | 17,360   | 616,519   |
| Juab Special Service Fire District | 4,127                  | 0.0023579                      | 17,363  | 35,585   | 2,189  | 223  | 7,931   |
| Kamas City                         | 40,166                 | 0.0229475                      | 168,979   | 346,316  | 21,304   | 2,173  | 77,184  |
| Kane County                        | 442,300                | 0.2526955                      | 1,860,780   | 3,813,594  | 234,601  | 23,932   | 849,942   |
| Kane County Water Conserv Dist     | 70,044                 | 0.0400175                      | 294,678   | 603,930  | 37,152   | 3,790  | 134,599   |
| Kaysville City                     | 652,430                | 0.3727471                      | 2,744,807   | 5,625,372  | 346,057  | 35,302   | 1,253,736   |
| Kearns Improvement Dist            | 323,982                | 0.1850976                      | 1,363,008   | 2,793,430  | 171,844  | 17,530   | 622,577   |
| Laverkin City                      | 101,873                | 0.0582024                      | 428,586   | 878,371  | 54,035   | 5,512  | 195,764   |
| Layton City                        | 1,201,919              | 0.6866822                      | 5,056,538   | 10,363,173   | 637,512  | 65,034   | 2,309,659   |
| Lehi City                          | 1,666,053              | 0.9518516                      | 7,009,172   | 14,365,019   | 883,694  | 90,148   | 3,201,557   |
| Lewiston City                      | 30,993                 | 0.0177069                      | 130,389   | 267,226  | 16,439   | 1,677  | 59,557  |
| Lindon City                        | 357,006                | 0.2039654                      | 1,501,945   | 3,078,176  | 189,360  | 19,317   | 686,038   |
| Logan City                         | 2,282,979              | 1.3043148                      | 9,604,614   | 19,684,274   | 1,210,919  | 123,529  | 4,387,068   |
| Lone Peak PS District              | 41,065                 | 0.0234613                      | 172,763   | 354,070  | 21,781   | 2,222  | 78,912  |
| Maeser Water Improve Dist          | 59,402                 | 0.0339377                      | 249,908   | 512,176  | 31,508   | 3,214  | 114,150   |
| Magna Mosquito Abatement           | 19,956                 | 0.0114011                      | 83,955  | 172,062  | 10,585   | 1,080  | 38,348  |
| Manti City                         | 84,414                 | 0.0482278                      | 355,136   | 727,837  | 44,774   | 4,568  | 162,214   |
| Mapleton City                      | 234,788                | 0.1341395                      | 987,766   | 2,024,388  | 124,534  | 12,704   | 451,179   |
| Marriott-Slaterville City          | 32,737                 | 0.0187032                      | 137,725   | 282,262  | 17,364   | 1,771  | 62,908  |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |   |   |   |  |  |
| 15,756                         | 6,412   | 77,404                               | 2,194  | 29,249  | —                      | 1,088   | 32,531  | 32,560  | 1,865   | —  | 34,425   |
| 14,755                         | 7,881   | 74,363                               | 2,054  | 27,390  | —                      | —   | 29,444  | 30,491  | 3,747   | —  | 34,238   |
| 40,225                         | 5,653   | 186,894                              | 5,600  | 74,671  | —                      | 991   | 81,262  | 83,124  | 3,837   | —  | 86,961   |
| 184,954                        | —   | 833,347                              | 25,751   | 343,338   | —                      | 63,886  | 432,975   | 382,207   | (29,407)  | —  | 352,800  |
| 10,009                         | 2,282   | 47,378                               | 1,393  | 18,579  | —                      | —   | 19,972  | 20,683  | 1,814   | —  | 22,497   |
| 9,912                          | 9,201   | 53,862                               | 1,380  | 18,400  | —                      | —   | 19,780  | 20,483  | 5,222   | —  | 25,705   |
| 416,901                        | 85,583  | 1,964,014                            | 58,044   | 773,911   | —                      | 55,223  | 887,178   | 861,524   | 5,309   | —  | 866,833  |
| 26,831                         | 23,318  | 144,210                              | 3,736  | 49,807  | —                      | 5,575   | 59,118  | 55,446  | 4,448   | —  | 59,894   |
| 373,094                        | —   | 1,681,050                            | 51,945   | 692,590   | —                      | 115,894   | 860,429   | 770,997   | (70,273)  | —  | 700,724  |
| 105,198                        | 1,206   | 475,198                              | 14,646   | 195,284   | —                      | 10,611  | 220,541   | 217,392   | (8,545)   | —  | 208,847  |
| 24,911                         | 884   | 113,125                              | 3,468  | 46,243  | —                      | 7,142   | 56,853  | 51,478  | (3,960)   | —  | 47,518   |
| 534,296                        | 89,853  | 2,497,228                            | 74,388   | 991,835   | —                      | 25,155  | 1,091,378   | 1,104,118   | 64,669  | —  | 1,168,787  |
| 6,687                          | 17,003  | 47,134                               | 931  | 12,414  | —                      | —   | 13,345  | 13,820  | 8,205   | —  | 22,025   |
| 249,204                        | 142,987   | 1,265,824                            | 34,696   | 462,607   | —                      | —   | 497,303   | 514,978   | 69,611  | —  | 584,589  |
| 291,171                        | 37,971  | 1,349,898                            | 40,539   | 540,512   | —                      | 70,091  | 651,142   | 601,702   | (30,048)  | —  | 571,654  |
| 19,283                         | —   | 86,884                               | 2,685  | 35,797  | —                      | 7,520   | 46,002  | 39,849  | (3,891)   | —  | 35,958   |
| 511,308                        | 218,160   | 2,521,959                            | 71,188   | 949,162   | —                      | —   | 1,020,350   | 1,056,614   | 126,339   | —  | 1,182,953  |
| 123,840                        | 2,968   | 560,955                              | 17,242   | 229,890   | —                      | 38,028  | 285,160   | 255,915   | (15,754)  | —  | 240,161  |
| 6,817                          | 3,921   | 34,638                               | 949  | 12,655  | —                      | 3,474   | 17,078  | 14,088  | (217)   | —  | 13,871   |
| 27,606                         | 3,710   | 128,092                              | 3,843  | 51,245  | —                      | 23,244  | 78,332  | 57,047  | (9,882)   | —  | 47,165   |
| 49,391                         | 16,558  | 239,098                              | 6,877  | 91,686  | —                      | 52  | 98,615  | 102,066   | 7,451   | —  | 109,517  |
| 24,859                         | 6,563   | 118,571                              | 3,461  | 46,147  | —                      | 21,632  | 71,240  | 51,371  | (10,545)  | —  | 40,826   |
| 293,438                        | 15,702  | 1,337,845                            | 40,854   | 544,721   | —                      | 55,543  | 641,118   | 606,388   | (19,706)  | —  | 586,682  |
| 311,863                        | 36,376  | 1,441,535                            | 43,420   | 578,923   | —                      | 60,472  | 682,815   | 644,462   | (46,113)  | —  | 598,349  |
| 65,841                         | 2,697   | 299,356                              | 9,167  | 122,223   | —                      | 37,723  | 169,113   | 136,060   | (13,175)  | —  | 122,885  |
| 17,646                         | 2,593   | 82,102                               | 2,457  | 32,758  | —                      | 13,545  | 48,760  | 36,466  | (5,152)   | —  | 31,314   |
| 348,756                        | 55,374  | 1,626,762                            | 48,556   | 647,410   | —                      | 17,680  | 713,646   | 720,702   | 23,472  | —  | 744,174  |
| 9,240                          | 11,427  | 53,059                               | 1,286  | 17,152  | —                      | —   | 18,438  | 19,094  | 9,809   | —  | 28,903   |
| 49,317                         | 16,207  | 238,414                              | 6,866  | 91,549  | —                      | 2,364   | 100,779   | 101,913   | 3,792   | —  | 105,705  |
| 136,148                        | 15,385  | 628,825                              | 18,955   | 252,737   | —                      | 30,590  | 302,282   | 281,348   | (8,268)   | —  | 273,080  |
| 10,646                         | 370   | 48,339                               | 1,482  | 19,763  | —                      | 25,788  | 47,033  | 22,001  | (9,984)   | —  | 12,017   |
| 425,699                        | 9,755   | 1,927,827                            | 59,269   | 790,243   | —                      | 121,461   | 970,973   | 879,705   | (79,878)  | —  | 799,827  |
| 137,230                        | 7,505   | 625,823                              | 19,106   | 254,746   | —                      | 50,198  | 324,050   | 283,586   | (17,143)  | —  | 266,443  |
| 9,327                          | 2,721   | 44,746                               | 1,299  | 17,315  | —                      | 2,099   | 20,713  | 19,275  | 220   | —  | 19,495   |
| 854,614                        | 1,917   | 3,852,549                            | 118,985  | 1,586,455   | —                      | 42,058  | 1,747,498   | 1,766,054   | (26,313)  | —  | 1,739,741  |
| 149,910                        | 30,147  | 705,598                              | 20,872   | 278,285   | —                      | 8,887   | 308,044   | 309,789   | 8,672   | —  | 318,461  |
| 180,814                        | 57,003  | 871,696                              | 25,174   | 335,652   | —                      | 5,859   | 366,685   | 373,651   | 16,996  | —  | 390,647  |
| 2,326                          | 7,912   | 18,392                               | 324  | 4,318   | —                      | —   | 4,642   | 4,807   | 2,933   | —  | 7,740  |
| 22,637                         | 529   | 102,523                              | 3,152  | 42,021  | —                      | 6,382   | 51,555  | 46,779  | (2,142)   | —  | 44,637   |
| 249,273                        | 15,168  | 1,138,315                            | 34,705   | 462,735   | —                      | 33,894  | 531,334   | 515,120   | (10,576)  | —  | 504,544  |
| 39,475                         | 3,359   | 181,223                              | 5,496  | 73,280  | —                      | 16,134  | 94,910  | 81,576  | (3,890)   | —  | 77,686   |
| 367,698                        | 48,434  | 1,705,170                            | 51,193   | 682,573   | —                      | 40,192  | 773,958   | 759,846   | 15,920  | —  | 775,766  |
| 182,590                        | 12,717  | 835,414                              | 25,421   | 338,950   | —                      | 12,888  | 377,259   | 377,322   | (3,851)   | —  | 373,471  |
| 57,414                         | 140,864   | 399,554                              | 7,994  | 106,580   | —                      | —   | 114,574   | 118,646   | 70,139  | —  | 188,785  |
| 677,381                        | —   | 3,052,074                            | 94,310   | 1,257,450   | —                      | 166,306   | 1,518,066   | 1,399,803   | (94,181)  | —  | 1,305,622  |
| 938,959                        | 278,306   | 4,508,970                            | 130,728  | 1,743,027   | —                      | —   | 1,873,755   | 1,940,352   | 131,428   | —  | 2,071,780  |
| 17,467                         | 791   | 79,492                               | 2,432  | 32,425  | —                      | 14,538  | 49,395  | 36,096  | (6,520)   | —  | 29,576   |
| 201,203                        | 46,708  | 953,266                              | 28,013   | 373,501   | —                      | 1,397   | 402,911   | 415,784   | 23,927  | —  | 439,711  |
| 1,286,648                      | 26,775  | 5,824,020                            | 179,136  | 2,388,457   | —                      | 132,145   | 2,699,738   | 2,658,849   | (54,229)  | —  | 2,604,620  |
| 23,144                         | 18,092  | 122,370                              | 3,222  | 42,962  | —                      | 1,576   | 47,760  | 47,826  | 5,636   | —  | 53,462   |
| 33,478                         | 171   | 151,013                              | 4,661  | 62,147  | —                      | 3,859   | 70,667  | 69,182  | (4,174)   | —  | 65,008   |
| 11,247                         | 12,203  | 62,878                               | 1,566  | 20,878  | —                      | 1,148   | 23,592  | 23,241  | 3,075   | —  | 26,316   |
| 47,575                         | 2,922   | 217,279                              | 6,624  | 88,315  | —                      | 25,823  | 120,762   | 98,312  | (6,580)   | —  | 91,732   |
| 132,323                        | 1,008   | 597,214                              | 18,423   | 245,636   | —                      | 34,140  | 298,199   | 273,444   | (15,382)  | —  | 258,062  |
| 18,450                         | 4,487   | 87,616                               | 2,569  | 34,249  | —                      | 44  | 36,862  | 38,127  | 2,080   | —  | 40,207   |

**Noncontributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Mayfield Town                  | \$ 10,405              | 0.0059448%                     | \$ 43,776   | 89,717   | 5,519  | 563  | 19,995  |
| Mendon City                    | 10,523                 | 0.0060120                      | 44,271  | 90,731   | 5,582  | 569  | 20,221  |
| Metro Water Dist Slc/Sandy     | 713,615                | 0.4077037                      | 3,002,217   | 6,152,925  | 378,510  | 38,613   | 1,371,313   |
| Midvale City                   | 640,127                | 0.3657182                      | 2,693,048   | 5,519,294  | 339,531  | 34,636   | 1,230,095   |
| Midvalley Improvement District | 118,651                | 0.0677878                      | 499,171   | 1,023,030  | 62,934   | 6,420  | 228,005   |
| Midway City                    | 113,321                | 0.0647429                      | 476,749   | 977,078  | 60,107   | 6,132  | 217,763   |
| Military Installation Devel    | 24,935                 | 0.0142456                      | 104,901   | 214,990  | 13,226   | 1,349  | 47,915  |
| Millard Co Care & Rehab Inc    | 223,628                | 0.1277634                      | 940,814   | 1,928,162  | 118,615  | 12,100   | 429,733   |
| Millard County                 | 668,493                | 0.3819245                      | 2,812,387   | 5,763,874  | 354,577  | 36,171   | 1,284,605   |
| Millcreek City                 | 199,702                | 0.1140939                      | 840,156   | 1,721,866  | 105,924  | 10,806   | 383,755   |
| Millville City                 | 27,146                 | 0.0155088                      | 114,203   | 234,054  | 14,398   | 1,469  | 52,164  |
| Minersville Town               | 28,576                 | 0.0163259                      | 120,219   | 246,385  | 15,157   | 1,546  | 54,912  |
| Moab Valley Fire Protection    | 5,302                  | 0.0030294                      | 22,308  | 45,719   | 2,812  | 287  | 10,189  |
| Monroe City                    | 82,623                 | 0.0472042                      | 347,599   | 712,390  | 43,824   | 4,471  | 158,772   |
| Morgan City Corporation        | 136,927                | 0.0782296                      | 576,061   | 1,180,614  | 72,628   | 7,409  | 263,126   |
| Morgan County                  | 231,405                | 0.1322064                      | 973,531   | 1,995,214  | 122,740  | 12,521   | 444,677   |
| Moroni City                    | 16,687                 | 0.0095338                      | 70,204  | 143,881  | 8,851  | 903  | 32,067  |
| Mount Pleasant City            | 110,378                | 0.0630613                      | 464,366   | 951,700  | 58,546   | 5,972  | 212,107   |
| Mountain Regional Water SSD    | 295,667                | 0.1689206                      | 1,243,885   | 2,549,292  | 156,825  | 15,998   | 568,165   |
| Mountainland Assn of Govt      | 403,414                | 0.2304793                      | 1,697,186   | 3,478,315  | 213,976  | 21,828   | 775,218   |
| Mt Olympus Improvement Dist    | 299,786                | 0.1712743                      | 1,261,217   | 2,584,813  | 159,010  | 16,221   | 576,082   |
| Murray City                    | 2,471,027              | 1.4117505                      | 10,395,741  | 21,305,657   | 1,310,662  | 133,704  | 4,748,429   |
| Myton City                     | 14,804                 | 0.0084576                      | 62,279  | 127,639  | 7,852  | 801  | 28,447  |
| N Ut Environmental Rsrc Agcy   | 71,576                 | 0.0408931                      | 301,125   | 617,145  | 37,965   | 3,873  | 137,544   |
| Nebo Credit Union              | 139,865                | 0.0799079                      | 588,420   | 1,205,943  | 74,186   | 7,568  | 268,771   |
| Nephi City                     | 277,154                | 0.1583441                      | 1,166,002   | 2,389,675  | 147,006  | 14,996   | 532,591   |
| Nibley City Corporation        | 111,420                | 0.0636569                      | 468,752   | 960,688  | 59,099   | 6,029  | 214,110   |
| North Davis Co Sewer Dist      | 480,640                | 0.2746000                      | 2,022,079   | 4,144,169  | 254,937  | 26,007   | 923,618   |
| North Davis Fire District      | 11,527                 | 0.0065856                      | 48,495  | 99,388   | 6,114  | 624  | 22,151  |
| North Emery Water Users SSD    | 6,014                  | 0.0034359                      | 25,301  | 51,853   | 3,190  | 325  | 11,557  |
| North Fork SSD                 | 20,759                 | 0.0118602                      | 87,335  | 178,990  | 11,011   | 1,123  | 39,892  |
| North Logan City               | 120,981                | 0.0691193                      | 508,975   | 1,043,125  | 64,170   | 6,546  | 232,483   |
| North Ogden City               | 311,882                | 0.1781850                      | 1,312,105   | 2,689,107  | 165,426  | 16,876   | 599,326   |
| North Park Police Agency       | 15,728                 | 0.0089855                      | 66,167  | 135,606  | 8,342  | 851  | 30,223  |
| North Pointe Solid Waste       | 184,565                | 0.1054460                      | 776,475   | 1,591,355  | 97,896   | 9,987  | 354,668   |
| North View Fire District       | 8,914                  | 0.0050926                      | 37,500  | 76,856   | 4,728  | 482  | 17,129  |
| Northeastern Counseling Ctr    | 353,057                | 0.2017090                      | 1,485,329   | 3,044,123  | 187,266  | 19,103   | 678,449   |
| Ogden City Corp                | 2,436,229              | 1.3918699                      | 10,249,345  | 21,005,625   | 1,292,205  | 131,821  | 4,681,560   |
| Oquirrh Rec And Parks District | 156,168                | 0.0892220                      | 657,006   | 1,346,508  | 82,833   | 8,450  | 300,099   |
| Orangeville City               | 19,928                 | 0.0113851                      | 83,837  | 171,820  | 10,570   | 1,078  | 38,294  |
| Orderville Town                | 15,469                 | 0.0088379                      | 65,080  | 133,379  | 8,205  | 837  | 29,726  |
| Panguitch City Corporation     | 41,596                 | 0.0237645                      | 174,995   | 358,646  | 22,063   | 2,251  | 79,932  |
| Park City                      | 2,123,512              | 1.2132077                      | 8,933,726   | 18,309,316   | 1,126,336  | 114,900  | 4,080,629   |
| Park City Fire Service         | 73,466                 | 0.0419730                      | 309,078   | 633,442  | 38,968   | 3,975  | 141,176   |
| Parowan City                   | 172,869                | 0.0987636                      | 727,268   | 1,490,507  | 91,692   | 9,354  | 332,192   |
| Payson City                    | 760,440                | 0.4344554                      | 3,199,210   | 6,556,653  | 403,346  | 41,146   | 1,461,293   |
| Perry City                     | 68,412                 | 0.0390854                      | 287,814   | 589,864  | 36,287   | 3,702  | 131,464   |
| Piute County                   | 83,126                 | 0.0474916                      | 349,715   | 716,727  | 44,091   | 4,498  | 159,738   |
| Plain City                     | 60,956                 | 0.0348254                      | 256,445   | 525,573  | 32,332   | 3,298  | 117,135   |
| Pleasant Grove City            | 547,241                | 0.3126507                      | 2,302,273   | 4,718,418  | 290,263  | 29,610   | 1,051,602   |
| Pleasant View City             | 133,718                | 0.0763960                      | 562,559   | 1,152,942  | 70,926   | 7,235  | 256,958   |
| Price City                     | 438,111                | 0.2503023                      | 1,843,157   | 3,777,477  | 232,379  | 23,706   | 841,893   |
| Price River Water Improve      | 240,974                | 0.1376738                      | 1,013,792   | 2,077,726  | 127,816  | 13,039   | 463,066   |
| Providence City                | 96,863                 | 0.0553400                      | 407,508   | 835,172  | 51,377   | 5,241  | 186,136   |
| Provo City Corp                | 3,647,968              | 2.0841620                      | 15,347,193  | 31,453,461   | 1,934,926  | 197,386  | 7,010,088   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   |   |  |  |
| 5,864                          | 6,223   | 32,645                               | 816  | 10,886   | —                      | 197   | 11,899  | 12,118  | 2,512   | —  | 14,630   |
| 5,931                          | 1,798   | 28,519                               | 826  | 11,009   | —                      | —   | 11,835  | 12,255  | 1,057   | —  | 13,312   |
| 402,181                        | 2,760   | 1,814,867                            | 55,994   | 746,586  | —                      | 43,110  | 845,690   | 831,105   | (19,643)  | —  | 811,462  |
| 360,764                        | 19,539  | 1,645,034                            | 50,228   | 669,702  | —                      | 19,846  | 739,776   | 745,518   | (6,204)   | —  | 739,314  |
| 66,870                         | 31,854  | 333,149                              | 9,310  | 124,133  | —                      | —   | 133,443   | 138,186   | 17,991  | —  | 156,177  |
| 63,866                         | 5,056   | 292,817                              | 8,892  | 118,557  | —                      | 18,531  | 145,980   | 131,979   | 438   | —  | 132,417  |
| 14,053                         | 4,649   | 67,966                               | 1,957  | 26,086   | —                      | 45,772  | 73,815  | 29,040  | (13,691)  | —  | 15,349   |
| 126,033                        | 35,204  | 603,070                              | 17,547   | 233,960  | —                      | 7,317   | 258,824   | 260,446   | 11,647  | —  | 272,093  |
| 376,751                        | —   | 1,697,527                            | 52,454   | 699,379  | —                      | 135,242   | 887,075   | 778,554   | (72,910)  | —  | 705,644  |
| 112,548                        | 372,907   | 880,016                              | 15,670   | 208,928  | —                      | —   | 224,598   | 232,581   | 141,513   | —  | 374,094  |
| 15,299                         | 1,863   | 70,795                               | 2,130  | 28,400   | —                      | 9,197   | 39,727  | 31,615  | (2,288)   | —  | 29,327   |
| 16,105                         | 5,801   | 78,364                               | 2,242  | 29,896   | —                      | 824   | 32,962  | 33,280  | 2,815   | —  | 36,095   |
| 2,988                          | 10,165  | 23,629                               | 416  | 5,547  | —                      | —   | 5,963   | 6,175   | 3,768   | —  | 9,943  |
| 46,565                         | 7,171   | 217,525                              | 6,483  | 86,440   | —                      | 8,341   | 101,264   | 96,226  | 2,294   | —  | 98,520   |
| 77,170                         | 12,303  | 360,008                              | 10,744   | 143,254  | —                      | 37,172  | 191,170   | 159,471   | (6,594)   | —  | 152,877  |
| 130,416                        | 2,376   | 589,990                              | 18,157   | 242,096  | —                      | 80,212  | 340,465   | 269,503   | (33,037)  | —  | 236,466  |
| 9,405                          | 1,787   | 44,162                               | 1,309  | 17,458   | —                      | 2,831   | 21,598  | 19,435  | (926)   | —  | 18,509   |
| 62,207                         | 13,691  | 293,977                              | 8,661  | 115,478  | —                      | 466   | 124,605   | 128,551   | 10,550  | —  | 139,101  |
| 166,633                        | 7,171   | 757,967                              | 23,200   | 309,327  | —                      | 20,431  | 352,958   | 344,345   | 1,401   | —  | 345,746  |
| 227,357                        | 31,596  | 1,055,999                            | 31,654   | 422,053  | —                      | —   | 453,707   | 469,833   | 16,720  | —  | 486,553  |
| 168,954                        | 14,142  | 775,399                              | 23,523   | 313,637  | —                      | 23,309  | 360,469   | 349,143   | (8,356)   | —  | 340,787  |
| 1,392,628                      | 68,446  | 6,343,207                            | 193,891  | 2,585,193  | —                      | 102,896   | 2,881,980   | 2,877,857   | (22,289)  | —  | 2,855,568  |
| 8,343                          | 8,676   | 46,267                               | 1,162  | 15,488   | —                      | 14,185  | 30,835  | 17,241  | (1,131)   | —  | 16,110   |
| 40,339                         | 103,906   | 285,662                              | 5,616  | 74,883   | —                      | —   | 80,499  | 83,361  | 49,548  | —  | 132,909  |
| 78,826                         | 19,049  | 374,214                              | 10,975   | 146,327  | —                      | 4,028   | 161,330   | 162,892   | 3,449   | —  | 166,341  |
| 156,199                        | 5,485   | 709,271                              | 21,747   | 289,959  | —                      | 13,660  | 325,366   | 322,785   | (13,139)  | —  | 309,646  |
| 62,795                         | 23,231  | 306,165                              | 8,743  | 116,568  | —                      | —   | 125,311   | 129,765   | 14,644  | —  | 144,409  |
| 270,880                        | 8,867   | 1,229,372                            | 37,714   | 502,847  | —                      | 22,537  | 563,098   | 559,773   | (9,225)   | —  | 550,548  |
| 6,496                          | 2,149   | 31,420                               | 904  | 12,060   | —                      | 220   | 13,184  | 13,425  | 602   | —  | 14,027   |
| 3,389                          | 2,804   | 18,075                               | 472  | 6,292  | —                      | 6,291   | 13,055  | 7,004   | (2,185)   | —  | 4,819  |
| 11,700                         | 5,835   | 58,550                               | 1,629  | 21,718   | —                      | 8,394   | 31,741  | 24,177  | (4,539)   | —  | 19,638   |
| 68,183                         | 3,860   | 311,072                              | 9,493  | 126,571  | —                      | 123,443   | 259,507   | 140,900   | (52,113)  | —  | 88,787   |
| 175,771                        | 50,188  | 842,161                              | 24,472   | 326,292  | —                      | 7,046   | 363,810   | 363,231   | 12,864  | —  | 376,095  |
| 8,864                          | 15,996  | 55,934                               | 1,234  | 16,454   | —                      | —   | 17,688  | 18,317  | 9,672   | —  | 27,989   |
| 104,018                        | 15,415  | 484,088                              | 14,482   | 193,092  | —                      | 2,604   | 210,178   | 214,952   | 4,265   | —  | 219,217  |
| 5,024                          | 741   | 23,376                               | 699  | 9,326  | —                      | 56  | 10,081  | 10,381  | 322   | —  | 10,703   |
| 198,977                        | 2,640   | 899,169                              | 27,703   | 369,369  | —                      | 62,985  | 460,057   | 411,184   | (35,161)  | —  | 376,023  |
| 1,373,017                      | 72,830  | 6,259,228                            | 191,161  | 2,548,787  | —                      | 34,616  | 2,774,564   | 2,837,330   | 49,147  | —  | 2,886,477  |
| 88,013                         | 26,495  | 423,057                              | 12,254   | 163,383  | —                      | 34,522  | 210,159   | 181,879   | 75  | —  | 181,954  |
| 11,231                         | 1,267   | 51,870                               | 1,564  | 20,848   | —                      | —   | 22,412  | 23,209  | 763   | —  | 23,972   |
| 8,718                          | 2,148   | 41,429                               | 1,214  | 16,184   | —                      | —   | 17,398  | 18,016  | 1,006   | —  | 19,022   |
| 23,443                         | 8,665   | 114,291                              | 3,264  | 43,517   | —                      | 3,664   | 50,445  | 48,444  | (1,024)   | —  | 47,420   |
| 1,196,775                      | 299,520   | 5,691,824                            | 166,623  | 2,221,622  | —                      | 84,369  | 2,472,614   | 2,473,127   | 112,830   | —  | 2,585,957  |
| 41,404                         | 11,812  | 198,367                              | 5,765  | 76,861   | —                      | 5,289   | 87,915  | 85,562  | 4,749   | —  | 90,311   |
| 97,426                         | 2,330   | 441,302                              | 13,564   | 180,856  | —                      | 33,079  | 227,499   | 201,330   | (13,332)  | —  | 187,998  |
| 428,571                        | 16,413  | 1,947,423                            | 59,669   | 795,573  | —                      | 28,967  | 884,209   | 885,638   | 35  | —  | 885,673  |
| 38,556                         | 2,342   | 176,064                              | 5,368  | 71,573   | —                      | 5,331   | 82,272  | 79,676  | 1,317   | —  | 80,993   |
| 46,848                         | 5,504   | 216,588                              | 6,523  | 86,966   | —                      | 23,894  | 117,383   | 96,812  | (15,504)  | —  | 81,308   |
| 34,354                         | 23,348  | 178,135                              | 4,783  | 63,772   | —                      | 4,368   | 72,923  | 70,992  | 11,811  | —  | 82,803   |
| 308,416                        | 27,985  | 1,417,613                            | 42,940   | 572,525  | —                      | 51,740  | 667,205   | 637,339   | 1,495   | —  | 638,834  |
| 75,361                         | 6,503   | 346,057                              | 10,492   | 139,896  | —                      | 5,147   | 155,535   | 155,733   | 7,367   | —  | 163,100  |
| 246,912                        | —   | 1,112,511                            | 34,377   | 458,353  | —                      | 95,776  | 588,506   | 510,242   | (52,691)  | —  | 457,551  |
| 135,809                        | —   | 611,914                              | 18,908   | 252,108  | —                      | 55,548  | 326,564   | 280,648   | (27,956)  | —  | 252,692  |
| 54,590                         | 21,182  | 267,149                              | 7,600  | 101,338  | —                      | 9,087   | 118,025   | 112,811   | 891   | —  | 113,702  |
| 2,055,932                      | —   | 9,263,406                            | 286,241  | 3,816,510  | —                      | 355,731   | 4,458,482   | 4,248,570   | (186,854)   | —  | 4,061,716  |

**Noncontributory Retirement System  
Local Government Division**

**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer              | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|-------------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Provo Housing Authority             | \$ 113,896             | 0.0650714                      | \$ 479,168  | 982,035  | 60,412   | 6,163  | 218,868   |
| Provo River Water Users             | 156,727                | 0.0895415                      | 659,359   | 1,351,330  | 83,130   | 8,480  | 301,173   |
| Recreation & Habilitation Svcs      | 9,152                  | 0.0052285                      | 38,501  | 78,907   | 4,854  | 495  | 17,586  |
| Redmond Town                        | 17,484                 | 0.0099887                      | 73,554  | 150,746  | 9,273  | 946  | 33,597  |
| Rich County                         | 107,610                | 0.0614798                      | 452,720   | 927,832  | 57,078   | 5,823  | 206,788   |
| Richfield City                      | 190,977                | 0.1091094                      | 803,451   | 1,646,642  | 101,297  | 10,334   | 366,990   |
| Richmond City                       | 45,881                 | 0.0262126                      | 193,022   | 395,592  | 24,336   | 2,483  | 88,166  |
| Riverdale City                      | 321,905                | 0.1839114                      | 1,354,273   | 2,775,528  | 170,742  | 17,418   | 618,587   |
| Roosevelt City                      | 230,476                | 0.1316759                      | 969,625   | 1,987,208  | 122,247  | 12,471   | 442,892   |
| Roosevelt City Housing              | 7,055                  | 0.0040309                      | 29,682  | 60,833   | 3,742  | 382  | 13,558  |
| Roy City                            | 613,358                | 0.3504247                      | 2,580,431   | 5,288,490  | 325,333  | 33,188   | 1,178,655   |
| Roy Water Conserv Dist              | 79,892                 | 0.0456437                      | 336,108   | 688,839  | 42,375   | 4,323  | 153,523   |
| S Utah Valley Electric Svc Dst      | 164,629                | 0.0940559                      | 692,602   | 1,419,460  | 87,321   | 8,908  | 316,357   |
| S Utah Valley Solid Waste           | 150,271                | 0.0858531                      | 632,199   | 1,295,666  | 79,706   | 8,131  | 288,767   |
| Salem City                          | 296,263                | 0.1692616                      | 1,246,396   | 2,554,438  | 157,142  | 16,030   | 569,312   |
| Salina City                         | 52,530                 | 0.0300116                      | 220,997   | 452,925  | 27,863   | 2,842  | 100,944   |
| Salt Lake City Corp                 | 17,667,549             | 10.0938494                     | 74,328,318  | 152,332,929  | 9,371,079  | 955,966  | 33,950,706  |
| Salt Lake City Public Library       | 857,412                | 0.4898576                      | 3,607,176   | 7,392,764  | 454,781  | 46,393   | 1,647,638   |
| Salt Lake Co Serv Area 3            | 32,478                 | 0.0185555                      | 136,638   | 280,033  | 17,227   | 1,757  | 62,412  |
| Salt Lake County                    | 23,684,795             | 13.5316317                     | 99,643,196  | 204,214,764  | 12,562,695   | 1,281,545  | 45,513,703  |
| San Juan County                     | 697,094                | 0.3982648                      | 2,932,712   | 6,010,476  | 369,747  | 37,719   | 1,339,565   |
| San Juan Mental Health              | 124,998                | 0.0714143                      | 525,875   | 1,077,760  | 66,301   | 6,763  | 240,202   |
| Sandy City                          | 2,585,202              | 1.4769813                      | 10,876,082  | 22,290,098   | 1,371,222  | 139,882  | 4,967,833   |
| Sandy Suburban Imp Dist             | 207,838                | 0.1187424                      | 874,386   | 1,792,020  | 110,240  | 11,246   | 399,391   |
| Sanpete County                      | 331,743                | 0.1895316                      | 1,395,658   | 2,860,346  | 175,960  | 17,950   | 637,490   |
| Santaquin City                      | 219,325                | 0.1253051                      | 922,712   | 1,891,062  | 116,333  | 11,867   | 421,464   |
| Sevier County                       | 425,583                | 0.2431449                      | 1,790,452   | 3,669,460  | 225,735  | 23,028   | 817,819   |
| Six-County Assoc of Govt            | 168,644                | 0.0963502                      | 709,496   | 1,454,084  | 89,451   | 9,125  | 324,074   |
| Slc Mosquito Abatement              | 86,399                 | 0.0493614                      | 363,484   | 744,945  | 45,827   | 4,675  | 166,027   |
| Smithfield City Corp                | 214,893                | 0.1227727                      | 904,064   | 1,852,844  | 113,982  | 11,628   | 412,947   |
| Snyder Basin Special Rec Dist       | 166,039                | 0.0948618                      | 698,536   | 1,431,622  | 88,069   | 8,984  | 319,068   |
| Snyderville Basin W R D             | 540,546                | 0.3088254                      | 2,274,105   | 4,660,688  | 286,712  | 29,248   | 1,038,736   |
| So Davis Metro Fire Agency          | 24,580                 | 0.0140429                      | 103,408   | 211,931  | 13,037   | 1,330  | 47,233  |
| So Davis Recreation Center          | 88,474                 | 0.0505473                      | 372,216   | 762,843  | 46,928   | 4,787  | 170,016   |
| So SI Valley Mosq Abate             | 40,909                 | 0.0233722                      | 172,106   | 352,725  | 21,699   | 2,214  | 78,612  |
| So Utah Valley Animal Svcs SSD      | 16,020                 | 0.0091528                      | 67,399  | 138,131  | 8,497  | 867  | 30,785  |
| So Utah Valley Power Systems        | 17,456                 | 0.0099730                      | 73,438  | 150,509  | 9,259  | 945  | 33,544  |
| Solid Waste SSD #1                  | 25,260                 | 0.0144317                      | 106,271   | 217,798  | 13,398   | 1,367  | 48,541  |
| South Davis Sewer Dist              | 324,531                | 0.1854115                      | 1,365,319   | 2,798,167  | 172,135  | 17,560   | 623,632   |
| South Davis Water Dist              | 65,148                 | 0.0372207                      | 274,083   | 561,722  | 34,556   | 3,525  | 125,192   |
| South Ogden City                    | 343,181                | 0.1960667                      | 1,443,781   | 2,958,972  | 182,027  | 18,569   | 659,471   |
| South Ogden Conserv Dist            | 210,948                | 0.1205189                      | 887,468   | 1,818,830  | 111,889  | 11,414   | 405,366   |
| South Valley Sewer District         | 545,168                | 0.3114660                      | 2,293,550   | 4,700,539  | 289,163  | 29,498   | 1,047,617   |
| South Valley Water Reclamation      | 501,104                | 0.2862913                      | 2,108,170   | 4,320,611  | 265,791  | 27,114   | 962,942   |
| South Weber City                    | 74,193                 | 0.0423883                      | 312,136   | 639,710  | 39,353   | 4,015  | 142,573   |
| Southeastern Utah AOG               | 129,001                | 0.0737009                      | 542,713   | 1,112,269  | 68,424   | 6,980  | 247,893   |
| Southeastern Utah Health            | 151,816                | 0.0867356                      | 638,697   | 1,308,984  | 80,525   | 8,215  | 291,736   |
| Spanish Fork City                   | 1,504,292              | 0.8594345                      | 6,328,638   | 12,970,292   | 797,895  | 81,395   | 2,890,712   |
| Spring City                         | 28,722                 | 0.0164096                      | 120,836   | 247,648  | 15,235   | 1,554  | 55,194  |
| Springville City                    | 1,332,913              | 0.7615219                      | 5,607,637   | 11,492,629   | 706,993  | 72,122   | 2,561,382   |
| St George Housing Auth              | 27,178                 | 0.0155271                      | 114,337   | 234,330  | 14,415   | 1,471  | 52,225  |
| Stansbury Park Improvement District | 41,523                 | 0.0237228                      | 174,688   | 358,016  | 22,024   | 2,247  | 79,792  |
| Stansbury Service Agency            | 14,965                 | 0.0085498                      | 62,958  | 129,031  | 7,938  | 810  | 28,757  |
| Summit County                       | 1,983,214              | 1.1330529                      | 8,343,489   | 17,099,648   | 1,051,921  | 107,309  | 3,811,028   |
| Sunset City                         | 83,659                 | 0.0477963                      | 351,959   | 721,325  | 44,374   | 4,527  | 160,763   |



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportionate Share of Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |   |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 64,190                         | —   | 289,221                              | 8,937  | 119,159   | —                      | 17,404  | 145,500   | 132,648   | (11,007)  | —  | 121,641  |
| 88,329                         | 171   | 398,153                              | 12,298   | 163,968   | —                      | 15,304  | 191,570   | 182,531   | (7,798)   | —  | 174,733  |
| 5,158                          | 342   | 23,581                               | 718  | 9,574   | —                      | 2,194   | 12,486  | 10,658  | (726)   | —  | 9,932  |
| 9,853                          | 1,162   | 45,558                               | 1,372  | 18,291  | —                      | 163   | 19,826  | 20,362  | 646   | —  | 21,008   |
| 60,647                         | 109,087   | 382,345                              | 8,444  | 112,582   | —                      | —   | 121,026   | 125,327   | 65,542  | —  | 190,869  |
| 107,631                        | 7,101   | 492,056                              | 14,985   | 199,801   | —                      | 33,801  | 248,587   | 222,420   | (13,168)  | —  | 209,252  |
| 25,858                         | 16,061  | 132,568                              | 3,600  | 48,000  | —                      | 14,786  | 66,386  | 53,434  | 37  | —  | 53,471   |
| 181,420                        | 7,063   | 824,488                              | 25,259   | 336,778   | —                      | 28,287  | 390,324   | 374,904   | (6,772)   | —  | 368,132  |
| 129,892                        | 11,916  | 597,171                              | 18,085   | 241,124   | —                      | 35,380  | 294,589   | 268,422   | (7,281)   | —  | 261,141  |
| 3,976                          | —   | 17,916                               | 554  | 7,381   | —                      | 636   | 8,571   | 8,217   | (396)   | —  | 7,821  |
| 345,678                        | 39,210  | 1,596,731                            | 48,128   | 641,697   | —                      | 43,875  | 733,700   | 714,342   | (3,198)   | —  | 711,144  |
| 45,025                         | 5,142   | 208,013                              | 6,269  | 83,583  | —                      | 2,279   | 92,131  | 93,045  | 2,163   | —  | 95,208   |
| 92,782                         | 36,395  | 454,442                              | 12,918   | 172,235   | —                      | 1,205   | 186,358   | 191,733   | 19,724  | —  | 211,457  |
| 84,690                         | 10,535  | 392,123                              | 11,791   | 157,214   | —                      | 96,543  | 265,548   | 175,012   | (48,372)  | —  | 126,640  |
| 166,969                        | 32,836  | 785,147                              | 23,247   | 309,951   | —                      | 3,369   | 336,567   | 345,040   | 20,262  | —  | 365,302  |
| 29,605                         | 638   | 134,029                              | 4,122  | 54,957  | —                      | 20,786  | 79,865  | 61,179  | (11,535)  | —  | 49,644   |
| 9,957,126                      | 71,092  | 44,934,890                           | 1,386,299  | 18,483,823  | —                      | 1,193,985                                       | 21,064,107  | 20,576,339  | (483,348)   | —  | 20,092,991   |
| 483,222                        | 67,474  | 2,244,727                            | 67,278   | 897,026   | —                      | 34,476  | 998,780   | 998,576   | 11,816  | —  | 1,010,392  |
| 18,304                         | 2,559   | 85,032                               | 2,548  | 33,979  | —                      | 1,207   | 37,734  | 37,825  | 515   | —  | 38,340   |
| 13,348,343                     | 117,215   | 60,260,806                           | 1,858,449  | 24,779,078  | —                      | 1,107,067                                       | 27,744,594  | 27,584,265  | (869,578)   | —  | 26,714,687   |
| 392,870                        | 12,694  | 1,782,848                            | 54,698   | 729,301   | —                      | 114,606   | 898,605   | 811,864   | (28,138)  | —  | 783,726  |
| 70,447                         | 14,998  | 332,410                              | 9,808  | 130,774   | —                      | 40,589  | 181,171   | 145,578   | (1,281)   | —  | 144,297  |
| 1,456,975                      | 60,354  | 6,625,044                            | 202,850  | 2,704,643   | —                      | 213,939   | 3,121,432   | 3,010,830   | (57,628)  | —  | 2,953,202  |
| 117,134                        | 9,476   | 537,247                              | 16,308   | 217,441   | —                      | 15,163  | 248,912   | 242,057   | (6,275)   | —  | 235,782  |
| 186,964                        | 2,710   | 845,114                              | 26,030   | 347,070   | —                      | 61,426  | 434,526   | 386,361   | (26,635)  | —  | 359,726  |
| 123,608                        | 15,079  | 572,018                              | 17,210   | 229,458   | —                      | 518   | 247,186   | 255,435   | 11,256  | —  | 266,691  |
| 239,851                        | 48,480  | 1,129,178                            | 33,394   | 445,246   | —                      | 133,768   | 612,408   | 495,652   | (66,342)  | —  | 429,310  |
| 95,045                         | 8,023   | 436,267                              | 13,233   | 176,436   | —                      | 25,178  | 214,847   | 196,410   | (20,353)  | —  | 176,057  |
| 48,693                         | 13,268  | 232,663                              | 6,779  | 90,390  | —                      | 7,216   | 104,385   | 100,623   | 2,781   | —  | 103,404  |
| 121,110                        | 1,585   | 547,270                              | 16,862   | 224,821   | —                      | 25,641  | 267,324   | 250,272   | (12,557)  | —  | 237,715  |
| 93,577                         | 147,574   | 569,203                              | 13,028   | 173,711   | —                      | —   | 186,739   | 193,376   | 97,324  | —  | 290,700  |
| 304,642                        | 65,575  | 1,438,201                            | 42,414   | 565,520   | —                      | 6,765   | 614,699   | 629,541   | 31,901  | —  | 661,442  |
| 13,853                         | 12,306  | 74,722                               | 1,929  | 25,715  | —                      | —   | 27,644  | 28,626  | 4,962   | —  | 33,588   |
| 49,863                         | 8,327   | 232,993                              | 6,942  | 92,562  | —                      | 7,043   | 106,547   | 103,041   | (1,548)   | —  | 101,493  |
| 23,056                         | 8,045   | 111,927                              | 3,210  | 42,799  | —                      | 165   | 46,174  | 47,644  | 3,209   | —  | 50,853   |
| 9,029                          | 4,665   | 45,346                               | 1,257  | 16,761  | —                      | 637   | 18,655  | 18,658  | 2,865   | —  | 21,523   |
| 9,838                          | 511   | 44,838                               | 1,370  | 18,263  | —                      | 297   | 19,930  | 20,330  | 148   | —  | 20,478   |
| 14,236                         | 846   | 64,990                               | 1,982  | 26,427  | —                      | 16,598  | 45,007  | 29,419  | (7,844)   | —  | 21,575   |
| 182,900                        | 20,838  | 844,930                              | 25,465   | 339,525   | —                      | 9,954   | 374,944   | 377,962   | 10,638  | —  | 388,600  |
| 36,717                         | 581   | 166,015                              | 5,112  | 68,158  | —                      | 2,069   | 75,339  | 75,874  | 110   | —  | 75,984   |
| 193,411                        | 33,468  | 904,919                              | 26,928   | 359,037   | —                      | 7,649   | 393,614   | 399,682   | 12,792  | —  | 412,474  |
| 118,886                        | —   | 535,666                              | 16,552   | 220,694   | —                      | 47,491  | 284,737   | 245,678   | (36,392)  | —  | 209,286  |
| 307,247                        | 61,049  | 1,445,411                            | 42,777   | 570,355   | —                      | —   | 613,132   | 634,924   | 30,813  | —  | 665,737  |
| 282,413                        | 36,975  | 1,309,444                            | 39,320   | 524,256   | —                      | 14,230  | 577,806   | 583,606   | 14,151  | —  | 597,757  |
| 41,814                         | 5,244   | 193,646                              | 5,822  | 77,621  | —                      | 33,892  | 117,335   | 86,409  | (8,743)   | —  | 77,666   |
| 72,703                         | 9,574   | 337,150                              | 10,122   | 134,961   | —                      | 22,968  | 168,051   | 150,239   | (20,565)  | —  | 129,674  |
| 85,561                         | —   | 385,512                              | 11,912   | 158,830   | —                      | 69,519  | 240,261   | 176,811   | (52,626)  | —  | 124,185  |
| 847,793                        | 178,624   | 3,998,524                            | 118,036  | 1,573,794   | —                      | —   | 1,691,830   | 1,751,959   | 99,222  | —  | 1,851,181  |
| 16,187                         | 25,990  | 98,925                               | 2,254  | 30,049  | —                      | 6,582   | 38,885  | 33,451  | 15,991  | —  | 49,442   |
| 751,207                        | 13,144  | 3,397,855                            | 104,588  | 1,394,496   | —                      | 141,785   | 1,640,869   | 1,552,364   | (78,195)  | —  | 1,474,169  |
| 15,317                         | 1,826   | 70,839                               | 2,133  | 28,433  | —                      | 670   | 31,236  | 31,652  | 561   | —  | 32,213   |
| 23,401                         | 79,606  | 185,046                              | 3,258  | 43,441  | —                      | —   | 46,699  | 48,359  | 29,505  | —  | 77,864   |
| 8,434                          | 28,690  | 66,691                               | 1,174  | 15,656  | —                      | —   | 16,830  | 17,429  | 10,634  | —  | 28,063   |
| 1,117,705                      | 96,345  | 5,132,387                            | 155,615  | 2,074,843   | —                      | 100,535   | 2,330,993   | 2,309,731   | 17,918  | —  | 2,327,649  |
| 47,149                         | 5,895   | 218,334                              | 6,564  | 87,524  | —                      | 10,869  | 104,957   | 97,433  | (1,325)   | —  | 96,108   |

**Noncontributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Sw Behavioral Health Center    | \$ 1,103,192           | 0.6302772%                     | \$ 4,641,187                                      | 9,511,928  | 585,146  | 59,692   | 2,119,940   |
| Sw Mosquito Abatement/Control  | 24,815                 | 0.0141771                      | 104,396   | 213,956  | 13,162   | 1,343  | 47,685  |
| Sw Ut Public Health Dept       | 358,852                | 0.2050196                      | 1,509,708   | 3,094,086  | 190,339  | 19,417   | 689,584   |
| Syracuse City Corp             | 333,429                | 0.1904952                      | 1,402,754   | 2,874,889  | 176,855  | 18,041   | 640,731   |
| Taylor West Weber Wtr Imp Dist | 28,320                 | 0.0161796                      | 119,142   | 244,177  | 15,021   | 1,532  | 54,420  |
| Taylorville-Bennion Imp        | 358,676                | 0.2049192                      | 1,508,968   | 3,092,571  | 190,246  | 19,407   | 689,247   |
| Timberlakes Water SSD          | 40,589                 | 0.0231893                      | 170,760   | 349,965  | 21,529   | 2,196  | 77,997  |
| Timpanogos SSD                 | 344,739                | 0.1969565                      | 1,450,333   | 2,972,400  | 182,853  | 18,653   | 662,464   |
| Tooele City                    | 663,137                | 0.3788645                      | 2,789,854   | 5,717,694  | 351,736  | 35,881   | 1,274,312   |
| Tooele County                  | 1,462,702              | 0.8356732                      | 6,153,667   | 12,611,695   | 775,835  | 79,145   | 2,810,790   |
| Tooele County Housing          | 46,605                 | 0.0266265                      | 196,070   | 401,838  | 24,720   | 2,522  | 89,558  |
| Tooele Valley Mosquito Abtmnt  | 4,040                  | 0.0023083                      | 16,998  | 34,836   | 2,143  | 219  | 7,764   |
| Toquerville City               | 18,641                 | 0.0106502                      | 78,425  | 160,729  | 9,888  | 1,009  | 35,822  |
| Torrey Town                    | 2,925                  | 0.0016709                      | 12,304  | 25,217   | 1,551  | 158  | 5,620   |
| Town of Alta                   | 81,587                 | 0.0466123                      | 343,240   | 703,457  | 43,275   | 4,415  | 156,781   |
| Town of Apple Valley           | 5,842                  | 0.0033379                      | 24,579  | 50,374   | 3,099  | 316  | 11,227  |
| Town of Brian Head             | 87,443                 | 0.0499581                      | 367,878   | 753,951  | 46,381   | 4,731  | 168,034   |
| Town of Daniel                 | 9,437                  | 0.0053916                      | 39,702  | 81,368   | 5,006  | 511  | 18,135  |
| Town of Garden City            | 38,482                 | 0.0219854                      | 161,894   | 331,796  | 20,411   | 2,082  | 73,948  |
| Town of Goshen                 | 6,350                  | 0.0036280                      | 26,716  | 54,753   | 3,368  | 344  | 12,203  |
| Town of Levan                  | 24,690                 | 0.0141062                      | 103,874   | 212,886  | 13,096   | 1,336  | 47,446  |
| Town of Manila                 | 4,343                  | 0.0024812                      | 18,271  | 37,445   | 2,304  | 235  | 8,346   |
| Town of Mantua                 | 14,893                 | 0.0085085                      | 62,654  | 128,407  | 7,899  | 806  | 28,618  |
| Town of Randolph               | 8,855                  | 0.0050589                      | 37,252  | 76,347   | 4,697  | 479  | 17,016  |
| Town of Springdale             | 126,600                | 0.0723295                      | 532,614   | 1,091,572  | 67,150   | 6,850  | 243,281   |
| Trans-Jordan Cities            | 278,772                | 0.1592683                      | 1,172,808   | 2,403,623  | 147,864  | 15,084   | 535,700   |
| Tremonton City                 | 224,369                | 0.1281869                      | 943,933   | 1,934,553  | 119,008  | 12,140   | 431,157   |
| Tridell-Lapoint Water          | 7,294                  | 0.0041674                      | 30,688  | 62,893   | 3,869  | 395  | 14,017  |
| Uintah Animal Control/Shelter  | 46,440                 | 0.0265323                      | 195,377   | 400,416  | 24,632   | 2,513  | 89,242  |
| Uintah Basin Assn of Govt      | 169,579                | 0.0968843                      | 713,429   | 1,462,145  | 89,947   | 9,176  | 325,871   |
| Uintah Basin Asst Council      | 7,724                  | 0.0044128                      | 32,495  | 66,596   | 4,097  | 418  | 14,842  |
| Uintah Co Care Center SSD      | 385,893                | 0.2204688                      | 1,623,471   | 3,327,240  | 204,682  | 20,880   | 741,548   |
| Uintah County                  | 1,344,238              | 0.7679920                      | 5,655,281   | 11,590,273   | 713,000  | 72,735   | 2,583,144   |
| Uintah Fire Suppression SSD    | 5,922                  | 0.0033831                      | 24,912  | 51,057   | 3,141  | 320  | 11,379  |
| Uintah Highlands Improv Dist   | 14,139                 | 0.0080778                      | 59,483  | 121,907  | 7,499  | 765  | 27,170  |
| Uintah Mosquito Abate District | 31,671                 | 0.0180945                      | 133,243   | 273,076  | 16,799   | 1,714  | 60,861  |
| Uintah Recreation District     | 176,544                | 0.1008632                      | 742,729   | 1,522,193  | 93,641   | 9,553  | 339,254   |
| Uintah Transportation SSD      | 22,875                 | 0.0130692                      | 96,238  | 197,236  | 12,133   | 1,238  | 43,958  |
| Uintah Water Conserv Dist      | 92,391                 | 0.0527850                      | 388,694   | 796,613  | 49,005   | 4,999  | 177,543   |
| Unified Fire Authority         | 519,446                | 0.2967706                      | 2,185,337   | 4,478,761  | 275,520  | 28,106   | 998,189   |
| Unified Police Department      | 1,055,801              | 0.6032015                      | 4,441,809   | 9,103,311  | 560,009  | 57,128   | 2,028,871   |
| Upper Country Water Dist       | 20,056                 | 0.0114584                      | 84,376  | 172,926  | 10,638   | 1,085  | 38,540  |
| Ut Municipal Power Agency      | 332,820                | 0.1901471                      | 1,400,191   | 2,869,635  | 176,532  | 18,008   | 639,561   |
| Ut Public Employees Assn       | 29,959                 | 0.0171160                      | 126,037   | 258,309  | 15,890   | 1,621  | 57,570  |
| Utah Assn of Counties          | 100,892                | 0.0576419                      | 424,459   | 869,912  | 53,514   | 5,459  | 193,879   |
| Utah Co Housing Authority      | 154,787                | 0.0884331                      | 651,197   | 1,334,602  | 82,101   | 8,375  | 297,445   |
| Utah Counties Indemnity Pool   | 72,369                 | 0.0413459                      | 304,460   | 623,978  | 38,385   | 3,916  | 139,067   |
| Utah County                    | 5,590,995              | 3.1942554                      | 23,521,614  | 48,206,612   | 2,965,531  | 302,521  | 10,743,892  |
| Utah Lake Commission           | 2,610                  | 0.0014913                      | 10,982  | 22,506   | 1,385  | 141  | 5,016   |
| Utah Local Governments Trust   | 238,513                | 0.1362675                      | 1,003,436   | 2,056,503  | 126,510  | 12,906   | 458,336   |
| Utah Valley Dispatch SSD       | 288,843                | 0.1650224                      | 1,215,179   | 2,490,462  | 153,206  | 15,629   | 555,054   |
| Utah Zoological Society        | 761,875                | 0.4352753                      | 3,205,247   | 6,569,026  | 404,107  | 41,224   | 1,464,050   |
| UTOPIA                         | 464,835                | 0.2655702                      | 1,955,586   | 4,007,895  | 246,554  | 25,152   | 893,247   |
| Valley Emergency Comm Ctr      | 755,314                | 0.4315271                      | 3,177,646   | 6,512,460  | 400,628  | 40,869   | 1,451,443   |
| Vernal City                    | 356,191                | 0.2034997                      | 1,498,516   | 3,071,148  | 188,928  | 19,273   | 684,472   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |                        |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|------------------------|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                        | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   | Proportionate Share of  | Proportionate Share of |  |
| 621,740                        | 68,801  | 2,870,173                            | 86,563   | 1,154,161   | —                      | 15,623  | 1,256,347                           | 1,284,822   | 19,602  | —                      | 1,304,424  |
| 13,985                         | 7,151   | 70,164                               | 1,947  | 25,961  | —                      | —   | 27,908                              | 28,900  | 4,002   | —                      | 32,902   |
| 202,243                        | —   | 911,244                              | 28,158   | 375,431   | —                      | 63,084  | 466,673                             | 417,933   | (42,996)  | —                      | 374,937  |
| 187,915                        | 10,706  | 857,393                              | 26,163   | 348,834   | —                      | 36,701  | 411,698                             | 388,325   | (15,229)  | —                      | 373,096  |
| 15,960                         | 6,942   | 78,854                               | 2,222  | 29,628  | —                      | —   | 31,850                              | 32,982  | 3,982   | —                      | 36,964   |
| 202,144                        | 17,550  | 928,348                              | 28,144   | 375,247   | —                      | 43,352  | 446,743                             | 417,728   | (5,731)   | —                      | 411,997  |
| 22,875                         | 9,655   | 112,723                              | 3,185  | 42,464  | —                      | 811   | 46,460                              | 47,271  | 3,826   | —                      | 51,097   |
| 194,289                        | 9,501   | 884,907                              | 27,050   | 360,666   | —                      | 59,297  | 447,013                             | 401,496   | (8,324)   | —                      | 393,172  |
| 373,733                        | 18,817  | 1,702,743                            | 52,034   | 693,775   | —                      | 53,930  | 799,739                             | 772,316   | (26,157)  | —                      | 746,159  |
| 824,354                        | 72,467  | 3,786,756                            | 114,772  | 1,530,282   | —                      | 32,596  | 1,677,650                           | 1,703,522   | 37,699  | —                      | 1,741,221  |
| 26,266                         | 1,936   | 120,282                              | 3,657  | 48,758  | —                      | 59  | 52,474                              | 54,278  | 972   | —                      | 55,250   |
| 2,277                          | 671   | 10,931                               | 317  | 4,227   | —                      | 1,850   | 6,394                               | 4,705   | (2,495)   | —                      | 2,210  |
| 10,506                         | 26,839  | 74,176                               | 1,463  | 19,503  | —                      | —   | 20,966                              | 21,710  | 12,896  | —                      | 34,606   |
| 1,648                          | 909   | 8,335                                | 229  | 3,060   | —                      | 602   | 3,891                               | 3,406   | (94)  | —                      | 3,312  |
| 45,981                         | 4,400   | 211,577                              | 6,402  | 85,356  | —                      | 5,430   | 97,188                              | 95,019  | 814   | —                      | 95,833   |
| 3,293                          | 7,009   | 21,845                               | 458  | 6,112   | —                      | 11,928  | 18,498                              | 6,804   | 2,548   | —                      | 9,352  |
| 49,281                         | 48,100  | 270,146                              | 6,861  | 91,483  | —                      | 1,497   | 99,841                              | 101,840   | 50,015  | —                      | 151,855  |
| 5,319                          | 12,064  | 36,029                               | 740  | 9,873   | —                      | —   | 10,613                              | 10,991  | 6,222   | —                      | 17,213   |
| 21,688                         | 6,508   | 104,226                              | 3,019  | 40,260  | —                      | 4,497   | 47,776                              | 44,817  | (2,706)   | —                      | 42,111   |
| 3,579                          | 4,286   | 20,412                               | 498  | 6,644   | —                      | 2,126   | 9,268                               | 7,396   | (106)   | —                      | 7,290  |
| 13,915                         | 966   | 63,663                               | 1,937  | 25,831  | —                      | 116   | 27,884                              | 28,756  | 1,371   | —                      | 30,127   |
| 2,448                          | 5,409   | 16,438                               | 341  | 4,544   | —                      | 1,025   | 5,910                               | 5,058   | 2,732   | —                      | 7,790  |
| 8,393                          | 1,665   | 39,482                               | 1,169  | 15,581  | —                      | 984   | 17,734                              | 17,345  | (709)   | —                      | 16,636   |
| 4,990                          | 211   | 22,696                               | 695  | 9,264   | —                      | 1,863   | 11,822                              | 10,313  | (596)   | —                      | 9,717  |
| 71,350                         | 22,480  | 343,961                              | 9,934  | 132,450   | —                      | 1,778   | 144,162                             | 147,444   | 9,630   | —                      | 157,074  |
| 157,111                        | 41,998  | 749,893                              | 21,874   | 291,652   | —                      | 31,853  | 345,379                             | 324,669   | 16,794  | —                      | 341,463  |
| 126,451                        | 4,959   | 574,707                              | 17,605   | 234,735   | —                      | 11,905  | 264,245                             | 261,309   | (3,195)   | —                      | 258,114  |
| 4,111                          | 255   | 18,778                               | 572  | 7,631   | —                      | 1,182   | 9,385                               | 8,495   | (176)   | —                      | 8,319  |
| 26,173                         | 4,803   | 122,731                              | 3,644  | 48,586  | —                      | 16,988  | 69,218                              | 54,086  | (9,175)   | —                      | 44,911   |
| 95,572                         | —   | 430,619                              | 13,306   | 177,414   | —                      | 26,986  | 217,706                             | 197,499   | (17,843)  | —                      | 179,656  |
| 4,353                          | 4,792   | 24,405                               | 606  | 8,081   | —                      | 8,548   | 17,235                              | 8,996   | (2,578)   | —                      | 6,418  |
| 217,483                        | 5,718   | 985,629                              | 30,279   | 403,722   | —                      | 114,929   | 548,930                             | 449,426   | (49,589)  | —                      | 399,837  |
| 757,589                        | 997,796   | 4,411,264                            | 105,477  | 1,406,344   | —                      | 341,321   | 1,853,142                           | 1,565,554   | 735,167   | —                      | 2,300,721  |
| 3,337                          | 973   | 16,009                               | 465  | 6,195   | —                      | 2,151   | 8,811                               | 6,896   | (1,215)   | —                      | 5,681  |
| 7,968                          | 5,047   | 40,950                               | 1,109  | 14,792  | —                      | —   | 15,901                              | 16,467  | 2,619   | —                      | 19,086   |
| 17,849                         | 882   | 81,306                               | 2,485  | 33,135  | —                      | 2,515   | 38,135                              | 36,886  | (1,223)   | —                      | 35,663   |
| 99,497                         | —   | 448,304                              | 13,853   | 184,700   | —                      | 49,249  | 247,802                             | 205,610   | (26,017)  | —                      | 179,593  |
| 12,892                         | 21,195  | 79,283                               | 1,795  | 23,932  | —                      | 28,564  | 54,291                              | 26,642  | (2,776)   | —                      | 23,866   |
| 52,070                         | 6,221   | 240,833                              | 7,250  | 96,660  | —                      | 7,444   | 111,354                             | 107,602   | 1,751   | —                      | 109,353  |
| 292,751                        | 99,902  | 1,418,948                            | 40,759   | 543,445   | —                      | 5,105   | 589,309                             | 604,968   | 54,118  | —                      | 659,086  |
| 595,031                        | 39,576  | 2,720,606                            | 82,844   | 1,104,581   | —                      | 83,826  | 1,271,251                           | 1,229,628   | (26,768)  | —                      | 1,202,860  |
| 11,303                         | 291   | 51,219                               | 1,574  | 20,983  | —                      | 867   | 23,424                              | 23,358  | (242)   | —                      | 23,116   |
| 187,572                        | 132,395   | 977,536                              | 26,115   | 348,197   | —                      | 16,628  | 390,940                             | 387,615   | 38,472  | —                      | 426,087  |
| 16,884                         | 760   | 76,835                               | 2,351  | 31,343  | —                      | 22,076  | 55,770                              | 34,891  | (11,729)  | —                      | 23,162   |
| 56,861                         | 13,242  | 269,441                              | 7,917  | 105,554   | —                      | 53,625  | 167,096                             | 117,503   | (9,966)   | —                      | 107,537  |
| 87,235                         | —   | 393,055                              | 12,145   | 161,938   | —                      | 27,608  | 201,691                             | 180,271   | (15,975)  | —                      | 164,296  |
| 40,786                         | 8,723   | 192,492                              | 5,678  | 75,712  | —                      | 6,084   | 87,474                              | 84,284  | (129)   | —                      | 84,155   |
| 3,150,989                      | 325,670   | 14,523,072                           | 438,702  | 5,849,310   | —                      | 422,308   | 6,710,320                           | 6,511,498   | (58,815)  | —                      | 6,452,683  |
| 1,471                          | 1,562   | 8,190                                | 205  | 2,731   | —                      | 6,121   | 9,057                               | 3,040   | (7,530)   | —                      | (4,490)  |
| 134,422                        | 5,781   | 611,445                              | 18,715   | 249,533   | —                      | 29,769  | 298,017                             | 277,782   | (19,799)  | —                      | 257,983  |
| 162,787                        | 25,473  | 758,943                              | 22,664   | 302,188   | —                      | 26,071  | 350,923                             | 336,399   | (13,959)  | —                      | 322,440  |
| 429,379                        | 17,087  | 1,951,740                            | 59,781   | 797,075   | —                      | 93,959  | 950,815                             | 887,310   | (21,708)  | —                      | 865,602  |
| 261,973                        | 137,288   | 1,317,660                            | 36,474   | 486,311   | —                      | 14,835  | 537,620                             | 541,366   | 36,327  | —                      | 577,693  |
| 425,682                        | 52,101  | 1,970,095                            | 59,266   | 790,211   | —                      | 90,313  | 939,790                             | 879,669   | (45,845)  | —                      | 833,824  |
| 200,743                        | 2,152   | 906,640                              | 27,949   | 372,648   | —                      | 102,622   | 503,219                             | 414,835   | (45,591)  | —                      | 369,244  |

**Noncontributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** (Concluded)

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|--|--|--|--|---|
| Vineyard Town   | \$ 145,928             | 0.0833720%                     | \$ 613,928                                     | 1,258,222  | 77,402   | 7,896  | 280,422   |
| Wasatch County  | 1,374,463              | 0.7852599                      | 5,782,437                                      | 11,850,874   | 729,031  | 74,370   | 2,641,225   |
| Wasatch County Fire District  | 8,775                  | 0.0050135                      | 36,918   | 75,662   | 4,655  | 475  | 16,863  |
| Wasatch Front Regional Council  | 337,144                | 0.1926173                      | 1,418,381                                      | 2,906,915  | 178,825  | 18,242   | 647,869   |
| Wasatch Front Waste/Recycling   | 503,301                | 0.2875468                      | 2,117,415                                      | 4,339,558  | 266,957  | 27,233   | 967,165   |
| Wasatch Integrated Waste Mgmt   | 292,063                | 0.1668616                      | 1,228,723                                      | 2,518,218  | 154,913  | 15,803   | 561,240   |
| Wasatch Mental Health SSD   | 2,427,422              | 1.3868382                      | 10,212,293                                     | 20,929,689   | 1,287,534  | 131,344  | 4,664,636   |
| Washington City   | 866,161                | 0.4948566                      | 3,643,987                                      | 7,468,207  | 459,422  | 46,867   | 1,664,452   |
| Washington Co Solid Waste   | 104,586                | 0.0597524                      | 440,000  | 901,763  | 55,474   | 5,659  | 200,977   |
| Washington Co Wat Con Dist  | 325,874                | 0.1861789                      | 1,370,970                                      | 2,809,748  | 172,848  | 17,633   | 626,214   |
| Washington County   | 1,772,414              | 1.0126182                      | 7,456,641                                      | 15,282,088   | 940,110  | 95,903   | 3,405,946   |
| Waste Management Serv Dist #5   | 27,350                 | 0.0156254                      | 115,061  | 235,813  | 14,507   | 1,480  | 52,556  |
| Wayne County  | 103,134                | 0.0589225                      | 433,889  | 889,238  | 54,703   | 5,580  | 198,186   |
| Weber Area Dispatch 911   | 486,551                | 0.2779773                      | 2,046,948                                      | 4,195,139  | 258,073  | 26,327   | 934,978   |
| Weber Basin Water Conserv   | 932,043                | 0.5324962                      | 3,921,155                                      | 8,036,251  | 494,367  | 50,432   | 1,791,053   |
| Weber Co Mosquito Abate   | 83,325                 | 0.0476055                      | 350,554  | 718,446  | 44,197   | 4,509  | 160,121   |
| Weber County Corp   | 3,620,554              | 2.0685003                      | 15,231,865                                     | 31,217,100   | 1,920,385  | 195,903  | 6,957,410   |
| Weber Fire District   | 15,479                 | 0.0088433                      | 65,120   | 133,460  | 8,210  | 838  | 29,744  |
| Weber Human Services  | 1,774,379              | 1.0137409                      | 7,464,908                                      | 15,299,032   | 941,152  | 96,009   | 3,409,722   |
| Wellington City   | 19,878                 | 0.0113565                      | 83,626   | 171,388  | 10,543   | 1,076  | 38,198  |
| Wellsville City Corp  | 60,722                 | 0.0346920                      | 255,462  | 523,560  | 32,208   | 3,286  | 116,687   |
| West Bountiful City   | 114,715                | 0.0655392                      | 482,613  | 989,095  | 60,846   | 6,207  | 220,441   |
| West Kane County SSD #1   | 34,068                 | 0.0194636                      | 143,325  | 293,738  | 18,070   | 1,843  | 65,466  |
| West Point City   | 121,031                | 0.0691477                      | 509,185  | 1,043,553  | 64,196   | 6,549  | 232,579   |
| West Valley City  | 2,952,703              | 1.6869427                      | 12,422,180                                     | 25,458,763   | 1,566,149  | 159,767  | 5,674,039   |
| White City Water Imp Dist   | 81,228                 | 0.0464072                      | 341,730  | 700,362  | 43,084   | 4,395  | 156,091   |
| Willard City Corp   | 43,308                 | 0.0247425                      | 182,197  | 373,405  | 22,971   | 2,343  | 83,222  |
| Woods Cross City  | 186,438                | 0.1065157                      | 784,352  | 1,607,499  | 98,889   | 10,088   | 358,266   |
| <b>Grand Total</b>  | <b>\$ 175,032,818</b>  | <b>100.0000000%</b>            | <b>\$ 736,372,374</b>                          | <b>1,509,165,864</b>                                 | <b>92,839,498</b>                                    | <b>9,470,779</b>                                   | <b>336,350,427</b>  |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |  |  |  |  |   |
| Six County Infrastructure Coal  | \$ —                   | 0.0000000%                     | \$ —   | —  | —  | —  | —   |
| N Tooele Co Fire Protection SD  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Canyonlands Health Care   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Sunnyside City  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Valley Mental Health  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Summit Mosquito Abatement Dist  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 175,032,818</b>  | <b>100.0000000%</b>            | <b>\$ 736,372,374</b>                          | <b>1,509,165,864</b>                                 | <b>92,839,498</b>                                    | <b>9,470,779</b>                                   | <b>336,350,427</b>  |

Columns may not add to total due to rounding.

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 82,243                         | 133,549   | 504,110                              | 11,450   | 152,671  | —                      | —   | 164,121   | 169,954   | 75,200  | —  | 245,154  |
| 774,623                        | 84,913  | 3,575,131                            | 107,848  | 1,437,965  | —                      | 11,104  | 1,556,917   | 1,600,754   | 49,131  | —  | 1,649,885  |
| 4,946                          | 3,717   | 26,001                               | 689  | 9,181  | —                      | 12,415  | 22,285  | 10,220  | (2,510)   | —  | 7,710  |
| 190,008                        | 34,993  | 891,112                              | 26,454   | 352,720  | —                      | —   | 379,174   | 392,651   | 20,797  | —  | 413,448  |
| 283,652                        | 5,375   | 1,283,425                            | 39,492   | 526,555  | —                      | 67,178  | 633,225   | 586,165   | (31,898)  | —  | 554,267  |
| 164,601                        | —   | 741,644                              | 22,917   | 305,556  | —                      | 527,172   | 855,645   | 340,148   | (243,475)   | —  | 96,673   |
| 1,368,053                      | 169,871   | 6,333,904                            | 190,470  | 2,539,573  | —                      | 129,268   | 2,859,311   | 2,827,073   | 40,968  | —  | 2,868,041  |
| 488,154                        | 129,804   | 2,329,277                            | 67,964   | 906,180  | —                      | 21,830  | 995,974   | 1,008,766   | 34,710  | —  | 1,043,476  |
| 58,943                         | 4,652   | 270,231                              | 8,206  | 109,418  | —                      | 7,473   | 125,097   | 121,805   | (2,248)   | —  | 119,557  |
| 183,657                        | 246,089   | 1,073,593                            | 25,570   | 340,930  | —                      | 26,935  | 393,435   | 379,526   | 182,272   | —  | 561,798  |
| 998,902                        | —   | 4,500,751                            | 139,074  | 1,854,303  | —                      | 244,269   | 2,237,646   | 2,064,225   | (113,708)   | —  | 1,950,517  |
| 15,414                         | 2,410   | 71,860                               | 2,146  | 28,613   | —                      | 22  | 30,781  | 31,852  | 1,140   | —  | 32,992   |
| 58,124                         | —   | 261,890                              | 8,092  | 107,899  | —                      | 24,439  | 140,430   | 120,114   | (16,623)  | —  | 103,491  |
| 274,212                        | 9,682   | 1,245,199                            | 38,178   | 509,031  | —                      | 77,189  | 624,398   | 566,657   | (19,588)  | —  | 547,069  |
| 525,283                        | 68,127  | 2,434,895                            | 73,134   | 975,105  | —                      | 60,938  | 1,109,177   | 1,085,495   | 32,781  | —  | 1,118,276  |
| 46,961                         | 1,279   | 212,870                              | 6,538  | 87,175   | —                      | 34,517  | 128,230   | 97,044  | (17,439)  | —  | 79,605   |
| 2,040,482                      | 221,637   | 9,415,432                            | 284,090  | 3,787,831  | —                      | 400,251   | 4,472,172   | 4,216,643   | (96,439)  | —  | 4,120,204  |
| 8,724                          | 23,990  | 63,296                               | 1,215  | 16,194   | —                      | 12,973  | 30,382  | 18,027  | 9,250   | —  | 27,277   |
| 1,000,010                      | 60,424  | 4,566,165                            | 139,228  | 1,856,359  | —                      | 112,182   | 2,107,769   | 2,066,513   | (6,027)   | —  | 2,060,486  |
| 11,203                         | 7,407   | 57,884                               | 1,560  | 20,796   | —                      | 1,823   | 24,179  | 23,150  | 487   | —  | 23,637   |
| 34,222                         | 7,673   | 161,868                              | 4,765  | 63,528   | —                      | 6,455   | 74,748  | 70,720  | 1,803   | —  | 72,523   |
| 64,651                         | 72,747  | 364,046                              | 9,001  | 120,015  | —                      | —   | 129,016   | 133,602   | 65,960  | —  | 199,562  |
| 19,200                         | 3,182   | 89,691                               | 2,673  | 35,642   | —                      | 484   | 38,799  | 39,677  | 1,242   | —  | 40,919   |
| 68,211                         | —   | 307,339                              | 9,497  | 126,623  | —                      | 27,471  | 163,591   | 140,958   | (11,911)  | —  | 129,047  |
| 1,664,093                      | 90,773  | 7,588,672                            | 231,686  | 3,089,124  | —                      | 138,444   | 3,459,254   | 3,438,837   | (56,464)  | —  | 3,382,373  |
| 45,779                         | 5,881   | 212,146                              | 6,374  | 84,981   | —                      | 781   | 92,136  | 94,601  | 2,244   | —  | 96,845   |
| 24,407                         | 5,494   | 115,466                              | 3,398  | 45,308   | —                      | 3,285   | 51,991  | 50,438  | (626)   | —  | 49,812   |
| 105,073                        | 67,270  | 540,697                              | 14,629   | 195,051  | —                      | 1,268   | 210,948   | 217,133   | 27,113  | —  | 244,246  |
| 98,645,479                     | 12,716,195                                      | 457,182,880                          | 13,734,101   | 183,119,660  | —                      | 13,809,336  | 210,663,097   | 203,850,263   | 215,480   | —  | 204,065,743  |
| —                              | 14,305  | 14,305                               | —  | —  | —                      | 46,244  | 46,244  | —   | (3,663)   | —  | (3,663)  |
| —                              | 860   | 860                                  | —  | —  | —                      | 1,230   | 1,230   | —   | (15)  | —  | (15)   |
| —                              | —   | —                                    | —  | —  | —                      | 11,734  | 11,734  | —   | (19,111)  | —  | (19,111)   |
| —                              | —   | —                                    | —  | —  | —                      | 570   | 570   | —   | (928)   | —  | (928)  |
| —                              | —   | —                                    | —  | —  | —                      | 1,918,104   | 1,918,104   | —   | (2,067,355)   | —  | (2,067,355)  |
| —                              | —   | —                                    | —  | —  | —                      | 7,331   | 7,331   | —   | (6,438)   | —  | (6,438)  |
| 98,645,479                     | 12,731,360                                      | 457,198,045                          | 13,734,101   | 183,119,660  | —                      | 15,794,548  | 212,648,309   | 203,850,263   | (1,882,030)   | —  | 201,968,233  |

**Noncontributory Retirement System  
State and School Division**

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Active Re Entry Inc            | \$ 76,000              | 0.0111790%                     | \$ 415,917  | 747,594  | 138,427  | 2,216  | 152,907   |
| Alpine School District         | 50,640,824             | 7.4488935                      | 277,137,360                                       | 498,143,626  | 92,238,024   | 1,476,349  | 101,886,491   |
| Alpine Uniserv                 | 22,709                 | 0.0033403                      | 124,276   | 223,382  | 41,362   | 662  | 45,689  |
| American Leadership Academy    | 883,682                | 0.1299831                      | 4,836,044   | 8,692,600  | 1,609,552  | 25,762   | 1,777,918   |
| AMES Charter School            | 385,746                | 0.0567405                      | 2,111,040   | 3,794,512  | 702,605  | 11,246   | 776,101   |
| Beaver School District         | 1,306,406              | 0.1921627                      | 7,149,446   | 12,850,851   | 2,379,509  | 38,086   | 2,628,415   |
| Box Elder School District      | 9,122,398              | 1.3418377                      | 49,923,302  | 89,735,193   | 16,615,684   | 265,948  | 18,353,751  |
| Bridgerland Technical College  | 1,060,277              | 0.1559590                      | 5,802,481   | 10,429,735   | 1,931,206  | 30,911   | 2,133,218   |
| Cache School District          | 12,993,313             | 1.9112210                      | 71,107,305  | 127,812,615  | 23,666,233   | 378,798  | 26,141,816  |
| Canyons School District        | 26,364,444             | 3.8780162                      | 144,282,258                                       | 259,341,747  | 48,020,629   | 768,612  | 53,043,779  |
| Carbon School District         | 2,756,505              | 0.4054617                      | 15,085,272  | 27,115,190   | 5,020,744  | 80,361   | 5,545,934   |
| Color Country Uniserv          | 18,394                 | 0.0027056                      | 100,662   | 180,937  | 33,503   | 536  | 37,007  |
| Daggett School District        | 323,056                | 0.0475192                      | 1,767,960   | 3,177,839  | 588,420  | 9,418  | 649,971   |
| Davis School District          | 52,159,690             | 7.6723075                      | 285,449,516                                       | 513,084,404  | 95,004,511   | 1,520,629  | 104,942,363   |
| Davis Technical College        | 871,106                | 0.1281333                      | 4,767,221   | 8,568,895  | 1,586,647  | 25,396   | 1,752,616   |
| Davis Uniserv                  | 13,095                 | 0.0019262                      | 71,665  | 128,814  | 23,852   | 382  | 26,347  |
| Dixie Applied Tech College     | 139,213                | 0.0204772                      | 761,858   | 1,369,410  | 253,565  | 4,059  | 280,089   |
| Dixie State University         | 1,150,394              | 0.1692145                      | 6,295,654   | 11,316,194   | 2,095,346  | 33,538   | 2,314,528   |
| Duchesne School District       | 3,645,779              | 0.5362673                      | 19,951,917  | 35,862,795   | 6,640,481  | 106,287  | 7,335,102   |
| East Hollywood High School     | 221,212                | 0.0325387                      | 1,210,608   | 2,176,021  | 402,920  | 6,449  | 445,067   |
| Educators Mutual Insurance     | 1,424,343              | 0.2095105                      | 7,794,874   | 14,010,983   | 2,594,323  | 41,524   | 2,865,699   |
| Emery School District          | 2,428,640              | 0.3572352                      | 13,290,997  | 23,890,050   | 4,423,566  | 70,803   | 4,886,288   |
| Fast Forward Charter HS        | 198,687                | 0.0292254                      | 1,087,336   | 1,954,444  | 361,892  | 5,792  | 399,747   |
| Garfield School District       | 983,784                | 0.1447075                      | 5,383,867   | 9,677,292  | 1,791,881  | 28,681   | 1,979,319   |
| Grand School District          | 1,624,078              | 0.2388900                      | 8,887,943   | 15,975,733   | 2,958,123  | 47,347   | 3,267,554   |
| Granite School District        | 55,072,438             | 8.1007513                      | 301,389,841                                       | 541,736,518  | 100,309,837  | 1,605,545  | 110,802,648   |
| Granite Uniserv                | 59,194                 | 0.0087070                      | 323,945   | 582,279  | 107,817  | 1,726  | 119,095   |
| Heber Valley Historic Railroad | 55,805                 | 0.0082084                      | 305,395   | 548,936  | 101,643  | 1,627  | 112,275   |
| High Desert Uniserv            | 9,197                  | 0.0013529                      | 50,335  | 90,475   | 16,753   | 268  | 18,505  |
| High School Activities Assn    | 122,251                | 0.0179822                      | 669,031   | 1,202,557  | 222,670  | 3,564  | 245,962   |
| Intech Collegiate High School  | 117,351                | 0.0172615                      | 642,217   | 1,154,360  | 213,745  | 3,421  | 236,104   |
| Iron School District           | 6,780,625              | 0.9973802                      | 37,107,701  | 66,699,650   | 12,350,342   | 197,678  | 13,642,237  |
| Itineris High School           | 237,607                | 0.0349503                      | 1,300,332   | 2,337,296  | 432,782  | 6,927  | 478,053   |
| Jordan School District         | 36,897,227             | 5.4273112                      | 201,924,044                                       | 362,950,616  | 67,205,211   | 1,075,677  | 74,235,145  |
| Jordan Uniserv                 | 38,428                 | 0.0056525                      | 210,302   | 378,010  | 69,994   | 1,120  | 77,315  |
| Juab School District           | 1,876,134              | 0.2759655                      | 10,267,344  | 18,455,151   | 3,417,221  | 54,696   | 3,774,676   |
| Kane School District           | 1,266,731              | 0.1863269                      | 6,932,324   | 12,460,583   | 2,307,245  | 36,929   | 2,548,592   |
| Logan School District          | 4,200,422              | 0.6178512                      | 22,987,260  | 41,318,706   | 7,650,717  | 122,456  | 8,451,012   |
| Millard School District        | 3,153,014              | 0.4637851                      | 17,255,204  | 31,015,558   | 5,742,950  | 91,921   | 6,343,685   |
| Monticello Academy             | 268,389                | 0.0394781                      | 1,468,789   | 2,640,092  | 488,849  | 7,824  | 539,984   |
| Morgan School District         | 1,740,237              | 0.2559761                      | 9,523,635   | 17,118,363   | 3,169,696  | 50,734   | 3,501,259   |
| Mountainland Technical College | 366,253                | 0.0538732                      | 2,004,362   | 3,602,762  | 667,100  | 10,678   | 736,881   |
| Murray School District         | 5,276,157              | 0.7760840                      | 28,874,338  | 51,900,500   | 9,610,079  | 153,818  | 10,615,332  |
| Nebo School District           | 23,339,965             | 3.4331375                      | 127,730,469                                       | 229,590,551  | 42,511,793   | 680,438  | 46,958,697  |
| Noah Webster Academy Inc       | 191,387                | 0.0281516                      | 1,047,385   | 1,882,634  | 348,595  | 5,580  | 385,060   |
| North Sanpete School Dist      | 2,036,475              | 0.2995505                      | 11,144,828  | 20,032,394   | 3,709,269  | 59,370   | 4,097,273   |
| North Summit School District   | 1,206,959              | 0.1775348                      | 6,605,213   | 11,872,613   | 2,198,375  | 35,187   | 2,428,334   |
| Nuames Charter School          | 528,219                | 0.0776972                      | 2,890,738   | 5,195,988  | 962,107  | 15,399   | 1,062,748   |
| Ogden School District          | 9,197,298              | 1.3528550                      | 50,333,202  | 90,471,973   | 16,752,108   | 268,132  | 18,504,446  |
| Ogden Weber/Nea/Uea Uniserv    | 26,661                 | 0.0039216                      | 145,904   | 262,256  | 48,560   | 777  | 53,640  |
| Ogden-Weber Tech College       | 707,621                | 0.1040858                      | 3,872,530   | 6,960,722  | 1,288,872  | 20,630   | 1,423,693   |
| Park City School District      | 6,682,215              | 0.9829048                      | 36,569,142  | 65,731,610   | 12,171,096   | 194,809  | 13,444,241  |
| Piute School District          | 386,333                | 0.0568267                      | 2,114,247   | 3,800,277  | 703,673  | 11,263   | 777,280   |
| Provo School District          | 10,681,310             | 1.5711423                      | 58,454,619  | 105,069,904  | 19,455,112   | 311,396  | 21,490,195  |
| Rich School District           | 699,062                | 0.1028268                      | 3,825,689   | 6,876,527  | 1,273,282  | 20,380   | 1,406,472   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportionate Share of Contributions and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Plan Gross Pension Expense                                 | Proportionate Share of Employer Contributions and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions |  |
| 42,304                         | 16,010  | 213,437                              | 5,836  | 83,710   | —                      | 3,022   | 92,568                              | 93,624  | 6,025   | —  | 99,649   |
| 28,188,550                     | 4,198,023   | 135,749,413                          | 3,888,549  | 55,778,517   | —                      | —   | 59,667,066                          | 62,384,072  | 2,500,511   | —  | 64,884,583   |
| 12,641                         | 11,611  | 70,603                               | 1,744  | 25,013   | —                      | 13,500  | 40,257                              | 27,975  | (14,916)  | —  | 13,059   |
| 491,890                        | 97,313  | 2,392,883                            | 67,855   | 973,334  | —                      | 194,468   | 1,235,657                           | 1,088,601   | (32,303)  | —  | 1,056,298  |
| 214,721                        | 69,175  | 1,071,243                            | 29,620   | 424,882  | —                      | 1,771   | 456,273                             | 475,199   | 33,308  | —  | 508,507  |
| 727,194                        | 24,494  | 3,418,189                            | 100,315  | 1,438,945  | —                      | 69,192  | 1,608,452                           | 1,609,352   | (21,579)  | —  | 1,587,773  |
| 5,077,863                      | 1,456,705   | 25,154,267                           | 700,480  | 10,047,897   | —                      | 83,966  | 10,832,343                          | 11,237,817  | 495,012   | —  | 11,732,829   |
| 590,189                        | 35,565  | 2,789,883                            | 81,415   | 1,167,846  | —                      | 177,766   | 1,427,027                           | 1,306,148   | (11,745)  | —  | 1,294,403  |
| 7,232,557                      | 2,396,154   | 36,149,325                           | 997,715  | 14,311,531   | —                      | —   | 15,309,246                          | 16,006,370  | 1,276,700   | —  | 17,283,070   |
| 14,675,422                     | 938,706   | 69,426,519                           | 2,024,442  | 29,039,211   | —                      | 393,715   | 31,457,368                          | 32,478,172  | 146,673   | —  | 32,624,845   |
| 1,534,372                      | —   | 7,160,667                            | 211,663  | 3,036,163  | —                      | 253,201   | 3,501,027                           | 3,395,719   | (191,578)   | —  | 3,204,141  |
| 10,239                         | 25,503  | 73,285                               | 1,412  | 20,260   | —                      | 1,199   | 22,871                              | 22,659  | 13,663  | —  | 36,322   |
| 179,825                        | 46,779  | 885,993                              | 24,806   | 355,831  | —                      | 65,562  | 446,199                             | 397,971   | (8,169)   | —  | 389,802  |
| 29,034,006                     | 2,841,697   | 138,338,695                          | 4,005,178  | 57,451,477   | —                      | 267,600   | 61,724,255                          | 64,255,152  | 1,180,321   | —  | 65,435,473   |
| 484,890                        | 140,303   | 2,403,205                            | 66,889   | 959,483  | —                      | —   | 1,026,372                           | 1,073,109   | 94,887  | —  | 1,167,996  |
| 7,289                          | 212   | 34,230                               | 1,006  | 14,424   | —                      | 13,037  | 28,467                              | 16,132  | (15,864)  | —  | 268  |
| 77,491                         | 190,601   | 552,240                              | 10,690   | 153,337  | —                      | —   | 164,027                             | 171,495   | 87,732  | —  | 259,227  |
| 640,352                        | 153,107   | 3,141,525                            | 88,335   | 1,267,105  | —                      | 215,653   | 1,571,093                           | 1,417,162   | (82,675)  | —  | 1,334,487  |
| 2,029,375                      | 45,874  | 9,516,638                            | 279,948  | 4,015,656  | —                      | 127,073   | 4,422,677                           | 4,491,209   | (18,603)  | —  | 4,472,606  |
| 123,135                        | 108,190   | 682,841                              | 16,986   | 243,655  | —                      | 2,687   | 263,328                             | 272,510   | 44,436  | —  | 316,946  |
| 792,842                        | 34,979  | 3,735,044                            | 109,371  | 1,568,848  | —                      | 197,153   | 1,875,372                           | 1,754,639   | (117,126)   | —  | 1,637,513  |
| 1,351,871                      | —   | 6,308,962                            | 186,488  | 2,675,035  | —                      | 388,759   | 3,250,282                           | 2,991,825   | (293,046)   | —  | 2,698,779  |
| 110,597                        | 56,552  | 572,688                              | 15,257   | 218,845  | —                      | —   | 234,102                             | 244,761   | 32,136  | —  | 276,897  |
| 547,611                        | 35,479  | 2,591,090                            | 75,542   | 1,083,593  | —                      | 133,338   | 1,292,473                           | 1,211,917   | (220)   | —  | 1,211,697  |
| 904,022                        | 214,542   | 4,433,465                            | 124,708  | 1,788,847  | —                      | 26,227  | 1,939,782                           | 2,000,691   | 64,005  | —  | 2,064,696  |
| 30,655,349                     | 5,960,278   | 149,023,820                          | 4,228,839  | 60,659,733   | —                      | 2,116,143   | 67,004,715                          | 67,843,345  | 128,496   | —  | 67,971,841   |
| 32,950                         | 20,207  | 173,978                              | 4,545  | 65,199   | —                      | —   | 69,744                              | 72,921  | 19,476  | —  | 92,397   |
| 31,063                         | 12,521  | 157,486                              | 4,285  | 61,466   | —                      | —   | 65,751                              | 68,745  | 12,470  | —  | 81,215   |
| 5,120                          | 12,397  | 36,290                               | 706  | 10,131   | —                      | 1,199   | 12,036                              | 11,330  | 4,926   | —  | 16,256   |
| 68,049                         | 6,022   | 323,597                              | 9,387  | 134,654  | —                      | 15,406  | 159,447                             | 150,600   | (4,056)   | —  | 146,544  |
| 65,322                         | 40,754  | 345,601                              | 9,011  | 129,257  | —                      | 9,710   | 147,978                             | 144,564   | 27,816  | —  | 172,380  |
| 3,774,346                      | 320,121   | 17,934,382                           | 520,663  | 7,468,544  | —                      | 71,999  | 8,061,206                           | 8,353,004   | 95,924  | —  | 8,448,928  |
| 132,261                        | 10,913  | 628,154                              | 18,245   | 261,713  | —                      | 24,392  | 304,350                             | 292,707   | 3,574   | —  | 296,281  |
| 20,538,357                     | 4,817,121   | 100,666,300                          | 2,833,221  | 40,640,582   | —                      | 432,157   | 43,905,960                          | 45,453,432  | 1,660,183   | —  | 47,113,615   |
| 21,391                         | 157   | 99,983                               | 2,951  | 42,327   | —                      | 23,739  | 69,017                              | 47,339  | (10,110)  | —  | 37,229   |
| 1,044,325                      | 373,131   | 5,246,828                            | 144,062  | 2,066,474  | —                      | —   | 2,210,536                           | 2,311,196   | 197,897   | —  | 2,509,093  |
| 705,109                        | 33,795  | 3,324,425                            | 97,268   | 1,395,246  | —                      | 11,790  | 1,504,304                           | 1,560,478   | 11,264  | —  | 1,571,742  |
| 2,338,110                      | 80,679  | 10,992,257                           | 322,537  | 4,626,570  | —                      | 358,203   | 5,307,310                           | 5,174,470   | (83,338)  | —  | 5,091,132  |
| 1,755,083                      | 37,616  | 8,228,305                            | 242,110  | 3,472,898  | —                      | 187,360   | 3,902,368                           | 3,884,175   | (17,404)  | —  | 3,866,771  |
| 149,395                        | 20,148  | 717,351                              | 20,609   | 295,618  | —                      | 168,852   | 485,079                             | 330,627   | (66,544)  | —  | 264,083  |
| 968,680                        | 315,063   | 4,835,736                            | 133,627  | 1,916,790  | —                      | 29,268  | 2,079,685                           | 2,143,786   | 77,012  | —  | 2,220,798  |
| 203,870                        | 74,133  | 1,025,562                            | 28,123   | 403,411  | —                      | 7,970   | 439,504                             | 451,185   | 54,398  | —  | 505,583  |
| 2,936,904                      | 1,003,886   | 14,709,940                           | 405,139  | 5,811,442  | —                      | 195,128   | 6,411,709                           | 6,499,661   | 244,825   | —  | 6,744,486  |
| 12,991,885                     | 1,327,810   | 61,958,830                           | 1,792,202  | 25,707,888   | —                      | 524,584   | 28,024,674                          | 28,752,337  | 833,819   | —  | 29,586,156   |
| 106,533                        | 7,936   | 505,109                              | 14,696   | 210,804  | —                      | 11,662  | 237,162                             | 235,768   | (1,164)   | —  | 234,604  |
| 1,133,577                      | 38,291  | 5,328,511                            | 156,374  | 2,243,083  | —                      | 11,653  | 2,411,110                           | 2,508,719   | 14,521  | —  | 2,523,240  |
| 671,838                        | 374,242   | 3,509,601                            | 92,679   | 1,329,409  | —                      | 13,359  | 1,435,447                           | 1,486,844   | 132,657   | —  | 1,619,501  |
| 294,026                        | 335,647   | 1,707,820                            | 40,560   | 581,809  | —                      | —   | 622,369                             | 650,710   | 204,177   | —  | 854,887  |
| 5,119,555                      | 41,835  | 23,933,968                           | 706,231  | 10,130,397   | —                      | 2,677,629   | 13,514,257                          | 11,330,086  | (1,093,082)   | —  | 10,237,004   |
| 14,840                         | 14,748  | 84,005                               | 2,047  | 29,366   | —                      | —   | 31,413                              | 32,843  | 8,635   | —  | 41,478   |
| 393,888                        | —   | 1,838,211                            | 54,336   | 779,411  | —                      | 316,591   | 1,150,338                           | 871,713   | (185,858)   | —  | 685,855  |
| 3,719,567                      | 1,397,266   | 18,755,883                           | 513,106  | 7,360,150  | —                      | 163,141   | 8,036,397                           | 8,231,773   | 507,692   | —  | 8,739,465  |
| 215,047                        | 667   | 1,004,257                            | 29,665   | 425,528  | —                      | 105,984   | 561,177                             | 475,920   | (51,419)  | —  | 424,501  |
| 5,945,611                      | 619,495   | 28,366,697                           | 820,184  | 11,764,967   | —                      | 1,408,169   | 13,993,320                          | 13,158,230  | (391,064)   | —  | 12,767,166   |
| 389,123                        | 87,710  | 1,903,685                            | 53,679   | 769,984  | —                      | —   | 823,663                             | 861,169   | 50,102  | —  | 911,271  |

**Noncontributory Retirement System  
State and School Division**
**Schedule of Employer Allocations and Pension Amounts** (Concluded)

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|---|--|--|--|---|
| Salt Lake Arts Academy  | \$ 279,855             | 0.0411646%                     | \$ 1,531,536                                      | 2,752,876  | 509,732  | 8,159  | 563,052   |
| Salt Lake Community College   | 3,864,635              | 0.5684594                      | 21,149,629  | 38,015,636   | 7,039,109  | 112,667  | 7,775,428   |
| Salt Lake School District   | 25,043,503             | 3.6837155                      | 137,053,267                                       | 246,347,917  | 45,614,646   | 730,102  | 50,386,120  |
| San Juan School District  | 3,656,387              | 0.5378277                      | 20,009,972  | 35,967,146   | 6,659,803  | 106,596  | 7,356,445   |
| Sevier School District  | 3,973,447              | 0.5844650                      | 21,745,121  | 39,086,008   | 7,237,303  | 115,839  | 7,994,353   |
| Snow College  | 922,050                | 0.1356267                      | 5,046,015   | 9,070,015  | 1,679,436  | 26,881   | 1,855,112   |
| Soldier Hollow Charter School   | 148,332                | 0.0218185                      | 811,761   | 1,459,109  | 270,174  | 4,324  | 298,435   |
| South Sanpete School Dist   | 2,864,679              | 0.4213732                      | 15,677,262  | 28,179,269   | 5,217,772  | 83,515   | 5,763,572   |
| South Summit School District  | 1,482,807              | 0.2181100                      | 8,114,820   | 14,586,073   | 2,700,809  | 43,229   | 2,983,324   |
| Southern Utah University  | 2,593,187              | 0.3814387                      | 14,191,492  | 25,508,655   | 4,723,272  | 75,600   | 5,217,345   |
| Southwest Educ Development Ctr  | 83,676                 | 0.0123081                      | 457,925   | 823,102  | 152,409  | 2,439  | 168,351   |
| Southwest Technical College   | 338,663                | 0.0498148                      | 1,853,368   | 3,331,357  | 616,846  | 9,873  | 681,370   |
| Space Dynamics Lab / USU  | 659,574                | 0.0970186                      | 3,609,594   | 6,488,104  | 1,201,360  | 19,229   | 1,327,027   |
| State of Utah   | 156,472,818            | 23.0160023                     | 856,314,317                                       | 1,539,191,676  | 285,002,133  | 4,561,702  | 314,814,501   |
| Success Academy   | 206,298                | 0.0303449                      | 1,128,987   | 2,029,311  | 375,754  | 6,014  | 415,060   |
| Summit Academy High School  | 223,663                | 0.0328992                      | 1,224,020   | 2,200,129  | 407,384  | 6,521  | 449,998   |
| Summit Academy Inc  | 1,041,957              | 0.1532643                      | 5,702,225   | 10,249,527   | 1,897,838  | 30,377   | 2,096,360   |
| Tintic School District  | 358,411                | 0.0527197                      | 1,961,445   | 3,525,622  | 652,817  | 10,449   | 721,104   |
| Tooele School District  | 10,465,327             | 1.5393727                      | 57,272,625  | 102,945,316  | 19,061,716   | 305,099  | 21,055,648  |
| Tooele Technical College  | 250,433                | 0.0368368                      | 1,370,519   | 2,463,455  | 456,142  | 7,301  | 503,856   |
| Tuacahn High School   | 216,952                | 0.0319121                      | 1,187,295   | 2,134,117  | 395,161  | 6,325  | 436,496   |
| Uintah Basin Technical College  | 632,202                | 0.0929923                      | 3,459,794   | 6,218,846  | 1,151,503  | 18,431   | 1,271,955   |
| Uintah Fire Suppression SSD   | 439                    | 0.0000646                      | 2,403   | 4,320  | 800  | 13   | 884   |
| Uintah School District  | 5,169,074              | 0.7603328                      | 28,288,312  | 50,847,141   | 9,415,035  | 150,696  | 10,399,886  |
| University of Utah  | 19,836,205             | 2.9177602                      | 108,555,768                                       | 195,124,772  | 36,129,988   | 578,292  | 39,909,330  |
| University of Utah Hospital   | 8,382,818              | 1.2330509                      | 45,875,870  | 82,460,092   | 15,268,600   | 244,387  | 16,865,757  |
| UT School Board Risk Mgmt   | 193,851                | 0.0285141                      | 1,060,872   | 1,906,876  | 353,084  | 5,651  | 390,018   |
| Utah Co Academy of Sciences   | 264,402                | 0.0388917                      | 1,446,972   | 2,600,877  | 481,587  | 7,708  | 531,963   |
| Utah Communications Authority   | 514,948                | 0.0757451                      | 2,818,109   | 5,065,442  | 937,935  | 15,012   | 1,036,047   |
| Utah Dairy Council  | 34,493                 | 0.0050736                      | 188,764   | 339,296  | 62,825   | 1,006  | 69,397  |
| Utah Education Association  | 296,937                | 0.0436773                      | 1,625,021   | 2,920,913  | 540,846  | 8,657  | 597,421   |
| Utah Housing Corporation  | 1,121,851              | 0.1650161                      | 6,139,452   | 11,035,427   | 2,043,358  | 32,706   | 2,257,102   |
| Utah Retirement Systems   | 5,774,827              | 0.8494347                      | 31,603,364  | 56,805,817   | 10,518,365   | 168,355  | 11,618,628  |
| Utah Safety Council   | 79,213                 | 0.0116517                      | 433,503   | 779,206  | 144,280  | 2,309  | 159,373   |
| Utah School Boards Association  | 171,188                | 0.0251805                      | 936,845   | 1,683,942  | 311,805  | 4,991  | 344,421   |
| Utah School Employees Assn  | 77,339                 | 0.0113760                      | 423,246   | 760,768  | 140,867  | 2,255  | 155,602   |
| Utah State Fair Corp  | 103,427                | 0.0152133                      | 566,013   | 1,017,387  | 188,383  | 3,015  | 208,089   |
| Utah State University   | 8,711,955              | 1.2814646                      | 47,677,110  | 85,697,751   | 15,868,097   | 253,983  | 17,527,963  |
| Utah Valley University  | 4,952,213              | 0.7284342                      | 27,101,519  | 48,713,927   | 9,020,042  | 144,374  | 9,963,574   |
| Wasatch School District   | 6,043,442              | 0.8889460                      | 33,073,388  | 59,448,129   | 11,007,624   | 176,187  | 12,159,066  |
| Wasatch Uniserv   | 27,868                 | 0.0040992                      | 152,511   | 274,133  | 50,759   | 812  | 56,069  |
| Washington School District  | 21,968,647             | 3.2314267                      | 120,225,784                                       | 216,101,172  | 40,014,052   | 640,459  | 44,199,682  |
| Wayne School District   | 496,843                | 0.0730820                      | 2,719,028   | 4,887,348  | 904,958  | 14,485   | 999,621   |
| Weber County School District  | 25,732,960             | 3.7851295                      | 140,826,392                                       | 253,129,963  | 46,870,433   | 750,202  | 51,773,268  |
| Weber State University  | 3,518,797              | 0.5175892                      | 19,256,995  | 34,613,699   | 6,409,194  | 102,585  | 7,079,622   |
| Woodland Peaks Uniserv  | 32,499                 | 0.0047804                      | 177,856   | 319,689  | 59,195   | 947  | 65,387  |
| Workers Compensation Fund   | 6,523,748              | 0.9595955                      | 35,701,915  | 64,172,804   | 11,882,462   | 190,189  | 13,125,415  |
| <b>Grand Total</b>  | <b>\$ 679,843,579</b>  | <b>100.0000000%</b>            | <b>\$ 3,720,517,145</b>                           | <b>6,687,484,874</b>                                       | <b>1,238,278,191</b>                                       | <b>19,819,710</b>                                  | <b>1,367,807,052</b>  |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |   |  |  |  |   |
| Liberty Academy Charter School  | \$ —                   | 0.0000000%                     | \$ —  | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 679,843,579</b>  | <b>100.0000000%</b>            | <b>\$ 3,720,517,145</b>                           | <b>6,687,484,874</b>                                       | <b>1,238,278,191</b>                                       | <b>19,819,710</b>                                  | <b>1,367,807,052</b>  |

Columns may not add to total due to rounding.



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   |   |  |  |
| 155,778                        | 89,162  | 816,151                              | 21,489   | 308,247  | —                      | —   | 329,736   | 344,751   | 44,467  | —  | 389,218  |
| 2,151,198                      | 556,383   | 10,595,676                           | 296,753  | 4,256,716  | —                      | 824,756   | 5,378,225   | 4,760,816   | 107,364   | —  | 4,868,180  |
| 13,940,137                     | —   | 65,056,359                           | 1,923,012  | 27,584,256   | —                      | 1,652,076   | 31,159,344  | 30,850,914  | (1,034,026)   | —  | 29,816,888   |
| 2,035,280                      | 49,201  | 9,547,522                            | 280,762  | 4,027,341  | —                      | 122,807   | 4,430,910   | 4,504,277   | (49,825)  | —  | 4,454,452  |
| 2,211,768                      | 152,228   | 10,474,188                           | 305,109  | 4,376,568  | —                      | 70,592  | 4,752,269   | 4,894,862   | 8,431   | —  | 4,903,293  |
| 513,247                        | 51,693  | 2,446,933                            | 70,801   | 1,015,595  | —                      | 85,958  | 1,172,354   | 1,135,866   | (1,964)   | —  | 1,133,902  |
| 82,567                         | 21,102  | 406,428                              | 11,390   | 163,380  | —                      | 41,408  | 216,178   | 182,729   | (35,614)  | —  | 147,115  |
| 1,594,586                      | —   | 7,441,673                            | 219,970  | 3,155,311  | —                      | 49,523  | 3,424,804   | 3,528,977   | (67,042)  | —  | 3,461,935  |
| 825,385                        | 172,950   | 4,024,888                            | 113,860  | 1,633,243  | —                      | 12,750  | 1,759,853   | 1,826,659   | 67,517  | —  | 1,894,176  |
| 1,443,463                      | 206,084   | 6,942,492                            | 199,123  | 2,856,275  | —                      | 5,700   | 3,061,098   | 3,194,528   | 127,100   | —  | 3,321,628  |
| 46,577                         | 18,052  | 235,419                              | 6,425  | 92,165   | —                      | 17,745  | 116,335   | 103,080   | 12,763  | —  | 115,843  |
| 188,512                        | 66,679  | 946,434                              | 26,005   | 373,021  | —                      | 16,227  | 415,253   | 417,196   | 64,174  | —  | 481,370  |
| 367,144                        | 219,622   | 1,933,022                            | 50,647   | 726,491  | —                      | —   | 777,138   | 812,525   | 141,235   | —  | 953,760  |
| 87,098,534                     | 4,348,576   | 410,823,313                          | 12,015,054   | 172,347,540  | —                      | 24,757,586  | 209,120,180   | 192,757,749                                       | (9,407,248)   | —  | 183,350,501  |
| 114,833                        | 79,516  | 615,423                              | 15,841   | 227,228  | —                      | —   | 243,069   | 254,137   | 44,934  | —  | 299,071  |
| 124,499                        | 47,716  | 628,734                              | 17,174   | 246,355  | —                      | —   | 263,529   | 275,529   | 27,581  | —  | 303,110  |
| 579,992                        | 735,330   | 3,442,059                            | 80,009   | 1,147,668  | —                      | —   | 1,227,677   | 1,283,580   | 464,975   | —  | 1,748,555  |
| 199,505                        | 17,902  | 948,960                              | 27,521   | 394,774  | —                      | 26,421  | 448,716   | 441,525   | 14,103  | —  | 455,628  |
| 5,825,386                      | 1,628,664   | 28,814,797                           | 803,599  | 11,527,071   | —                      | 482,534   | 12,813,204  | 12,892,161  | 175,605   | —  | 13,067,766   |
| 139,400                        | 91,287  | 741,844                              | 19,230   | 275,840  | —                      | —   | 295,070   | 308,506   | 57,501  | —  | 366,007  |
| 120,764                        | 10,039  | 573,624                              | 16,659   | 238,963  | —                      | 105,636   | 361,258   | 267,262   | (26,054)  | —  | 241,208  |
| 351,907                        | 52,349  | 1,694,642                            | 48,545   | 696,341  | —                      | 62,920  | 807,806   | 778,805   | (66,775)  | —  | 712,030  |
| 244                            | 1,215   | 2,356                                | 34   | 484  | —                      | —   | 518   | 541   | 463   | —  | 1,004  |
| 2,877,297                      | —   | 13,427,879                           | 396,917  | 5,693,495  | —                      | 565,315   | 6,655,727   | 6,367,745   | (401,573)   | —  | 5,966,172  |
| 11,041,563                     | —   | 51,529,185                           | 1,523,160  | 21,848,659   | —                      | 10,708,827  | 34,080,646  | 24,436,081  | (5,735,587)   | —  | 18,700,494   |
| 4,666,185                      | —   | 21,776,329                           | 643,690  | 9,233,284  | —                      | 1,640,437   | 11,517,411  | 10,326,733  | (1,049,476)   | —  | 9,277,257  |
| 107,905                        | 78,547  | 582,121                              | 14,885   | 213,518  | —                      | 8,202   | 236,605   | 238,804   | 35,596  | —  | 274,400  |
| 147,176                        | 112,000   | 798,847                              | 20,303   | 291,227  | —                      | —   | 311,530   | 325,716   | 53,477  | —  | 379,193  |
| 286,639                        | 367,914   | 1,705,612                            | 39,541   | 567,192  | —                      | —   | 606,733   | 634,361   | 262,354   | —  | 896,715  |
| 19,200                         | 4,865   | 94,468                               | 2,649  | 37,992   | —                      | 210,614   | 251,255   | 42,491  | (80,484)  | —  | (37,993)   |
| 165,286                        | —   | 771,364                              | 22,801   | 327,063  | —                      | 61,853  | 411,717   | 365,795   | (34,777)  | —  | 331,018  |
| 624,464                        | 162,936   | 3,077,208                            | 86,143   | 1,235,667  | —                      | —   | 1,321,810   | 1,382,001   | 119,466   | —  | 1,501,467  |
| 3,214,482                      | 798,428   | 15,799,893                           | 443,431  | 6,360,704  | —                      | 233,328   | 7,037,463   | 7,113,969   | 387,300   | —  | 7,501,269  |
| 44,093                         | 18,776  | 224,551                              | 6,083  | 87,250   | —                      | 26,054  | 119,387   | 97,582  | 10,662  | —  | 108,244  |
| 95,290                         | 119,852   | 564,554                              | 13,145   | 188,556  | —                      | 4,065   | 205,766   | 210,885   | 59,234  | —  | 270,119  |
| 43,050                         | 6,459   | 207,366                              | 5,939  | 85,185   | —                      | 25,197  | 116,321   | 95,273  | (28,445)  | —  | 66,828   |
| 57,571                         | 10,237  | 278,912                              | 7,942  | 113,920  | —                      | 19,732  | 141,594   | 127,411   | (521)   | —  | 126,890  |
| 4,849,395                      | 74,465  | 22,705,806                           | 668,963  | 9,595,814  | —                      | 1,862,067   | 12,126,844  | 10,732,195  | (789,969)   | —  | 9,942,226  |
| 2,756,584                      | 150,125   | 13,014,657                           | 380,265  | 5,454,633  | —                      | 1,058,447   | 6,893,345   | 6,100,596   | (303,371)   | —  | 5,797,225  |
| 3,364,003                      | 1,374,862   | 17,074,118                           | 464,057  | 6,656,571  | —                      | 31,935  | 7,152,563   | 7,444,874   | 675,050   | —  | 8,119,924  |
| 15,512                         | 37,326  | 109,719                              | 2,140  | 30,695   | —                      | 245   | 33,080  | 34,331  | 16,134  | —  | 50,465   |
| 12,228,559                     | 1,337,078   | 58,405,778                           | 1,686,903  | 24,197,445   | —                      | —   | 25,884,348  | 27,063,020  | 832,060   | —  | 27,895,080   |
| 276,561                        | 36,511  | 1,327,178                            | 38,151   | 547,250  | —                      | 102,806   | 688,207   | 612,058   | (55,655)  | —  | 556,403  |
| 14,323,914                     | 719,700   | 67,567,084                           | 1,975,953  | 28,343,661   | —                      | 337,490   | 30,657,104  | 31,700,251  | 50,001  | —  | 31,750,252   |
| 1,958,692                      | 43,366  | 9,184,265                            | 270,197  | 3,875,791  | —                      | 666,495   | 4,812,483   | 4,334,781   | (266,187)   | —  | 4,068,594  |
| 18,090                         | 6,454   | 90,878                               | 2,496  | 35,796   | —                      | 1   | 38,293  | 40,036  | 3,201   | —  | 43,237   |
| 3,631,359                      | 563,401   | 17,510,364                           | 500,938  | 7,185,606  | —                      | 220,071   | 7,906,615   | 8,036,559   | 287,149   | —  | 8,323,708  |
| 378,425,998                    | 45,161,217  | 1,811,213,977                        | 52,203,041   | 748,816,143  | —                      | 57,632,796  | 858,651,980   | 837,494,481                                       | (7,731,282)   | —  | 829,763,199  |
| —                              | 11,160  | 11,160                               | —  | —  | —                      | 267,871   | 267,871   | —   | (120,536)   | —  | (120,536)  |
| 378,425,998                    | 45,172,377  | 1,811,225,137                        | 52,203,041   | 748,816,143  | —                      | 57,900,667  | 858,919,851   | 837,494,481                                       | (7,851,817)   | —  | 829,642,664  |

**Contributory Retirement System  
Local Government Division**

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer        | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|-------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Box Elder County              | \$ 16,882              | 0.6237643%                     | \$ 253,125  | 537,344  | 13,872   | —  | 190,759   |
| Brigham City                  | 5,753                  | 0.2125654                      | 86,260  | 183,115  | 4,727  | —  | 65,007  |
| Carbon County                 | 6,990                  | 0.2582532                      | 104,800   | 222,473  | 5,743  | —  | 78,979  |
| Castle Valley SSD             | 11,381                 | 0.4205240                      | 170,650   | 362,262  | 9,352  | —  | 128,605   |
| Centerville City              | 27,384                 | 1.0117884                      | 410,587   | 871,608  | 22,502   | —  | 309,425   |
| City of Naples                | 6,376                  | 0.2355772                      | 95,598  | 202,939  | 5,239  | —  | 72,044  |
| City of Orem                  | 137,380                | 5.0759551                      | 2,059,837   | 4,372,697  | 112,888  | —  | 1,552,327   |
| City of St George             | 15,957                 | 0.5895800                      | 239,253   | 507,895  | 13,112   | —  | 180,305   |
| City of West Jordan           | 9,181                  | 0.3392182                      | 137,656   | 292,221  | 7,544  | —  | 103,740   |
| Clinton City                  | 14,458                 | 0.5342150                      | 216,786   | 460,201  | 11,881   | —  | 163,373   |
| Corinne City                  | 18,829                 | 0.6956870                      | 282,312   | 599,302  | 15,472   | —  | 212,755   |
| Davis & Weber County Canal Co | 100,316                | 3.7065045                      | 1,504,110   | 3,192,980  | 82,432   | —  | 1,133,522   |
| Davis Co Housing Authority    | 30,893                 | 1.1414456                      | 463,202   | 983,302  | 25,385   | —  | 349,077   |
| DDI Vantage                   | 585,446                | 21.6312928                     | 8,778,037   | 18,634,345   | 481,078  | —  | 6,615,276   |
| Duchesne Co Mosquito Dist     | 9,197                  | 0.3397983                      | 137,891   | 292,720  | 7,557  | —  | 103,917   |
| Duchesne County               | 109,923                | 4.0614960                      | 1,648,166   | 3,498,788  | 90,327   | —  | 1,242,085   |
| Emery Co Care & Rehab Ctr     | 87,483                 | 3.2323735                      | 1,311,706   | 2,784,538  | 71,887   | —  | 988,523   |
| Emery County                  | 3,135                  | 0.1158303                      | 47,004  | 99,782   | 2,576  | —  | 35,423  |
| Emery Town                    | 5,244                  | 0.1937738                      | 78,634  | 166,927  | 4,309  | —  | 59,260  |
| Five-County Assn of Govts     | 11,650                 | 0.4304542                      | 174,680   | 370,816  | 9,573  | —  | 131,641   |
| Garfield County               | 9,282                  | 0.3429552                      | 139,172   | 295,440  | 7,627  | —  | 104,882   |
| Garland City                  | 23,820                 | 0.8801261                      | 357,158   | 758,187  | 19,574   | —  | 269,160   |
| Grand County                  | 16,948                 | 0.6261914                      | 254,110   | 539,434  | 13,926   | —  | 191,502   |
| Honeyville City               | 13,499                 | 0.4987648                      | 202,400   | 429,662  | 11,092   | —  | 152,532   |
| Housing Authority of SLC      | 3,858                  | 0.1425389                      | 57,843  | 122,791  | 3,170  | —  | 43,591  |
| Iron County                   | 7,298                  | 0.2696592                      | 109,428   | 232,299  | 5,997  | —  | 82,467  |
| Jordan Valley Water Conserv   | 34,877                 | 1.2886544                      | 522,940   | 1,110,115  | 28,659   | —  | 394,096   |
| Juab County                   | 7,624                  | 0.2817006                      | 114,315   | 242,672  | 6,265  | —  | 86,150  |
| Kaysville City                | 12,681                 | 0.4685318                      | 190,132   | 403,618  | 10,420   | —  | 143,286   |
| Kearns Improvement Dist       | 33,668                 | 1.2439919                      | 504,815   | 1,071,641  | 27,666   | —  | 380,437   |
| Layton City                   | 28,474                 | 1.0520582                      | 426,928   | 906,299  | 23,398   | —  | 321,740   |
| Logan City                    | 13,291                 | 0.4910925                      | 199,287   | 423,053  | 10,922   | —  | 150,186   |
| Mountainland Assn of Govt     | 17,893                 | 0.6611221                      | 268,285   | 569,526  | 14,703   | —  | 202,184   |
| Murray City                   | 56,786                 | 2.0981454                      | 851,433   | 1,807,454  | 46,662   | —  | 641,654   |
| North Davis Co Sewer Dist     | 12,608                 | 0.4658564                      | 189,046   | 401,313  | 10,361   | —  | 142,468   |
| Oakley City                   | 23,217                 | 0.8578229                      | 348,107   | 738,974  | 19,078   | —  | 262,339   |
| Ogden City Corp               | 73,960                 | 2.7327216                      | 1,108,946   | 2,354,111  | 60,775   | —  | 835,720   |
| Park City                     | 119,466                | 4.4140715                      | 1,791,243   | 3,802,515  | 98,168   | —  | 1,349,910   |
| Provo City Corp               | 42,930                 | 1.5861985                      | 643,684   | 1,366,436  | 35,277   | —  | 485,091   |
| Provo Housing Authority       | 20,317                 | 0.7506751                      | 304,626   | 646,671  | 16,695   | —  | 229,571   |
| Roy City                      | 12,762                 | 0.4715379                      | 191,351   | 406,208  | 10,487   | —  | 144,206   |
| Salt Lake City Corp           | 326,130                | 12.0499896                     | 4,889,920   | 10,380,500   | 267,989  | —  | 3,685,124   |
| Salt Lake County              | 207,231                | 7.6568638                      | 3,107,177   | 6,596,029  | 170,287  | —  | 2,341,620   |
| Sandy City                    | 79,410                 | 2.9340912                      | 1,190,662   | 2,527,582  | 65,254   | —  | 897,303   |
| South Davis Sewer Dist        | 46,248                 | 1.7087889                      | 693,431   | 1,472,041  | 38,003   | —  | 522,581   |
| Tooele County                 | 7,892                  | 0.2915943                      | 118,330   | 251,195  | 6,485  | —  | 89,175  |
| Town of Manila                | 8,003                  | 0.2957019                      | 119,997   | 254,733  | 6,576  | —  | 90,431  |
| Town of Paragonah             | 6,870                  | 0.2538308                      | 103,005   | 218,663  | 5,645  | —  | 77,626  |
| Utah Co Housing Authority     | 6,902                  | 0.2550132                      | 103,485   | 219,682  | 5,671  | —  | 77,988  |
| Utah County                   | 70,182                 | 2.5930994                      | 1,052,287   | 2,233,833  | 57,670   | —  | 793,021   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| —                              | —   | 190,759                              | —  | 107,571  | —                      | —   | 107,571                             | 54,949  | (1,066)   | —  | 53,883   |
| —                              | —   | 65,007                               | —  | 36,658   | —                      | —   | 36,658                              | 18,725  | (8,976)   | —  | 9,749  |
| —                              | —   | 78,979                               | —  | 44,537   | —                      | —   | 44,537                              | 22,750  | (61,181)  | —  | (38,431)   |
| —                              | —   | 128,605                              | —  | 72,521   | —                      | —   | 72,521                              | 37,045  | 2,361   | —  | 39,406   |
| —                              | —   | 309,425                              | —  | 174,487  | —                      | —   | 174,487                             | 89,131  | 19,367  | —  | 108,498  |
| —                              | —   | 72,044                               | —  | 40,626   | —                      | —   | 40,626                              | 20,753  | (14,040)  | —  | 6,713  |
| —                              | —   | 1,552,327                            | —  | 875,370  | —                      | —   | 875,370                             | 447,153   | 98,856  | —  | 546,009  |
| —                              | —   | 180,305                              | —  | 101,676  | —                      | —   | 101,676                             | 51,938  | 13,048  | —  | 64,986   |
| —                              | —   | 103,740                              | —  | 58,500   | —                      | —   | 58,500                              | 29,883  | 6,937   | —  | 36,820   |
| —                              | —   | 163,373                              | —  | 92,128   | —                      | —   | 92,128                              | 47,060  | 12,217  | —  | 59,277   |
| —                              | —   | 212,755                              | —  | 119,974  | —                      | —   | 119,974                             | 61,285  | 14,630  | —  | 75,915   |
| —                              | —   | 1,133,522                            | —  | 639,203  | —                      | —   | 639,203                             | 326,515   | 49,341  | —  | 375,856  |
| —                              | —   | 349,077                              | —  | 196,847  | —                      | —   | 196,847                             | 100,553   | 39,769  | —  | 140,322  |
| —                              | —   | 6,615,276                            | —  | 3,730,409  | —                      | —   | 3,730,409                           | 1,905,550   | 407,496   | —  | 2,313,046  |
| —                              | —   | 103,917                              | —  | 58,600   | —                      | —   | 58,600                              | 29,934  | 5,400   | —  | 35,334   |
| —                              | —   | 1,242,085                            | —  | 700,422  | —                      | —   | 700,422                             | 357,787   | 20,215  | —  | 378,002  |
| —                              | —   | 988,523                              | —  | 557,437  | —                      | —   | 557,437                             | 284,747   | 113,644   | —  | 398,391  |
| —                              | —   | 35,423                               | —  | 19,975   | —                      | —   | 19,975                              | 10,204  | (81,769)  | —  | (71,565)   |
| —                              | —   | 59,260                               | —  | 33,417   | —                      | —   | 33,417                              | 17,070  | (1,828)   | —  | 15,242   |
| —                              | —   | 131,641                              | —  | 74,234   | —                      | —   | 74,234                              | 37,920  | 10,686  | —  | 48,606   |
| —                              | —   | 104,882                              | —  | 59,144   | —                      | —   | 59,144                              | 30,212  | 6,624   | —  | 36,836   |
| —                              | —   | 269,160                              | —  | 151,782  | —                      | —   | 151,782                             | 77,532  | 2,472   | —  | 80,004   |
| —                              | —   | 191,502                              | —  | 107,989  | —                      | —   | 107,989                             | 55,163  | (2,733)   | —  | 52,430   |
| —                              | —   | 152,532                              | —  | 86,014   | —                      | —   | 86,014                              | 43,937  | 7,459   | —  | 51,396   |
| —                              | —   | 43,591                               | —  | 24,581   | —                      | —   | 24,581                              | 12,557  | (26,137)  | —  | (13,580)   |
| —                              | —   | 82,467                               | —  | 46,504   | —                      | —   | 46,504                              | 23,755  | 7,817   | —  | 31,572   |
| —                              | —   | 394,096                              | —  | 222,234  | —                      | —   | 222,234                             | 113,521   | (1,103)   | —  | 112,418  |
| —                              | —   | 86,150                               | —  | 48,580   | —                      | —   | 48,580                              | 24,816  | 2,938   | —  | 27,754   |
| —                              | —   | 143,286                              | —  | 80,800   | —                      | —   | 80,800                              | 41,274  | 9,575   | —  | 50,849   |
| —                              | —   | 380,437                              | —  | 214,532  | —                      | —   | 214,532                             | 109,586   | (4,649)   | —  | 104,937  |
| —                              | —   | 321,740                              | —  | 181,432  | —                      | —   | 181,432                             | 92,678  | (41,759)  | —  | 50,919   |
| —                              | —   | 150,186                              | —  | 84,691   | —                      | —   | 84,691                              | 43,262  | 11,017  | —  | 54,279   |
| —                              | —   | 202,184                              | —  | 114,013  | —                      | —   | 114,013                             | 58,240  | 16,624  | —  | 74,864   |
| —                              | —   | 641,654                              | —  | 361,834  | —                      | —   | 361,834                             | 184,831   | (989)   | —  | 183,842  |
| —                              | —   | 142,468                              | —  | 80,339   | —                      | —   | 80,339                              | 41,038  | 9,576   | —  | 50,614   |
| —                              | —   | 262,339                              | —  | 147,935  | —                      | —   | 147,935                             | 75,568  | 31,446  | —  | 107,014  |
| —                              | —   | 835,720                              | —  | 471,270  | —                      | —   | 471,270                             | 240,732   | (3,504)   | —  | 237,228  |
| —                              | —   | 1,349,910                            | —  | 761,226  | —                      | —   | 761,226                             | 388,846   | 25,485  | —  | 414,331  |
| —                              | —   | 485,091                              | —  | 273,547  | —                      | —   | 273,547                             | 139,732   | (106,620)   | —  | 33,112   |
| —                              | —   | 229,571                              | —  | 129,457  | —                      | —   | 129,457                             | 66,129  | 17,132  | —  | 83,261   |
| —                              | —   | 144,206                              | —  | 81,319   | —                      | —   | 81,319                              | 41,539  | 9,651   | —  | 51,190   |
| —                              | —   | 3,685,124                            | —  | 2,078,072  | —                      | —   | 2,078,072                           | 1,061,512   | (399,422)   | —  | 662,090  |
| —                              | —   | 2,341,620                            | —  | 1,320,459  | —                      | —   | 1,320,459                           | 674,511   | (16,208)  | —  | 658,303  |
| —                              | —   | 897,303                              | —  | 505,997  | —                      | —   | 505,997                             | 258,471   | (32,020)  | —  | 226,451  |
| —                              | —   | 522,581                              | —  | 294,688  | —                      | —   | 294,688                             | 150,531   | 32,601  | —  | 183,132  |
| —                              | —   | 89,175                               | —  | 50,287   | —                      | —   | 50,287                              | 25,687  | 6,861   | —  | 32,548   |
| —                              | —   | 90,431                               | —  | 50,995   | —                      | —   | 50,995                              | 26,049  | 1,190   | —  | 27,239   |
| —                              | —   | 77,626                               | —  | 43,774   | —                      | —   | 43,774                              | 22,361  | 12,652  | —  | 35,013   |
| —                              | —   | 77,988                               | —  | 43,978   | —                      | —   | 43,978                              | 22,465  | (26,588)  | —  | (4,123)  |
| —                              | —   | 793,021                              | —  | 447,191  | —                      | —   | 447,191                             | 228,432   | (34,736)  | —  | 193,696  |

**Contributory Retirement System  
Local Government Division**
**Schedule of Employer Allocations and Pension Amounts** (Concluded)

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|---|--|--|--|---|
| Utah League Cities/Towns  | \$ 69,031              | 2.5505988%                     | \$ 1,035,040                                      | 2,197,221  | 56,725   | —  | 780,023   |
| Vernal City   | 23,213                 | 0.8576699                      | 348,045   | 738,842  | 19,074   | —  | 262,292   |
| Weber County Corp   | 13,943                 | 0.5151625                      | 209,054   | 443,788  | 11,457   | —  | 157,547   |
| Weber River Water Users   | 8,960                  | 0.3310545                      | 134,343   | 285,188  | 7,363  | —  | 101,243   |
| West Valley City  | 20,261                 | 0.7485990                      | 303,784   | 644,883  | 16,649   | —  | 228,936   |
| Woods Cross City  | 13,084                 | 0.4834290                      | 196,177   | 416,451  | 10,751   | —  | 147,842   |
| <b>Grand Total</b>  | <b>\$ 2,706,476</b>    | <b>100.0000000%</b>            | <b>\$ 40,580,280</b>                              | <b>86,145,305</b>  | <b>2,223,977</b>   | <b>—</b>   | <b>30,581,967</b>   |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |   |  |  |  |   |
| LaVerkin City   | \$ —                   | 0.0000000%                     | \$ —  | —  | —  | —  | —   |
| North Logan City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Rich County   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| South Jordan City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Tooele City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Bountiful City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Gunnison Valley Hospital  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Riverdale City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| San Juan County   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Spring City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Springville City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Timpanogos Special Service District   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Uintah County   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Washington County Water District  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Weber Fire District   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Bluffdale City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Brian Head Town   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Millard County  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Southeastern Utah Assoc. of Governments   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Sunset City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| West Bountiful City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Cache County  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Midway City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Mount Pleasant City   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Pleasant View City  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Sevier County   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| South Valley Sewer District   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Southeastern Utah Health  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Valley Mental Health  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 2,706,476</b>    | <b>100.0000000%</b>            | <b>\$ 40,580,280</b>                              | <b>86,145,305</b>  | <b>2,223,977</b>   | <b>—</b>   | <b>30,581,967</b>   |

Columns may not add to total due to rounding.



**Contributory Retirement System  
State and School Division**

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|---|--|--|--|---|
| Alpine School District  | \$ 117,064             | 3.4078692%                     | \$ 2,419,601                                      | 5,070,607  | 157,427  | —  | 1,889,074   |
| Box Elder School District   | 16,709                 | 0.4864327                      | 345,369   | 723,769  | 22,471   | —  | 269,643   |
| Cache School District   | 52,587                 | 1.5308611                      | 1,086,917   | 2,277,786  | 70,719   | —  | 848,598   |
| Carbon School District  | 1,108                  | 0.0322572                      | 22,903  | 47,996   | 1,490  | —  | 17,881  |
| Davis School District   | 199,060                | 5.7948812                      | 4,114,389   | 8,622,270  | 267,696  | —  | 3,212,259   |
| Dixie State University  | 8,383                  | 0.2440379                      | 173,268   | 363,107  | 11,273   | —  | 135,277   |
| Duchesne School District  | 30,996                 | 0.9023387                      | 640,664   | 1,342,600  | 41,684   | —  | 500,191   |
| Educators Mutual Insurance  | 24,482                 | 0.7126974                      | 506,018   | 1,060,431  | 32,923   | —  | 395,067   |
| Emery School District   | 12,853                 | 0.3741780                      | 265,668   | 556,744  | 17,285   | —  | 207,417   |
| Granite School District   | 332,411                | 9.6768717                      | 6,870,617   | 14,398,327   | 447,026  | —  | 5,364,152   |
| Iron School District  | 10,820                 | 0.3149850                      | 223,641   | 468,670  | 14,551   | —  | 174,605   |
| Jordan School District  | 70,097                 | 2.0405932                      | 1,448,829   | 3,036,222  | 94,266   | —  | 1,131,156   |
| Logan School District   | 26,672                 | 0.7764555                      | 551,286   | 1,155,297  | 35,869   | —  | 430,410   |
| Millard School District   | 31,964                 | 0.9305180                      | 660,671   | 1,384,528  | 42,986   | —  | 515,811   |
| Murray School District  | 10,194                 | 0.2967661                      | 210,705   | 441,562  | 13,709   | —  | 164,505   |
| Nebo School District  | 6,418                  | 0.1868411                      | 132,658   | 278,003  | 8,631  | —  | 103,571   |
| Provo School District   | 31,510                 | 0.9173062                      | 651,291   | 1,364,870  | 42,375   | —  | 508,488   |
| Salt Lake Community College   | 47,469                 | 1.3818834                      | 981,143   | 2,056,120  | 63,836   | —  | 766,015   |
| Salt Lake School District   | 192,671                | 5.6088741                      | 3,982,323   | 8,345,508  | 259,104  | —  | 3,109,151   |
| San Juan School District  | 3,667                  | 0.1067437                      | 75,788  | 158,825  | 4,931  | —  | 59,171  |
| Sevier School District  | 3,390                  | 0.0986855                      | 70,067  | 146,835  | 4,559  | —  | 54,704  |
| Snow College  | 8,377                  | 0.2438650                      | 173,145   | 362,850  | 11,265   | —  | 135,181   |
| Southern Utah University  | 5,596                  | 0.1629085                      | 115,666   | 242,393  | 7,526  | —  | 90,305  |
| State of Utah   | 991,034                | 28.8501673                     | 20,483,732  | 42,926,489   | 1,332,742  | —  | 15,992,430  |
| Uintah School District  | 23,973                 | 0.6978786                      | 495,497   | 1,038,382  | 32,239   | —  | 386,853   |
| University of Utah  | 340,054                | 9.8993752                      | 7,028,595   | 14,729,393   | 457,304  | —  | 5,487,491   |
| University of Utah Hospital   | 393,049                | 11.4421282                     | 8,123,956   | 17,024,873   | 528,572  | —  | 6,342,681   |
| Utah Housing Corporation  | 100,007                | 2.9113361                      | 2,067,060   | 4,331,810  | 134,490  | —  | 1,613,832   |
| Utah State University   | 72,354                 | 2.1063074                      | 1,495,487   | 3,133,999  | 97,301   | —  | 1,167,583   |
| Utah Valley University  | 80,649                 | 2.3477838                      | 1,666,936   | 3,493,294  | 108,457  | —  | 1,301,440   |
| Washington School District  | 24,389                 | 0.7099909                      | 504,096   | 1,056,404  | 32,798   | —  | 393,567   |
| Weber State University  | 72,211                 | 2.1021497                      | 1,492,535   | 3,127,812  | 97,109   | —  | 1,165,278   |
| Workers Compensation Fund   | 92,886                 | 2.7040324                      | 1,919,874   | 4,023,361  | 124,914  | —  | 1,498,918   |
| <b>Grand Total</b>  | <b>\$ 3,435,106</b>    | <b>100.0000000%</b>            | <b>\$ 71,000,395</b>                              | <b>148,791,137</b>   | <b>4,619,528</b>   | <b>—</b>   | <b>55,432,705</b>   |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |   |  |  |  |   |
| Kane School District  | \$ —                   | 0.0000000%                     | \$ —  | —  | —  | —  | —   |
| North Sanpete School District   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Ogden-Weber Applied Technology Center   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Park City School District   | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Tooele School District  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Juab School District  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Weber County School District  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Juab School District  | —                      | 0.0000000                      | —   | —  | —  | —  | —   |
| Weber County School District  | —                      | 0.0000000%                     | —   | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 3,435,106</b>    | <b>100.0000000%</b>            | <b>\$ 71,000,395</b>                              | <b>148,791,137</b>   | <b>4,619,528</b>   | <b>—</b>   | <b>55,432,705</b>   |

Columns may not add to total due to rounding.

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |                        |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|------------------------|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                        | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of  | Proportionate Share of |  |
| —                              | —   | 1,889,074                            | —  | 1,091,336  | —                      | —   | 1,091,336                           | 667,359   | (100,142)   | —                      | 567,217  |
| —                              | —   | 269,643                              | —  | 155,775  | —                      | —   | 155,775                             | 95,258  | 38,199  | —                      | 133,457  |
| —                              | —   | 848,598                              | —  | 490,243  | —                      | —   | 490,243                             | 299,787   | (51,109)  | —                      | 248,678  |
| —                              | —   | 17,881                               | —  | 10,330   | —                      | —   | 10,330                              | 6,317   | (10,719)  | —                      | (4,402)  |
| —                              | —   | 3,212,259                            | —  | 1,855,752  | —                      | —   | 1,855,752                           | 1,134,805   | 210,976   | —                      | 1,345,781  |
| —                              | —   | 135,277                              | —  | 78,151   | —                      | —   | 78,151                              | 47,790  | 12,672  | —                      | 60,462   |
| —                              | —   | 500,191                              | —  | 288,965  | —                      | —   | 288,965                             | 176,704   | 16,351  | —                      | 193,055  |
| —                              | —   | 395,067                              | —  | 228,234  | —                      | —   | 228,234                             | 139,567   | 512   | —                      | 140,079  |
| —                              | —   | 207,417                              | —  | 119,827  | —                      | —   | 119,827                             | 73,275  | 21,310  | —                      | 94,585   |
| —                              | —   | 5,364,152                            | —  | 3,098,921  | —                      | —   | 3,098,921                           | 1,895,011   | 96,781  | —                      | 1,991,792  |
| —                              | —   | 174,605                              | —  | 100,871  | —                      | —   | 100,871                             | 61,683  | 19,731  | —                      | 81,414   |
| —                              | —   | 1,131,156                            | —  | 653,479  | —                      | —   | 653,479                             | 399,607   | (38,973)  | —                      | 360,634  |
| —                              | —   | 430,410                              | —  | 248,652  | —                      | —   | 248,652                             | 152,052   | 57,248  | —                      | 209,300  |
| —                              | —   | 515,811                              | —  | 297,989  | —                      | —   | 297,989                             | 182,222   | 59,138  | —                      | 241,360  |
| —                              | —   | 164,505                              | —  | 95,036   | —                      | —   | 95,036                              | 58,115  | 20,377  | —                      | 78,492   |
| —                              | —   | 103,571                              | —  | 59,834   | —                      | —   | 59,834                              | 36,589  | (27,029)  | —                      | 9,560  |
| —                              | —   | 508,488                              | —  | 293,758  | —                      | —   | 293,758                             | 179,635   | (76,123)  | —                      | 103,512  |
| —                              | —   | 766,015                              | —  | 442,534  | —                      | —   | 442,534                             | 270,613   | 81,286  | —                      | 351,899  |
| —                              | —   | 3,109,151                            | —  | 1,796,186  | —                      | —   | 1,796,186                           | 1,098,380   | 24,286  | —                      | 1,122,666  |
| —                              | —   | 59,171                               | —  | 34,184   | —                      | —   | 34,184                              | 20,904  | 5,758   | —                      | 26,662   |
| —                              | —   | 54,704                               | —  | 31,603   | —                      | —   | 31,603                              | 19,325  | (31,395)  | —                      | (12,070)   |
| —                              | —   | 135,181                              | —  | 78,095   | —                      | —   | 78,095                              | 47,756  | 15,419  | —                      | 63,175   |
| —                              | —   | 90,305                               | —  | 52,170   | —                      | —   | 52,170                              | 31,902  | 9,136   | —                      | 41,038   |
| —                              | —   | 15,992,430                           | —  | 9,238,977  | —                      | —   | 9,238,977                           | 5,649,697   | (616,843)   | —                      | 5,032,854  |
| —                              | —   | 386,853                              | —  | 223,489  | —                      | —   | 223,489                             | 136,665   | (18,251)  | —                      | 118,414  |
| —                              | —   | 5,487,491                            | —  | 3,170,175  | —                      | —   | 3,170,175                           | 1,938,584   | (3,928)   | —                      | 1,934,656  |
| —                              | —   | 6,342,681                            | —  | 3,664,227  | —                      | —   | 3,664,227                           | 2,240,700   | 402,856   | —                      | 2,643,556  |
| —                              | —   | 1,613,832                            | —  | 932,326  | —                      | —   | 932,326                             | 570,124   | 162,762   | —                      | 732,886  |
| —                              | —   | 1,167,583                            | —  | 674,524  | —                      | —   | 674,524                             | 412,476   | 81,194  | —                      | 493,670  |
| —                              | —   | 1,301,440                            | —  | 751,854  | —                      | —   | 751,854                             | 459,764   | 28,567  | —                      | 488,331  |
| —                              | —   | 393,567                              | —  | 227,367  | —                      | —   | 227,367                             | 139,037   | (28,050)  | —                      | 110,987  |
| —                              | —   | 1,165,278                            | —  | 673,192  | —                      | —   | 673,192                             | 411,662   | (1,578)   | —                      | 410,084  |
| —                              | —   | 1,498,918                            | —  | 865,939  | —                      | —   | 865,939                             | 529,528   | 71,910  | —                      | 601,438  |
| —                              | —   | 55,432,705                           | —  | 32,023,995   | —                      | —   | 32,023,995                          | 19,582,893  | 432,325   | —                      | 20,015,218   |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | (18,248)  | —                      | (18,248)   |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | (22,820)  | —                      | (22,820)   |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | (120,756)   | —                      | (120,756)  |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | (79,207)  | —                      | (79,207)   |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | (21,196)  | —                      | (21,196)   |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | —   | —                      | —  |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | —   | —                      | —  |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | —   | —                      | —  |
| —                              | —   | —                                    | —  | —  | —                      | —   | —                                   | —   | —   | —                      | —  |
| —                              | —   | 55,432,705                           | —  | 32,023,995   | —                      | —   | 32,023,995                          | 19,582,893  | 170,098   | —                      | 19,752,991   |

**Public Safety Retirement System  
Other Division A with Social Security**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer   | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------|------------------------|--------------------------------|---|--|--|--|---|
| American Fork City       | \$ 540,928             | 1.0127761%                     | \$ 2,605,453                                      | 5,107,147  | 574,627  | —  | 992,790   |
| Beaver County            | 822,099                | 1.5392092%                     | 3,959,747   | 7,761,802  | 873,313  | —  | 1,508,835   |
| Big Water Municipal Corp | 5,856                  | 0.0109645%                     | 28,207  | 55,291   | 6,221  | —  | 10,748  |
| Blanding City            | 87,807                 | 0.1644007%                     | 422,935   | 829,027  | 93,277   | —  | 161,156   |
| Box Elder County         | 1,013,787              | 1.8981060%                     | 4,883,039   | 9,571,618  | 1,076,943  | —  | 1,860,649   |
| Brigham City             | 474,430                | 0.8882721%                     | 2,285,156   | 4,479,308  | 503,986  | —  | 870,743   |
| Cache County             | 1,588,189              | 2.9735539%                     | 7,649,720   | 14,994,802   | 1,687,129  | —  | 2,914,875   |
| Carbon County            | 629,223                | 1.1780900%                     | 3,030,737   | 5,940,779  | 668,422  | —  | 1,154,842   |
| Cedar City               | 517,436                | 0.9687915%                     | 2,492,299   | 4,885,345  | 549,671  | —  | 949,674   |
| Centerville City         | 343,700                | 0.6435060%                     | 1,655,474   | 3,245,021  | 365,111  | —  | 630,807   |
| City of Draper           | 654,261                | 1.2249678%                     | 3,151,334   | 6,177,171  | 695,020  | —  | 1,200,795   |
| City of Harrisville      | 98,885                 | 0.1851420%                     | 476,294   | 933,619  | 105,045  | —  | 181,488   |
| City of Helper           | 61,717                 | 0.1155523%                     | 297,268   | 582,698  | 65,562   | —  | 113,272   |
| City of Kanab            | 83,563                 | 0.1564540%                     | 402,491   | 788,954  | 88,769   | —  | 153,367   |
| City of Moab             | 221,841                | 0.4153505%                     | 1,068,524   | 2,094,497  | 235,661  | —  | 407,154   |
| City of Monticello       | 31,621                 | 0.0592034%                     | 152,306   | 298,546  | 33,591   | —  | 58,035  |
| City of Naples           | 65,243                 | 0.1221534%                     | 314,250   | 615,985  | 69,307   | —  | 119,743   |
| City of North Salt Lake  | 402,183                | 0.7530044%                     | 1,937,168   | 3,797,191  | 427,238  | —  | 738,145   |
| City of South Jordan     | 894,274                | 1.6743433%                     | 4,307,391   | 8,443,246  | 949,985  | —  | 1,641,302   |
| City of South Salt Lake  | 945,689                | 1.7706054%                     | 4,555,033   | 8,928,669  | 1,004,602  | —  | 1,735,665   |
| City of St George        | 1,918,102              | 3.5912484%                     | 9,238,792   | 18,109,663   | 2,037,595  | —  | 3,520,380   |
| Clearfield City          | 404,253                | 0.7568791%                     | 1,947,136   | 3,816,730  | 429,436  | —  | 741,943   |
| Clinton City             | 216,929                | 0.4061546%                     | 1,044,867   | 2,048,124  | 230,443  | —  | 398,140   |
| Daggett County           | 37,726                 | 0.0706350%                     | 181,715   | 356,193  | 40,077   | —  | 69,241  |
| Davis County             | 3,021,859              | 5.6578036%                     | 14,555,181  | 28,530,723   | 3,210,113  | —  | 5,546,154   |
| Duchesne County          | 463,595                | 0.8679856%                     | 2,232,967   | 4,377,009  | 492,476  | —  | 850,857   |
| East Carbon City         | 27,345                 | 0.0511981%                     | 131,711   | 258,178  | 29,049   | —  | 50,188  |
| Emery County             | 483,871                | 0.9059478%                     | 2,330,628   | 4,568,442  | 514,015  | —  | 888,070   |
| Enoch City               | 52,107                 | 0.0975602%                     | 250,982   | 491,969  | 55,353   | —  | 95,635  |
| Ephraim City             | 113,884                | 0.2132244%                     | 548,538   | 1,075,231  | 120,979  | —  | 209,017   |
| Fairview City            | 22,375                 | 0.0418927%                     | 107,773   | 211,253  | 23,769   | —  | 41,066  |
| Farmington City          | 274,185                | 0.5133541%                     | 1,320,647   | 2,588,701  | 291,266  | —  | 503,224   |
| Fountain Green City      | 12,595                 | 0.0235814%                     | 60,665  | 118,914  | 13,380   | —  | 23,116  |
| Garfield County          | 419,736                | 0.7858683%                     | 2,021,713   | 3,962,914  | 445,884  | —  | 770,360   |
| Garland City             | 30,358                 | 0.0568383%                     | 146,221   | 286,620  | 32,249   | —  | 55,717  |
| Grand County             | 306,389                | 0.5736490%                     | 1,475,761   | 2,892,752  | 325,476  | —  | 562,329   |
| Grantsville City         | 176,190                | 0.3298798%                     | 848,644   | 1,663,492  | 187,166  | —  | 323,370   |
| Heber City               | 344,832                | 0.6456268%                     | 1,660,930   | 3,255,716  | 366,314  | —  | 632,886   |
| Hurricane City           | 373,047                | 0.6984523%                     | 1,796,828   | 3,522,100  | 396,286  | —  | 684,669   |
| Iron County              | 949,012                | 1.7768286%                     | 4,571,043   | 8,960,050  | 1,008,133  | —  | 1,741,765   |
| Ivins City               | 163,556                | 0.3062241%                     | 787,788   | 1,544,203  | 173,745  | —  | 300,181   |
| Juab County              | 247,599                | 0.4635781%                     | 1,192,594   | 2,337,695  | 263,024  | —  | 454,430   |
| Kamas City               | 42,204                 | 0.0790177%                     | 203,280   | 398,464  | 44,833   | —  | 77,458  |
| Kane County              | 508,540                | 0.9521351%                     | 2,449,449   | 4,801,351  | 540,220  | —  | 933,346   |
| Kaysville City           | 493,661                | 0.9242781%                     | 2,377,784   | 4,660,876  | 524,415  | —  | 906,039   |
| Laverkin City            | 69,966                 | 0.1309972%                     | 337,001   | 660,582  | 74,325   | —  | 128,412   |
| Layton City              | 1,255,756              | 2.3511425%                     | 6,048,514   | 11,856,155   | 1,333,986  | —  | 2,304,746   |
| Lehi City                | 762,844                | 1.4282679%                     | 3,674,341   | 7,202,356  | 810,368  | —  | 1,400,083   |
| Lindon City              | 322,038                | 0.6029487%                     | 1,551,137   | 3,040,502  | 342,100  | —  | 591,050   |
| Mapleton City            | 125,032                | 0.2340956%                     | 602,231   | 1,180,479  | 132,821  | —  | 229,476   |
| Millard County           | 685,534                | 1.2835196%                     | 3,301,963   | 6,472,431  | 728,241  | —  | 1,258,191   |
| Morgan County            | 127,673                | 0.2390415%                     | 614,955   | 1,205,420  | 135,627  | —  | 234,324   |
| Moroni City              | 8,450                  | 0.0158201%                     | 40,699  | 79,776   | 8,976  | —  | 15,508  |
| Mount Pleasant City      | 79,542                 | 0.1489266%                     | 383,126   | 750,995  | 84,498   | —  | 145,988   |
| Murray City              | 1,378,936              | 2.5817706%                     | 6,641,824   | 13,019,148   | 1,464,839  | —  | 2,530,823   |



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |   |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|---|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Plan Gross Pension Expense                                 | Proportionate Share of Employer Contributions | Proportionate Share of Nonemployer Contributions | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   |   |  |   |  |
| 299,487                        | 43,477  | 1,335,754                            | 123,994  | 543,178   | —                      | 14,652  | 681,824                             | 810,193   | 9,597   | —  | 819,790   |  |
| 455,158                        | 60,510  | 2,024,503                            | 188,446  | 825,518   | —                      | —   | 1,013,964                           | 1,231,324   | 69,361  | —  | 1,300,685   |  |
| 3,242                          | 4,195   | 18,185                               | 1,342  | 5,881   | —                      | 202   | 7,425                               | 8,771   | 3,230   | —  | 12,001  |  |
| 48,615                         | 42,952  | 252,723                              | 20,128   | 88,172  | —                      | —   | 108,300                             | 131,516   | 26,856  | —  | 158,372   |  |
| 561,287                        | 719   | 2,422,655                            | 232,385  | 1,018,004   | —                      | 117,427   | 1,367,816                           | 1,518,432   | (61,024)                                      | —  | 1,457,408   |  |
| 262,670                        | 42,952  | 1,176,365                            | 108,751  | 476,404   | —                      | 427   | 585,582                             | 710,593   | 27,497  | —  | 738,090   |  |
| 879,307                        | 27,867  | 3,822,049                            | 364,052  | 1,594,795   | —                      | 103,603   | 2,062,450                           | 2,378,760   | (7,039)                                       | —  | 2,371,721   |  |
| 348,372                        | 5,876   | 1,509,090                            | 144,234  | 631,841   | —                      | 143,522   | 919,597                             | 942,439   | (15,673)                                      | —  | 926,766   |  |
| 286,480                        | 35,761  | 1,271,915                            | 118,609  | 519,588   | —                      | 67,500  | 705,697                             | 775,006   | (13,593)                                      | —  | 761,413   |  |
| 190,290                        | 25,410  | 846,507                              | 78,784   | 345,129   | —                      | —   | 423,913                             | 514,787   | 40,912  | —  | 555,699   |  |
| 362,234                        | 151,214   | 1,714,243                            | 149,973  | 656,982   | —                      | 29,962  | 836,917                             | 979,940   | 56,509  | —  | 1,036,449   |  |
| 54,748                         | 28,916  | 265,152                              | 22,667   | 99,297  | —                      | 7,354   | 129,318                             | 148,108   | 12,675  | —  | 160,783   |  |
| 34,170                         | —   | 147,442                              | 14,147   | 61,974  | —                      | 14,785  | 90,906                              | 92,439  | (17,542)                                      | —  | 74,897  |  |
| 46,265                         | 2,238   | 201,870                              | 19,155   | 83,910  | —                      | 5,920   | 108,985                             | 125,159   | 1,793   | —  | 126,952   |  |
| 122,823                        | 93,974  | 623,951                              | 50,851   | 222,763   | —                      | 455   | 274,069                             | 332,269   | 41,287  | —  | 373,556   |  |
| 17,507                         | 13,668  | 89,210                               | 7,248  | 31,752  | —                      | 5,232   | 44,232                              | 47,361  | 9,991   | —  | 57,352  |  |
| 36,122                         | 11,288  | 167,153                              | 14,955   | 65,514  | —                      | 31,452  | 111,921                             | 97,719  | (33,365)                                      | —  | 64,354  |  |
| 222,670                        | 101,291   | 1,062,106                            | 92,190   | 403,856   | —                      | —   | 496,046                             | 602,383   | 57,128  | —  | 659,511   |  |
| 495,118                        | 127,495   | 2,263,915                            | 204,990  | 897,994   | —                      | 22,796  | 1,125,780                           | 1,339,428   | 69,743  | —  | 1,409,171   |  |
| 523,584                        | 26,730  | 2,285,979                            | 216,775  | 949,622   | —                      | 78,543  | 1,244,940                           | 1,416,435   | (91,586)                                      | —  | 1,324,849   |  |
| 1,061,964                      | 202,771   | 4,785,115                            | 439,677  | 1,926,081   | —                      | 63,146  | 2,428,904                           | 2,872,898   | 136,875                                       | —  | 3,009,773   |  |
| 223,816                        | 5,877   | 971,636                              | 92,665   | 405,934   | —                      | 15,369  | 513,968                             | 605,482   | (46,110)                                      | —  | 559,372   |  |
| 120,104                        | 19,530  | 537,774                              | 49,726   | 217,831   | —                      | —   | 267,557                             | 324,912   | 20,067  | —  | 344,979   |  |
| 20,887                         | —   | 90,128                               | 8,648  | 37,883  | —                      | 161,072   | 207,603                             | 56,506  | (128,537)                                     | —  | (72,031)  |  |
| 1,673,063                      | 448   | 7,219,665                            | 692,685  | 3,034,429   | —                      | 775,371   | 4,502,485                           | 4,526,085   | (577,333)                                     | —  | 3,948,752   |  |
| 256,671                        | 22,107  | 1,129,635                            | 106,268  | 465,523   | —                      | 63,534  | 635,325                             | 694,364   | (20,510)                                      | —  | 673,854   |  |
| 15,140                         | 55  | 65,383                               | 6,268  | 27,459  | —                      | 3,739   | 37,466                              | 40,957  | (13,949)                                      | —  | 27,008  |  |
| 267,897                        | 30,649  | 1,186,616                            | 110,915  | 485,884   | —                      | 152,100   | 748,899                             | 724,733   | (61,556)                                      | —  | 663,177   |  |
| 28,849                         | 11,567  | 136,051                              | 11,944   | 52,324  | —                      | 17,801  | 82,069                              | 78,045  | (6,292)                                       | —  | 71,753  |  |
| 63,052                         | 90,500  | 362,569                              | 26,105   | 114,358   | —                      | 5,863   | 146,326                             | 170,574   | 53,953  | —  | 224,527   |  |
| 12,388                         | 47,313  | 100,767                              | 5,129  | 22,468  | —                      | —   | 27,597                              | 33,513  | 22,928  | —  | 56,441  |  |
| 151,803                        | 64,932  | 719,959                              | 62,850   | 275,325   | —                      | 26,459  | 364,634                             | 410,669   | 16,760  | —  | 427,429   |  |
| 6,973                          | —   | 30,089                               | 2,887  | 12,647  | —                      | 481   | 16,015                              | 18,864  | (550)   | —  | 18,314  |  |
| 232,388                        | 24,184  | 1,026,932                            | 96,214   | 421,482   | —                      | 7,571   | 525,267                             | 628,673   | 14,485  | —  | 643,158   |  |
| 16,808                         | 2,324   | 74,849                               | 6,959  | 30,484  | —                      | 15,972  | 53,415                              | 45,469  | (25,824)                                      | —  | 19,645  |  |
| 169,633                        | 42,545  | 774,507                              | 70,232   | 307,663   | —                      | 2,621   | 380,516                             | 458,903   | 17,391  | —  | 476,294   |  |
| 97,548                         | 55,306  | 476,224                              | 40,387   | 176,923   | —                      | 3,966   | 221,276                             | 263,895   | 11,516  | —  | 275,411   |  |
| 190,918                        | 74,767  | 898,571                              | 79,044   | 346,267   | —                      | —   | 425,311                             | 516,483   | 70,484  | —  | 586,967   |  |
| 206,539                        | 116,281   | 1,007,489                            | 85,512   | 374,598   | —                      | 5,061   | 465,171                             | 558,742   | 71,713  | —  | 630,455   |  |
| 525,424                        | 181,729   | 2,448,918                            | 217,537  | 952,960   | —                      | 89,086  | 1,259,583                           | 1,421,413   | (28,007)                                      | —  | 1,393,406   |  |
| 90,553                         | 12,084  | 402,818                              | 37,491   | 164,236   | —                      | 80,886  | 282,613                             | 244,971   | (26,925)                                      | —  | 218,046   |  |
| 137,084                        | 27,393  | 618,907                              | 56,756   | 248,629   | —                      | 37,732  | 343,117                             | 370,850   | (3,294)                                       | —  | 367,556   |  |
| 23,366                         | 15,911  | 116,735                              | 9,674  | 42,379  | —                      | 1,012   | 53,065                              | 63,212  | 15,928  | —  | 79,140  |  |
| 281,555                        | 67,218  | 1,282,119                            | 116,570  | 510,655   | —                      | 1,095   | 628,320                             | 761,682   | 41,330  | —  | 803,012   |  |
| 273,317                        | 53,125  | 1,232,481                            | 113,159  | 495,715   | —                      | 41,435  | 650,309                             | 739,397   | 21,779  | —  | 761,176   |  |
| 38,737                         | 36,210  | 203,359                              | 16,038   | 70,257  | —                      | 6,267   | 92,562                              | 104,794   | 10,389  | —  | 115,183   |  |
| 695,254                        | 6,989   | 3,006,989                            | 287,851  | 1,260,979   | —                      | 96,668  | 1,645,498                           | 1,880,848   | (60,073)                                      | —  | 1,820,775   |  |
| 422,352                        | 128,602   | 1,951,037                            | 174,863  | 766,018   | —                      | 33,647  | 974,528                             | 1,142,574   | 79,442  | —  | 1,222,016   |  |
| 178,297                        | 52,425  | 821,772                              | 73,819   | 323,377   | —                      | —   | 397,196                             | 482,342   | 36,791  | —  | 519,133   |  |
| 69,224                         | 22,183  | 320,883                              | 28,660   | 125,552   | —                      | 1,899   | 156,111                             | 187,270   | 193   | —  | 187,463   |  |
| 379,548                        | 288   | 1,638,027                            | 157,141  | 688,385   | —                      | 153,664   | 999,190                             | 1,026,780   | (76,943)                                      | —  | 949,837   |  |
| 70,687                         | 4,558   | 309,569                              | 29,266   | 128,204   | —                      | 26,205  | 183,675                             | 191,227   | (25,097)                                      | —  | 166,130   |  |
| 4,678                          | 18,044  | 38,230                               | 1,937  | 8,485   | —                      | —   | 10,422                              | 12,656  | 8,684   | —  | 21,340  |  |
| 44,039                         | 11,472  | 201,499                              | 18,233   | 79,873  | —                      | 31  | 98,137                              | 119,137   | 6,929   | —  | 126,066   |  |
| 763,453                        | 289,979   | 3,584,255                            | 316,086  | 1,384,671   | —                      | 130,926   | 1,831,683                           | 2,065,344   | 97,048  | —  | 2,162,392   |  |

**Public Safety Retirement System  
Other Division A with Social Security**

**Schedule of Employer Allocations and Pension Amounts (Concluded)**

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|--|--|--|--|---|
| Nephi City  | \$ 134,906             | 0.2525839%                     | % 649,794                                      | 1,273,710  | 143,311  | —  | 247,599   |
| North Ogden City  | 268,155                | 0.5020646                      | 1,291,604                                      | 2,531,772  | 284,860  | —  | 492,157   |
| North Park Police Agency  | 101,432                | 0.1899099                      | 488,559  | 957,663  | 107,751  | —  | 186,162   |
| Park City   | 736,649                | 1.3792220                      | 3,548,166                                      | 6,955,031  | 782,540  | —  | 1,352,005   |
| Parowan City  | 66,387                 | 0.1242954                      | 319,760  | 626,787  | 70,522   | —  | 121,843   |
| Payson City   | 286,466                | 0.5363490                      | 1,379,803                                      | 2,704,658  | 304,313  | —  | 525,765   |
| Perry City  | 98,019                 | 0.1835199                      | 472,121  | 925,440  | 104,125  | —  | 179,898   |
| Piute County  | 45,605                 | 0.0853855                      | 219,661  | 430,575  | 48,446   | —  | 83,701  |
| Pleasant Grove City   | 350,228                | 0.6557293                      | 1,686,919                                      | 3,306,660  | 372,046  | —  | 642,789   |
| Pleasant View City  | 131,733                | 0.2466434                      | 634,511  | 1,243,754  | 139,940  | —  | 241,776   |
| Price City  | 285,454                | 0.5344528                      | 1,374,925                                      | 2,695,096  | 303,237  | —  | 523,906   |
| Rich County   | 79,608                 | 0.1490501                      | 383,444  | 751,618  | 84,568   | —  | 146,109   |
| Richfield City  | 184,838                | 0.3460717                      | 890,299  | 1,745,143  | 196,353  | —  | 339,242   |
| Riverdale City  | 391,253                | 0.7325404                      | 1,884,522                                      | 3,693,997  | 415,627  | —  | 718,085   |
| Roosevelt City  | 175,641                | 0.3288513                      | 845,998  | 1,658,305  | 186,583  | —  | 322,362   |
| Roy City  | 660,352                | 1.2363720                      | 3,180,672                                      | 6,234,679  | 701,490  | —  | 1,211,974   |
| Salem City  | 166,404                | 0.3115569                      | 801,507  | 1,571,094  | 176,770  | —  | 305,409   |
| Salina City   | 35,148                 | 0.0658075                      | 169,295  | 331,849  | 37,338   | —  | 64,509  |
| Salt Lake County  | 8,290,723              | 15.5226584                     | 39,933,354                                     | 78,276,432   | 8,807,213  | —  | 15,216,342  |
| San Juan County   | 336,918                | 0.6308095                      | 1,622,811                                      | 3,180,996  | 357,907  | —  | 618,361   |
| Sanpete County  | 432,311                | 0.8094125                      | 2,082,282                                      | 4,081,641  | 459,243  | —  | 793,440   |
| Santaquin City  | 201,086                | 0.3764920                      | 968,558  | 1,898,544  | 213,613  | —  | 369,062   |
| Sevier County   | 648,367                | 1.2139329                      | 3,122,946                                      | 6,121,525  | 688,759  | —  | 1,189,978   |
| Smithfield City Corp  | 98,353                 | 0.1841455                      | 473,730  | 928,594  | 104,480  | —  | 180,512   |
| South Ogden City  | 415,801                | 0.7785005                      | 2,002,759                                      | 3,925,761  | 441,704  | —  | 763,138   |
| Spanish Fork City   | 647,958                | 1.2131674                      | 3,120,976                                      | 6,117,664  | 688,324  | —  | 1,189,227   |
| Springville City  | 356,789                | 0.6680134                      | 1,718,521                                      | 3,368,605  | 379,016  | —  | 654,831   |
| Stockton Town   | 15,937                 | 0.0298396                      | 76,765   | 150,473  | 16,930   | —  | 29,251  |
| Summit County   | 1,794,129              | 3.3591343                      | 8,641,659                                      | 16,939,176   | 1,905,898  | —  | 3,292,846   |
| Sunset City   | 91,769                 | 0.1718187                      | 442,018  | 866,434  | 97,486   | —  | 168,428   |
| Syracuse City Corp  | 376,181                | 0.7043201                      | 1,811,923                                      | 3,551,690  | 399,616  | —  | 690,421   |
| Tooele City   | 463,078                | 0.8670173                      | 2,230,476                                      | 4,372,126  | 491,926  | —  | 849,908   |
| Tooele County   | 856,314                | 1.6032702                      | 4,124,549                                      | 8,084,844  | 909,660  | —  | 1,571,632   |
| Town of Brian Head  | 97,329                 | 0.1822286                      | 468,799  | 918,928  | 103,392  | —  | 178,633   |
| Town of Springdale  | 179,231                | 0.3355729                      | 863,290  | 1,692,200  | 190,397  | —  | 328,951   |
| Tremonton City  | 138,686                | 0.2596603                      | 667,998  | 1,309,394  | 147,326  | —  | 254,536   |
| Uintah County   | 777,060                | 1.4548833                      | 3,742,811                                      | 7,336,570  | 825,469  | —  | 1,426,173   |
| Unified Fire Authority  | 55,193                 | 0.1033371                      | 265,843  | 521,100  | 58,631   | —  | 101,298   |
| Vernal City   | 359,314                | 0.6727411                      | 1,730,684                                      | 3,392,445  | 381,698  | —  | 659,465   |
| Wasatch County  | 798,898                | 1.4957706                      | 3,847,997                                      | 7,542,753  | 848,667  | —  | 1,466,254   |
| Washington City   | 219,401                | 0.4107826                      | 1,056,773                                      | 2,071,462  | 233,069  | —  | 402,676   |
| Washington County   | 1,971,238              | 3.6907337                      | 9,494,726                                      | 18,611,339   | 2,094,041  | —  | 3,617,902   |
| Wayne County  | 58,502                 | 0.1095321                      | 281,781  | 552,340  | 62,146   | —  | 107,371   |
| Weber County Corp   | 3,945,556              | 7.3872345                      | 19,004,289                                     | 37,251,760   | 4,191,353  | —  | 7,241,457   |
| Wellington City   | 15,176                 | 0.0284131                      | 73,095   | 143,279  | 16,121   | —  | 27,852  |
| West Bountiful City   | 129,886                | 0.2431848                      | 625,614  | 1,226,313  | 137,978  | —  | 238,386   |
| Willard City Corp   | 38,546                 | 0.0721694                      | 185,662  | 363,930  | 40,947   | —  | 70,745  |
| <b>Grand Total</b>  | <b>\$ 53,410,462</b>   | <b>100.0000000%</b>            | <b>257,258,503</b>                             | <b>504,272,072</b>                                   | <b>56,737,787</b>                                    | <b>—</b>   | <b>98,026,634</b>   |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |  |  |  |  |   |
| Centerfield City  | \$ —                   | 0.0000000%                     | —  | —  | —  | —  | —   |
| Gunnison City   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Escalante Town  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Taylorville City  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| North Logan City  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 53,410,462</b>   | <b>100.0000000%</b>            | <b>\$ 257,258,503</b>                          | <b>504,272,072</b>                                   | <b>56,737,787</b>                                    | <b>—</b>   | <b>98,026,634</b>   |

Columns may not add to total due to rounding.

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |   |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|---|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Plan Gross Pension Expense                                 | Proportionate Share of Employer Contributions | Proportionate Share of Nonemployer Contributions | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   |   |  |   |  |
| 74,691                         | 23,148  | 345,438                              | 30,924   | 135,467   | —                      | 13,448  | 179,839                             | 202,060   | 9,416   | —  | 211,476   |  |
| 148,465                        | 31,944  | 672,566                              | 61,468   | 269,270   | —                      | —   | 330,738                             | 401,638   | 33,132  | —  | 434,770   |  |
| 56,158                         | 93,291  | 335,611                              | 23,251   | 101,854   | —                      | —   | 125,105                             | 151,923   | 85,241  | —  | 237,164   |  |
| 407,848                        | 106,562   | 1,866,415                            | 168,858  | 739,713   | —                      | 29,063  | 937,634                             | 1,103,339   | 141,112                                       | —  | 1,244,451   |  |
| 36,755                         | 9,039   | 167,637                              | 15,217   | 66,663  | —                      | 183   | 82,063                              | 99,433  | 8,355   | —  | 107,788   |  |
| 158,603                        | 13,939  | 698,307                              | 65,665   | 287,658   | —                      | 43,509  | 396,832                             | 429,064   | 2,488   | —  | 431,552   |  |
| 54,268                         | 46,793  | 280,959                              | 22,468   | 98,427  | —                      | —   | 120,895                             | 146,811   | 42,403  | —  | 189,214   |  |
| 25,249                         | 2,353   | 111,303                              | 10,454   | 45,794  | —                      | 3,593   | 59,841                              | 68,306  | (1,123)                                       | —  | 67,183  |  |
| 193,905                        | —   | 836,694                              | 80,281   | 351,685   | —                      | 66,378  | 498,344                             | 524,565   | (51,568)                                      | —  | 472,997   |  |
| 72,935                         | 29,447  | 344,158                              | 30,197   | 132,281   | —                      | 24,497  | 165,348                             | 197,308   | 24,624  | —  | 221,932   |  |
| 158,042                        | 55,222  | 737,170                              | 65,433   | 286,641   | —                      | 15,143  | 367,217                             | 427,547   | (2,492)                                       | —  | 425,055   |  |
| 44,075                         | 2,847   | 193,031                              | 18,248   | 79,939  | —                      | 36,498  | 134,685                             | 119,236   | (3,497)                                       | —  | 115,739   |  |
| 102,337                        | 5,062   | 446,641                              | 42,370   | 185,607   | —                      | 7,148   | 235,125                             | 276,848   | 872   | —  | 277,720   |  |
| 216,619                        | 20,070  | 954,774                              | 89,685   | 392,881   | —                      | 7,455   | 490,021                             | 586,012   | (3,633)                                       | —  | 582,379   |  |
| 97,244                         | 23,731  | 443,337                              | 40,261   | 176,372   | —                      | 3,272   | 219,905                             | 263,072   | 8,112   | —  | 271,184   |  |
| 365,606                        | 46,236  | 1,623,816                            | 151,369  | 663,099   | —                      | 3,585   | 818,053                             | 989,063   | 7,191   | —  | 996,254   |  |
| 92,130                         | 26,876  | 424,415                              | 38,144   | 167,096   | —                      | 5,047   | 210,287                             | 249,237   | 24,314  | —  | 273,551   |  |
| 19,460                         | —   | 83,969                               | 8,057  | 35,294  | —                      | 4,674   | 48,025                              | 52,644  | (6,074)                                       | —  | 46,570  |  |
| 4,590,192                      | 668,129   | 20,474,663                           | 1,900,444  | 8,325,215   | —                      | 72,074  | 10,297,733                          | 12,417,693  | 101,546                                       | —  | 12,519,239  |  |
| 186,536                        | 32,185  | 837,082                              | 77,230   | 338,320   | —                      | 24,497  | 440,047                             | 504,630   | (21,173)                                      | —  | 483,457   |  |
| 239,351                        | 13,254  | 1,046,045                            | 99,096   | 434,109   | —                      | 22,404  | 555,609                             | 647,507   | (1,846)                                       | —  | 645,661   |  |
| 111,332                        | 32,524  | 512,918                              | 46,094   | 201,923   | —                      | 10,044  | 258,061                             | 301,183   | 31,163  | —  | 332,346   |  |
| 358,971                        | 33,072  | 1,582,021                            | 148,622  | 651,064   | —                      | 66,326  | 866,012                             | 971,112   | (64,848)                                      | —  | 906,264   |  |
| 54,453                         | 27,054  | 262,019                              | 22,545   | 98,762  | —                      | 1,912   | 123,219                             | 147,311   | (5,964)                                       | —  | 141,347   |  |
| 230,210                        | 22,152  | 1,015,500                            | 95,312   | 417,530   | —                      | 66,779  | 579,621                             | 622,779   | (21,306)                                      | —  | 601,473   |  |
| 358,744                        | 41,626  | 1,589,597                            | 148,528  | 650,654   | —                      | —   | 799,182                             | 970,500   | 55,717  | —  | 1,026,217   |  |
| 197,538                        | —   | 852,369                              | 81,785   | 358,273   | —                      | 62,551  | 502,609                             | 534,392   | (75,379)                                      | —  | 459,013   |  |
| 8,824                          | 11,912  | 49,987                               | 3,653  | 16,004  | —                      | 92  | 19,749                              | 23,871  | 7,681   | —  | 31,552  |  |
| 993,326                        | 316,729   | 4,602,901                            | 411,259  | 1,801,592   | —                      | —   | 2,212,851                           | 2,687,214   | 322,026                                       | —  | 3,009,240   |  |
| 50,808                         | 13,342  | 232,578                              | 21,036   | 92,151  | —                      | 456   | 113,643                             | 137,450   | (3,791)                                       | —  | 133,659   |  |
| 208,274                        | 143,470   | 1,042,165                            | 86,230   | 377,745   | —                      | —   | 463,975                             | 563,436   | 98,399  | —  | 661,835   |  |
| 256,385                        | 5,023   | 1,111,316                            | 106,149  | 465,004   | —                      | 33,041  | 604,194                             | 693,590   | (45,242)                                      | —  | 648,348   |  |
| 474,101                        | 27,713  | 2,073,446                            | 196,289  | 859,876   | —                      | 12,138  | 1,068,303                           | 1,282,571   | (10,624)                                      | —  | 1,271,947   |  |
| 53,887                         | 11,650  | 244,170                              | 22,310   | 97,734  | —                      | —   | 120,044                             | 145,778   | 10,949  | —  | 156,727   |  |
| 99,232                         | 163,789   | 591,972                              | 41,084   | 179,977   | —                      | —   | 221,061                             | 268,449   | 124,298                                       | —  | 392,747   |  |
| 76,784                         | 55,792  | 387,112                              | 31,790   | 139,263   | —                      | —   | 171,053                             | 207,721   | 29,770  | —  | 237,491   |  |
| 430,222                        | 1,927   | 1,858,322                            | 178,121  | 780,292   | —                      | 153,814   | 1,112,227                           | 1,163,866   | (65,967)                                      | —  | 1,097,899   |  |
| 30,558                         | 7,039   | 138,895                              | 12,652   | 55,422  | —                      | —   | 68,074                              | 82,667  | 4,685   | —  | 87,352  |  |
| 198,936                        | —   | 858,401                              | 82,364   | 360,809   | —                      | 49,146  | 492,319                             | 538,174   | (60,429)                                      | —  | 477,745   |  |
| 442,313                        | 51,693  | 1,960,260                            | 183,127  | 802,221   | —                      | 7,371   | 992,719                             | 1,196,575   | 41,192  | —  | 1,237,767   |  |
| 121,472                        | 33,325  | 557,473                              | 50,292   | 220,313   | —                      | 3,395   | 274,000                             | 328,615   | 16,981  | —  | 345,596   |  |
| 1,091,383                      | 17,584  | 4,726,869                            | 451,857  | 1,979,437   | —                      | 209,976   | 2,641,270                           | 2,952,484   | (123,487)                                     | —  | 2,828,997   |  |
| 32,390                         | 11,382  | 151,143                              | 13,410   | 58,745  | —                      | 4,113   | 76,268                              | 87,623  | 7,245   | —  | 94,868  |  |
| 2,184,471                      | 721,112   | 10,147,040                           | 904,420  | 3,961,968   | —                      | 1,488,765   | 6,355,153                           | 5,909,581   | (334,597)                                     | —  | 5,574,984   |  |
| 8,402                          | 676   | 36,930                               | 3,479  | 15,239  | —                      | 16,007  | 34,725                              | 22,730  | (12,300)                                      | —  | 10,430  |  |
| 71,912                         | 28,955  | 339,253                              | 29,773   | 130,426   | —                      | 2,880   | 163,079                             | 194,541   | 24,033  | —  | 218,574   |  |
| 21,341                         | 8,356   | 100,442                              | 8,836  | 38,706  | —                      | 4,544   | 52,086                              | 57,734  | 6,103   | —  | 63,837  |  |
| 29,570,896                     | 5,623,923                                       | 133,221,453                          | 12,243,009   | 53,632,627  | —                      | 5,218,706   | 71,094,342                          | 79,997,209  | 194,148                                       | —  | 80,191,357  |  |
| —                              | 599   | 599                                  | —  | —   | —                      | 25,899  | 25,899                              | —   | (16,744)                                      | —  | (16,744)  |  |
| —                              | —   | —                                    | —  | —   | —                      | 74,014  | 74,014                              | —   | (48,625)                                      | —  | (48,625)  |  |
| —                              | —   | —                                    | —  | —   | —                      | 1,762   | 1,762                               | —   | (7,548)                                       | —  | (7,548)   |  |
| —                              | —   | —                                    | —  | —   | —                      | 359   | 359                                 | —   | (8,757)                                       | —  | (8,757)   |  |
| —                              | 121   | 121                                  | —  | —   | —                      | 72,040  | 72,040                              | —   | (73,677)                                      | —  | (73,677)  |  |
| 29,570,896                     | 5,624,643                                       | 133,222,173                          | 12,243,009   | 53,632,627  | —                      | 5,392,781   | 71,268,417                          | 79,997,209  | 38,798  | —  | 80,036,007  |  |

**Public Safety Retirement System  
State of Utah**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer   | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Dixie State University   | \$ 76,420              | 0.1505029%                     | \$ 360,266                                     | 649,456  | 122,555  | 2,104  | 122,706   |
| Snow College             | 22,582                 | 0.0444741                      | 106,460  | 191,916  | 36,216   | 622  | 36,260  |
| Southern Utah University | 89,740                 | 0.1767365                      | 423,063  | 762,661  | 143,918  | 2,470  | 144,095   |
| State of Utah            | 49,537,405             | 97.5602149                     | 233,534,875                                    | 420,995,878  | 79,443,888   | 1,363,627  | 79,541,585  |
| University of Utah       | 883,958                | 1.7408888                      | 4,167,255                                      | 7,512,355  | 1,417,617  | 24,333   | 1,419,360   |
| Utah State University    | 166,131                | 0.3271828                      | 783,194  | 1,411,873  | 266,427  | 4,573  | 266,755   |
| <b>Grand Total</b>       | <b>\$ 50,776,236</b>   | <b>100.0000000%</b>            | <b>\$ 239,375,113</b>                          | <b>431,524,139</b>                                   | <b>81,430,621</b>                                    | <b>1,397,729</b>                                   | <b>81,530,761</b>   |

Columns may not add to total due to rounding.

**Public Safety Retirement System  
Salt Lake City**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Salt Lake City Corp    | \$ 15,294,371          | 100.0000000%                   | \$ 103,028,050                                 | 155,807,761  | 59,653,139   | 1,785,729  | 19,814,195  |

**Public Safety Retirement System  
Ogden City**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Ogden City Corp        | \$ 2,970,415           | 100.0000000%                   | \$ 22,263,653                                  | 33,874,092   | 12,757,018   | 379,429  | 4,446,695   |

**Public Safety Retirement System  
Provo City**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Provo City Corp        | \$ 2,265,693           | 100.0000000%                   | \$ 15,111,749                                  | 24,169,945   | 7,692,917  | 453,535  | 3,503,297   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 25,452                         | 207   | 150,469                              | 8,178  | 66,893   | —                      | 32,645  | 107,716   | 93,044  | (21,633)  | —  | 71,411   |
| 7,521                          | 7,900   | 52,303                               | 2,416  | 19,767   | —                      | 15,401  | 37,584  | 27,495  | 12,931  | —  | 40,426   |
| 29,888                         | 9,840   | 186,293                              | 9,603  | 78,553   | —                      | 30,402  | 118,558   | 109,262   | (12,079)  | —  | 97,183   |
| 16,498,637                     | 616,986   | 98,020,835                           | 5,300,890  | 43,361,800   | —                      | —   | 48,662,690  | 60,313,703  | 387,689   | —  | 60,701,392   |
| 294,406                        | 228,566   | 1,966,665                            | 94,590   | 773,759  | —                      | —   | 868,349   | 1,076,253   | 306,399   | —  | 1,382,652  |
| 55,331                         | 3,828   | 330,487                              | 17,777   | 145,420  | —                      | 24,232  | 187,429   | 202,271   | (7,221)   | —  | 195,050  |
| 16,911,235                     | 867,326   | 100,707,051                          | 5,433,454  | 44,446,192   | —                      | 102,680   | 49,982,326  | 61,822,028  | 666,085   | —  | 62,488,113   |

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 7,068,399                      | —   | 28,668,323                           | —  | 10,787,734   | —                      | —   | 10,787,734  | 21,999,491  | —   | —  | 21,999,491   |

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 505,834                        | —   | 5,331,958                            | 980,568  | 2,452,099  | —                      | —   | 3,432,667   | 4,755,024   | —   | —  | 4,755,024  |

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 1,504,912                      | —   | 5,461,744                            | 685,781  | 1,912,395  | —                      | —   | 2,598,176   | 2,959,535   | —   | —  | 2,959,535  |

**Public Safety Retirement System  
Logan City**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Logan City             | \$ 1,067,969           | 100.0000000%                   | \$ 6,809,837                                   | 11,762,835   | 2,801,647  | —  | 1,976,763   |

**Public Safety Retirement System  
Bountiful City**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|--|--|--|--|---|
| City of Bountiful      | \$ 964,252             | 100.0000000%                   | \$ 7,529,711                                   | 11,131,858   | 4,554,737  | 157,772  | 1,420,345   |

**Public Safety Retirement System  
Other Division B without Social Security**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer      | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|-----------------------------|------------------------|--------------------------------|--|--|--|--|---|
| City of Orem                | \$ 1,558,296           | 7.3044190%                     | \$ 5,755,853                                   | 11,700,624   | 907,013  | 2,092,584  | 2,263,255   |
| City of Saratoga Springs    | 379,315                | 1.7780179                      | 1,401,071                                      | 2,848,128  | 220,782  | 509,370  | 550,914   |
| City of Wendover            | 994                    | 0.0046591                      | 3,671  | 7,463  | 579  | 1,335  | 1,444   |
| City of West Jordan         | 1,957,210              | 9.1743034                      | 7,229,314                                      | 14,695,909   | 1,139,203  | 2,628,272  | 2,842,633   |
| Cottonwood Heights City     | 517,784                | 2.4270798                      | 1,912,529                                      | 3,887,831  | 301,378  | 695,315  | 752,024   |
| Gunnison Valley Police Dept | 61,168                 | 0.2867228                      | 225,936  | 459,289  | 35,603   | 82,141   | 88,840  |
| Herriman City               | 258,236                | 1.2104672                      | 953,843  | 1,938,994  | 150,308  | 346,777  | 375,060   |
| Lone Peak PS District       | 373,644                | 1.7514353                      | 1,380,124                                      | 2,805,546  | 217,481  | 501,755  | 542,677   |
| Sandy City                  | 1,581,515              | 7.4132550                      | 5,841,615                                      | 11,874,964   | 920,528  | 2,123,764  | 2,296,977   |
| Town of Mantua              | 19,115                 | 0.0895990                      | 70,604   | 143,525  | 11,126   | 25,668   | 27,762  |
| Unified Police Department   | 7,197,558              | 33.7381234                     | 26,585,504                                     | 54,043,600   | 4,189,370  | 9,665,362  | 10,453,667  |
| Utah County                 | 4,352,991              | 20.4043850                     | 16,078,573                                     | 32,684,877   | 2,533,678  | 5,845,488  | 6,322,244   |
| West Valley City            | 2,872,287              | 13.4636722                     | 10,609,319                                     | 21,566,858   | 1,671,827  | 3,857,099  | 4,171,682   |
| Woods Cross City            | 203,493                | 0.9538609                      | 751,639  | 1,527,947  | 118,444  | 273,264  | 295,551   |
| <b>Grand Total</b>          | <b>\$ 21,333,605</b>   | <b>100.0000000%</b>            | <b>\$ 78,799,595</b>                           | <b>160,185,555</b>                                   | <b>12,417,320</b>                                    | <b>28,648,194</b>                                  | <b>30,984,730</b>   |

Columns may not add to total due to rounding.

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      |  | Deferred Inflows of Resources  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 489,104                        | —   | 2,465,867                            | 744,436  | 1,078,735  | —                      | —   | 1,823,171                           | 1,063,559   | —   | —  | 1,063,559  |

| Deferred Outflows of Resources |   |                                      |  | Deferred Inflows of Resources  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 614,798                        | —   | 2,192,915                            | 265,888  | 781,608  | —                      | —   | 1,047,496                           | 1,572,472   | —   | —  | 1,572,472  |

| Deferred Outflows of Resources |   |                                      |  | Deferred Inflows of Resources  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 1,188,385                      | 19,639  | 5,563,863                            | —  | 1,197,608  | 88,272                 | 104,108   | 1,389,988                           | 1,845,250   | (31,933)  | —  | 1,813,317  |
| 289,273                        | 47,552  | 1,397,109                            | —  | 291,518  | 21,487                 | 7,274   | 320,279                             | 449,165   | 11,787  | —  | 460,952  |
| 758                            | 595   | 4,132                                | —  | 764  | 56                     | —   | 820                                 | 1,177   | 178   | —  | 1,355  |
| 1,492,604                      | 142,528   | 7,106,037                            | —  | 1,504,188  | 110,870                | 41,043  | 1,656,101                           | 2,317,623   | 59,799  | —  | 2,377,422  |
| 394,871                        | 43,339  | 1,885,549                            | —  | 397,936  | 29,331                 | 14,702  | 441,969                             | 613,132   | 16,570  | —  | 629,702  |
| 46,648                         | 40,588  | 258,217                              | —  | 47,010   | 3,465                  | —   | 50,475                              | 72,432  | 14,092  | —  | 86,524   |
| 196,936                        | 154,471   | 1,073,244                            | —  | 198,464  | 14,628                 | —   | 213,092                             | 305,790   | 46,138  | —  | 351,928  |
| 284,948                        | 21,525  | 1,350,905                            | —  | 287,159  | 21,166                 | 12,125  | 320,450                             | 442,450   | 1,045   | —  | 443,495  |
| 1,206,092                      | 2,249   | 5,629,082                            | —  | 1,215,452  | 89,588                 | 118,671   | 1,423,711                           | 1,872,745   | (44,827)  | —  | 1,827,918  |
| 14,577                         | 12,578  | 80,585                               | —  | 14,690   | 1,083                  | —   | 15,773                              | 22,635  | 4,596   | —  | 27,231   |
| 5,488,990                      | 231,622   | 25,839,641                           | —  | 5,531,587  | 407,718                | 297,495   | 6,236,800                           | 8,522,961   | (24,716)  | —  | 8,498,245  |
| 3,319,671                      | 154,531   | 15,641,934                           | —  | 3,345,433  | 246,583                | 78,136  | 3,670,152                           | 5,154,578   | 37,838  | —  | 5,192,416  |
| 2,190,459                      | —   | 10,219,240                           | —  | 2,207,458  | 162,706                | 294,609   | 2,664,773                           | 3,401,208   | (118,539)   | —  | 3,282,669  |
| 155,187                        | 18,146  | 742,148                              | —  | 156,392  | 11,527                 | 11,043  | 178,962                             | 240,965   | 1,333   | —  | 242,298  |
| 16,269,399                     | 889,364   | 76,791,687                           | —  | 16,395,659   | 1,208,480              | 979,206   | 18,583,345                          | 25,262,111  | (26,641)  | —  | 25,235,470   |

**Firefighters Retirement System  
Other Division A with Social Security**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|---|--|--|--|--|
| American Fork City  | \$ 32,201              | 2.4297297%                     | \$ 315,494  | 1,177,314  | (382,349)  | 66,681   | 357,609  |
| Brigham City  | 18,275                 | 1.3789193                      | 179,049   | 668,149  | (216,991)  | 37,843   | 202,950  |
| Cache County  | 9,068                  | 0.6841959                      | 88,841  | 331,524  | (107,667)  | 18,777   | 100,700  |
| Cedar City  | 22,244                 | 1.6784452                      | 217,942   | 813,283  | (264,125)  | 46,063   | 247,034  |
| City of Draper  | 82,196                 | 6.2021181                      | 805,328   | 3,005,207  | (975,982)  | 170,209  | 912,830  |
| City of Kanab   | 2,681                  | 0.2022597                      | 26,263  | 98,004   | (31,828)   | 5,551  | 29,769   |
| City of Santa Clara   | 5,150                  | 0.3886043                      | 50,459  | 188,296  | (61,152)   | 10,665   | 57,195   |
| City of South Jordan  | 101,364                | 7.6484656                      | 993,132   | 3,706,028  | (1,203,584)  | 209,902  | 1,125,704  |
| City of South Salt Lake   | 98,096                 | 7.4018263                      | 961,107   | 3,586,520  | (1,164,772)  | 203,134  | 1,089,404  |
| City of St George   | 64,843                 | 4.8927419                      | 635,309   | 2,370,755  | (769,935)  | 134,275  | 720,116  |
| City of Washington Terrace  | 2,219                  | 0.1674643                      | 21,745  | 81,144   | (26,353)   | 4,596  | 24,647   |
| Clinton City  | 13,676                 | 1.0319315                      | 133,993   | 500,017  | (162,388)  | 28,320   | 151,880  |
| Farmington City   | 17,545                 | 1.3238220                      | 171,895   | 641,452  | (208,320)  | 36,331   | 194,841  |
| Hurricane Valley Fire SSD   | 21,066                 | 1.5895500                      | 206,399   | 770,209  | (250,136)  | 43,623   | 233,951  |
| Kaysville City  | 8,832                  | 0.6664376                      | 86,535  | 322,919  | (104,872)  | 18,290   | 98,087   |
| Layton City   | 119,971                | 9.0524398                      | 1,175,435   | 4,386,317  | (1,424,517)  | 248,433  | 1,332,342  |
| Lehi City   | 70,016                 | 5.2830772                      | 685,993   | 2,559,890  | (831,360)  | 144,987  | 777,565  |
| Moab Valley Fire Protection   | 5,658                  | 0.4269416                      | 55,437  | 206,873  | (67,185)   | 11,717   | 62,837   |
| Morgan County   | 2,744                  | 0.2070631                      | 26,887  | 100,331  | (32,584)   | 5,683  | 30,476   |
| Murray City   | 150,581                | 11.3620768                     | 1,475,335   | 5,505,437  | (1,787,966)  | 311,816  | 1,672,275  |
| N Tooele Co Fire Protection SD  | 2,549                  | 0.1923381                      | 24,975  | 93,197   | (30,267)   | 5,278  | 28,308   |
| North Davis Fire District   | 36,153                 | 2.7279109                      | 354,212   | 1,321,796  | (429,272)  | 74,864   | 401,495  |
| North Fork SSD  | 2,254                  | 0.1700720                      | 22,083  | 82,408   | (26,763)   | 4,667  | 25,031   |
| North Logan City  | 6,615                  | 0.4991053                      | 64,807  | 241,839  | (78,541)   | 13,697   | 73,459   |
| North View Fire District  | 25,696                 | 1.9389011                      | 251,761   | 939,485  | (305,111)  | 53,211   | 285,368  |
| Payson City   | 3,931                  | 0.2965966                      | 38,512  | 143,714  | (46,673)   | 8,140  | 43,653   |
| Pleasant Grove City   | 20,507                 | 1.5473661                      | 200,921   | 749,769  | (243,498)  | 42,465   | 227,742  |
| Price City  | 3,254                  | 0.2455664                      | 31,886  | 118,988  | (38,643)   | 6,739  | 36,143   |
| Riverdale City  | 21,160                 | 1.5966201                      | 207,317   | 773,635  | (251,249)  | 43,817   | 234,991  |
| Roy City  | 43,266                 | 3.2646087                      | 423,901   | 1,581,851  | (513,728)  | 89,593   | 480,486  |
| Smithfield City Corp  | 5,716                  | 0.4313059                      | 56,004  | 208,987  | (67,871)   | 11,837   | 63,480   |
| So Davis Metro Fire Agency  | 140,195                | 10.5784551                     | 1,373,584   | 5,125,740  | (1,664,655)  | 290,312  | 1,556,941  |
| South Ogden City  | 27,595                 | 2.0822122                      | 270,370   | 1,008,926  | (327,663)  | 57,144   | 306,461  |
| Springville City  | 6,526                  | 0.4924004                      | 63,937  | 238,590  | (77,485)   | 13,513   | 72,472   |
| State of Utah   | 50,423                 | 3.8046416                      | 494,022   | 1,843,521  | (598,709)  | 104,413  | 559,969  |
| Syracuse City Corp  | 26,910                 | 2.0304809                      | 263,652   | 983,860  | (319,522)  | 55,724   | 298,847  |
| Uintah Fire Suppression SSD   | 5,310                  | 0.4006870                      | 52,028  | 194,151  | (63,053)   | 10,996   | 58,973   |
| Wasatch County Fire District  | 42,782                 | 3.2281322                      | 419,164   | 1,564,176  | (507,988)  | 88,592   | 475,118  |
| Washington City   | 6,023                  | 0.4544895                      | 59,014  | 220,221  | (71,520)   | 12,473   | 66,892   |
| <b>Grand Total</b>  | <b>\$ 1,325,291</b>    | <b>100.0000000%</b>            | <b>\$ 12,984,728</b>                              | <b>48,454,523</b>  | <b>(15,736,277)</b>  | <b>2,744,371</b>                                   | <b>14,718,041</b>  |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |   |  |  |  |  |
| Hurricane City  | \$ —                   | 0.0000000%                     | \$ —  | —  | —  | —  | —  |
| Leeds Area Special Service District   | —                      | 0.0000000                      | —   | —  | —  | —  | —  |
| Ivins City  | —                      | 0.0000000                      | —   | —  | —  | —  | —  |
| <b>Grand Total</b>  | <b>\$ 1,325,291</b>    | <b>100.0000000%</b>            | <b>\$ 12,984,728</b>                              | <b>48,454,523</b>  | <b>(15,736,277)</b>  | <b>2,744,371</b>                                   | <b>14,718,041</b>  |

Columns may not add to total due to rounding.



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Proportionate Share of Employer Contributions | Proportionate Share of Nonemployer Contributions |  |
| 167,804                        | 2,113   | 594,207                              | 56,889   | 193,211   | 36,625                 | 30,727  | 317,452                             | 176,895   | (5,975)                                       | (58,199)   | 112,721  |
| 95,232                         | —   | 336,025                              | 32,285   | 109,651   | 20,785                 | 34,039  | 196,760                             | 100,392   | (7,912)                                       | (33,029)   | 59,451   |
| 47,253                         | 1,203   | 167,933                              | 16,020   | 54,407  | 10,313                 | 824   | 81,564                              | 49,813  | 88  | (16,388)   | 33,513   |
| 115,918                        | 6,260   | 415,275                              | 39,298   | 133,469   | 25,300                 | 7,632   | 205,699                             | 122,199   | (432)   | (40,203)   | 81,564   |
| 428,336                        | —   | 1,511,375                            | 145,214  | 493,190   | 93,488                 | 196,457   | 928,349                             | 451,543   | (42,341)                                      | (148,558)  | 260,644  |
| 13,969                         | 526   | 49,815                               | 4,736  | 16,084  | 3,049                  | 8   | 23,877                              | 14,725  | 136   | (4,845)  | 10,016   |
| 26,838                         | 457   | 95,155                               | 9,099  | 30,902  | 5,858                  | 7,568   | 53,427                              | 28,292  | (1,858)                                       | (9,308)  | 17,126   |
| 528,225                        | 32,416  | 1,896,247                            | 179,078  | 608,203   | 115,289                | —   | 902,570                             | 556,843   | 6,804   | (183,201)  | 380,446  |
| 511,192                        | 74,927  | 1,878,657                            | 173,304  | 588,590   | 111,571                | 907   | 874,372                             | 538,887   | 16,272  | (177,294)  | 377,865  |
| 337,907                        | 14,433  | 1,206,731                            | 114,557  | 389,069   | 73,751                 | 7,218   | 584,595                             | 356,214   | 1,330   | (117,194)  | 240,350  |
| 11,566                         | 279   | 41,088                               | 3,921  | 13,317  | 2,524                  | 71  | 19,833                              | 12,192  | 39  | (4,011)  | 8,220  |
| 71,268                         | 14,648  | 266,116                              | 24,161   | 82,059  | 15,555                 | 1,560   | 123,335                             | 75,129  | 2,778   | (24,718)   | 53,189   |
| 91,427                         | —   | 322,599                              | 30,995   | 105,270   | 19,955                 | 11,670  | 167,890                             | 96,380  | (2,523)                                       | (31,709)   | 62,148   |
| 109,779                        | 45  | 387,398                              | 37,217   | 126,400   | 23,960                 | 20,188  | 207,765                             | 115,727   | (4,816)                                       | (38,074)   | 72,837   |
| 46,026                         | —   | 162,403                              | 15,604   | 52,995  | 10,046                 | 19,764  | 98,409                              | 48,520  | (4,670)                                       | (15,963)   | 27,887   |
| 625,188                        | 59,582  | 2,265,545                            | 211,950  | 719,847   | 136,452                | —   | 1,068,249                           | 659,059   | 13,252  | (216,830)  | 455,481  |
| 364,865                        | 10,485  | 1,297,902                            | 123,696  | 420,108   | 79,634                 | 7,499   | 630,937                             | 384,632   | 315   | (126,544)  | 258,403  |
| 29,486                         | 1,648   | 105,688                              | 9,996  | 33,950  | 6,436                  | 1,603   | 51,985                              | 31,083  | (34)  | (10,226)   | 20,823   |
| 14,300                         | 891   | 51,350                               | 4,848  | 16,466  | 3,121                  | 8,182   | 32,617                              | 15,075  | (1,680)                                       | (4,960)  | 8,435  |
| 784,698                        | 25,361  | 2,794,150                            | 266,029  | 903,509   | 171,266                | 17,589  | 1,358,393                           | 827,214   | 1,171   | (272,152)  | 556,233  |
| 13,283                         | 2,074   | 48,943                               | 4,503  | 15,295  | 2,899                  | 291   | 22,988                              | 14,003  | 482   | (4,607)  | 9,878  |
| 188,397                        | 14,687  | 679,443                              | 63,870   | 216,922   | 41,119                 | 1,333   | 323,244                             | 198,604   | 3,367   | (65,341)   | 136,630  |
| 11,746                         | 1,895   | 43,339                               | 3,982  | 13,524  | 2,564                  | 7,266   | 27,336                              | 12,382  | (1,282)                                       | (4,074)  | 7,026  |
| 34,470                         | 893   | 122,519                              | 11,686   | 39,689  | 7,523                  | 4,050   | 62,948                              | 36,337  | (710)   | (11,955)   | 23,672   |
| 133,906                        | 483   | 472,968                              | 45,397   | 154,181   | 29,226                 | 12,516  | 241,320                             | 141,161   | (2,576)                                       | (46,442)   | 92,143   |
| 20,484                         | 805   | 73,082                               | 6,944  | 23,585  | 4,471                  | 86  | 35,086                              | 21,594  | 157   | (7,104)  | 14,647   |
| 106,866                        | 23,080  | 400,153                              | 36,229   | 123,046   | 23,324                 | —   | 182,599                             | 112,655   | 5,358   | (37,064)   | 80,949   |
| 16,960                         | 547   | 60,389                               | 5,750  | 19,527  | 3,702                  | 4   | 28,983                              | 17,878  | 117   | (5,882)  | 12,113   |
| 110,267                        | 14,492  | 403,567                              | 37,383   | 126,963   | 24,067                 | —   | 188,413                             | 116,241   | 3,180   | (38,243)   | 81,178   |
| 225,463                        | 35,087  | 830,629                              | 76,436   | 259,600   | 49,209                 | —   | 385,245                             | 237,679   | 7,628   | (78,196)   | 167,111  |
| 29,787                         | 9,046   | 114,150                              | 10,098   | 34,297  | 6,501                  | 453   | 51,349                              | 31,401  | 2,197   | (10,331)   | 23,267   |
| 730,579                        | 37,616  | 2,615,448                            | 247,680  | 841,195   | 159,454                | —   | 1,248,329                           | 770,160   | 8,290   | (253,383)  | 525,067  |
| 143,804                        | 3,074   | 510,483                              | 48,752   | 165,577   | 31,386                 | 119   | 245,834                             | 151,595   | 634   | (49,875)   | 102,354  |
| 34,007                         | 1,754   | 121,746                              | 11,529   | 39,155  | 7,422                  | 1,397   | 59,503                              | 35,849  | 53  | (11,794)   | 24,108   |
| 262,760                        | 16,901  | 944,043                              | 89,080   | 302,544   | 57,349                 | 22,618  | 471,591                             | 276,995   | (2,282)                                       | (91,131)   | 183,582  |
| 140,231                        | 1,146   | 495,948                              | 47,541   | 161,463   | 30,606                 | 6,179   | 245,789                             | 147,828   | (962)   | (48,636)   | 98,230   |
| 27,673                         | 1,560   | 99,202                               | 9,382  | 31,862  | 6,040                  | 378   | 47,662                              | 29,172  | 287   | (9,598)  | 19,861   |
| 222,944                        | 437   | 787,091                              | 75,582   | 256,700   | 48,659                 | 22,989  | 403,930                             | 235,023   | (4,785)                                       | (77,323)   | 152,915  |
| 31,388                         | 12,505  | 123,258                              | 10,641   | 36,141  | 6,851                  | 64  | 53,697                              | 33,089  | 2,844   | (10,886)   | 25,047   |
| 6,906,292                      | 423,356   | 24,792,060                           | 2,341,362  | 7,951,963   | 1,507,350              | 453,248   | 12,253,923                          | 7,280,460   | (8,058)                                       | (2,395,271)                                      | 4,877,131  |
| —                              | 7,333   | 7,333                                | —  | —   | —                      | —   | —                                   | —   | 2,101   | —  | 2,101  |
| —                              | 5,032   | 5,032                                | —  | —   | —                      | —   | —                                   | —   | 1,291   | —  | 1,291  |
| —                              | 8,875   | 8,875                                | —  | —   | —                      | —   | —                                   | —   | 2,148   | —  | 2,148  |
| 6,906,292                      | 444,595   | 24,813,299                           | 2,341,362  | 7,951,963   | 1,507,350              | 453,248   | 12,253,923                          | 7,280,460   | (2,519)                                       | (2,395,271)                                      | 4,882,670  |

**Firefighters Retirement System  
Other Division B without Social Security**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer   | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------|------------------------|--------------------------------|---|--|--|--|---|
| City of Orem             | \$ 212,855             | 3.7318322%                     | \$ 1,508,227                                      | 6,787,181  | (2,833,589)  | —  | 2,566,006   |
| City of Saratoga Springs | 29,110                 | 0.5103655                      | 206,265   | 928,215  | (387,522)  | —  | 350,927   |
| City of West Jordan      | 321,234                | 5.6319581                      | 2,276,167   | 10,242,989   | (4,276,358)  | —  | 3,872,532   |
| Logan City               | 149,486                | 2.6208221                      | 1,059,211   | 4,766,558  | (1,989,996)  | —  | 1,802,076   |
| Lone Peak PS District    | 29,305                 | 0.5137804                      | 207,645   | 934,426  | (390,115)  | —  | 353,275   |
| Ogden City Corp          | 329,131                | 5.7704081                      | 2,332,122   | 10,494,792   | (4,381,484)  | —  | 3,967,730   |
| Park City Fire Service   | 280,031                | 4.9095708                      | 1,984,213   | 8,929,165  | (3,727,848)  | —  | 3,375,819   |
| Provo City Corp          | 287,789                | 5.0455792                      | 2,039,181   | 9,176,527  | (3,831,120)  | —  | 3,469,338   |
| Salt Lake City Corp      | 1,511,321              | 26.4968276                     | 10,708,746  | 48,190,472   | (20,119,100)   | —  | 18,219,209  |
| Sandy City               | 264,803                | 4.6425852                      | 1,876,310   | 8,443,591  | (3,525,125)  | —  | 3,192,240   |
| Unified Fire Authority   | 1,718,503              | 30.1291902                     | 12,176,773  | 54,796,744   | (22,877,161)   | —  | 20,716,820  |
| Weber Fire District      | 180,142                | 3.1582865                      | 1,276,428   | 5,744,058  | (2,398,094)  | —  | 2,171,637   |
| West Valley City         | 390,070                | 6.8387941                      | 2,763,912   | 12,437,893   | (5,192,712)  | —  | 4,702,352   |
| <b>Grand Total</b>       | <b>\$ 5,703,779</b>    | <b>100.0000000%</b>            | <b>\$ 40,415,201</b>                              | <b>181,872,609</b>   | <b>(75,930,223)</b>  | <b>—</b>   | <b>68,759,961</b>   |

Columns may not add to total due to rounding.

**Judges Retirement System**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|---|--|--|--|---|
| State of Utah          | \$ 8,091,313           | 100.0000000%                   | \$ 48,638,543                                     | 75,935,463   | 25,403,548   | 6,756,482  | 13,427,925  |

**Utah Governors and Legislators Retirement Plan**

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|------------------------|------------------------|--------------------------------|---|--|--|--|---|
| State Of Utah          | \$ 391,883             | 100.0000000%                   | \$ 2,640,357                                      | 3,912,507  | 1,558,808  | —  | 754,302   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 993,110                        | 679   | 3,559,795                            | 578,938  | 1,409,044   | 158,799                | 11,922  | 2,158,703                           | 565,095   | (4,742)   | (237,062)  | 323,291  |
| 135,818                        | 5,048   | 491,793                              | 79,176   | 192,701   | 21,717                 | 114   | 293,708                             | 77,282  | 1,978   | (32,421)   | 46,839   |
| 1,498,769                      | 30,222  | 5,401,523                            | 873,714  | 2,126,483   | 239,654                | —   | 3,239,851                           | 852,823   | 12,329  | (357,765)  | 507,387  |
| 697,449                        | 2,008   | 2,501,533                            | 406,581  | 989,555   | 111,522                | 6,963   | 1,514,621                           | 396,860   | (2,165)   | (166,486)  | 228,209  |
| 136,727                        | 2,607   | 492,609                              | 79,705   | 193,990   | 21,863                 | 367   | 295,925                             | 77,800  | 939   | (32,637)   | 46,102   |
| 1,535,613                      | 9,940   | 5,513,283                            | 895,192  | 2,178,759   | 245,545                | 14,698  | 3,334,194                           | 873,788   | (3,278)   | (366,560)  | 503,950  |
| 1,306,528                      | 1,706   | 4,684,053                            | 761,646  | 1,853,728   | 208,914                | 8,768   | 2,833,056                           | 743,435   | (2,953)   | (311,876)  | 428,606  |
| 1,342,722                      | —   | 4,812,060                            | 782,746  | 1,905,082   | 214,702                | 4,202   | 2,906,732                           | 764,030   | (1,487)   | (320,516)  | 442,027  |
| 7,051,298                      | 774   | 25,271,281                           | 4,110,585  | 10,004,525  | 1,127,505              | 7,003   | 15,249,618                          | 4,012,300   | (1,468)   | (1,683,189)                                      | 2,327,643  |
| 1,235,478                      | 6,378   | 4,434,096                            | 720,227  | 1,752,921   | 197,553                | 4,680   | 2,675,381                           | 703,007   | 891   | (294,916)  | 408,982  |
| 8,017,937                      | 18,781  | 28,753,538                           | 4,674,091  | 11,376,012  | 1,282,071              | 10,503  | 17,342,677                          | 4,562,333   | 3,363   | (1,913,932)                                      | 2,651,764  |
| 840,479                        | 4,803   | 3,016,919                            | 489,961  | 1,192,488   | 134,393                | —   | 1,816,842                           | 478,246   | 1,814   | (200,628)  | 279,432  |
| 1,819,930                      | 4,528   | 6,526,810                            | 1,060,936  | 2,582,154   | 291,007                | 20,258  | 3,954,355                           | 1,035,569   | (7,102)   | (434,429)  | 594,038  |
| 26,611,858                     | 87,473  | 95,459,292                           | 15,513,498   | 37,757,442  | 4,255,245              | 89,478  | 57,615,663                          | 15,142,568  | (1,882)   | (6,352,417)                                      | 8,788,269  |

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 7,135,437                      | —   | 27,319,844                           | —  | 7,324,361   | —                      | —   | 7,324,361                           | 12,356,757  | —   | (1,518,442)                                      | 10,838,315   |

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| —                              | —   | 754,302                              | —  | 433,138   | —                      | —   | 433,138                             | 506,329   | —   | —  | 506,329  |

Tier 2 Public Employees Contributory Retirement System

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer                     | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--|------------------------|--------------------------------|--|--|--|--|---|
| 4 Corners Comm Behavior Health             | \$ 101,227             | 0.0993556%                     | \$ 42,552                                      | 170,471  | (56,170)   | 299  | 23,330  |
| Active Re Entry Inc                        | 1,114                  | 0.0010938                      | 468  | 1,877  | (618)  | 3  | 257   |
| Alpine City                                | 19,831                 | 0.0194641                      | 8,336  | 33,396   | (11,004)   | 59   | 4,570   |
| Alpine School District                     | 5,685,454              | 5.5803606                      | 2,389,949                                      | 9,574,595  | (3,154,801)  | 16,774   | 1,310,336   |
| American Fork City                         | 76,287                 | 0.0748773                      | 32,068   | 128,472  | (42,331)   | 225  | 17,582  |
| American Leadership Academy                | 154,146                | 0.1512965                      | 64,797   | 259,589  | (85,534)   | 455  | 35,526  |
| AMES Charter School                        | 8,690                  | 0.0085294                      | 3,653  | 14,634   | (4,822)  | 26   | 2,003   |
| Ash Creek SS District                      | 8,969                  | 0.0088035                      | 3,770  | 15,105   | (4,977)  | 26   | 2,067   |
| Ashley Valley Improv Dist                  | 16,516                 | 0.0162111                      | 6,943  | 27,814   | (9,165)  | 49   | 3,807   |
| Ballard Town                               | 1,864                  | 0.0018294                      | 783  | 3,139  | (1,034)  | 5  | 430   |
| Bear River Assn of Govts                   | 32,475                 | 0.0318747                      | 13,651   | 54,690   | (18,020)   | 96   | 7,485   |
| Bear River Health Dept                     | 133,752                | 0.1312800                      | 56,224   | 225,246  | (74,218)   | 395  | 30,826  |
| Bear River Mental Health                   | 112,747                | 0.1106632                      | 47,395   | 189,872  | (62,562)   | 333  | 25,985  |
| Bear River Water District                  | 12,596                 | 0.0123636                      | 5,295  | 21,213   | (6,990)  | 37   | 2,903   |
| Beaver City                                | 29,548                 | 0.0290020                      | 12,421   | 49,761   | (16,396)   | 87   | 6,810   |
| Beaver County                              | 61,095                 | 0.0599660                      | 25,682   | 102,888  | (33,901)   | 180  | 14,081  |
| Beaver School District                     | 101,110                | 0.0992407                      | 42,503   | 170,274  | (56,105)   | 298  | 23,303  |
| Beaver Valley Hospital                     | 93,957                 | 0.0922198                      | 39,496   | 158,228  | (52,136)   | 277  | 21,654  |
| Benchland Water Company                    | 6,851                  | 0.0067240                      | 2,880  | 11,537   | (3,801)  | 20   | 1,579   |
| Big Plains Water & Sewer Spec Service Dist | 1,917                  | 0.0018816                      | 806  | 3,228  | (1,064)  | 6  | 442   |
| Blanding City                              | 19,364                 | 0.0190057                      | 8,140  | 32,609   | (10,745)   | 57   | 4,463   |
| Bluffdale City                             | 85,874                 | 0.0842863                      | 36,098   | 144,616  | (47,650)   | 253  | 19,791  |
| Bona Vista Water Improve                   | 5,161                  | 0.0050660                      | 2,170  | 8,692  | (2,864)  | 15   | 1,190   |
| Bountiful Irrigation District              | 6,948                  | 0.0068198                      | 2,921  | 11,701   | (3,856)  | 20   | 1,601   |
| Box Elder Co Mosq Dist                     | 4,874                  | 0.0047839                      | 2,049  | 8,208  | (2,705)  | 14   | 1,123   |
| Box Elder County                           | 94,903                 | 0.0931490                      | 39,894   | 159,822  | (52,661)   | 280  | 21,873  |
| Box Elder School District                  | 836,451                | 0.8209890                      | 351,612  | 1,408,625  | (464,138)  | 2,468  | 192,778   |
| Bridgerland Technical College              | 39,716                 | 0.0389818                      | 16,695   | 66,884   | (22,038)   | 117  | 9,153   |
| Brigham City                               | 96,012                 | 0.0942375                      | 40,360   | 161,690  | (53,276)   | 283  | 22,128  |
| Cache County                               | 149,946                | 0.1471746                      | 63,032   | 252,517  | (83,204)   | 442  | 34,558  |
| Cache School District                      | 1,302,898              | 1.2788148                      | 547,689  | 2,194,147  | (722,965)  | 3,844  | 300,281   |
| Canyons School District                    | 3,837,819              | 3.7668784                      | 1,613,273                                      | 6,463,083  | (2,129,567)  | 11,323   | 884,508   |
| Carbon County                              | 122,244                | 0.1199844                      | 51,387   | 205,865  | (67,832)   | 361  | 28,174  |
| Carbon School District                     | 297,855                | 0.2923491                      | 125,207  | 501,603  | (165,277)  | 879  | 68,647  |
| Castle Dale City                           | 2,896                  | 0.0028425                      | 1,217  | 4,877  | (1,607)  | 9  | 667   |
| Castle Valley SSD                          | 5,895                  | 0.0057860                      | 2,478  | 9,927  | (3,271)  | 17   | 1,359   |
| Cedar City                                 | 109,301                | 0.1072807                      | 45,946   | 184,069  | (60,650)   | 322  | 25,191  |
| Cedar City Housing Auth                    | 5,804                  | 0.0056967                      | 2,440  | 9,774  | (3,221)  | 17   | 1,338   |
| Cedar Mtn Fire Protection Dist             | 2,289                  | 0.0022466                      | 962  | 3,855  | (1,270)  | 7  | 528   |
| Centerville City                           | 27,920                 | 0.0274036                      | 11,736   | 47,018   | (15,492)   | 82   | 6,435   |
| Central Davis Sewer Dist                   | 11,889                 | 0.0116693                      | 4,998  | 20,022   | (6,597)  | 35   | 2,740   |
| Central Iron Co Water Conserv              | 12,556                 | 0.0123242                      | 5,278  | 21,145   | (6,967)  | 37   | 2,894   |
| Central Ut Public Health                   | 48,988                 | 0.0480826                      | 20,593   | 82,499   | (27,183)   | 145  | 11,290  |
| Central Utah Counseling Center             | 60,294                 | 0.0591798                      | 25,345   | 101,539  | (33,457)   | 178  | 13,896  |
| Central Utah Water Dist                    | 167,200                | 0.1641094                      | 70,285   | 281,573  | (92,778)   | 493  | 38,535  |
| Central Wasatch Commission                 | 5,736                  | 0.0056297                      | 2,411  | 9,659  | (3,183)  | 17   | 1,322   |
| Central Weber Sewer Dist                   | 67,354                 | 0.0661088                      | 28,313   | 113,427  | (37,374)   | 199  | 15,523  |
| City of Bountiful                          | 217,961                | 0.2139319                      | 91,622   | 367,057  | (120,944)  | 643  | 50,234  |
| City of Cedar Hills                        | 15,001                 | 0.0147242                      | 6,306  | 25,263   | (8,324)  | 44   | 3,457   |
| City of Draper                             | 182,558                | 0.1791831                      | 76,740   | 307,436  | (101,299)  | 539  | 42,074  |
| City of Duchesne                           | 6,995                  | 0.0068655                      | 2,940  | 11,780   | (3,881)  | 21   | 1,612   |
| City of Enterprise                         | 2,558                  | 0.0025102                      | 1,075  | 4,307  | (1,419)  | 8  | 589   |
| City of Green River                        | 13,416                 | 0.0131676                      | 5,639  | 22,593   | (7,444)  | 40   | 3,092   |
| City of Harrisville                        | 10,684                 | 0.0104868                      | 4,491  | 17,993   | (5,929)  | 32   | 2,462   |
| City of Helper                             | 9,034                  | 0.0088673                      | 3,798  | 15,214   | (5,013)  | 27   | 2,082   |
| City of Holladay                           | 21,984                 | 0.0215773                      | 9,241  | 37,022   | (12,199)   | 65   | 5,067   |
| City of Kanab                              | 31,414                 | 0.0308330                      | 13,205   | 52,902   | (17,431)   | 93   | 7,240   |
| City of Milford                            | 11,590                 | 0.0113756                      | 4,872  | 19,518   | (6,431)  | 34   | 2,671   |
| City of Moab                               | 111,902                | 0.1098332                      | 47,039   | 188,448  | (62,093)   | 330  | 25,790  |
| City of Monticello                         | 14,084                 | 0.0138239                      | 5,920  | 23,719   | (7,815)  | 42   | 3,246   |
| City of Naples                             | 8,721                  | 0.0085602                      | 3,666  | 14,687   | (4,839)  | 26   | 2,010   |
| City of North Salt Lake                    | 50,913                 | 0.0499722                      | 21,402   | 85,741   | (28,251)   | 150  | 11,734  |
| City of Orem                               | 275,775                | 0.2706777                      | 115,925  | 464,420  | (153,025)  | 814  | 63,558  |
| City of Riverton                           | 132,950                | 0.1304926                      | 55,887   | 223,895  | (73,773)   | 392  | 30,641  |
| City of Santa Clara                        | 33,140                 | 0.0325277                      | 13,931   | 55,810   | (18,389)   | 98   | 7,638   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |   |  |   |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|---|---|---|--|---|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources   | Proportionate Share of Allocable Plan Gross Pension Expense | Proportionate Share of Employer Contributions | Proportionate Share of Nonemployer Contributions | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |   |   |   |  |   |  |
| 10,665                         | 13,123  | 47,417                               | 8,795  | 9,473  | 764                    | —   | 19,032  | 108,612   | 1,378   | —  | 109,990   |  |
| 117                            | 201   | 578                                  | 97   | 104  | 8                      | 135   | 344   | 1,196   | 8   | —  | 1,204   |  |
| 2,089                          | 2,557   | 9,275                                | 1,723  | 1,856  | 150                    | —   | 3,729   | 21,277  | 271   | —  | 21,548  |  |
| 599,026                        | 716,045   | 2,642,181                            | 493,950  | 532,063  | 42,938                 | —   | 1,068,951   | 6,100,237   | 75,602  | —  | 6,175,839   |  |
| 8,038                          | 8,600   | 34,445                               | 6,628  | 7,139  | 576                    | —   | 14,343  | 81,853  | 976   | —  | 82,829  |  |
| 16,241                         | 18,830  | 71,052                               | 13,392   | 14,425   | 1,164                  | —   | 28,981  | 165,392   | 2,048   | —  | 167,440   |  |
| 916                            | 1,325   | 4,270                                | 755  | 813  | 66                     | 168   | 1,802   | 9,324   | 120   | —  | 9,444   |  |
| 945                            | 1,474   | 4,512                                | 779  | 839  | 68                     | —   | 1,686   | 9,624   | 136   | —  | 9,760   |  |
| 1,740                          | 2,195   | 7,791                                | 1,435  | 1,546  | 125                    | —   | 3,106   | 17,721  | 221   | —  | 17,942  |  |
| 196                            | 196   | 827                                  | 162  | 174  | 14                     | —   | 350   | 2,000   | 22  | —  | 2,022   |  |
| 3,422                          | 4,298   | 15,301                               | 2,821  | 3,039  | 245                    | —   | 6,105   | 34,844  | 448   | —  | 35,292  |  |
| 14,092                         | 16,995  | 62,308                               | 11,620   | 12,517   | 1,010                  | —   | 25,147  | 143,510   | 1,822   | —  | 145,332   |  |
| 11,879                         | 13,838  | 52,035                               | 9,795  | 10,551   | 851                    | —   | 21,197  | 120,973   | 1,490   | —  | 122,463   |  |
| 1,327                          | 1,824   | 6,091                                | 1,094  | 1,179  | 95                     | —   | 2,368   | 13,515  | 185   | —  | 13,700  |  |
| 3,113                          | 3,786   | 13,796                               | 2,567  | 2,765  | 223                    | —   | 5,555   | 31,704  | 403   | —  | 32,107  |  |
| 6,437                          | 7,396   | 28,094                               | 5,308  | 5,717  | 461                    | —   | 11,486  | 65,553  | 804   | —  | 66,357  |  |
| 10,653                         | 13,240  | 47,494                               | 8,784  | 9,462  | 764                    | —   | 19,010  | 108,486   | 1,372   | —  | 109,858   |  |
| 9,899                          | 12,599  | 44,429                               | 8,163  | 8,793  | 710                    | —   | 17,666  | 100,811   | 1,292   | —  | 102,103   |  |
| 722                            | 990   | 3,311                                | 595  | 641  | 52                     | —   | 1,288   | 7,350   | 98  | —  | 7,448   |  |
| 202                            | 346   | 996                                  | 167  | 179  | 14                     | —   | 360   | 2,057   | 31  | —  | 2,088   |  |
| 2,040                          | 2,740   | 9,300                                | 1,682  | 1,812  | 146                    | —   | 3,640   | 20,776  | 276   | —  | 21,052  |  |
| 9,048                          | 11,426  | 40,518                               | 7,461  | 8,036  | 649                    | —   | 16,146  | 92,139  | 1,185   | —  | 93,324  |  |
| 544                            | 751   | 2,500                                | 448  | 483  | 39                     | —   | 970   | 5,538   | 79  | —  | 5,617   |  |
| 732                            | 972   | 3,325                                | 604  | 650  | 52                     | —   | 1,306   | 7,455   | 99  | —  | 7,554   |  |
| 514                            | 624   | 2,275                                | 423  | 456  | 37                     | —   | 916   | 5,230   | 65  | —  | 5,295   |  |
| 9,999                          | 12,545  | 44,697                               | 8,245  | 8,881  | 717                    | —   | 17,843  | 101,827   | 1,314   | —  | 103,141   |  |
| 88,129                         | 112,940   | 396,315                              | 72,671   | 78,278   | 6,317                  | —   | 157,266   | 897,474   | 11,549  | —  | 909,023   |  |
| 4,185                          | 4,899   | 18,354                               | 3,451  | 3,717  | 300                    | 192   | 7,660   | 42,613  | 546   | —  | 43,159  |  |
| 10,116                         | 11,538  | 44,065                               | 8,342  | 8,985  | 725                    | —   | 18,052  | 103,017   | 1,237   | —  | 104,254   |  |
| 15,799                         | 19,975  | 70,774                               | 13,027   | 14,032   | 1,132                  | —   | 28,191  | 160,886   | 2,044   | —  | 162,930   |  |
| 137,275                        | 178,735   | 620,135                              | 113,195  | 121,929  | 9,840                  | —   | 244,964   | 1,397,951   | 18,162  | —  | 1,416,113   |  |
| 404,357                        | 492,797   | 1,792,985                            | 333,428  | 359,155  | 28,984                 | —   | 721,567   | 4,117,807   | 51,325  | —  | 4,169,132   |  |
| 12,880                         | 14,458  | 55,873                               | 10,621   | 11,440   | 923                    | —   | 22,984  | 131,162   | 1,607   | —  | 132,769   |  |
| 31,382                         | 36,590  | 137,498                              | 25,878   | 27,874   | 2,249                  | —   | 56,001  | 319,585   | 3,910   | —  | 323,495   |  |
| 305                            | 398   | 1,379                                | 252  | 271  | 22                     | 60  | 605   | 3,107   | 36  | —  | 3,143   |  |
| 621                            | 795   | 2,792                                | 512  | 552  | 45                     | —   | 1,109   | 6,325   | 80  | —  | 6,405   |  |
| 11,516                         | 14,352  | 51,381                               | 9,496  | 10,229   | 825                    | —   | 20,550  | 117,275   | 1,505   | —  | 118,780   |  |
| 612                            | 662   | 2,629                                | 504  | 543  | 44                     | —   | 1,091   | 6,227   | 73  | —  | 6,300   |  |
| 241                            | 414   | 1,190                                | 199  | 214  | 17                     | —   | 430   | 2,456   | 37  | —  | 2,493   |  |
| 2,942                          | 3,948   | 13,407                               | 2,426  | 2,613  | 211                    | —   | 5,250   | 29,957  | 390   | —  | 30,347  |  |
| 1,253                          | 1,234   | 5,262                                | 1,033  | 1,113  | 90                     | —   | 2,236   | 12,756  | 139   | —  | 12,895  |  |
| 1,323                          | 1,504   | 5,758                                | 1,091  | 1,175  | 95                     | —   | 2,361   | 13,472  | 161   | —  | 13,633  |  |
| 5,161                          | 6,743   | 23,339                               | 4,256  | 4,584  | 370                    | —   | 9,210   | 52,562  | 676   | —  | 53,238  |  |
| 6,353                          | 7,955   | 28,382                               | 5,238  | 5,643  | 455                    | —   | 11,336  | 64,693  | 801   | —  | 65,494  |  |
| 17,616                         | 22,509  | 79,153                               | 14,526   | 15,647   | 1,263                  | —   | 31,436  | 179,398   | 2,355   | —  | 181,753   |  |
| 604                            | 1,035   | 2,978                                | 498  | 537  | 43                     | —   | 1,078   | 6,154   | 92  | —  | 6,246   |  |
| 7,096                          | 8,122   | 30,940                               | 5,852  | 6,303  | 509                    | —   | 12,664  | 72,268  | 880   | —  | 73,148  |  |
| 22,965                         | 27,712  | 101,554                              | 18,936   | 20,397   | 1,646                  | —   | 40,979  | 233,862   | 2,945   | —  | 236,807   |  |
| 1,581                          | 1,712   | 6,794                                | 1,303  | 1,404  | 113                    | —   | 2,820   | 16,096  | 196   | —  | 16,292  |  |
| 19,234                         | 24,594  | 86,441                               | 15,861   | 17,084   | 1,379                  | —   | 34,324  | 195,876   | 2,518   | —  | 198,394   |  |
| 737                            | 939   | 3,309                                | 608  | 655  | 53                     | —   | 1,316   | 7,505   | 97  | —  | 7,602   |  |
| 269                            | 461   | 1,327                                | 222  | 239  | 19                     | 75  | 555   | 2,744   | 32  | —  | 2,776   |  |
| 1,413                          | 1,987   | 6,532                                | 1,166  | 1,255  | 101                    | —   | 2,522   | 14,394  | 195   | —  | 14,589  |  |
| 1,126                          | 1,564   | 5,184                                | 928  | 1,000  | 81                     | —   | 2,009   | 11,464  | 155   | —  | 11,619  |  |
| 952                            | 1,139   | 4,200                                | 785  | 845  | 68                     | —   | 1,698   | 9,693   | 121   | —  | 9,814   |  |
| 2,316                          | 2,855   | 10,303                               | 1,910  | 2,057  | 166                    | —   | 4,133   | 23,587  | 294   | —  | 23,881  |  |
| 3,310                          | 4,274   | 14,917                               | 2,729  | 2,940  | 237                    | —   | 5,906   | 33,705  | 435   | —  | 34,140  |  |
| 1,221                          | 1,510   | 5,436                                | 1,007  | 1,085  | 88                     | —   | 2,180   | 12,435  | 156   | —  | 12,591  |  |
| 11,790                         | 15,520  | 53,430                               | 9,722  | 10,472   | 845                    | —   | 21,039  | 120,065   | 1,567   | —  | 121,632   |  |
| 1,484                          | 1,635   | 6,407                                | 1,224  | 1,318  | 106                    | 123   | 2,771   | 15,112  | 178   | —  | 15,290  |  |
| 919                            | 1,138   | 4,093                                | 758  | 816  | 66                     | —   | 1,640   | 9,358   | 130   | —  | 9,488   |  |
| 5,364                          | 6,321   | 23,569                               | 4,423  | 4,765  | 385                    | —   | 9,573   | 54,628  | 663   | —  | 55,291  |  |
| 29,056                         | 34,056  | 127,484                              | 23,959   | 25,808   | 2,083                  | —   | 51,850  | 295,895   | 3,685   | —  | 299,580   |  |
| 14,008                         | 16,378  | 61,419                               | 11,551   | 12,442   | 1,004                  | —   | 24,997  | 142,650   | 1,750   | —  | 144,400   |  |
| 3,492                          | 4,435   | 15,663                               | 2,879  | 3,101  | 250                    | —   | 6,230   | 35,558  | 458   | —  | 36,016  |  |

Tier 2 Public Employees Contributory Retirement System

Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|--|--|--|--|---|
| City of Saratoga Springs       | \$ 128,133             | 0.12576488%                    | \$ 53,862                                      | 215,783  | (71,100)   | 378  | 29,531  |
| City of South Jordan           | 264,502                | 0.2596129                      | 111,187  | 445,435  | (146,770)  | 780  | 60,960  |
| City of South Salt Lake        | 164,878                | 0.1618299                      | 69,308   | 277,662  | (91,489)   | 486  | 38,000  |
| City of St George              | 670,899                | 0.6584972                      | 282,020  | 1,129,827  | (372,275)  | 1,979  | 154,623   |
| City of Taylorsville           | 49,019                 | 0.0481128                      | 20,606   | 82,550   | (27,200)   | 145  | 11,297  |
| City of Uintah                 | 295                    | 0.0002892                      | 124  | 496  | (163)  | 1  | 68  |
| City of Washington Terrace     | 12,048                 | 0.0118255                      | 5,065  | 20,290   | (6,685)  | 36   | 2,777   |
| City of Wendover               | 20,045                 | 0.0196743                      | 8,426  | 33,757   | (11,123)   | 59   | 4,620   |
| City of West Haven             | 19,536                 | 0.0191745                      | 8,212  | 32,899   | (10,840)   | 58   | 4,502   |
| City of West Jordan            | 370,041                | 0.3632005                      | 155,551  | 623,167  | (205,332)  | 1,092  | 85,284  |
| City of Woodland Hills         | 6,595                  | 0.0064729                      | 2,772  | 11,106   | (3,659)  | 19   | 1,520   |
| Clearfield City                | 106,482                | 0.1045139                      | 44,761   | 179,321  | (59,086)   | 314  | 24,541  |
| Cleveland Town                 | 2,755                  | 0.0027039                      | 1,158  | 4,639  | (1,529)  | 8  | 635   |
| Clinton City                   | 29,508                 | 0.0289622                      | 12,404   | 49,692   | (16,373)   | 87   | 6,801   |
| Coalville City                 | 9,805                  | 0.0096233                      | 4,121  | 16,511   | (5,440)  | 29   | 2,260   |
| Color Country Uniserv          | 1,639                  | 0.0016089                      | 689  | 2,760  | (910)  | 5  | 378   |
| Cottonwood Heights City        | 69,884                 | 0.0685926                      | 29,377   | 117,689  | (38,778)   | 206  | 16,106  |
| Cottonwood Heights P&R Srv     | 22,448                 | 0.0220330                      | 9,436  | 37,803   | (12,456)   | 66   | 5,174   |
| Cottonwood Imp District        | 22,878                 | 0.0224549                      | 9,617  | 38,527   | (12,695)   | 67   | 5,273   |
| Council On Aging Golden Age SS | 5,243                  | 0.0051460                      | 2,204  | 8,829  | (2,909)  | 15   | 1,208   |
| Daggett County                 | 16,963                 | 0.0166498                      | 7,131  | 28,567   | (9,413)  | 50   | 3,910   |
| Daggett School District        | 32,094                 | 0.0315012                      | 13,491   | 54,049   | (17,809)   | 95   | 7,397   |
| Davis & Weber County Canal Co  | 3,998                  | 0.0039244                      | 1,681  | 6,733  | (2,219)  | 12   | 921   |
| Davis Behavioral Health Inc    | 323,510                | 0.3175303                      | 135,991  | 544,808  | (179,513)  | 954  | 74,560  |
| Davis Co Housing Authority     | 10,662                 | 0.0104652                      | 4,482  | 17,956   | (5,916)  | 31   | 2,457   |
| Davis Co Mosquito Abate        | 2,795                  | 0.0027436                      | 1,175  | 4,707  | (1,551)  | 8  | 644   |
| Davis County                   | 534,748                | 0.5248632                      | 224,788  | 900,543  | (296,726)  | 1,578  | 123,244   |
| Davis School District          | 5,087,749              | 4.9937037                      | 2,138,696                                      | 8,568,028  | (2,823,141)  | 15,010   | 1,172,582   |
| Davis Technical College        | 73,518                 | 0.0721595                      | 30,904   | 123,809  | (40,795)   | 217  | 16,944  |
| DDI Vantage                    | 156,047                | 0.1531628                      | 65,596   | 262,792  | (86,589)   | 460  | 35,964  |
| Delta City                     | 16,999                 | 0.0166849                      | 7,146  | 28,627   | (9,433)  | 50   | 3,918   |
| Dixie Applied Tech College     | 2,868                  | 0.0028150                      | 1,206  | 4,830  | (1,591)  | 8  | 661   |
| Dixie State University         | 61,113                 | 0.0599834                      | 25,690   | 102,917  | (33,911)   | 180  | 14,085  |
| Duchesne Co Water Conserv Dist | 2,016                  | 0.0019790                      | 848  | 3,396  | (1,119)  | 6  | 465   |
| Duchesne County                | 141,924                | 0.1393001                      | 59,659   | 239,006  | (78,752)   | 419  | 32,709  |
| Duchesne School District       | 538,363                | 0.5284115                      | 226,307  | 906,631  | (298,732)  | 1,588  | 124,077   |
| Eagle Mountain City            | 100,292                | 0.0984386                      | 42,159   | 168,898  | (55,651)   | 296  | 23,115  |
| East Carbon City               | 7,533                  | 0.0073937                      | 3,167  | 12,686   | (4,180)  | 22   | 1,736   |
| East Hollywood High School     | 44,886                 | 0.0440558                      | 18,868   | 75,589   | (24,907)   | 132  | 10,345  |
| Educators Mutual Insurance     | 28,980                 | 0.0284445                      | 12,182   | 48,804   | (16,081)   | 85   | 6,679   |
| Elk Ridge City                 | 16,548                 | 0.0162421                      | 6,956  | 27,868   | (9,182)  | 49   | 3,814   |
| Emery Co Care & Rehab Ctr      | 24,115                 | 0.0236693                      | 10,137   | 40,611   | (13,381)   | 71   | 5,558   |
| Emery County                   | 49,148                 | 0.0482394                      | 20,660   | 82,768   | (27,272)   | 145  | 11,327  |
| Emery County Recreation SSD    | 3,680                  | 0.0036123                      | 1,547  | 6,198  | (2,042)  | 11   | 848   |
| Emery School District          | 172,294                | 0.1691091                      | 72,426   | 290,152  | (95,604)   | 508  | 39,709  |
| Emery Water Conserv Dist       | 12,938                 | 0.0126984                      | 5,438  | 21,787   | (7,179)  | 38   | 2,982   |
| Enoch City                     | 20,736                 | 0.0203524                      | 8,716  | 34,920   | (11,506)   | 61   | 4,779   |
| Ephraim City                   | 28,318                 | 0.0277947                      | 11,904   | 47,689   | (15,713)   | 84   | 6,527   |
| Fairview City                  | 2,854                  | 0.0028009                      | 1,200  | 4,806  | (1,583)  | 8  | 658   |
| Farmington City                | 70,745                 | 0.0694376                      | 29,739   | 119,139  | (39,256)   | 209  | 16,305  |
| Farr West City                 | 3,919                  | 0.0038470                      | 1,648  | 6,601  | (2,175)  | 12   | 903   |
| Fast Forward Charter HS        | 39,992                 | 0.0392524                      | 16,811   | 67,348   | (22,191)   | 118  | 9,217   |
| Ferron City                    | 6,610                  | 0.0064880                      | 2,779  | 11,132   | (3,668)  | 20   | 1,523   |
| Fillmore City                  | 11,205                 | 0.0109975                      | 4,710  | 18,869   | (6,217)  | 33   | 2,582   |
| Five-County Assn of Govts      | 58,135                 | 0.0570609                      | 24,438   | 97,903   | (32,259)   | 172  | 13,399  |
| Fox Hollow Golf Course         | 4,026                  | 0.0039519                      | 1,693  | 6,781  | (2,234)  | 12   | 928   |
| Francis City                   | 3,488                  | 0.0034234                      | 1,466  | 5,874  | (1,935)  | 10   | 804   |
| Fruit Heights City             | 9,098                  | 0.0089296                      | 3,824  | 15,321   | (5,048)  | 27   | 2,097   |
| Garfield County                | 36,045                 | 0.0353786                      | 15,152   | 60,701   | (20,001)   | 106  | 8,307   |
| Garfield School District       | 72,153                 | 0.0708196                      | 30,331   | 121,510  | (40,037)   | 213  | 16,629  |
| Garland City                   | 7,299                  | 0.0071643                      | 3,068  | 12,292   | (4,050)  | 22   | 1,682   |
| Grand Co Cemetery Mtce Dist    | 5,976                  | 0.0058655                      | 2,512  | 10,064   | (3,316)  | 18   | 1,377   |
| Grand County                   | 130,172                | 0.1277655                      | 54,719   | 219,216  | (72,231)   | 384  | 30,001  |
| Grand School District          | 279,451                | 0.2742852                      | 117,470  | 470,609  | (155,064)  | 824  | 64,405  |
| Grand Water/Sewer Service      | 15,691                 | 0.0154009                      | 6,596  | 26,424   | (8,707)  | 46   | 3,616   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 13,500                         | 16,802  | 60,211                               | 11,132   | 11,991  | 968                    | —   | 24,091                              | 137,481   | 1,767   | —  | 139,248  |
| 27,868                         | 35,023  | 124,631                              | 22,980   | 24,753  | 1,998                  | —   | 49,731                              | 283,799   | 3,655   | —  | 287,454  |
| 17,372                         | 19,906  | 75,764                               | 14,325   | 15,430  | 1,245                  | —   | 31,000                              | 176,906   | 2,136   | —  | 179,042  |
| 70,687                         | 83,842  | 311,131                              | 58,287   | 62,785  | 5,067                  | —   | 126,139                             | 719,844   | 8,912   | —  | 728,756  |
| 5,165                          | 6,148   | 22,755                               | 4,259  | 4,587   | 370                    | —   | 9,216                               | 52,595  | 648   | —  | 53,243   |
| 31                             | 346   | 446                                  | 26   | 28  | 2                      | 460   | 516                                 | 316   | (5)   | —  | 311  |
| 1,269                          | 1,449   | 5,531                                | 1,047  | 1,128   | 91                     | —   | 2,266                               | 12,927  | 157   | —  | 13,084   |
| 2,112                          | 2,697   | 9,488                                | 1,741  | 1,876   | 151                    | —   | 3,768                               | 21,507  | 276   | —  | 21,783   |
| 2,058                          | 2,578   | 9,196                                | 1,697  | 1,828   | 148                    | —   | 3,673                               | 20,961  | 268   | —  | 21,229   |
| 38,988                         | 50,172  | 175,536                              | 32,149   | 34,630  | 2,795                  | —   | 69,574                              | 397,037   | 5,180   | —  | 402,217  |
| 695                            | 1,075   | 3,309                                | 573  | 617   | 50                     | —   | 1,240                               | 7,076   | 101   | —  | 7,177  |
| 11,219                         | 13,401  | 49,475                               | 9,251  | 9,965   | 804                    | —   | 20,020                              | 114,251   | 1,429   | —  | 115,680  |
| 290                            | 350   | 1,283                                | 239  | 258   | 21                     | —   | 518                                 | 2,956   | 39  | —  | 2,995  |
| 3,109                          | 3,812   | 13,809                               | 2,564  | 2,761   | 223                    | —   | 5,548                               | 31,660  | 396   | —  | 32,056   |
| 1,033                          | 1,168   | 4,490                                | 852  | 918   | 74                     | —   | 1,844                               | 10,520  | 132   | —  | 10,652   |
| 173                            | 198   | 754                                  | 142  | 153   | 12                     | —   | 307                                 | 1,759   | 23  | —  | 1,782  |
| 7,363                          | 9,259   | 32,934                               | 6,072  | 6,540   | 528                    | —   | 13,140                              | 74,983  | 958   | —  | 75,941   |
| 2,365                          | 2,919   | 10,524                               | 1,950  | 2,101   | 170                    | —   | 4,221                               | 24,086  | 302   | —  | 24,388   |
| 2,410                          | 2,905   | 10,655                               | 1,988  | 2,141   | 173                    | —   | 4,302                               | 24,547  | 304   | —  | 24,851   |
| 552                            | 601   | 2,376                                | 456  | 491   | 40                     | —   | 987                                 | 5,625   | 66  | —  | 5,691  |
| 1,787                          | 2,414   | 8,161                                | 1,474  | 1,587   | 128                    | —   | 3,189                               | 18,201  | 243   | —  | 18,444   |
| 3,382                          | 3,938   | 14,812                               | 2,788  | 3,003   | 242                    | —   | 6,033                               | 34,436  | 421   | —  | 34,857   |
| 421                            | 1,243   | 2,597                                | 347  | 374   | 30                     | 1,320   | 2,071                               | 4,290   | 16  | —  | 4,306  |
| 34,085                         | 42,712  | 152,311                              | 28,106   | 30,275  | 2,443                  | —   | 60,824                              | 347,112   | 4,409   | —  | 351,521  |
| 1,123                          | 1,257   | 4,868                                | 926  | 998   | 81                     | —   | 2,005                               | 11,440  | 139   | —  | 11,579   |
| 295                            | 545   | 1,492                                | 243  | 262   | 21                     | 96  | 622                                 | 2,999   | 39  | —  | 3,038  |
| 56,342                         | 70,596  | 251,760                              | 46,459   | 50,043  | 4,039                  | —   | 100,541                             | 573,760   | 7,312   | —  | 581,072  |
| 536,051                        | 665,470   | 2,389,113                            | 442,022  | 476,127   | 38,424                 | —   | 956,573                             | 5,458,926   | 69,110  | —  | 5,528,036  |
| 7,746                          | 9,705   | 34,612                               | 6,387  | 6,880   | 555                    | —   | 13,822                              | 78,882  | 1,000   | —  | 79,882   |
| 16,441                         | 18,676  | 71,541                               | 13,557   | 14,603  | 1,179                  | —   | 29,339                              | 167,432   | 2,019   | —  | 169,451  |
| 1,791                          | 2,123   | 7,882                                | 1,477  | 1,591   | 128                    | —   | 3,196                               | 18,239  | 229   | —  | 18,468   |
| 302                            | 518   | 1,489                                | 249  | 268   | 22                     | —   | 539                                 | 3,077   | 46  | —  | 3,123  |
| 6,439                          | 6,676   | 27,380                               | 5,309  | 5,719   | 462                    | —   | 11,490                              | 65,572  | 764   | —  | 66,336   |
| 212                            | 364   | 1,047                                | 175  | 189   | 15                     | —   | 379                                 | 2,163   | 32  | —  | 2,195  |
| 14,953                         | 18,565  | 66,646                               | 12,330   | 13,282  | 1,072                  | —   | 26,684                              | 152,278   | 1,925   | —  | 154,203  |
| 56,723                         | 68,437  | 250,825                              | 46,773   | 50,382  | 4,066                  | —   | 101,221                             | 577,639   | 7,238   | —  | 584,877  |
| 10,567                         | 12,616  | 46,594                               | 8,713  | 9,386   | 757                    | —   | 18,856                              | 107,609   | 1,342   | —  | 108,951  |
| 794                            | 899   | 3,451                                | 654  | 705   | 57                     | —   | 1,416                               | 8,083   | 96  | —  | 8,179  |
| 4,729                          | 5,489   | 20,695                               | 3,900  | 4,201   | 339                    | —   | 8,440                               | 48,160  | 592   | —  | 48,752   |
| 3,053                          | 2,706   | 12,523                               | 2,518  | 2,712   | 219                    | 4   | 5,453                               | 31,094  | 316   | —  | 31,410   |
| 1,744                          | 1,889   | 7,496                                | 1,438  | 1,549   | 125                    | 55  | 3,167                               | 17,755  | 217   | —  | 17,972   |
| 2,541                          | 3,118   | 11,288                               | 2,095  | 2,257   | 182                    | 72  | 4,606                               | 25,874  | 319   | —  | 26,193   |
| 5,178                          | 6,403   | 23,053                               | 4,270  | 4,599   | 371                    | —   | 9,240                               | 52,733  | 680   | —  | 53,413   |
| 388                            | 389   | 1,636                                | 320  | 344   | 28                     | 44  | 736                                 | 3,949   | 43  | —  | 3,992  |
| 18,153                         | 22,490  | 80,860                               | 14,969   | 16,124  | 1,301                  | —   | 32,394                              | 184,864   | 2,342   | —  | 187,206  |
| 1,363                          | 1,542   | 5,925                                | 1,124  | 1,211   | 98                     | —   | 2,433                               | 13,881  | 166   | —  | 14,047   |
| 2,185                          | 2,881   | 9,906                                | 1,802  | 1,941   | 157                    | —   | 3,900                               | 22,248  | 291   | —  | 22,539   |
| 2,984                          | 3,706   | 13,301                               | 2,460  | 2,650   | 214                    | —   | 5,324                               | 30,384  | 385   | —  | 30,769   |
| 301                            | 374   | 1,341                                | 248  | 267   | 22                     | —   | 537                                 | 3,062   | 43  | —  | 3,105  |
| 7,454                          | 8,135   | 32,103                               | 6,146  | 6,621   | 534                    | —   | 13,301                              | 75,907  | 910   | —  | 76,817   |
| 413                            | 669   | 1,997                                | 341  | 367   | 30                     | —   | 738                                 | 4,205   | 61  | —  | 4,266  |
| 4,214                          | 5,291   | 18,840                               | 3,474  | 3,743   | 302                    | —   | 7,519                               | 42,909  | 542   | —  | 43,451   |
| 696                            | 1,017   | 3,256                                | 574  | 619   | 50                     | —   | 1,243                               | 7,092   | 103   | —  | 7,195  |
| 1,181                          | 1,632   | 5,428                                | 973  | 1,049   | 85                     | 230   | 2,337                               | 12,022  | 148   | —  | 12,170   |
| 6,125                          | 6,938   | 26,634                               | 5,051  | 5,441   | 439                    | —   | 10,931                              | 62,377  | 746   | —  | 63,123   |
| 424                            | 727   | 2,091                                | 350  | 377   | 30                     | —   | 757                                 | 4,320   | 65  | —  | 4,385  |
| 367                            | 588   | 1,769                                | 303  | 326   | 26                     | —   | 655                                 | 3,742   | 54  | —  | 3,796  |
| 959                            | 1,112   | 4,195                                | 790  | 851   | 69                     | —   | 1,710                               | 9,761   | 116   | —  | 9,877  |
| 3,798                          | 5,049   | 17,260                               | 3,132  | 3,373   | 272                    | —   | 6,777                               | 38,675  | 508   | —  | 39,183   |
| 7,602                          | 9,974   | 34,418                               | 6,269  | 6,752   | 545                    | —   | 13,566                              | 77,417  | 996   | —  | 78,413   |
| 769                            | 1,065   | 3,538                                | 634  | 683   | 55                     | —   | 1,372                               | 7,832   | 106   | —  | 7,938  |
| 630                            | 759   | 2,784                                | 519  | 559   | 45                     | —   | 1,123                               | 6,412   | 88  | —  | 6,500  |
| 13,715                         | 16,850  | 60,950                               | 11,309   | 12,182  | 983                    | —   | 24,474                              | 139,668   | 1,780   | —  | 141,448  |
| 29,443                         | 36,118  | 130,790                              | 24,279   | 26,152  | 2,110                  | —   | 52,541                              | 299,838   | 3,797   | —  | 303,635  |
| 1,653                          | 2,113   | 7,428                                | 1,363  | 1,468   | 119                    | —   | 2,950                               | 16,836  | 215   | —  | 17,051   |

Tier 2 Public Employees Contributory Retirement System

Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Granger-Hunter Imp Dist        | \$ 112,370             | 0.1102929%                     | \$ 47,236                                      | 189,237  | (62,353)   | 332  | 25,898  |
| Granite School District        | 5,408,324              | 5.3083528                      | 2,273,454                                      | 9,107,893  | (3,001,024)  | 15,956   | 1,246,465   |
| Grantsville City               | 43,442                 | 0.0426390                      | 18,261   | 73,159   | (24,106)   | 128  | 10,012  |
| Gunnison City                  | 4,838                  | 0.0047490                      | 2,034  | 8,148  | (2,685)  | 14   | 1,115   |
| Gunnison Valley Hospital       | 107,281                | 0.1052979                      | 45,097   | 180,667  | (59,529)   | 317  | 24,725  |
| Heber City                     | 105,061                | 0.1031187                      | 44,164   | 176,928  | (58,297)   | 310  | 24,214  |
| Heber Light & Power            | 56,993                 | 0.0559398                      | 23,958   | 95,980   | (31,625)   | 168  | 13,135  |
| Heber Valley Historic Railroad | 16,292                 | 0.0159904                      | 6,848  | 27,436   | (9,040)  | 48   | 3,755   |
| Herriman City                  | 148,449                | 0.1457050                      | 62,402   | 249,996  | (82,373)   | 438  | 34,213  |
| High Desert Uniserv            | 1,751                  | 0.0017185                      | 736  | 2,949  | (972)  | 5  | 404   |
| High School Activities Assn    | 6,469                  | 0.0063499                      | 2,720  | 10,895   | (3,590)  | 19   | 1,491   |
| Highland City                  | 21,853                 | 0.0214487                      | 9,186  | 36,801   | (12,126)   | 64   | 5,036   |
| Hinckley Town                  | 7,378                  | 0.0072418                      | 3,102  | 12,425   | (4,094)  | 22   | 1,700   |
| Hooper City                    | 21,085                 | 0.0206948                      | 8,863  | 35,507   | (11,700)   | 62   | 4,859   |
| Hooper Water Improv Dist       | 5,519                  | 0.0054169                      | 2,320  | 9,294  | (3,062)  | 16   | 1,272   |
| Housing Auth of Carbon Co      | 6,964                  | 0.0068357                      | 2,928  | 11,728   | (3,864)  | 21   | 1,605   |
| Housing Auth of SI County      | 181,809                | 0.1784486                      | 76,426   | 306,176  | (100,884)  | 536  | 41,902  |
| Housing Authority of SLC       | 152,669                | 0.1498468                      | 64,176   | 257,102  | (84,714)   | 450  | 35,186  |
| Housing Authority Ogden City   | 19,932                 | 0.0195633                      | 8,379  | 33,566   | (11,060)   | 59   | 4,594   |
| Hurricane City                 | 79,860                 | 0.0783841                      | 33,570   | 134,489  | (44,314)   | 236  | 18,406  |
| Hurricane Valley Fire SSD      | 2,319                  | 0.0022766                      | 975  | 3,906  | (1,287)  | 7  | 535   |
| Hyde Park City                 | 2,850                  | 0.0027973                      | 1,198  | 4,800  | (1,581)  | 8  | 657   |
| Hyrum City                     | 15,483                 | 0.0151968                      | 6,508  | 26,074   | (8,591)  | 46   | 3,568   |
| Intech Collegiate High School  | 28,966                 | 0.0284303                      | 12,176   | 48,780   | (16,073)   | 85   | 6,676   |
| Iron County                    | 150,213                | 0.1474363                      | 63,144   | 252,966  | (83,352)   | 443  | 34,620  |
| Iron School District           | 571,593                | 0.5610270                      | 240,276  | 962,591  | (317,171)  | 1,686  | 131,736   |
| Itineris High School           | 25,116                 | 0.0246517                      | 10,558   | 42,297   | (13,937)   | 74   | 5,789   |
| Ivins City                     | 44,289                 | 0.0434702                      | 18,617   | 74,585   | (24,575)   | 131  | 10,207  |
| Jordan School District         | 4,600,455              | 4.5154166                      | 1,933,856                                      | 7,747,400  | (2,552,746)  | 13,573   | 1,060,274   |
| Jordan Uniserv                 | 3,555                  | 0.0034892                      | 1,494  | 5,987  | (1,973)  | 10   | 819   |
| Jordan Valley Water Conserv    | 133,933                | 0.1314570                      | 56,300   | 225,549  | (74,318)   | 395  | 30,868  |
| Jordanelle SSD                 | 36,938                 | 0.0362552                      | 15,527   | 62,205   | (20,497)   | 109  | 8,513   |
| Juab County                    | 31,291                 | 0.0307129                      | 13,154   | 52,696   | (17,363)   | 92   | 7,212   |
| Juab School District           | 173,028                | 0.1698297                      | 72,734   | 291,388  | (96,012)   | 510  | 39,878  |
| Kamas City                     | 4,666                  | 0.0045793                      | 1,961  | 7,857  | (2,589)  | 14   | 1,075   |
| Kane County                    | 144,398                | 0.1417289                      | 60,699   | 243,174  | (80,125)   | 426  | 33,280  |
| Kane County Water Conserv Dist | 15,542                 | 0.0152542                      | 6,533  | 26,173   | (8,624)  | 46   | 3,582   |
| Kane School District           | 143,002                | 0.1403588                      | 60,113   | 240,823  | (79,350)   | 422  | 32,958  |
| Kaysville City                 | 67,220                 | 0.0659779                      | 28,257   | 113,203  | (37,300)   | 198  | 15,492  |
| Kearns Improvement Dist        | 26,219                 | 0.0257346                      | 11,022   | 44,155   | (14,549)   | 77   | 6,043   |
| Laverkin City                  | 11,205                 | 0.0109977                      | 4,710  | 18,869   | (6,217)  | 33   | 2,582   |
| Layton City                    | 226,267                | 0.2220847                      | 95,114   | 381,045  | (125,553)  | 668  | 52,148  |
| Lehi City                      | 266,837                | 0.2619050                      | 112,168  | 449,368  | (148,065)  | 787  | 61,498  |
| Lewiston City                  | 12,384                 | 0.0121546                      | 5,206  | 20,854   | (6,871)  | 37   | 2,854   |
| Lindon City                    | 26,009                 | 0.0255285                      | 10,933   | 43,801   | (14,432)   | 77   | 5,994   |
| Logan City                     | 313,470                | 0.3076753                      | 131,771  | 527,899  | (173,941)  | 925  | 72,246  |
| Logan School District          | 448,348                | 0.4400608                      | 188,469  | 755,041  | (248,784)  | 1,323  | 103,332   |
| Manti City                     | 18,529                 | 0.0181870                      | 7,789  | 31,205   | (10,282)   | 55   | 4,271   |
| Mapleton City                  | 26,998                 | 0.0264985                      | 11,349   | 45,465   | (14,981)   | 80   | 6,222   |
| Marriott-Slaterville City      | 3,419                  | 0.0033562                      | 1,437  | 5,758  | (1,897)  | 10   | 788   |
| Mendon City                    | 1,914                  | 0.0018790                      | 805  | 3,224  | (1,062)  | 6  | 441   |
| Metro Water Dist Slc/Sandy     | 41,368                 | 0.0406038                      | 17,390   | 69,667   | (22,955)   | 122  | 9,534   |
| Midvale City                   | 137,613                | 0.1350688                      | 57,847   | 231,746  | (76,360)   | 406  | 31,716  |
| Midvalley Improvement District | 6,150                  | 0.0060362                      | 2,585  | 10,357   | (3,413)  | 18   | 1,417   |
| Midway City                    | 25,897                 | 0.0254179                      | 10,886   | 43,611   | (14,370)   | 76   | 5,968   |
| Millard Co Care & Rehab Inc    | 65,256                 | 0.0640495                      | 27,431   | 109,894  | (36,210)   | 193  | 15,040  |
| Millard County                 | 72,334                 | 0.0709973                      | 30,407   | 121,815  | (40,138)   | 213  | 16,671  |
| Millard School District        | 269,423                | 0.2644433                      | 113,255  | 453,723  | (149,500)  | 795  | 62,094  |
| Millcreek City                 | 35,676                 | 0.0350169                      | 14,997   | 60,081   | (19,796)   | 105  | 8,222   |
| Millville City                 | 1,778                  | 0.0017452                      | 747  | 2,994  | (987)  | 5  | 410   |
| Minersville Town               | 748                    | 0.0007346                      | 315  | 1,260  | (415)  | 2  | 172   |
| Monroe City                    | 2,887                  | 0.0028335                      | 1,214  | 4,862  | (1,602)  | 9  | 665   |
| Monticello Academy             | 87,946                 | 0.0863206                      | 36,969   | 148,106  | (48,800)   | 259  | 20,269  |
| Morgan City Corporation        | 14,062                 | 0.0138019                      | 5,911  | 23,681   | (7,803)  | 41   | 3,241   |
| Morgan County                  | 26,005                 | 0.0255248                      | 10,932   | 43,795   | (14,430)   | 77   | 5,994   |



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |                        |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|------------------------|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                        | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of  | Proportionate Share of |  |
| 11,839                         | 15,402  | 53,471                               | 9,763  | 10,516   | 849                    | —   | 21,128                              | 120,568   | 1,571   | —                      | 122,139  |
| 569,827                        | 695,719   | 2,527,967                            | 469,873  | 506,128  | 40,845                 | —   | 1,016,846                           | 5,802,888   | 73,017  | —                      | 5,875,905  |
| 4,577                          | 6,568   | 21,285                               | 3,774  | 4,065  | 328                    | —   | 8,167                               | 46,611  | 643   | —                      | 47,254   |
| 510                            | 650   | 2,289                                | 420  | 453  | 37                     | —   | 910                                 | 5,191   | 66  | —                      | 5,257  |
| 11,303                         | 13,886  | 50,231                               | 9,321  | 10,040   | 810                    | —   | 20,171                              | 115,108   | 1,430   | —                      | 116,538  |
| 11,069                         | 13,238  | 48,831                               | 9,128  | 9,832  | 793                    | —   | 19,753                              | 112,725   | 1,400   | —                      | 114,125  |
| 6,005                          | 7,272   | 26,580                               | 4,952  | 5,334  | 430                    | —   | 10,716                              | 61,151  | 769   | —                      | 61,920   |
| 1,716                          | 1,808   | 7,327                                | 1,415  | 1,525  | 123                    | —   | 3,063                               | 17,480  | 210   | —                      | 17,690   |
| 15,641                         | 20,002  | 70,294                               | 12,897   | 13,892   | 1,121                  | —   | 27,910                              | 159,279   | 2,059   | —                      | 161,338  |
| 184                            | 219   | 812                                  | 152  | 164  | 13                     | —   | 329                                 | 1,879   | 25  | —                      | 1,904  |
| 682                            | 1,072   | 3,264                                | 562  | 605  | 49                     | —   | 1,216                               | 6,941   | 100   | —                      | 7,041  |
| 2,302                          | 3,445   | 10,847                               | 1,899  | 2,045  | 165                    | 332   | 4,441                               | 23,447  | 294   | —                      | 23,741   |
| 777                            | 1,156   | 3,655                                | 641  | 690  | 56                     | —   | 1,387                               | 7,916   | 111   | —                      | 8,027  |
| 2,221                          | 2,917   | 10,059                               | 1,832  | 1,973  | 159                    | —   | 3,964                               | 22,623  | 296   | —                      | 22,919   |
| 581                            | 758   | 2,627                                | 479  | 516  | 42                     | —   | 1,037                               | 5,922   | 78  | —                      | 6,000  |
| 734                            | 1,178   | 3,538                                | 605  | 652  | 53                     | —   | 1,310                               | 7,473   | 109   | —                      | 7,582  |
| 19,156                         | 24,457  | 86,051                               | 15,796   | 17,014   | 1,373                  | —   | 34,183                              | 195,073   | 2,535   | —                      | 197,608  |
| 16,085                         | 21,018  | 72,739                               | 13,264   | 14,287   | 1,153                  | —   | 28,704                              | 163,807   | 2,113   | —                      | 165,920  |
| 2,100                          | 3,119   | 9,872                                | 1,732  | 1,865  | 151                    | —   | 3,748                               | 21,386  | 309   | —                      | 21,695   |
| 8,414                          | 10,616  | 37,672                               | 6,938  | 7,474  | 603                    | —   | 15,015                              | 85,687  | 1,098   | —                      | 86,785   |
| 244                            | 439   | 1,225                                | 202  | 217  | 18                     | 47  | 484                                 | 2,489   | 39  | —                      | 2,528  |
| 300                            | 543   | 1,508                                | 248  | 267  | 22                     | 279   | 816                                 | 3,058   | 39  | —                      | 3,097  |
| 1,631                          | 1,967   | 7,212                                | 1,345  | 1,449  | 117                    | —   | 2,911                               | 16,613  | 201   | —                      | 16,814   |
| 3,052                          | 3,909   | 13,722                               | 2,517  | 2,711  | 219                    | —   | 5,447                               | 31,079  | 411   | —                      | 31,490   |
| 15,827                         | 19,201  | 70,091                               | 13,050   | 14,057   | 1,134                  | —   | 28,241                              | 161,172   | 1,986   | —                      | 163,158  |
| 60,224                         | 73,881  | 267,527                              | 49,660   | 53,491   | 4,317                  | —   | 107,468                             | 613,293   | 7,675   | —                      | 620,968  |
| 2,646                          | 3,663   | 12,172                               | 2,182  | 2,350  | 190                    | —   | 4,722                               | 26,948  | 368   | —                      | 27,316   |
| 4,666                          | 5,532   | 20,536                               | 3,848  | 4,145  | 334                    | —   | 8,327                               | 47,520  | 596   | —                      | 48,116   |
| 484,709                        | 590,975   | 2,149,531                            | 399,686  | 430,525  | 34,744                 | —   | 864,955                             | 4,936,081   | 61,687  | —                      | 4,997,768  |
| 375                            | 641   | 1,845                                | 309  | 333  | 27                     | —   | 669                                 | 3,814   | 57  | —                      | 3,871  |
| 14,111                         | 17,399  | 62,773                               | 11,636   | 12,534   | 1,011                  | —   | 25,181                              | 143,704   | 1,827   | —                      | 145,531  |
| 3,892                          | 4,977   | 17,491                               | 3,209  | 3,457  | 279                    | —   | 6,945                               | 39,633  | 523   | —                      | 40,156   |
| 3,297                          | 4,113   | 14,714                               | 2,719  | 2,928  | 236                    | —   | 5,883                               | 33,574  | 409   | —                      | 33,983   |
| 18,230                         | 22,876  | 81,494                               | 15,033   | 16,193   | 1,307                  | —   | 32,533                              | 185,651   | 2,378   | —                      | 188,029  |
| 492                            | 809   | 2,390                                | 405  | 437  | 35                     | —   | 877                                 | 5,006   | 74  | —                      | 5,080  |
| 15,214                         | 18,050  | 66,970                               | 12,545   | 13,513   | 1,091                  | —   | 27,149                              | 154,933   | 1,923   | —                      | 156,856  |
| 1,637                          | 1,957   | 7,222                                | 1,350  | 1,454  | 117                    | —   | 2,921                               | 16,675  | 208   | —                      | 16,883   |
| 15,067                         | 17,949  | 66,396                               | 12,424   | 13,383   | 1,080                  | —   | 26,887                              | 153,435   | 1,920   | —                      | 155,355  |
| 7,082                          | 8,130   | 30,902                               | 5,840  | 6,291  | 508                    | —   | 12,639                              | 72,125  | 885   | —                      | 73,010   |
| 2,762                          | 3,227   | 12,109                               | 2,278  | 2,454  | 198                    | —   | 4,930                               | 28,132  | 342   | —                      | 28,474   |
| 1,181                          | 1,606   | 5,402                                | 973  | 1,049  | 85                     | —   | 2,107                               | 12,022  | 158   | —                      | 12,180   |
| 23,840                         | 30,301  | 106,957                              | 19,658   | 21,175   | 1,709                  | —   | 42,542                              | 242,775   | 3,130   | —                      | 245,905  |
| 28,114                         | 35,777  | 126,176                              | 23,183   | 24,971   | 2,015                  | —   | 50,169                              | 286,305   | 3,646   | —                      | 289,951  |
| 1,305                          | 1,715   | 5,911                                | 1,076  | 1,159  | 94                     | —   | 2,329                               | 13,287  | 172   | —                      | 13,459   |
| 2,740                          | 3,443   | 12,254                               | 2,260  | 2,434  | 196                    | —   | 4,890                               | 27,907  | 359   | —                      | 28,266   |
| 33,028                         | 41,492  | 147,691                              | 27,234   | 29,335   | 2,367                  | —   | 58,936                              | 336,339   | 4,316   | —                      | 340,655  |
| 47,239                         | 53,827  | 205,721                              | 38,952   | 41,958   | 3,386                  | —   | 84,296                              | 481,058   | 5,871   | —                      | 486,929  |
| 1,952                          | 2,644   | 8,922                                | 1,610  | 1,734  | 140                    | —   | 3,484                               | 19,881  | 252   | —                      | 20,133   |
| 2,844                          | 4,046   | 13,192                               | 2,346  | 2,527  | 204                    | —   | 5,077                               | 28,967  | 401   | —                      | 29,368   |
| 360                            | 539   | 1,697                                | 297  | 320  | 26                     | —   | 643                                 | 3,669   | 51  | —                      | 3,720  |
| 202                            | 236   | 885                                  | 166  | 179  | 14                     | —   | 359                                 | 2,054   | 25  | —                      | 2,079  |
| 4,359                          | 5,319   | 19,334                               | 3,594  | 3,871  | 312                    | —   | 7,777                               | 44,387  | 559   | —                      | 44,946   |
| 14,499                         | 18,234  | 64,855                               | 11,956   | 12,878   | 1,039                  | —   | 25,873                              | 147,652   | 1,874   | —                      | 149,526  |
| 648                            | 728   | 2,811                                | 534  | 576  | 46                     | —   | 1,156                               | 6,599   | 78  | —                      | 6,677  |
| 2,728                          | 3,316   | 12,088                               | 2,250  | 2,423  | 196                    | —   | 4,869                               | 27,786  | 360   | —                      | 28,146   |
| 6,875                          | 7,993   | 30,101                               | 5,669  | 6,107  | 493                    | —   | 12,269                              | 70,016  | 840   | —                      | 70,856   |
| 7,621                          | 9,334   | 33,839                               | 6,284  | 6,769  | 546                    | —   | 13,599                              | 77,612  | 980   | —                      | 78,592   |
| 28,387                         | 35,646  | 126,922                              | 23,407   | 25,213   | 2,035                  | —   | 50,655                              | 289,079   | 3,697   | —                      | 292,776  |
| 3,759                          | 6,317   | 18,403                               | 3,100  | 3,339  | 269                    | —   | 6,708                               | 38,279  | 569   | —                      | 38,848   |
| 187                            | 497   | 1,099                                | 154  | 166  | 13                     | 278   | 611                                 | 1,908   | 24  | —                      | 1,932  |
| 79                             | 125   | 378                                  | 65   | 70   | 6                      | 65  | 206                                 | 803   | 8   | —                      | 811  |
| 304                            | 398   | 1,376                                | 251  | 270  | 22                     | —   | 543                                 | 3,097   | 40  | —                      | 3,137  |
| 9,266                          | 11,384  | 41,178                               | 7,641  | 8,230  | 664                    | —   | 16,535                              | 94,362  | 1,184   | —                      | 95,546   |
| 1,482                          | 2,263   | 7,027                                | 1,222  | 1,316  | 106                    | —   | 2,644                               | 15,088  | 217   | —                      | 15,305   |
| 2,740                          | 2,707   | 11,518                               | 2,259  | 2,434  | 196                    | —   | 4,889                               | 27,903  | 312   | —                      | 28,215   |

## Tier 2 Public Employees Contributory Retirement System

## Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Morgan School District         | \$ 233,278             | 0.22896575                     | \$ 98,061   | 392,852  | (129,443)  | 688  | 53,764  |
| Moroni City                    | 3,975                  | 0.0039015                      | 1,671   | 6,694  | (2,206)  | 12   | 916   |
| Mount Pleasant City            | 14,926                 | 0.0146500                      | 6,274   | 25,136   | (8,282)  | 44   | 3,440   |
| Mountain Regional Water SSD    | 29,094                 | 0.0285559                      | 12,230  | 48,995   | (16,144)   | 86   | 6,705   |
| Mountainland Assn of Govt      | 43,150                 | 0.0423527                      | 18,139  | 72,667   | (23,944)   | 127  | 9,945   |
| Mt Olympus Improvement Dist    | 30,531                 | 0.0299666                      | 12,834  | 51,416   | (16,941)   | 90   | 7,037   |
| Murray City                    | 266,802                | 0.2618701                      | 112,153   | 449,308  | (148,046)  | 787  | 61,490  |
| Murray School District         | 530,230                | 0.5204289                      | 222,889   | 892,934  | (294,219)  | 1,564  | 122,203   |
| Myton City                     | 2,563                  | 0.0025158                      | 1,077   | 4,317  | (1,422)  | 8  | 591   |
| N Ut Environmental Rsrc Agcy   | 3,884                  | 0.0038121                      | 1,633   | 6,541  | (2,155)  | 11   | 895   |
| Nebo Credit Union              | 16,590                 | 0.0162832                      | 6,974   | 27,938   | (9,206)  | 49   | 3,823   |
| Nebo School District           | 2,745,581              | 2.6948295                      | 1,154,138   | 4,623,698  | (1,523,495)  | 8,100  | 632,778   |
| Nephi City                     | 49,629                 | 0.0487121                      | 20,862  | 83,579   | (27,539)   | 146  | 11,438  |
| Nibley City Corporation        | 27,292                 | 0.0267875                      | 11,473  | 45,961   | (15,144)   | 81   | 6,290   |
| Noah Webster Academy Inc       | 62,568                 | 0.0614118                      | 26,301  | 105,368  | (34,719)   | 185  | 14,420  |
| North Davis Co Sewer Dist      | 30,803                 | 0.0302331                      | 12,948  | 51,873   | (17,092)   | 91   | 7,099   |
| North Davis Fire District      | 387                    | 0.0003799                      | 163   | 652  | (215)  | 1  | 89  |
| North Emery Water Users SSD    | 7,945                  | 0.0077978                      | 3,340   | 13,379   | (4,408)  | 23   | 1,831   |
| North Logan City               | 40,143                 | 0.0394013                      | 16,875  | 67,603   | (22,275)   | 118  | 9,252   |
| North Ogden City               | 69,948                 | 0.0686548                      | 29,403  | 117,796  | (38,813)   | 206  | 16,121  |
| North Park Police Agency       | 924                    | 0.0009069                      | 388   | 1,556  | (513)  | 3  | 213   |
| North Pointe Solid Waste       | 30,237                 | 0.0296783                      | 12,711  | 50,921   | (16,778)   | 89   | 6,969   |
| North Sanpete School Dist      | 165,916                | 0.1628490                      | 69,745  | 279,411  | (92,065)   | 489  | 38,239  |
| North Summit School District   | 67,855                 | 0.0666005                      | 28,524  | 114,271  | (37,652)   | 200  | 15,639  |
| Northeastern Counseling Ctr    | 76,276                 | 0.0748664                      | 32,064  | 128,453  | (42,325)   | 225  | 17,580  |
| Nuames Charter School          | 61,161                 | 0.0600306                      | 25,710  | 102,998  | (33,938)   | 180  | 14,096  |
| Oakley City                    | 9,978                  | 0.0097938                      | 4,194   | 16,804   | (5,537)  | 29   | 2,300   |
| Ogden City Corp                | 461,525                | 0.4529936                      | 194,007   | 777,231  | (256,095)  | 1,362  | 106,368   |
| Ogden School District          | 1,338,569              | 1.3138256                      | 562,683   | 2,254,218  | (742,758)  | 3,949  | 308,502   |
| Ogden-Weber Tech College       | 22,032                 | 0.0216246                      | 9,261   | 37,103   | (12,225)   | 65   | 5,078   |
| Oquirrh Rec And Parks District | 9,549                  | 0.0093728                      | 4,014   | 16,082   | (5,299)  | 28   | 2,201   |
| Orangeville City               | 1,049                  | 0.0010296                      | 441   | 1,767  | (582)  | 3  | 242   |
| Orderville Town                | 1,653                  | 0.0016225                      | 695   | 2,784  | (917)  | 5  | 381   |
| Panguitch City Corporation     | 10,386                 | 0.0101937                      | 4,366   | 17,490   | (5,763)  | 31   | 2,394   |
| Park City                      | 692,368                | 0.6795699                      | 291,045   | 1,165,983  | (384,188)  | 2,043  | 159,571   |
| Park City Fire Service         | 11,795                 | 0.0115771                      | 4,958   | 19,864   | (6,545)  | 35   | 2,718   |
| Park City School District      | 859,447                | 0.8435607                      | 361,279   | 1,447,353  | (476,899)  | 2,536  | 198,078   |
| Parowan City                   | 6,339                  | 0.0062215                      | 2,665   | 10,675   | (3,517)  | 19   | 1,461   |
| Payson City                    | 95,617                 | 0.0938492                      | 40,194  | 161,023  | (53,057)   | 282  | 22,037  |
| Perry City                     | 10,786                 | 0.0105870                      | 4,534   | 18,165   | (5,985)  | 32   | 2,486   |
| Piute County                   | 6,287                  | 0.0061705                      | 2,643   | 10,587   | (3,488)  | 19   | 1,449   |
| Piute School District          | 36,690                 | 0.0360117                      | 15,423  | 61,788   | (20,359)   | 108  | 8,456   |
| Plain City                     | 7,494                  | 0.0073559                      | 3,150   | 12,621   | (4,159)  | 22   | 1,727   |
| Pleasant Grove City            | 75,973                 | 0.0745687                      | 31,936  | 127,942  | (42,157)   | 224  | 17,510  |
| Pleasant View City             | 17,982                 | 0.0176501                      | 7,559   | 30,283   | (9,978)  | 53   | 4,144   |
| Price City                     | 41,537                 | 0.0407696                      | 17,461  | 69,951   | (23,049)   | 123  | 9,573   |
| Price River Water Improve      | 25,147                 | 0.0246820                      | 10,571  | 42,349   | (13,954)   | 74   | 5,796   |
| Providence City                | 17,982                 | 0.0176496                      | 7,559   | 30,283   | (9,978)  | 53   | 4,144   |
| Provo City Corp                | 687,616                | 0.6749052                      | 289,047   | 1,157,980  | (381,551)  | 2,029  | 158,476   |
| Provo Housing Authority        | 22,092                 | 0.0216832                      | 9,286   | 37,203   | (12,258)   | 65   | 5,091   |
| Provo River Water Users        | 12,030                 | 0.0118077                      | 5,057   | 20,259   | (6,675)  | 35   | 2,773   |
| Provo School District          | 1,486,801              | 1.4593175                      | 624,994   | 2,503,848  | (825,011)  | 4,386  | 342,665   |
| Rich County                    | 19,549                 | 0.0191879                      | 8,218   | 32,922   | (10,848)   | 58   | 4,506   |
| Rich School District           | 45,907                 | 0.0450583                      | 19,298  | 77,310   | (25,473)   | 135  | 10,580  |
| Richfield City                 | 8,824                  | 0.0086606                      | 3,709   | 14,860   | (4,896)  | 26   | 2,034   |
| Richmond City                  | 15,082                 | 0.0148036                      | 6,340   | 25,400   | (8,369)  | 44   | 3,476   |
| Riverdale City                 | 26,121                 | 0.0256377                      | 10,980  | 43,988   | (14,494)   | 77   | 6,020   |
| Roosevelt City                 | 36,350                 | 0.0356783                      | 15,280  | 61,216   | (20,170)   | 107  | 8,378   |
| Roy City                       | 79,076                 | 0.0776142                      | 33,241  | 133,168  | (43,878)   | 233  | 18,225  |
| S Utah Valley Electric Svc Dst | 21,566                 | 0.0211677                      | 9,066   | 36,319   | (11,967)   | 64   | 4,970   |
| S Utah Valley Solid Waste      | 14,207                 | 0.0139441                      | 5,972   | 23,925   | (7,883)  | 42   | 3,274   |
| Salem City                     | 31,391                 | 0.0308109                      | 13,196  | 52,864   | (17,419)   | 93   | 7,235   |
| Salina City                    | 6,184                  | 0.0060694                      | 2,599   | 10,414   | (3,431)  | 18   | 1,425   |
| Salt Lake Arts Academy         | 35,464                 | 0.0348080                      | 14,908  | 59,722   | (19,678)   | 105  | 8,173   |
| Salt Lake City Corp            | 2,792,215              | 2.7406022                      | 1,173,741   | 4,702,233  | (1,549,372)  | 8,238  | 643,526   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 24,578                         | 31,926  | 110,956                              | 20,267   | 21,831   | 1,762                  | —   | 43,860                              | 250,297   | 3,267   | —  | 253,564  |
| 419                            | 420   | 1,767                                | 345  | 372  | 30                     | —   | 747                                 | 4,265   | 48  | —  | 4,313  |
| 1,573                          | 1,708   | 6,765                                | 1,297  | 1,397  | 113                    | —   | 2,807                               | 16,015  | 197   | —  | 16,212   |
| 3,065                          | 3,664   | 13,520                               | 2,528  | 2,723  | 220                    | —   | 5,471                               | 31,216  | 388   | —  | 31,604   |
| 4,546                          | 5,878   | 20,496                               | 3,749  | 4,038  | 326                    | —   | 8,113                               | 46,298  | 613   | —  | 46,911   |
| 3,217                          | 4,042   | 14,386                               | 2,653  | 2,857  | 231                    | —   | 5,741                               | 32,758  | 418   | —  | 33,176   |
| 28,111                         | 34,138  | 124,526                              | 23,180   | 24,968   | 2,015                  | —   | 50,163                              | 286,266   | 3,584   | —  | 289,850  |
| 55,866                         | 70,446  | 250,079                              | 46,066   | 49,621   | 4,004                  | —   | 99,691                              | 568,913   | 7,255   | —  | 576,168  |
| 270                            | 336   | 1,205                                | 223  | 240  | 19                     | —   | 482                                 | 2,750   | 34  | —  | 2,784  |
| 409                            | 596   | 1,911                                | 337  | 363  | 29                     | —   | 729                                 | 4,167   | 58  | —  | 4,225  |
| 1,748                          | 2,165   | 7,785                                | 1,441  | 1,553  | 125                    | —   | 3,119                               | 17,800  | 228   | —  | 18,028   |
| 289,278                        | 354,423   | 1,284,579                            | 238,535  | 256,940  | 20,735                 | —   | 516,210                             | 2,945,885   | 37,084  | —  | 2,982,969  |
| 5,229                          | 6,790   | 23,603                               | 4,312  | 4,644  | 375                    | —   | 9,331                               | 53,250  | 697   | —  | 53,947   |
| 2,876                          | 3,588   | 12,835                               | 2,371  | 2,554  | 206                    | —   | 5,131                               | 29,283  | 372   | —  | 29,655   |
| 6,592                          | 7,431   | 28,628                               | 5,436  | 5,855  | 473                    | —   | 11,764                              | 67,133  | 788   | —  | 67,921   |
| 3,245                          | 4,329   | 14,764                               | 2,676  | 2,883  | 233                    | —   | 5,792                               | 33,050  | 449   | —  | 33,499   |
| 41                             | 70  | 201                                  | 34   | 36   | 3                      | —   | 73                                  | 415   | 6   | —  | 421  |
| 837                            | 1,068   | 3,759                                | 690  | 743  | 60                     | —   | 1,493                               | 8,524   | 108   | —  | 8,632  |
| 4,230                          | 5,744   | 19,344                               | 3,488  | 3,757  | 303                    | —   | 7,548                               | 43,072  | 573   | —  | 43,645   |
| 7,370                          | 9,215   | 32,912                               | 6,077  | 6,546  | 528                    | —   | 13,151                              | 75,051  | 958   | —  | 76,009   |
| 97                             | 167   | 480                                  | 80   | 86   | 7                      | —   | 173                                 | 991   | 15  | —  | 1,006  |
| 3,186                          | 3,716   | 13,960                               | 2,627  | 2,830  | 228                    | —   | 5,685                               | 32,443  | 398   | —  | 32,841   |
| 17,481                         | 21,851  | 78,060                               | 14,415   | 15,527   | 1,253                  | —   | 31,195                              | 178,020   | 2,286   | —  | 180,306  |
| 7,149                          | 9,260   | 32,248                               | 5,895  | 6,350  | 512                    | —   | 12,757                              | 72,805  | 935   | —  | 73,740   |
| 8,037                          | 10,226  | 36,068                               | 6,627  | 7,138  | 576                    | —   | 14,341                              | 81,841  | 1,055   | —  | 82,896   |
| 6,444                          | 8,369   | 29,089                               | 5,314  | 5,724  | 462                    | —   | 11,500                              | 65,623  | 862   | —  | 66,485   |
| 1,051                          | 1,640   | 5,020                                | 867  | 934  | 75                     | —   | 1,876                               | 10,706  | 153   | —  | 10,859   |
| 48,627                         | 59,845  | 216,202                              | 40,097   | 43,191   | 3,486                  | —   | 86,774                              | 495,195   | 6,273   | —  | 501,468  |
| 141,033                        | 160,619   | 614,103                              | 116,294  | 125,267  | 10,109                 | —   | 251,670                             | 1,436,224   | 17,454  | —  | 1,453,678  |
| 2,321                          | 3,007   | 10,471                               | 1,914  | 2,062  | 166                    | —   | 4,142                               | 23,639  | 304   | —  | 23,943   |
| 1,006                          | 1,624   | 4,859                                | 830  | 894  | 72                     | 152   | 1,948                               | 10,246  | 138   | —  | 10,384   |
| 111                            | 170   | 526                                  | 91   | 98   | 8                      | —   | 197                                 | 1,126   | 16  | —  | 1,142  |
| 174                            | 248   | 808                                  | 144  | 155  | 12                     | —   | 311                                 | 1,774   | 24  | —  | 1,798  |
| 1,094                          | 1,253   | 4,772                                | 902  | 972  | 78                     | —   | 1,952                               | 11,143  | 141   | —  | 11,284   |
| 72,949                         | 93,175  | 327,738                              | 60,153   | 64,794   | 5,229                  | —   | 130,176                             | 742,880   | 9,690   | —  | 752,570  |
| 1,243                          | 1,527   | 5,523                                | 1,025  | 1,104  | 89                     | 532   | 2,750                               | 12,656  | 133   | —  | 12,789   |
| 90,552                         | 118,619   | 409,785                              | 74,668   | 80,430   | 6,491                  | —   | 161,589                             | 922,148   | 11,996  | —  | 934,144  |
| 668                            | 1,452   | 3,600                                | 551  | 593  | 48                     | 935   | 2,127                               | 6,801   | 77  | —  | 6,878  |
| 10,074                         | 11,990  | 44,383                               | 8,307  | 8,948  | 722                    | —   | 17,977                              | 102,592   | 1,300   | —  | 103,892  |
| 1,136                          | 1,845   | 5,499                                | 937  | 1,009  | 81                     | 318   | 2,345                               | 11,573  | 159   | —  | 11,732   |
| 662                            | 746   | 2,876                                | 546  | 588  | 47                     | —   | 1,181                               | 6,745   | 83  | —  | 6,828  |
| 3,866                          | 4,603   | 17,033                               | 3,188  | 3,434  | 277                    | —   | 6,899                               | 39,367  | 500   | —  | 39,867   |
| 790                            | 998   | 3,537                                | 651  | 701  | 57                     | —   | 1,409                               | 8,041   | 99  | —  | 8,140  |
| 8,005                          | 10,264  | 36,003                               | 6,601  | 7,110  | 574                    | —   | 14,285                              | 81,516  | 1,075   | —  | 82,591   |
| 1,895                          | 2,607   | 8,699                                | 1,562  | 1,683  | 136                    | —   | 3,381                               | 19,294  | 262   | —  | 19,556   |
| 4,376                          | 5,386   | 19,458                               | 3,609  | 3,887  | 314                    | —   | 7,810                               | 44,568  | 573   | —  | 45,141   |
| 2,649                          | 3,348   | 11,867                               | 2,185  | 2,353  | 190                    | —   | 4,728                               | 26,981  | 335   | —  | 27,316   |
| 1,895                          | 2,445   | 8,537                                | 1,562  | 1,683  | 136                    | —   | 3,381                               | 19,294  | 246   | —  | 19,540   |
| 72,448                         | 87,271  | 320,224                              | 59,740   | 64,349   | 5,193                  | —   | 129,282                             | 737,781   | 9,193   | —  | 746,974  |
| 2,328                          | 3,008   | 10,492                               | 1,919  | 2,067  | 167                    | 713   | 4,866                               | 23,703  | 258   | —  | 23,961   |
| 1,268                          | 1,285   | 5,361                                | 1,045  | 1,126  | 91                     | 38  | 2,300                               | 12,908  | 136   | —  | 13,044   |
| 156,651                        | 183,213   | 686,915                              | 129,173  | 139,139  | 11,229                 | —   | 279,541                             | 1,595,270   | 19,586  | —  | 1,614,856  |
| 2,060                          | 2,008   | 8,632                                | 1,698  | 1,829  | 148                    | —   | 3,675                               | 20,975  | 232   | —  | 21,207   |
| 4,837                          | 5,722   | 21,274                               | 3,988  | 4,296  | 347                    | —   | 8,631                               | 49,256  | 594   | —  | 49,850   |
| 930                            | 1,136   | 4,126                                | 767  | 826  | 67                     | 26  | 1,686                               | 9,467   | 110   | —  | 9,577  |
| 1,589                          | 2,153   | 7,262                                | 1,310  | 1,411  | 114                    | —   | 2,835                               | 16,183  | 217   | —  | 16,400   |
| 2,752                          | 3,423   | 12,272                               | 2,269  | 2,444  | 197                    | —   | 4,910                               | 28,026  | 345   | —  | 28,371   |
| 3,830                          | 4,527   | 16,842                               | 3,158  | 3,402  | 275                    | —   | 6,835                               | 39,002  | 455   | —  | 39,457   |
| 8,332                          | 9,846   | 36,636                               | 6,870  | 7,400  | 597                    | —   | 14,867                              | 84,845  | 1,053   | —  | 85,898   |
| 2,272                          | 2,677   | 9,983                                | 1,874  | 2,018  | 163                    | —   | 4,055                               | 23,140  | 286   | —  | 23,426   |
| 1,497                          | 2,403   | 7,216                                | 1,234  | 1,330  | 107                    | 164   | 2,835                               | 15,243  | 209   | —  | 15,452   |
| 3,307                          | 4,558   | 15,193                               | 2,727  | 2,938  | 237                    | —   | 5,902                               | 33,681  | 451   | —  | 34,132   |
| 652                            | 868   | 2,963                                | 537  | 579  | 47                     | —   | 1,163                               | 6,635   | 89  | —  | 6,724  |
| 3,736                          | 3,700   | 15,714                               | 3,081  | 3,319  | 268                    | —   | 6,668                               | 38,051  | 425   | —  | 38,476   |
| 294,191                        | 355,251   | 1,301,206                            | 242,587  | 261,304  | 21,087                 | —   | 524,978                             | 2,995,922   | 37,448  | —  | 3,033,370  |

Tier 2 Public Employees Contributory Retirement System

Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer              | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|-------------------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Salt Lake City Public Library       | \$ 157,635             | 0.1547207%                     | \$ 66,264                                      | 265,465  | (87,470)   | 465  | 36,330  |
| Salt Lake Community College         | 389,493                | 0.3822929                      | 163,728  | 655,925  | (216,125)  | 1,149  | 89,767  |
| Salt Lake County                    | 3,537,538              | 3.4721476                      | 1,487,046                                      | 5,957,394  | (1,962,944)  | 10,437   | 815,302   |
| Salt Lake School District           | 2,278,301              | 2.2361874                      | 957,711  | 3,836,775  | (1,264,206)  | 6,722  | 525,084   |
| San Juan County                     | 95,878                 | 0.0941054                      | 40,303   | 161,463  | (53,202)   | 283  | 22,097  |
| San Juan Mental Health              | 20,959                 | 0.0205713                      | 8,810  | 35,296   | (11,630)   | 62   | 4,830   |
| San Juan School District            | 399,260                | 0.3918798                      | 167,834  | 672,374  | (221,545)  | 1,178  | 92,018  |
| Sandy City                          | 389,024                | 0.3818330                      | 163,531  | 655,136  | (215,865)  | 1,148  | 89,659  |
| Sandy Suburban Imp Dist             | 4,298                  | 0.0042186                      | 1,807  | 7,238  | (2,385)  | 13   | 991   |
| Sanpete County                      | 59,339                 | 0.0582417                      | 24,944   | 99,929   | (32,926)   | 175  | 13,676  |
| Santaquin City                      | 26,253                 | 0.0257681                      | 11,036   | 44,212   | (14,568)   | 77   | 6,051   |
| Sevier County                       | 58,659                 | 0.0575746                      | 24,658   | 98,785   | (32,549)   | 173  | 13,519  |
| Sevier School District              | 258,644                | 0.2538630                      | 108,724  | 435,570  | (143,519)  | 763  | 59,610  |
| Six-County Assoc of Govt            | 11,083                 | 0.0108779                      | 4,659  | 18,664   | (6,150)  | 33   | 2,554   |
| Slc Mosquito Abatement              | 23,031                 | 0.0226058                      | 9,682  | 38,786   | (12,780)   | 68   | 5,308   |
| Smithfield City Corp                | 22,807                 | 0.0223850                      | 9,587  | 38,407   | (12,655)   | 67   | 5,256   |
| Snow College                        | 42,538                 | 0.0417512                      | 17,881   | 71,635   | (23,604)   | 125  | 9,804   |
| Snyder Basin Special Rec Dist       | 62,383                 | 0.0612298                      | 26,223   | 105,056  | (34,616)   | 184  | 14,377  |
| Snyderville Basin W R D             | 29,467                 | 0.0289220                      | 12,387   | 49,623   | (16,351)   | 87   | 6,791   |
| So Davis Metro Fire Agency          | 2,386                  | 0.0023424                      | 1,003  | 4,019  | (1,324)  | 7  | 550   |
| So Davis Recreation Center          | 18,274                 | 0.0179359                      | 7,682  | 30,774   | (10,140)   | 54   | 4,212   |
| So Sl Valley Mosq Abate             | 12,269                 | 0.0120419                      | 5,157  | 20,661   | (6,808)  | 36   | 2,828   |
| So Utah Valley Animal Svcs SSD      | 5,266                  | 0.0051690                      | 2,214  | 8,869  | (2,922)  | 16   | 1,214   |
| Soldier Hollow Charter School       | 30,632                 | 0.0300662                      | 12,877   | 51,587   | (16,998)   | 90   | 7,060   |
| Solid Waste SSD #1                  | 16,995                 | 0.0166812                      | 7,144  | 28,621   | (9,431)  | 50   | 3,917   |
| South Davis Sewer Dist              | 31,318                 | 0.0307391                      | 13,165   | 52,741   | (17,378)   | 92   | 7,218   |
| South Davis Water Dist              | 783                    | 0.0007682                      | 329  | 1,318  | (434)  | 2  | 180   |
| South Ogden City                    | 25,354                 | 0.0248852                      | 10,658   | 42,697   | (14,069)   | 75   | 5,843   |
| South Ogden Conserv Dist            | 43,666                 | 0.0428590                      | 18,356   | 73,536   | (24,230)   | 129  | 10,064  |
| South Sanpete School Dist           | 206,765                | 0.2029434                      | 86,916   | 348,203  | (114,732)  | 610  | 47,654  |
| South Summit School District        | 119,797                | 0.1175826                      | 50,358   | 201,744  | (66,474)   | 353  | 27,610  |
| South Valley Sewer District         | 91,688                 | 0.0899936                      | 38,542   | 154,408  | (50,877)   | 271  | 21,132  |
| South Valley Water Reclamation      | 62,695                 | 0.0615360                      | 26,355   | 105,581  | (34,789)   | 185  | 14,449  |
| South Weber City                    | 23,458                 | 0.0230247                      | 9,861  | 39,505   | (13,017)   | 69   | 5,406   |
| Southeastern Utah AOG               | 22,239                 | 0.0218281                      | 9,349  | 37,452   | (12,340)   | 66   | 5,126   |
| Southeastern Utah Health            | 38,221                 | 0.0375144                      | 16,067   | 64,366   | (21,208)   | 113  | 8,809   |
| Southern Utah University            | 327,050                | 0.3210046                      | 137,479  | 550,769  | (181,477)  | 965  | 75,376  |
| Southwest Educ Development Ctr      | 18,773                 | 0.0184259                      | 7,891  | 31,615   | (10,417)   | 55   | 4,327   |
| Southwest Technical College         | 66,660                 | 0.0654277                      | 28,021   | 112,259  | (36,989)   | 197  | 15,363  |
| Space Dynamics Lab / USU            | 28,471                 | 0.0279449                      | 11,968   | 47,947   | (15,798)   | 84   | 6,562   |
| Spanish Fork City                   | 239,290                | 0.2348667                      | 100,588  | 402,976  | (132,780)  | 706  | 55,150  |
| Spring City                         | 2,985                  | 0.0029294                      | 1,255  | 5,026  | (1,656)  | 9  | 688   |
| Springville City                    | 196,983                | 0.1933419                      | 82,804   | 331,730  | (109,304)  | 581  | 45,399  |
| St George Housing Auth              | 2,098                  | 0.0020595                      | 882  | 3,534  | (1,164)  | 6  | 484   |
| Stansbury Park Improvement District | 1,542                  | 0.0015139                      | 648  | 2,597  | (856)  | 5  | 355   |
| Stansbury Service Agency            | 19,891                 | 0.0195237                      | 8,362  | 33,498   | (11,038)   | 59   | 4,584   |
| State of Utah                       | 18,488,665             | 18.1469081                     | 7,771,932                                      | 31,135,853   | (10,259,174)   | 54,546   | 4,261,112   |
| Success Academy                     | 27,877                 | 0.0273617                      | 11,718   | 46,946   | (15,469)   | 82   | 6,425   |
| Summit Academy High School          | 89,522                 | 0.0878673                      | 37,632   | 150,760  | (49,675)   | 264  | 20,632  |
| Summit Academy Inc                  | 341,871                | 0.3355521                      | 143,710  | 575,729  | (189,701)  | 1,009  | 78,792  |
| Summit County                       | 243,103                | 0.2386095                      | 102,191  | 409,398  | (134,896)  | 717  | 56,028  |
| Sunset City                         | 11,481                 | 0.0112687                      | 4,826  | 19,334   | (6,371)  | 34   | 2,646   |
| Sw Behavioral Health Center         | 204,991                | 0.2012015                      | 86,170   | 345,215  | (113,747)  | 605  | 47,245  |
| Sw Mosquito Abatement/Control       | 11,453                 | 0.0112409                      | 4,814  | 19,287   | (6,355)  | 34   | 2,639   |
| Sw Ut Public Health Dept            | 62,294                 | 0.0611427                      | 26,186   | 104,907  | (34,566)   | 184  | 14,357  |
| Syracuse City Corp                  | 66,822                 | 0.0655864                      | 28,089   | 112,531  | (37,079)   | 197  | 15,400  |
| Taylor West Weber Wtr Imp Dist      | 5,417                  | 0.0053171                      | 2,277  | 9,123  | (3,006)  | 16   | 1,249   |
| Taylorville-Bennion Imp             | 40,308                 | 0.0395628                      | 16,944   | 67,881   | (22,366)   | 119  | 9,290   |
| Timberlakes Water SSD               | 9,010                  | 0.0088435                      | 3,787  | 15,173   | (5,000)  | 27   | 2,077   |
| Timpanogos SSD                      | 61,198                 | 0.0600669                      | 25,725   | 103,061  | (33,958)   | 181  | 14,104  |
| Tintic School District              | 16,184                 | 0.0158851                      | 6,803  | 27,255   | (8,980)  | 48   | 3,730   |
| Tooele City                         | 108,009                | 0.1060123                      | 45,403   | 181,892  | (59,933)   | 319  | 24,893  |
| Tooele County                       | 277,133                | 0.2720104                      | 116,496  | 466,706  | (153,778)  | 818  | 63,871  |
| Tooele County Housing               | 15,495                 | 0.0152085                      | 6,513  | 26,094   | (8,598)  | 46   | 3,571   |
| Tooele School District              | 1,111,118              | 1.0905795                      | 467,072  | 1,871,180  | (616,548)  | 3,278  | 256,081   |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |                                      |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|--------------------------------------|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                                      |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     | Proportionate Share of Pension Expense  | Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions |  |
| 16,609                         | 21,619  | 75,023                               | 13,695   | 14,752   | 1,190                  | —   | 29,637                              | 169,135   | 2,177                                | —  | 171,312  |
| 41,037                         | 43,441  | 175,394                              | 33,839   | 36,450   | 2,942                  | 3,237   | 76,468                              | 417,908   | 4,768                                | —  | 422,676  |
| 372,719                        | 454,518   | 1,652,976                            | 307,340  | 331,054  | 26,716                 | —   | 665,110                             | 3,795,619   | 47,685                               | —  | 3,843,304  |
| 240,044                        | 289,155   | 1,061,005                            | 197,938  | 213,211  | 17,206                 | —   | 428,355                             | 2,444,515   | 30,550                               | —  | 2,475,065  |
| 10,102                         | 13,620  | 46,102                               | 8,330  | 8,973  | 724                    | —   | 18,027                              | 102,872   | 1,386                                | —  | 104,258  |
| 2,208                          | 2,897   | 9,997                                | 1,821  | 1,961  | 158                    | 29  | 3,969                               | 22,488  | 284                                  | —  | 22,772   |
| 42,066                         | 50,891  | 186,153                              | 34,688   | 37,364   | 3,015                  | —   | 75,067                              | 428,388   | 5,380                                | —  | 433,768  |
| 40,988                         | 52,801  | 184,596                              | 33,798   | 36,406   | 2,938                  | —   | 73,142                              | 417,405   | 5,455                                | —  | 422,860  |
| 453                            | 485   | 1,942                                | 373  | 402  | 32                     | —   | 807                                 | 4,612   | 54                                   | —  | 4,666  |
| 6,252                          | 7,190   | 27,293                               | 5,155  | 5,553  | 448                    | —   | 11,156                              | 63,668  | 766                                  | —  | 64,434   |
| 2,766                          | 3,347   | 12,241                               | 2,281  | 2,457  | 198                    | —   | 4,936                               | 28,169  | 351                                  | —  | 28,520   |
| 6,180                          | 7,224   | 27,096                               | 5,096  | 5,489  | 443                    | —   | 11,028                              | 62,938  | 774                                  | —  | 63,712   |
| 27,251                         | 33,772  | 121,396                              | 22,471   | 24,205   | 1,953                  | —   | 48,629                              | 277,513   | 3,525                                | —  | 281,038  |
| 1,168                          | 1,744   | 5,499                                | 963  | 1,037  | 84                     | —   | 2,084                               | 11,891  | 169                                  | —  | 12,060   |
| 2,427                          | 3,150   | 10,953                               | 2,001  | 2,155  | 174                    | —   | 4,330                               | 24,712  | 329                                  | —  | 25,041   |
| 2,403                          | 2,935   | 10,661                               | 1,981  | 2,134  | 172                    | 803   | 5,090                               | 24,470  | 271                                  | —  | 24,741   |
| 4,482                          | 5,234   | 19,645                               | 3,696  | 3,981  | 321                    | —   | 7,998                               | 45,641  | 609                                  | —  | 46,250   |
| 6,573                          | 8,284   | 29,418                               | 5,420  | 5,838  | 471                    | 2,036   | 13,765                              | 66,934  | 694                                  | —  | 67,628   |
| 3,105                          | 3,613   | 13,596                               | 2,560  | 2,758  | 223                    | —   | 5,541                               | 31,616  | 389                                  | —  | 32,005   |
| 251                            | 431   | 1,239                                | 207  | 223  | 18                     | —   | 448                                 | 2,561   | 38                                   | —  | 2,599  |
| 1,925                          | 2,668   | 8,859                                | 1,588  | 1,710  | 138                    | —   | 3,436                               | 19,607  | 263                                  | —  | 19,870   |
| 1,293                          | 1,729   | 5,886                                | 1,066  | 1,148  | 93                     | —   | 2,307                               | 13,164  | 178                                  | —  | 13,342   |
| 555                            | 767   | 2,552                                | 458  | 493  | 40                     | —   | 991                                 | 5,651   | 75                                   | —  | 5,726  |
| 3,227                          | 3,885   | 14,262                               | 2,661  | 2,867  | 231                    | —   | 5,759                               | 32,867  | 416                                  | —  | 33,283   |
| 1,791                          | 2,151   | 7,909                                | 1,477  | 1,590  | 128                    | —   | 3,195                               | 18,235  | 233                                  | —  | 18,468   |
| 3,300                          | 4,979   | 15,589                               | 2,721  | 2,931  | 237                    | —   | 5,889                               | 33,603  | 468                                  | —  | 34,071   |
| 82                             | 142   | 406                                  | 68   | 73   | 6                      | —   | 147                                 | 840   | 13                                   | —  | 853  |
| 2,671                          | 3,287   | 11,876                               | 2,203  | 2,373  | 191                    | 286   | 5,053                               | 27,204  | 329                                  | —  | 27,533   |
| 4,601                          | 6,125   | 20,919                               | 3,794  | 4,086  | 330                    | —   | 8,210                               | 46,852  | 614                                  | —  | 47,466   |
| 21,785                         | 25,860  | 95,909                               | 17,964   | 19,350   | 1,562                  | —   | 38,876                              | 221,850   | 2,789                                | —  | 224,639  |
| 12,622                         | 15,716  | 56,301                               | 10,408   | 11,211   | 905                    | —   | 22,524                              | 128,537   | 1,643                                | —  | 130,180  |
| 9,660                          | 12,066  | 43,129                               | 7,966  | 8,580  | 692                    | —   | 17,238                              | 98,378  | 1,260                                | —  | 99,638   |
| 6,606                          | 7,964   | 29,204                               | 5,447  | 5,867  | 473                    | —   | 11,787                              | 67,269  | 837                                  | —  | 68,106   |
| 2,472                          | 3,171   | 11,118                               | 2,038  | 2,195  | 177                    | —   | 4,410                               | 25,170  | 320                                  | —  | 25,490   |
| 2,343                          | 3,490   | 11,025                               | 1,932  | 2,081  | 168                    | 11  | 4,192                               | 23,862  | 336                                  | —  | 24,198   |
| 4,027                          | 5,538   | 18,487                               | 3,321  | 3,577  | 289                    | —   | 7,187                               | 41,009  | 545                                  | —  | 41,554   |
| 34,458                         | 43,105  | 153,904                              | 28,414   | 30,606   | 2,470                  | —   | 61,490                              | 350,910   | 4,435                                | —  | 355,345  |
| 1,978                          | 2,207   | 8,567                                | 1,631  | 1,757  | 142                    | —   | 3,530                               | 20,142  | 248                                  | —  | 20,390   |
| 7,023                          | 8,700   | 31,283                               | 5,791  | 6,238  | 503                    | —   | 12,532                              | 71,523  | 887                                  | —  | 72,410   |
| 3,000                          | 3,295   | 12,941                               | 2,474  | 2,664  | 215                    | —   | 5,353                               | 30,548  | 386                                  | —  | 30,934   |
| 25,212                         | 32,179  | 113,247                              | 20,789   | 22,393   | 1,807                  | —   | 44,989                              | 256,747   | 3,303                                | —  | 260,050  |
| 314                            | 345   | 1,356                                | 259  | 279  | 23                     | —   | 561                                 | 3,202   | 37                                   | —  | 3,239  |
| 20,754                         | 25,931  | 92,665                               | 17,114   | 18,434   | 1,488                  | —   | 37,036                              | 211,354   | 2,682                                | —  | 214,036  |
| 221                            | 259   | 970                                  | 182  | 196  | 16                     | —   | 394                                 | 2,251   | 27                                   | —  | 2,278  |
| 163                            | 279   | 802                                  | 134  | 144  | 12                     | —   | 290                                 | 1,655   | 25                                   | —  | 1,680  |
| 2,096                          | 3,591   | 10,330                               | 1,728  | 1,861  | 150                    | —   | 3,739                               | 21,343  | 320                                  | —  | 21,663   |
| 1,947,987                      | 2,301,167                                       | 8,564,812                            | 1,606,289  | 1,730,227  | 139,630                | —   | 3,476,146                           | 19,837,506  | 244,399                              | —  | 20,081,905   |
| 2,937                          | 3,452   | 12,896                               | 2,422  | 2,609  | 211                    | —   | 5,242                               | 29,911  | 374                                  | —  | 30,285   |
| 9,432                          | 11,733  | 42,061                               | 7,778  | 8,378  | 676                    | —   | 16,832                              | 96,053  | 1,222                                | —  | 97,275   |
| 36,020                         | 44,570  | 160,391                              | 29,702   | 31,993   | 2,582                  | —   | 64,277                              | 366,813   | 4,679                                | —  | 371,492  |
| 25,614                         | 29,085  | 111,444                              | 21,121   | 22,750   | 1,836                  | —   | 45,707                              | 260,839   | 3,125                                | —  | 263,964  |
| 1,210                          | 1,727   | 5,617                                | 997  | 1,074  | 87                     | —   | 2,158                               | 12,319  | 169                                  | —  | 12,488   |
| 21,598                         | 25,191  | 94,639                               | 17,810   | 19,184   | 1,548                  | —   | 38,542                              | 219,946   | 2,768                                | —  | 222,714  |
| 1,207                          | 1,494   | 5,374                                | 995  | 1,072  | 86                     | —   | 2,153                               | 12,288  | 154                                  | —  | 12,442   |
| 6,563                          | 7,671   | 28,775                               | 5,412  | 5,830  | 470                    | —   | 11,712                              | 66,839  | 825                                  | —  | 67,664   |
| 7,040                          | 8,090   | 30,727                               | 5,805  | 6,253  | 505                    | —   | 12,563                              | 71,697  | 862                                  | —  | 72,559   |
| 571                            | 600   | 2,436                                | 471  | 507  | 41                     | —   | 1,019                               | 5,812   | 67                                   | —  | 5,879  |
| 4,247                          | 5,806   | 19,462                               | 3,502  | 3,772  | 304                    | —   | 7,578                               | 43,249  | 575                                  | —  | 43,824   |
| 949                            | 1,097   | 4,150                                | 783  | 843  | 68                     | —   | 1,694                               | 9,667   | 123                                  | —  | 9,790  |
| 6,448                          | 7,779   | 28,512                               | 5,317  | 5,727  | 462                    | —   | 11,506                              | 65,663  | 828                                  | —  | 66,491   |
| 1,705                          | 2,358   | 7,841                                | 1,406  | 1,515  | 122                    | —   | 3,043                               | 17,365  | 226                                  | —  | 17,591   |
| 11,380                         | 13,244  | 49,836                               | 9,384  | 10,108   | 816                    | —   | 20,308                              | 115,889   | 1,403                                | —  | 117,292  |
| 29,199                         | 35,898  | 129,786                              | 24,077   | 25,935   | 2,093                  | —   | 52,105                              | 297,351   | 3,777                                | —  | 301,128  |
| 1,633                          | 1,877   | 7,127                                | 1,346  | 1,450  | 117                    | —   | 2,913                               | 16,625  | 214                                  | —  | 16,839   |
| 117,069                        | 145,033   | 521,461                              | 96,534   | 103,982  | 8,391                  | —   | 208,907                             | 1,192,180   | 15,028                               | —  | 1,207,208  |

## Tier 2 Public Employees Contributory Retirement System

## Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset)<br>(6.95% Discount) | Net Pension Liability/(Asset)<br>1.00% Decrease<br>(5.95%) | Net Pension Liability/(Asset)<br>1.00% Increase<br>(7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|---|--|--|--|---|
| Tooele Technical College       | \$ 27,850              | 0.0273347%                     | \$ 11,707   | 46,900   | (15,453)   | 82   | 6,419   |
| Toquerville City               | 15,528                 | 0.0152410                      | 6,527   | 26,150   | (8,616)  | 46   | 3,579   |
| Torrey Town                    | 2,878                  | 0.0028251                      | 1,210   | 4,847  | (1,597)  | 8  | 663   |
| Town of Alta                   | 4,583                  | 0.0044984                      | 1,927   | 7,718  | (2,543)  | 14   | 1,056   |
| Town of Apple Valley           | 1,639                  | 0.0016085                      | 689   | 2,760  | (909)  | 5  | 378   |
| Town of Brian Head             | 6,280                  | 0.0061638                      | 2,640   | 10,576   | (3,485)  | 19   | 1,447   |
| Town of Garden City            | 12,545                 | 0.0123131                      | 5,273   | 21,126   | (6,961)  | 37   | 2,891   |
| Town of Goshen                 | 8,375                  | 0.0082207                      | 3,521   | 14,105   | (4,647)  | 25   | 1,930   |
| Town of Manila                 | 4,736                  | 0.0046485                      | 1,991   | 7,976  | (2,628)  | 14   | 1,092   |
| Town of Paragonah              | 2,459                  | 0.0024133                      | 1,034   | 4,141  | (1,364)  | 7  | 567   |
| Town of Springdale             | 29,738                 | 0.0291885                      | 12,501  | 50,081   | (16,501)   | 88   | 6,854   |
| Trans-Jordan Cities            | 49,564                 | 0.0486481                      | 20,835  | 83,469   | (27,503)   | 146  | 11,423  |
| Tremonton City                 | 21,538                 | 0.0211401                      | 9,054   | 36,271   | (11,951)   | 64   | 4,964   |
| Tridell-Lapoint Water          | 9,599                  | 0.0094220                      | 4,035   | 16,166   | (5,327)  | 28   | 2,212   |
| Tuacahn High School            | 56,797                 | 0.0557468                      | 23,875  | 95,648   | (31,516)   | 168  | 13,090  |
| Uintah Animal Control/Shelter  | 6,381                  | 0.0062626                      | 2,682   | 10,745   | (3,540)  | 19   | 1,471   |
| Uintah Basin Assn of Govt      | 59,035                 | 0.0579434                      | 24,816  | 99,417   | (32,758)   | 174  | 13,606  |
| Uintah Basin Asst Council      | 4,355                  | 0.0042744                      | 1,831   | 7,334  | (2,416)  | 13   | 1,004   |
| Uintah Basin Technical College | 135,849                | 0.1333377                      | 57,106  | 228,776  | (75,381)   | 401  | 31,309  |
| Uintah Co Care Center SSD      | 72,383                 | 0.0710454                      | 30,427  | 121,897  | (40,165)   | 214  | 16,682  |
| Uintah County                  | 258,231                | 0.2534581                      | 108,551   | 434,875  | (143,290)  | 762  | 59,515  |
| Uintah Fire Suppression SSD    | 394                    | 0.0003870                      | 166   | 664  | (219)  | 1  | 91  |
| Uintah Highlands Improv Dist   | 4,726                  | 0.0046386                      | 1,987   | 7,959  | (2,622)  | 14   | 1,089   |
| Uintah Recreation District     | 24,544                 | 0.0240900                      | 10,317  | 41,333   | (13,619)   | 72   | 5,657   |
| Uintah School District         | 699,060                | 0.6861385                      | 293,858   | 1,177,253  | (387,902)  | 2,062  | 161,114   |
| Uintah Transportation SSD      | 21,629                 | 0.0212296                      | 9,092   | 36,425   | (12,002)   | 64   | 4,985   |
| Unified Fire Authority         | 56,906                 | 0.0558541                      | 23,921  | 95,833   | (31,577)   | 168  | 13,115  |
| Unified Police Department      | 174,189                | 0.1709688                      | 73,222  | 293,343  | (96,656)   | 514  | 40,146  |
| University of Utah             | 2,432,964              | 2.3879912                      | 1,022,726   | 4,097,235  | (1,350,027)  | 7,178  | 560,729   |
| University of Utah Hospital    | 4,213                  | 0.0041348                      | 1,771   | 7,094  | (2,338)  | 12   | 971   |
| Ut Municipal Power Agency      | 59,927                 | 0.0588189                      | 25,191  | 100,919  | (33,253)   | 177  | 13,811  |
| Ut Public Employees Assn       | 3,866                  | 0.0037949                      | 1,625   | 6,511  | (2,145)  | 11   | 891   |
| Ut School Board Risk Mgmt      | 19,002                 | 0.0186508                      | 7,988   | 32,000   | (10,544)   | 56   | 4,379   |
| Utah Assn of Counties          | 12,166                 | 0.0119409                      | 5,114   | 20,488   | (6,751)  | 36   | 2,804   |
| Utah Co Academy of Sciences    | 31,860                 | 0.0312706                      | 13,393  | 53,653   | (17,679)   | 94   | 7,343   |
| Utah Co Housing Authority      | 40,770                 | 0.0400161                      | 17,138  | 68,658   | (22,623)   | 120  | 9,396   |
| Utah Communications Authority  | 31,282                 | 0.0307039                      | 13,150  | 52,681   | (17,358)   | 92   | 7,210   |
| Utah Counties Indemnity Pool   | 3,321                  | 0.0032592                      | 1,396   | 5,592  | (1,843)  | 10   | 765   |
| Utah County                    | 767,284                | 0.7531009                      | 322,537   | 1,292,145  | (425,758)  | 2,264  | 176,837   |
| Utah Dairy Council             | 1,317                  | 0.0012931                      | 554   | 2,219  | (731)  | 4  | 304   |
| Utah Education Association     | 23,219                 | 0.0227895                      | 9,760   | 39,101   | (12,884)   | 69   | 5,351   |
| Utah Housing Corporation       | 173,836                | 0.1706225                      | 73,074  | 292,748  | (96,460)   | 513  | 40,064  |
| Utah League Cities/Towns       | 4,497                  | 0.0044143                      | 1,891   | 7,574  | (2,496)  | 13   | 1,037   |
| Utah Local Governments Trust   | 29,862                 | 0.0293102                      | 12,553  | 50,289   | (16,570)   | 88   | 6,882   |
| Utah Retirement Systems        | 548,017                | 0.5378870                      | 230,365   | 922,888  | (304,089)  | 1,617  | 126,302   |
| Utah Safety Council            | 17,058                 | 0.0167425                      | 7,170   | 28,726   | (9,465)  | 50   | 3,931   |
| Utah School Boards Association | 23,005                 | 0.0225798                      | 9,670   | 38,742   | (12,765)   | 68   | 5,302   |
| Utah School Employees Assn     | 6,315                  | 0.0061987                      | 2,655   | 10,636   | (3,504)  | 19   | 1,456   |
| Utah State Fair Corp           | 10,012                 | 0.0098265                      | 4,208   | 16,860   | (5,555)  | 30   | 2,307   |
| Utah State University          | 636,440                | 0.6246761                      | 267,535   | 1,071,798  | (353,154)  | 1,878  | 146,681   |
| Utah Valley Dispatch SSD       | 54,573                 | 0.0535640                      | 22,940  | 91,903   | (30,282)   | 161  | 12,577  |
| Utah Valley University         | 462,476                | 0.4539268                      | 194,407   | 778,832  | (256,623)  | 1,364  | 106,587   |
| Utah Zoological Society        | 192,986                | 0.1894190                      | 81,124  | 324,999  | (107,086)  | 569  | 44,478  |
| UTOPIA                         | 123,983                | 0.1216916                      | 52,118  | 208,794  | (68,797)   | 366  | 28,575  |
| Valley Emergency Comm Ctr      | 224,334                | 0.2201876                      | 94,302  | 377,790  | (124,481)  | 662  | 51,703  |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 2,934                          | 3,668   | 13,103                               | 2,420  | 2,606  | 210                    | —   | 5,236                               | 29,881  | 368   | —  | 30,249   |
| 1,636                          | 2,450   | 7,711                                | 1,349  | 1,453  | 117                    | —   | 2,919                               | 16,661  | 234   | —  | 16,895   |
| 303                            | 273   | 1,247                                | 250  | 269  | 22                     | —   | 541                                 | 3,088   | 30  | —  | 3,118  |
| 483                            | 533   | 2,086                                | 398  | 429  | 35                     | —   | 862                                 | 4,917   | 56  | —  | 4,973  |
| 173                            | 525   | 1,081                                | 142  | 153  | 12                     | 511   | 818                                 | 1,758   | 15  | —  | 1,773  |
| 662                            | 796   | 2,924                                | 546  | 588  | 47                     | —   | 1,181                               | 6,738   | 83  | —  | 6,821  |
| 1,322                          | 1,451   | 5,701                                | 1,090  | 1,174  | 95                     | —   | 2,359                               | 13,460  | 160   | —  | 13,620   |
| 882                            | 1,228   | 4,065                                | 728  | 784  | 63                     | 33  | 1,608                               | 8,987   | 115   | —  | 9,102  |
| 499                            | 785   | 2,390                                | 411  | 443  | 36                     | 214   | 1,104                               | 5,082   | 61  | —  | 5,143  |
| 259                            | 409   | 1,242                                | 214  | 230  | 19                     | —   | 463                                 | 2,638   | 38  | —  | 2,676  |
| 3,133                          | 4,610   | 14,685                               | 2,584  | 2,783  | 225                    | —   | 5,592                               | 31,908  | 449   | —  | 32,357   |
| 5,222                          | 6,602   | 23,393                               | 4,306  | 4,638  | 374                    | —   | 9,318                               | 53,180  | 679   | —  | 53,859   |
| 2,269                          | 2,664   | 9,961                                | 1,871  | 2,016  | 163                    | —   | 4,050                               | 23,110  | 289   | —  | 23,399   |
| 1,011                          | 959   | 4,210                                | 834  | 898  | 72                     | —   | 1,804                               | 10,300  | 112   | —  | 10,412   |
| 5,984                          | 7,897   | 27,139                               | 4,934  | 5,315  | 429                    | —   | 10,678                              | 60,940  | 792   | —  | 61,732   |
| 672                            | 908   | 3,070                                | 554  | 597  | 48                     | —   | 1,199                               | 6,846   | 89  | —  | 6,935  |
| 6,220                          | 7,157   | 27,157                               | 5,129  | 5,525  | 446                    | —   | 11,100                              | 63,342  | 763   | —  | 64,105   |
| 459                            | 587   | 2,063                                | 378  | 408  | 33                     | 105   | 924                                 | 4,673   | 57  | —  | 4,730  |
| 14,313                         | 16,832  | 62,855                               | 11,802   | 12,713   | 1,026                  | —   | 25,541                              | 145,760   | 1,812   | —  | 147,572  |
| 7,626                          | 7,881   | 32,403                               | 6,289  | 6,774  | 547                    | —   | 13,610                              | 77,664  | 901   | —  | 78,565   |
| 27,208                         | 28,338  | 115,823                              | 22,435   | 24,166   | 1,950                  | —   | 48,551                              | 277,071   | 3,244   | —  | 280,315  |
| 42                             | 71  | 205                                  | 34   | 37   | 3                      | —   | 74                                  | 423   | 6   | —  | 429  |
| 498                            | 704   | 2,305                                | 411  | 442  | 36                     | —   | 889                                 | 5,071   | 69  | —  | 5,140  |
| 2,586                          | 2,895   | 11,210                               | 2,132  | 2,297  | 185                    | —   | 4,614                               | 26,334  | 341   | —  | 26,675   |
| 73,654                         | 81,019  | 317,849                              | 60,734   | 65,420   | 5,279                  | —   | 131,433                             | 750,060   | 9,016   | —  | 759,076  |
| 2,279                          | 2,949   | 10,277                               | 1,879  | 2,024  | 163                    | —   | 4,066                               | 23,207  | 308   | —  | 23,515   |
| 5,996                          | 7,462   | 26,741                               | 4,944  | 5,325  | 430                    | —   | 10,699                              | 61,058  | 775   | —  | 61,833   |
| 18,353                         | 21,603  | 80,616                               | 15,133   | 16,301   | 1,316                  | —   | 32,750                              | 186,897   | 2,320   | —  | 189,217  |
| 256,340                        | 294,368   | 1,118,615                            | 211,375  | 227,684  | 18,374                 | 75,730  | 533,163                             | 2,610,461   | 28,708  | —  | 2,639,169  |
| 444                            | 663   | 2,090                                | 366  | 394  | 32                     | —   | 792                                 | 4,520   | 63  | —  | 4,583  |
| 6,314                          | 9,919   | 30,221                               | 5,206  | 5,608  | 453                    | —   | 11,267                              | 64,299  | 915   | —  | 65,214   |
| 407                            | 744   | 2,053                                | 336  | 362  | 29                     | 483   | 1,210                               | 4,148   | 37  | —  | 4,185  |
| 2,002                          | 2,753   | 9,190                                | 1,651  | 1,778  | 144                    | —   | 3,573                               | 20,388  | 275   | —  | 20,663   |
| 1,282                          | 2,174   | 6,296                                | 1,057  | 1,139  | 92                     | 71  | 2,359                               | 13,053  | 186   | —  | 13,239   |
| 3,357                          | 3,904   | 14,698                               | 2,768  | 2,982  | 241                    | —   | 5,991                               | 34,184  | 422   | —  | 34,606   |
| 4,296                          | 4,712   | 18,524                               | 3,542  | 3,815  | 308                    | —   | 7,665                               | 43,744  | 535   | —  | 44,279   |
| 3,296                          | 5,022   | 15,620                               | 2,718  | 2,927  | 236                    | —   | 5,881                               | 33,564  | 478   | —  | 34,042   |
| 350                            | 404   | 1,529                                | 288  | 311  | 25                     | 22  | 646                                 | 3,563   | 42  | —  | 3,605  |
| 80,842                         | 99,942  | 359,885                              | 66,661   | 71,805   | 5,795                  | —   | 144,261                             | 823,261   | 10,480  | —  | 833,741  |
| 139                            | 527   | 974                                  | 114  | 123  | 10                     | 652   | 899                                 | 1,414   | 4   | —  | 1,418  |
| 2,446                          | 3,029   | 10,895                               | 2,017  | 2,173  | 175                    | —   | 4,365                               | 24,913  | 345   | —  | 25,258   |
| 18,316                         | 21,576  | 80,469                               | 15,103   | 16,268   | 1,313                  | —   | 32,684                              | 186,518   | 2,283   | —  | 188,801  |
| 474                            | 651   | 2,175                                | 391  | 421  | 34                     | 143   | 989                                 | 4,826   | 57  | —  | 4,883  |
| 3,146                          | 3,858   | 13,974                               | 2,594  | 2,795  | 226                    | —   | 5,615                               | 32,041  | 428   | —  | 32,469   |
| 57,740                         | 68,017  | 253,676                              | 47,612   | 51,285   | 4,139                  | —   | 103,036                             | 587,998   | 7,289   | —  | 595,287  |
| 1,797                          | 1,605   | 7,383                                | 1,482  | 1,596  | 129                    | 152   | 3,359                               | 18,302  | 170   | —  | 18,472   |
| 2,424                          | 3,089   | 10,883                               | 1,999  | 2,153  | 174                    | —   | 4,326                               | 24,683  | 306   | —  | 24,989   |
| 665                            | 922   | 3,062                                | 549  | 591  | 48                     | —   | 1,188                               | 6,776   | 92  | —  | 6,868  |
| 1,055                          | 1,906   | 5,298                                | 870  | 937  | 76                     | 1,504   | 3,387                               | 10,742  | 73  | —  | 10,815   |
| 67,056                         | 70,069  | 285,684                              | 55,294   | 59,560   | 4,807                  | 7,840   | 127,501                             | 682,872   | 7,645   | —  | 690,517  |
| 5,750                          | 6,795   | 25,283                               | 4,741  | 5,107  | 412                    | —   | 10,260                              | 58,554  | 720   | —  | 59,274   |
| 48,727                         | 52,586  | 209,264                              | 40,180   | 43,280   | 3,493                  | 4,328   | 91,281                              | 496,215   | 5,928   | —  | 502,143  |
| 20,333                         | 23,497  | 88,877                               | 16,767   | 18,060   | 1,457                  | —   | 36,284                              | 207,066   | 2,545   | —  | 209,611  |
| 13,063                         | 14,677  | 56,681                               | 10,772   | 11,603   | 936                    | —   | 23,311                              | 133,029   | 1,634   | —  | 134,663  |
| 23,636                         | 28,875  | 104,876                              | 19,490   | 20,994   | 1,694                  | —   | 42,178                              | 240,701   | 3,071   | —  | 243,772  |

Tier 2 Public Employees Contributory Retirement System

Schedule of Employer Allocations and Pension Amounts (Concluded)

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|--|--|--|--|---|
| Vernal City   | \$ 38,863              | 0.0381442%                     | \$ 16,336                                      | 65,447   | (21,564)   | 115  | 8,957   |
| Vineyard Town   | 55,506                 | 0.0544800                      | 23,333   | 93,475   | (30,800)   | 164  | 12,793  |
| Wasatch County  | 242,779                | 0.2382910                      | 102,055  | 408,852  | (134,715)  | 716  | 55,954  |
| Wasatch County Fire District  | 2,885                  | 0.0028315                      | 1,213  | 4,858  | (1,601)  | 9  | 665   |
| Wasatch Front Regional Council  | 46,673                 | 0.0458105                      | 19,620   | 78,600   | (25,899)   | 138  | 10,757  |
| Wasatch Front Waste/Recycling   | 139,730                | 0.1371472                      | 58,737   | 235,313  | (77,535)   | 412  | 32,204  |
| Wasatch Integrated Waste Mgmt   | 41,135                 | 0.0403751                      | 17,292   | 69,274   | (22,826)   | 121  | 9,481   |
| Wasatch Mental Health SSD   | 338,934                | 0.3326693                      | 142,475  | 570,783  | (188,071)  | 1,000  | 78,115  |
| Wasatch School District   | 766,901                | 0.7527252                      | 322,376  | 1,291,501  | (425,546)  | 2,263  | 176,749   |
| Washington City   | 112,414                | 0.1103358                      | 47,254   | 189,310  | (62,377)   | 332  | 25,908  |
| Washington Co Solid Waste   | 14,208                 | 0.0139449                      | 5,972  | 23,926   | (7,884)  | 42   | 3,274   |
| Washington Co Wat Con Dist  | 49,206                 | 0.0482961                      | 20,684   | 82,865   | (27,304)   | 145  | 11,341  |
| Washington County   | 254,273                | 0.2495727                      | 106,887  | 428,208  | (141,093)  | 750  | 58,603  |
| Washington School District  | 2,344,433              | 2.3010966                      | 985,510  | 3,948,144  | (1,300,902)  | 6,917  | 540,325   |
| Wayne County  | 18,333                 | 0.0179939                      | 7,706  | 30,873   | (10,173)   | 54   | 4,225   |
| Wayne School District   | 38,502                 | 0.0377901                      | 16,185   | 64,839   | (21,364)   | 114  | 8,874   |
| Weber Area Dispatch 911   | 101,164                | 0.0992940                      | 42,525   | 170,365  | (56,135)   | 298  | 23,315  |
| Weber Basin Water Conserv   | 85,017                 | 0.0834452                      | 35,738   | 143,172  | (47,175)   | 251  | 19,594  |
| Weber Co Mosquito Abate   | 4,652                  | 0.0045665                      | 1,956  | 7,835  | (2,582)  | 14   | 1,072   |
| Weber County Corp   | 807,240                | 0.7923187                      | 339,333  | 1,359,434  | (447,930)  | 2,382  | 186,046   |
| Weber County School District  | 1,995,793              | 1.9589016                      | 838,956  | 3,361,017  | (1,107,446)  | 5,888  | 459,974   |
| Weber Human Services  | 348,842                | 0.3423936                      | 146,640  | 587,467  | (193,569)  | 1,029  | 80,398  |
| Weber State University  | 276,943                | 0.2718236                      | 116,416  | 466,386  | (153,673)  | 817  | 63,827  |
| Wellington City   | 6,729                  | 0.0066050                      | 2,829  | 11,333   | (3,734)  | 20   | 1,551   |
| Wellsville City Corp  | 7,282                  | 0.0071470                      | 3,061  | 12,263   | (4,040)  | 21   | 1,678   |
| West Bountiful City   | 25,123                 | 0.0246587                      | 10,561   | 42,309   | (13,941)   | 74   | 5,790   |
| West Kane County SSD #1   | 12,843                 | 0.0126054                      | 5,399  | 21,628   | (7,126)  | 38   | 2,960   |
| West Point City   | 33,685                 | 0.0330625                      | 14,160   | 56,728   | (18,692)   | 99   | 7,763   |
| West Valley City  | 387,270                | 0.3801113                      | 162,794  | 652,182  | (214,892)  | 1,143  | 89,255  |
| White City Water Imp Dist   | 5,310                  | 0.0052116                      | 2,232  | 8,942  | (2,946)  | 16   | 1,224   |
| Willard City Corp   | 4,211                  | 0.0041330                      | 1,770  | 7,091  | (2,337)  | 12   | 970   |
| Woods Cross City  | 10,158                 | 0.0099701                      | 4,270  | 17,106   | (5,636)  | 30   | 2,341   |
| Workers Compensation Fund   | 770,149                | 0.7559131                      | 323,741  | 1,296,970  | (427,348)  | 2,272  | 177,497   |
| <b>Grand Total</b>  | <b>\$ 101,883,279</b>  | <b>100.0000000%</b>            | <b>\$ 42,827,859</b>                           | <b>171,576,632</b>                                   | <b>(56,534,003)</b>                                  | <b>300,586</b>                                     | <b>23,481,199</b>   |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |  |  |  |  |   |
| Liberty Academy Charter School  | \$ —                   | 0.0000000%                     | \$ —   | —  | —  | —  | —   |
| North Fork SS District  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Utah Lake Commission  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Weber Fire District   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Centerfield City  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Lone Peak PS District   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Aurora City   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Canyonlands Health Care   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Alpine Uniserv  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Huntington City   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Maeser Water District   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Mantua City   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Valley Mental Health  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Jordan River Commission   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Ogden Weber/NEA/UEA Uniserv   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Recreation and Habilitation Services  | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Uintah Water Conserv Dist   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 101,883,279</b>  | <b>100.0000000%</b>            | <b>\$ 42,827,856</b>                           | <b>171,576,632</b>                                   | <b>(56,534,003)</b>                                  | <b>300,586</b>                                     | <b>23,481,199</b>   |

Columns may not add to total due to rounding.



Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|---|--|--|
| Changes of Assumptions         | Changes in Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Proportionate Share of Employer Contributions | Proportionate Share of Nonemployer Contributions | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   |   |  | Proportionate Share of Nonemployer Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 4,095                          | 4,471   | 17,638                               | 3,376  | 3,637  | 293                    | —   | 7,306                               | 41,698  | 477   | —  | —   | 42,175   |  |
| 5,848                          | 7,761   | 26,566                               | 4,822  | 5,194  | 419                    | —   | 10,435                              | 59,555  | 780   | —  | —   | 60,335   |  |
| 25,579                         | 31,260  | 113,509                              | 21,093   | 22,720   | 1,834                  | —   | 45,647                              | 260,491   | 3,337   | —  | —   | 263,828  |  |
| 304                            | 521   | 1,499                                | 251  | 270  | 22                     | —   | 543                                 | 3,095   | 46  | —  | —   | 3,141  |  |
| 4,918                          | 5,630   | 21,443                               | 4,055  | 4,368  | 352                    | —   | 8,775                               | 50,078  | 607   | —  | —   | 50,685   |  |
| 14,722                         | 16,609  | 63,947                               | 12,140   | 13,076   | 1,055                  | —   | 26,271                              | 149,924   | 1,815   | —  | —   | 151,739  |  |
| 4,334                          | 5,809   | 19,745                               | 3,574  | 3,850  | 311                    | 2,679   | 10,414                              | 44,137  | 441   | —  | —   | 44,578   |  |
| 35,711                         | 43,766  | 158,592                              | 29,447   | 31,719   | 2,560                  | —   | 63,726                              | 363,661   | 4,606   | —  | —   | 368,267  |  |
| 80,802                         | 103,941   | 363,755                              | 66,628   | 71,769   | 5,792                  | —   | 144,189                             | 822,850   | 10,640  | —  | —   | 833,490  |  |
| 11,844                         | 14,963  | 53,047                               | 9,766  | 10,520   | 849                    | —   | 21,135                              | 120,615   | 1,536   | —  | —   | 122,151  |  |
| 1,497                          | 1,843   | 6,656                                | 1,234  | 1,330  | 107                    | —   | 2,671                               | 15,244  | 193   | —  | —   | 15,437   |  |
| 5,184                          | 6,533   | 23,203                               | 4,275  | 4,605  | 372                    | —   | 9,252                               | 52,795  | 664   | —  | —   | 53,459   |  |
| 26,790                         | 32,274  | 118,417                              | 22,091   | 23,796   | 1,920                  | —   | 47,807                              | 272,823   | 3,388   | —  | —   | 276,211  |  |
| 247,012                        | 310,807   | 1,105,061                            | 203,683  | 219,399  | 17,706                 | —   | 440,788                             | 2,515,471   | 32,157  | —  | —   | 2,547,628  |  |
| 1,932                          | 2,297   | 8,508                                | 1,593  | 1,716  | 138                    | —   | 3,447                               | 19,670  | 247   | —  | —   | 19,917   |  |
| 4,057                          | 4,421   | 17,466                               | 3,345  | 3,603  | 291                    | —   | 7,239                               | 41,311  | 497   | —  | —   | 41,808   |  |
| 10,659                         | 13,055  | 47,327                               | 8,789  | 9,467  | 764                    | —   | 19,020                              | 108,544   | 1,374   | —  | —   | 109,918  |  |
| 8,957                          | 11,618  | 40,420                               | 7,386  | 7,956  | 642                    | —   | 15,984                              | 91,219  | 1,202   | —  | —   | 92,421   |  |
| 490                            | 840   | 2,416                                | 404  | 435  | 35                     | —   | 874                                 | 4,992   | 75  | —  | —   | 5,067  |  |
| 85,052                         | 104,569   | 378,049                              | 70,133   | 75,544   | 6,096                  | —   | 151,773                             | 866,133   | 11,100  | —  | —   | 877,233  |  |
| 210,279                        | 260,926   | 937,067                              | 173,394  | 186,773  | 15,073                 | —   | 375,240                             | 2,141,396   | 27,198  | —  | —   | 2,168,594  |  |
| 36,754                         | 43,212  | 161,393                              | 30,307   | 32,646   | 2,635                  | —   | 65,588                              | 374,292   | 4,656   | —  | —   | 378,948  |  |
| 29,179                         | 30,205  | 124,028                              | 24,061   | 25,917   | 2,092                  | —   | 52,070                              | 297,147   | 3,452   | —  | —   | 300,599  |  |
| 709                            | 776   | 3,056                                | 585  | 630  | 51                     | —   | 1,266                               | 7,220   | 89  | —  | —   | 7,309  |  |
| 767                            | 1,044   | 3,510                                | 633  | 681  | 55                     | —   | 1,369                               | 7,813   | 103   | —  | —   | 7,916  |  |
| 2,647                          | 2,992   | 11,503                               | 2,183  | 2,351  | 190                    | —   | 4,724                               | 26,956  | 333   | —  | —   | 27,289   |  |
| 1,353                          | 2,056   | 6,407                                | 1,116  | 1,202  | 97                     | —   | 2,415                               | 13,780  | 193   | —  | —   | 13,973   |  |
| 3,549                          | 4,238   | 15,649                               | 2,927  | 3,152  | 254                    | —   | 6,333                               | 36,143  | 447   | —  | —   | 36,590   |  |
| 40,803                         | 46,775  | 177,976                              | 33,646   | 36,242   | 2,925                  | —   | 72,813                              | 415,523   | 5,045   | —  | —   | 420,568  |  |
| 559                            | 618   | 2,417                                | 461  | 497  | 40                     | —   | 998                                 | 5,697   | 68  | —  | —   | 5,765  |  |
| 444                            | 571   | 1,997                                | 366  | 394  | 32                     | —   | 792                                 | 4,518   | 57  | —  | —   | 4,575  |  |
| 1,070                          | 1,170   | 4,611                                | 883  | 951  | 77                     | —   | 1,911                               | 10,899  | 132   | —  | —   | 11,031   |  |
| 81,144                         | 98,551  | 359,464                              | 66,910   | 72,073   | 5,816                  | —   | 144,799                             | 826,335   | 10,238  | —  | —   | 836,573  |  |
| 10,734,536                     | 13,005,142                                      | 47,521,463                           | 8,851,587  | 9,534,546  | 769,448                | 107,785   | 19,263,366                          | 109,316,174   | 1,363,615                                     | —  | —   | 110,679,789                                      |  |
| —                              | 6,006   | 6,006                                | —  | —  | —                      | 9,420   | 9,420                               | —   | (133)   | —  | —   | (133)  |  |
| —                              | 534   | 534                                  | —  | —  | —                      | 923   | 923                                 | —   | (23)  | —  | —   | (23)   |  |
| —                              | 379   | 379                                  | —  | —  | —                      | 504   | 504                                 | —   | (4)   | —  | —   | (4)  |  |
| —                              | 1,571   | 1,571                                | —  | —  | —                      | 1,942   | 1,942                               | —   | (16)  | —  | —   | (16)   |  |
| —                              | 176   | 176                                  | —  | —  | —                      | 293   | 293                                 | —   | (7)   | —  | —   | (7)  |  |
| —                              | 91  | 91                                   | —  | —  | —                      | 109   | 109                                 | —   | (1)   | —  | —   | (1)  |  |
| —                              | —   | —                                    | —  | —  | —                      | 84  | 84                                  | —   | (11)  | —  | —   | (11)   |  |
| —                              | —   | —                                    | —  | —  | —                      | 471   | 471                                 | —   | (61)  | —  | —   | (61)   |  |
| —                              | 155   | 155                                  | —  | —  | —                      | 139   | 139                                 | —   | 4   | —  | —   | 4  |  |
| —                              | 5   | 5                                    | —  | —  | —                      | 40  | 40                                  | —   | (4)   | —  | —   | (4)  |  |
| —                              | —   | —                                    | —  | —  | —                      | 73  | 73                                  | —   | (9)   | —  | —   | (9)  |  |
| —                              | —   | —                                    | —  | —  | —                      | 78  | 78                                  | —   | (10)  | —  | —   | (10)   |  |
| —                              | 6,149   | 6,149                                | —  | —  | —                      | 13,101  | 13,101                              | —   | (663)   | —  | —   | (663)  |  |
| —                              | 152   | 152                                  | —  | —  | —                      | 190   | 190                                 | —   | (0)   | —  | —   | (0)  |  |
| —                              | 250   | 250                                  | —  | —  | —                      | 411   | 411                                 | —   | (9)   | —  | —   | (9)  |  |
| —                              | 110   | 110                                  | —  | —  | —                      | 110   | 110                                 | —   | 3   | —  | —   | 3  |  |
| —                              | 367   | 367                                  | —  | —  | —                      | 423   | 423                                 | —   | 4   | —  | —   | 4  |  |
| 10,734,536                     | 13,021,087                                      | 47,537,408                           | 8,851,587  | 9,534,546  | 769,448                | 136,097   | 19,291,678                          | 109,316,174   | 1,362,677                                     | —  | —   | 110,678,851                                      |  |

## Tier 2 Public Safety and Firefighter Contributory Retirement System

## Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|--|--|--|--|---|
| American Fork City             | \$ 173,599             | 1.1694804%                     | \$ 29,302                                      | 221,013  | (117,405)  | 13,464   | 34,080  |
| Beaver County                  | 85,791                 | 0.5779426%                     | 14,481   | 109,222  | (58,020)   | 6,654  | 16,842  |
| Big Water Municipal Corp       | 5,528                  | 0.0372397%                     | 933  | 7,038  | (3,739)  | 429  | 1,085   |
| Blanding City                  | 4,790                  | 0.0322714%                     | 809  | 6,099  | (3,240)  | 372  | 940   |
| Bluffdale City                 | 9,336                  | 0.0628969%                     | 1,576  | 11,887   | (6,314)  | 724  | 1,833   |
| Box Elder County               | 99,856                 | 0.6726949%                     | 16,855   | 127,129  | (67,532)   | 7,745  | 19,603  |
| Brigham City                   | 42,971                 | 0.2894805%                     | 7,253  | 54,707   | (29,061)   | 3,333  | 8,436   |
| Cache County                   | 178,253                | 1.2008330%                     | 30,088   | 226,939  | (120,553)  | 13,825   | 34,994  |
| Carbon County                  | 62,425                 | 0.4205372%                     | 10,537   | 79,475   | (42,218)   | 4,842  | 12,255  |
| Cedar City                     | 72,582                 | 0.4889595%                     | 12,251   | 92,406   | (49,087)   | 5,629  | 14,249  |
| Cedar Mtn Fire Protection Dist | 9,514                  | 0.0640940%                     | 1,606  | 12,113   | (6,434)  | 738  | 1,868   |
| Centerville City               | 5,918                  | 0.0398694%                     | 999  | 7,535  | (4,003)  | 459  | 1,162   |
| City of Bountiful              | 44,421                 | 0.2992494%                     | 7,498  | 56,553   | (30,042)   | 3,445  | 8,720   |
| City of Draper                 | 131,153                | 0.8835336%                     | 22,137   | 166,974  | (88,699)   | 10,172   | 25,747  |
| City of Harrisville            | 12,716                 | 0.0856616%                     | 2,146  | 16,189   | (8,600)  | 986  | 2,496   |
| City of Helper                 | 7,062                  | 0.0475747%                     | 1,192  | 8,991  | (4,776)  | 548  | 1,386   |
| City of Kanab                  | 3,818                  | 0.0257228%                     | 645  | 4,861  | (2,582)  | 296  | 750   |
| City of Moab                   | 33,987                 | 0.2289598%                     | 5,737  | 43,270   | (22,985)   | 2,636  | 6,672   |
| City of Monticello             | 8,953                  | 0.0603111%                     | 1,511  | 11,398   | (6,055)  | 694  | 1,758   |
| City of Naples                 | 11,848                 | 0.0798141%                     | 2,000  | 15,084   | (8,013)  | 919  | 2,326   |
| City of North Salt Lake        | 28,153                 | 0.1896608%                     | 4,752  | 35,843   | (19,040)   | 2,184  | 5,527   |
| City of Orem                   | 242,287                | 1.6322111%                     | 40,896   | 308,462  | (163,859)  | 18,792   | 47,564  |
| City of Santa Clara            | 16,604                 | 0.1118523%                     | 2,803  | 21,138   | (11,229)   | 1,288  | 3,259   |
| City of Saratoga Springs       | 105,616                | 0.7115034%                     | 17,827   | 134,463  | (71,428)   | 8,192  | 20,734  |
| City of South Jordan           | 264,264                | 1.7802629%                     | 44,606   | 336,442  | (178,722)  | 20,496   | 51,879  |
| City of South Salt Lake        | 122,492                | 0.8251895%                     | 20,676   | 155,948  | (82,842)   | 9,500  | 24,047  |
| City of St George              | 194,687                | 1.3115396%                     | 32,861   | 247,860  | (131,667)  | 15,100   | 38,220  |
| City of Wendover               | 1,167                  | 0.0078605%                     | 197  | 1,486  | (789)  | 90   | 229   |
| City of West Jordan            | 274,914                | 1.8520053%                     | 46,403   | 350,000  | (185,925)  | 21,322   | 53,969  |
| Clearfield City                | 54,091                 | 0.3643941%                     | 9,130  | 68,865   | (36,582)   | 4,195  | 10,619  |
| Clinton City                   | 61,184                 | 0.4121786%                     | 10,327   | 77,895   | (41,379)   | 4,745  | 12,011  |
| Cottonwood Heights City        | 65,408                 | 0.4406332%                     | 11,040   | 83,273   | (44,236)   | 5,073  | 12,841  |
| Daggett County                 | 576                    | 0.0038795%                     | 97   | 733  | (389)  | 45   | 113   |
| Davis County                   | 335,449                | 2.2598123%                     | 56,621   | 427,069  | (226,865)  | 26,017   | 65,853  |
| Dixie State University         | 8,182                  | 0.0551163%                     | 1,381  | 10,416   | (5,533)  | 635  | 1,606   |
| Duchesne County                | 79,827                 | 0.5377712%                     | 13,474   | 101,630  | (53,987)   | 6,191  | 15,671  |
| East Carbon City               | 8,297                  | 0.0558912%                     | 1,400  | 10,563   | (5,611)  | 643  | 1,629   |
| Emery County                   | 40,700                 | 0.2741843%                     | 6,870  | 51,817   | (27,526)   | 3,157  | 7,990   |
| Enoch City                     | 9,726                  | 0.0655209%                     | 1,642  | 12,382   | (6,578)  | 754  | 1,909   |
| Ephraim City                   | 2,432                  | 0.0163839%                     | 411  | 3,096  | (1,645)  | 189  | 477   |
| Farmington City                | 53,188                 | 0.3583076%                     | 8,978  | 67,715   | (35,971)   | 4,125  | 10,441  |
| Garfield County                | 30,607                 | 0.2061891%                     | 5,166  | 38,967   | (20,700)   | 2,374  | 6,009   |
| Garland City                   | 4,711                  | 0.0317335%                     | 795  | 5,997  | (3,186)  | 365  | 925   |
| Grand County                   | 69,519                 | 0.4683234%                     | 11,734   | 88,506   | (47,015)   | 5,392  | 13,647  |
| Grantsville City               | 30,011                 | 0.2021772%                     | 5,066  | 38,208   | (20,297)   | 2,328  | 5,892   |
| Gunnison Valley Police Dept    | 4,563                  | 0.0307378%                     | 770  | 5,809  | (3,086)  | 354  | 896   |
| Heber City                     | 40,025                 | 0.2696340%                     | 6,756  | 50,957   | (27,069)   | 3,104  | 7,857   |
| Herriman City                  | 8,820                  | 0.0594155%                     | 1,489  | 11,229   | (5,965)  | 684  | 1,731   |
| Hurricane City                 | 30,674                 | 0.2066393%                     | 5,177  | 39,052   | (20,745)   | 2,379  | 6,022   |
| Hurricane Valley Fire SSD      | 74,798                 | 0.5038905%                     | 12,625   | 95,227   | (50,586)   | 5,801  | 14,684  |
| Iron County                    | 126,940                | 0.8551498%                     | 21,426   | 161,610  | (85,849)   | 9,845  | 24,920  |
| Ivins City                     | 25,790                 | 0.1737393%                     | 4,353  | 32,834   | (17,442)   | 2,000  | 5,063   |
| Juab County                    | 61,811                 | 0.4163973%                     | 10,433   | 78,693   | (41,803)   | 4,794  | 12,134  |
| Kane County                    | 38,763                 | 0.2611323%                     | 6,543  | 49,350   | (26,215)   | 3,006  | 7,610   |
| Kaysville City                 | 65,442                 | 0.4408629%                     | 11,046   | 83,316   | (44,259)   | 5,076  | 12,847  |
| Layton City                    | 188,318                | 1.2686344%                     | 31,786   | 239,752  | (127,359)  | 14,606   | 36,969  |
| Lehi City                      | 248,064                | 1.6711253%                     | 41,871   | 315,816  | (167,766)  | 19,240   | 48,698  |
| Lindon City                    | 2,158                  | 0.0145344%                     | 364  | 2,747  | (1,459)  | 167  | 424   |
| Logan City                     | 133,313                | 0.8980839%                     | 22,502   | 169,724  | (90,159)   | 10,340   | 26,171  |
| Lone Peak PS District          | 67,895                 | 0.4573848%                     | 11,460   | 86,439   | (45,917)   | 5,266  | 13,329  |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |                        |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|------------------------|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                        | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of  | Proportionate Share of |  |
| 27,878                         | 24,168  | 99,590                               | 38   | 13,427   | 1,075                  | —   | 14,540                              | 169,869   | 1,496   | —                      | 171,365  |
| 13,777                         | 10,506  | 47,779                               | 19   | 6,636  | 531                    | —   | 7,186                               | 83,947  | 645   | —                      | 84,592   |
| 888                            | 757   | 3,159                                | 1  | 428  | 34                     | 121   | 584                                 | 5,409   | 40  | —                      | 5,449  |
| 769                            | 1,048   | 3,129                                | 1  | 371  | 30                     | 402   | 804                                 | 4,687   | 37  | —                      | 4,724  |
| 1,499                          | 569   | 4,625                                | 2  | 722  | 58                     | 1,386   | 2,168                               | 9,136   | (53)  | —                      | 9,083  |
| 16,036                         | 5,639   | 49,023                               | 22   | 7,724  | 618                    | 1,012   | 9,376                               | 97,710  | 291   | —                      | 98,001   |
| 6,901                          | 1,713   | 20,383                               | 9  | 3,324  | 266                    | 1,314   | 4,913                               | 42,048  | 15  | —                      | 42,063   |
| 28,626                         | 30,531  | 107,976                              | 39   | 13,787   | 1,104                  | —   | 14,930                              | 174,423   | 1,948   | —                      | 176,371  |
| 10,025                         | 3,384   | 30,506                               | 14   | 4,828  | 387                    | 720   | 5,949                               | 61,084  | 154   | —                      | 61,238   |
| 11,656                         | 1,680   | 33,214                               | 16   | 5,614  | 449                    | 2,378   | 8,457                               | 71,022  | (57)  | —                      | 70,965   |
| 1,528                          | 849   | 4,983                                | 2  | 736  | 59                     | 1,000   | 1,797                               | 9,310   | (3)   | —                      | 9,307  |
| 950                            | 539   | 3,110                                | 1  | 458  | 37                     | 573   | 1,069                               | 5,791   | (5)   | —                      | 5,786  |
| 7,134                          | 902   | 20,201                               | 10   | 3,436  | 275                    | 1,381   | 5,102                               | 43,467  | (34)  | —                      | 43,433   |
| 21,062                         | 2,884   | 59,865                               | 29   | 10,144   | 812                    | 6,956   | 17,941                              | 128,335   | (237)   | —                      | 128,098  |
| 2,042                          | 1,996   | 7,520                                | 3  | 984  | 79                     | 530   | 1,596                               | 12,443  | 96  | —                      | 12,539   |
| 1,134                          | 1,590   | 4,658                                | 2  | 546  | 44                     | 1,072   | 1,664                               | 6,910   | 25  | —                      | 6,935  |
| 613                            | —   | 1,659                                | 1  | 295  | 24                     | 578   | 898                                 | 3,736   | (34)  | —                      | 3,702  |
| 5,458                          | 2,966   | 17,732                               | 7  | 2,629  | 210                    | 779   | 3,625                               | 33,257  | 126   | —                      | 33,383   |
| 1,438                          | 1,320   | 5,210                                | 2  | 692  | 55                     | 126   | 875                                 | 8,760   | 73  | —                      | 8,833  |
| 1,903                          | 1,466   | 6,614                                | 3  | 916  | 73                     | 63  | 1,055                               | 11,593  | 90  | —                      | 11,683   |
| 4,521                          | 3,381   | 15,613                               | 6  | 2,178  | 174                    | 1,329   | 3,687                               | 27,549  | 126   | —                      | 27,675   |
| 38,909                         | 11,387  | 116,652                              | 53   | 18,740   | 1,500                  | 1,967   | 22,260                              | 237,082   | 566   | —                      | 237,648  |
| 2,666                          | 1,033   | 8,246                                | 4  | 1,284  | 103                    | 2,895   | 4,286                               | 16,247  | (110)   | —                      | 16,137   |
| 16,961                         | 3,186   | 49,073                               | 23   | 8,169  | 654                    | 1,083   | 9,929                               | 103,347   | 146   | —                      | 103,493  |
| 42,438                         | 9,587   | 124,400                              | 58   | 20,440   | 1,636                  | 5,692   | 27,826                              | 258,587   | 219   | —                      | 258,806  |
| 19,671                         | 10,744  | 63,962                               | 27   | 9,474  | 758                    | 4,743   | 15,002                              | 119,860   | 320   | —                      | 120,180  |
| 31,265                         | 20,980  | 105,565                              | 43   | 15,058   | 1,206                  | —   | 16,307                              | 190,504   | 1,306   | —                      | 191,810  |
| 187                            | —   | 506                                  | —  | 90   | 7                      | 177   | 274                                 | 1,142   | (10)  | —                      | 1,132  |
| 44,148                         | 22,238  | 141,677                              | 60   | 21,264   | 1,702                  | —   | 23,026                              | 269,007   | 1,435   | —                      | 270,442  |
| 8,686                          | 5,537   | 29,037                               | 12   | 4,184  | 335                    | 2,541   | 7,072                               | 52,929  | 173   | —                      | 53,102   |
| 9,826                          | 5,791   | 32,373                               | 13   | 4,732  | 379                    | —   | 5,124                               | 59,870  | 378   | —                      | 60,248   |
| 10,504                         | 5,722   | 34,140                               | 14   | 5,059  | 405                    | 1,530   | 7,008                               | 64,003  | 269   | —                      | 64,272   |
| 92                             | 6,425   | 6,675                                | —  | 45   | 4                      | 1,864   | 1,913                               | 564   | 269   | —                      | 833  |
| 53,870                         | 34,732  | 180,472                              | 74   | 25,946   | 2,077                  | —   | 28,097                              | 328,242   | 2,192   | —                      | 330,434  |
| 1,314                          | 739   | 4,294                                | 2  | 633  | 51                     | 129   | 815                                 | 8,006   | 41  | —                      | 8,047  |
| 12,819                         | 19,143  | 53,824                               | 18   | 6,174  | 494                    | —   | 6,686                               | 78,112  | 1,199   | —                      | 79,311   |
| 1,332                          | 836   | 4,440                                | 2  | 642  | 51                     | 1,003   | 1,698                               | 8,118   | (15)  | —                      | 8,103  |
| 6,536                          | 2,014   | 19,697                               | 9  | 3,148  | 252                    | 2,143   | 5,552                               | 39,826  | (5)   | —                      | 39,821   |
| 1,562                          | 1,630   | 5,855                                | 2  | 752  | 60                     | 1,563   | 2,377                               | 9,517   | 1   | —                      | 9,518  |
| 391                            | 1,478   | 2,535                                | 1  | 188  | 15                     | 354   | 558                                 | 2,380   | 76  | —                      | 2,456  |
| 8,541                          | 4,095   | 27,202                               | 12   | 4,114  | 329                    | 161   | 4,616                               | 52,045  | 245   | —                      | 52,290   |
| 4,915                          | 5,743   | 19,041                               | 7  | 2,367  | 190                    | —   | 2,564                               | 29,949  | 358   | —                      | 30,307   |
| 756                            | 350   | 2,396                                | 1  | 364  | 29                     | 561   | 955                                 | 4,609   | (15)  | —                      | 4,594  |
| 11,164                         | 7,800   | 38,003                               | 15   | 5,377  | 430                    | 1,623   | 7,445                               | 68,025  | 371   | —                      | 68,396   |
| 4,820                          | 3,366   | 16,406                               | 7  | 2,321  | 186                    | —   | 2,514                               | 29,367  | 210   | —                      | 29,577   |
| 733                            | 148   | 2,131                                | 1  | 353  | 28                     | 586   | 968                                 | 4,465   | (28)  | —                      | 4,437  |
| 6,428                          | 7,105   | 24,494                               | 9  | 3,096  | 248                    | —   | 3,353                               | 39,165  | 444   | —                      | 39,609   |
| 1,416                          | —   | 3,831                                | 2  | 682  | 55                     | 1,336   | 2,075                               | 8,630   | (79)  | —                      | 8,551  |
| 4,926                          | 968   | 14,295                               | 7  | 2,373  | 190                    | 492   | 3,062                               | 30,015  | 38  | —                      | 30,053   |
| 12,012                         | 1,163   | 33,660                               | 16   | 5,785  | 463                    | 7,406   | 13,670                              | 73,191  | (397)   | —                      | 72,794   |
| 20,385                         | 10,767  | 65,917                               | 28   | 9,818  | 786                    | —   | 10,632                              | 124,212   | 679   | —                      | 124,891  |
| 4,142                          | 1,085   | 12,290                               | 6  | 1,995  | 160                    | 255   | 2,416                               | 25,236  | 56  | —                      | 25,292   |
| 9,926                          | 8,480   | 35,334                               | 14   | 4,781  | 383                    | —   | 5,178                               | 60,483  | 535   | —                      | 61,018   |
| 6,225                          | 3,207   | 20,048                               | 9  | 2,998  | 240                    | 240   | 3,487                               | 37,930  | 181   | —                      | 38,111   |
| 10,509                         | 2,574   | 31,006                               | 14   | 5,062  | 405                    | 2,945   | 8,426                               | 64,036  | (22)  | —                      | 64,014   |
| 30,242                         | 8,599   | 90,416                               | 41   | 14,566   | 1,166                  | 2,244   | 18,017                              | 184,272   | 409   | —                      | 184,681  |
| 39,836                         | 129   | 107,903                              | 55   | 19,187   | 1,536                  | 1,925   | 22,703                              | 242,734   | (109)   | —                      | 242,625  |
| 346                            | —   | 937                                  | —  | 167  | 13                     | 327   | 507                                 | 2,111   | (19)  | —                      | 2,092  |
| 21,409                         | 16,638  | 74,558                               | 29   | 10,311   | 825                    | —   | 11,165                              | 130,448   | 1,044   | —                      | 131,492  |
| 10,903                         | 11,332  | 40,830                               | 15   | 5,251  | 420                    | 853   | 6,539                               | 66,436  | 642   | —                      | 67,078   |

## Tier 2 Public Safety and Firefighter Contributory Retirement System

## Schedule of Employer Allocations and Pension Amounts (Continued)

at December 31, 2018

| Participating Employer         | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|--------------------------------|------------------------|--------------------------------|--|--|--|--|---|
| Mapleton City                  | \$ 18,686              | 0.1258785%                     | \$ 3,154                                       | 23,789   | (12,637)   | 1,449  | 3,668   |
| Millard County                 | 84,505                 | 0.5692838                      | 14,264   | 107,586  | (57,151)   | 6,554  | 16,590  |
| Moab Valley Fire Protection    | 4,355                  | 0.0293378                      | 735  | 5,544  | (2,945)  | 338  | 855   |
| Morgan County                  | 16,900                 | 0.1138477                      | 2,853  | 21,515   | (11,429)   | 1,311  | 3,318   |
| Murray City                    | 219,399                | 1.4780218                      | 37,033   | 279,323  | (148,380)  | 17,017   | 43,071  |
| N Tooele Co Fire Protection SD | 12,262                 | 0.0826083                      | 2,070  | 15,612   | (8,293)  | 951  | 2,407   |
| Nephi City                     | 17,246                 | 0.1161777                      | 2,911  | 21,956   | (11,663)   | 1,338  | 3,386   |
| North Davis Fire District      | 41,462                 | 0.2793127                      | 6,998  | 52,786   | (28,040)   | 3,216  | 8,139   |
| North Logan City               | 5,028                  | 0.0338694                      | 849  | 6,401  | (3,400)  | 390  | 987   |
| North Ogden City               | 31,446                 | 0.2118440                      | 5,308  | 40,035   | (21,267)   | 2,439  | 6,173   |
| North Park Police Agency       | 10,167                 | 0.0684911                      | 1,716  | 12,944   | (6,876)  | 789  | 1,996   |
| North View Fire District       | 47,351                 | 0.3189911                      | 7,993  | 60,284   | (32,024)   | 3,673  | 9,296   |
| Ogden City Corp                | 406,426                | 2.739556                       | 68,601   | 517,431  | (274,866)  | 31,522   | 79,787  |
| Park City                      | 22,786                 | 0.1535009                      | 3,846  | 29,009   | (15,410)   | 1,767  | 4,473   |
| Park City Fire Service         | 126,568                | 0.8526445                      | 21,364   | 161,136  | (85,598)   | 9,817  | 24,847  |
| Parowan City                   | 8,053                  | 0.0542512                      | 1,359  | 10,253   | (5,446)  | 625  | 1,581   |
| Payson City                    | 38,170                 | 0.2571392                      | 6,443  | 48,595   | (25,814)   | 2,960  | 7,493   |
| Perry City                     | 9,465                  | 0.0637599                      | 1,598  | 12,050   | (6,401)  | 734  | 1,858   |
| Pleasant Grove City            | 75,058                 | 0.5056422                      | 12,669   | 95,558   | (50,762)   | 5,821  | 14,735  |
| Pleasant View City             | 5,778                  | 0.0389251                      | 975  | 7,356  | (3,908)  | 448  | 1,134   |
| Price City                     | 17,742                 | 0.1195244                      | 2,995  | 22,588   | (11,999)   | 1,376  | 3,483   |
| Provo City Corp                | 230,164                | 1.5505388                      | 38,850   | 293,028  | (155,660)  | 17,851   | 45,184  |
| Rich County                    | 9,792                  | 0.0659631                      | 1,653  | 12,466   | (6,622)  | 759  | 1,922   |
| Richfield City                 | 13,686                 | 0.0921997                      | 2,310  | 17,424   | (9,256)  | 1,061  | 2,687   |
| Riverdale City                 | 34,754                 | 0.2341277                      | 5,866  | 44,246   | (23,504)   | 2,696  | 6,823   |
| Roosevelt City                 | 11,186                 | 0.0753564                      | 1,888  | 14,241   | (7,565)  | 868  | 2,196   |
| Roy City                       | 128,629                | 0.8665285                      | 21,711   | 163,760  | (86,992)   | 9,976  | 25,252  |
| Salem City                     | 5,097                  | 0.0343344                      | 860  | 6,489  | (3,447)  | 395  | 1,001   |
| Salina City                    | 926                    | 0.0062348                      | 156  | 1,178  | (626)  | 72   | 182   |
| Salt Lake City Corp            | 769,652                | 5.1848956                      | 129,911  | 979,864  | (520,517)  | 59,694   | 151,093   |
| Salt Lake County               | 991,040                | 6.6763113                      | 167,279  | 1,261,718  | (670,241)  | 76,865   | 194,555   |
| San Juan County                | 46,794                 | 0.3152344                      | 7,898  | 59,574   | (31,647)   | 3,629  | 9,186   |
| Sandy City                     | 302,268                | 2.0362817                      | 51,020   | 384,825  | (204,424)  | 23,444   | 59,339  |
| Sanpete County                 | 41,551                 | 0.2799141                      | 7,013  | 52,899   | (28,101)   | 3,223  | 8,157   |
| Santaquin City                 | 13,356                 | 0.0899718                      | 2,254  | 17,003   | (9,032)  | 1,036  | 2,622   |
| Sevier County                  | 53,248                 | 0.3587112                      | 8,988  | 67,791   | (36,011)   | 4,130  | 10,453  |
| Smithfield City Corp           | 35,574                 | 0.2396497                      | 6,005  | 45,290   | (24,059)   | 2,759  | 6,984   |
| So Davis Metro Fire Agency     | 177,785                | 1.1976765                      | 30,009   | 226,342  | (120,236)  | 13,789   | 34,902  |
| South Ogden City               | 50,624                 | 0.3410389                      | 8,545  | 64,451   | (34,237)   | 3,926  | 9,938   |
| Southern Utah University       | 4,129                  | 0.0278155                      | 697  | 5,257  | (2,792)  | 320  | 811   |
| Spanish Fork City              | 53,080                 | 0.3575857                      | 8,960  | 67,578   | (35,898)   | 4,117  | 10,420  |
| Springville City               | 69,327                 | 0.4670312                      | 11,702   | 88,262   | (46,886)   | 5,377  | 13,610  |
| State of Utah                  | 3,572,919              | 24.0695883                     | 603,078  | 4,548,775  | (2,416,369)  | 277,116  | 701,415   |
| Summit County                  | 76,575                 | 0.5158581                      | 12,925   | 97,489   | (51,787)   | 5,939  | 15,033  |
| Sunset City                    | 11,298                 | 0.0761079                      | 1,907  | 14,383   | (7,641)  | 876  | 2,218   |
| Syracuse City Corp             | 47,737                 | 0.3215853                      | 8,058  | 60,775   | (32,284)   | 3,702  | 9,371   |
| Tooele City                    | 101,646                | 0.6847533                      | 17,157   | 129,408  | (68,743)   | 7,884  | 19,954  |
| Tooele County                  | 81,589                 | 0.5496396                      | 13,772   | 103,873  | (55,179)   | 6,328  | 16,017  |
| Town of Brian Head             | 4,468                  | 0.0300984                      | 754  | 5,688  | (3,022)  | 347  | 877   |
| Tremonton City                 | 13,421                 | 0.0904154                      | 2,265  | 17,087   | (9,077)  | 1,041  | 2,635   |
| Uintah County                  | 139,033                | 0.9366188                      | 23,468   | 177,006  | (94,028)   | 10,783   | 27,294  |
| Unified Fire Authority         | 266,015                | 1.7920577                      | 44,901   | 338,671  | (179,906)  | 20,632   | 52,222  |
| Unified Police Department      | 319,352                | 2.1513669                      | 53,904   | 406,575  | (215,978)  | 24,769   | 62,693  |
| University of Utah             | 53,406                 | 0.3597768                      | 9,014  | 67,992   | (36,118)   | 4,142  | 10,484  |
| Utah County                    | 249,288                | 1.6793698                      | 42,078   | 317,375  | (168,594)  | 19,335   | 48,939  |
| Utah State University          | 7,508                  | 0.0505758                      | 1,267  | 9,558  | (5,077)  | 582  | 1,474   |
| Vernal City                    | 13,093                 | 0.0882044                      | 2,210  | 16,669   | (8,855)  | 1,016  | 2,570   |
| Wasatch County                 | 61,207                 | 0.4123328                      | 10,331   | 77,924   | (41,394)   | 4,747  | 12,016  |
| Wasatch County Fire District   | 45,411                 | 0.3059206                      | 7,665  | 57,814   | (30,712)   | 3,522  | 8,915   |
| Washington City                | 74,445                 | 0.5015148                      | 12,566   | 94,778   | (50,348)   | 5,774  | 14,615  |

Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |                        |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|------------------------|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Resources | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions |                        | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|                                |   |                                      |  |  |                        |   |                                     |   | Proportionate Share of  | Proportionate Share of |  |
| 3,001                          | 2,664   | 10,782                               | 4  | 1,445  | 116                    | —   | 1,565                               | 18,284  | 168   | —                      | 18,452   |
| 13,571                         | 8,074   | 44,789                               | 19   | 6,536  | 523                    | —   | 7,078                               | 82,690  | 493   | —                      | 83,183   |
| 699                            | 960   | 2,852                                | 1  | 337  | 27                     | 39  | 404                                 | 4,261   | 57  | —                      | 4,318  |
| 2,714                          | 2,829   | 10,172                               | 4  | 1,307  | 105                    | 1,285   | 2,701                               | 16,537  | 88  | —                      | 16,625   |
| 35,233                         | 26,760  | 122,081                              | 48   | 16,970   | 1,359                  | —   | 18,377                              | 214,686   | 1,668   | —                      | 216,354  |
| 1,969                          | 2,387   | 7,714                                | 3  | 948  | 76                     | 366   | 1,393                               | 11,999  | 134   | —                      | 12,133   |
| 2,769                          | 1,870   | 9,363                                | 4  | 1,334  | 107                    | 160   | 1,605                               | 16,875  | 105   | —                      | 16,980   |
| 6,658                          | 2,887   | 20,900                               | 9  | 3,207  | 257                    | 688   | 4,161                               | 40,571  | 128   | —                      | 40,699   |
| 807                            | 1,474   | 3,658                                | 1  | 389  | 31                     | 761   | 1,182                               | 4,920   | 51  | —                      | 4,971  |
| 5,050                          | 5,265   | 18,927                               | 7  | 2,432  | 195                    | —   | 2,634                               | 30,771  | 334   | —                      | 31,105   |
| 1,633                          | 1,642   | 6,060                                | 2  | 786  | 63                     | 1,979   | 2,830                               | 9,948   | (28)  | —                      | 9,920  |
| 7,604                          | 5,708   | 26,281                               | 10   | 3,663  | 293                    | —   | 3,966                               | 46,334  | 353   | —                      | 46,687   |
| 65,268                         | 32,566  | 209,143                              | 89   | 31,436   | 2,517                  | —   | 34,042                              | 397,693   | 2,054   | —                      | 399,747  |
| 3,659                          | 11,822  | 21,721                               | 5  | 1,762  | 141                    | —   | 1,908                               | 22,296  | 738   | —                      | 23,034   |
| 20,325                         | 15,982  | 70,971                               | 28   | 9,790  | 784                    | —   | 10,602                              | 123,848   | 1,015   | —                      | 124,863  |
| 1,293                          | 1,515   | 5,014                                | 2  | 623  | 50                     | 346   | 1,021                               | 7,880   | 74  | —                      | 7,954  |
| 6,130                          | 3,025   | 19,608                               | 8  | 2,952  | 236                    | 594   | 3,790                               | 37,350  | 141   | —                      | 37,491   |
| 1,520                          | 1,128   | 5,240                                | 2  | 732  | 59                     | 915   | 1,708                               | 9,261   | 16  | —                      | 9,277  |
| 12,054                         | 2,741   | 35,351                               | 17   | 5,806  | 465                    | 3,654   | 9,942                               | 73,446  | (81)  | —                      | 73,365   |
| 928                            | 1,097   | 3,607                                | 1  | 447  | 36                     | 394   | 878                                 | 5,654   | 41  | —                      | 5,695  |
| 2,849                          | 2,206   | 9,914                                | 4  | 1,372  | 110                    | 1,062   | 2,548                               | 17,361  | 64  | —                      | 17,425   |
| 36,962                         | 16,149  | 116,146                              | 51   | 17,803   | 1,425                  | —   | 19,279                              | 225,219   | 982   | —                      | 226,201  |
| 1,572                          | 1,159   | 5,412                                | 2  | 757  | 61                     | 238   | 1,058                               | 9,581   | 61  | —                      | 9,642  |
| 2,198                          | 1,534   | 7,480                                | 3  | 1,059  | 85                     | 627   | 1,774                               | 13,392  | 51  | —                      | 13,443   |
| 5,581                          | 1,241   | 16,341                               | 8  | 2,688  | 215                    | 2,078   | 4,989                               | 34,008  | (54)  | —                      | 33,954   |
| 1,796                          | 3,019   | 7,879                                | 2  | 865  | 69                     | 156   | 1,092                               | 10,946  | 178   | —                      | 11,124   |
| 20,656                         | 16,078  | 71,962                               | 28   | 9,949  | 796                    | —   | 10,773                              | 125,865   | 1,003   | —                      | 126,868  |
| 818                            | 2,687   | 4,901                                | 1  | 394  | 32                     | 1,139   | 1,566                               | 4,987   | 98  | —                      | 5,085  |
| 149                            | 895   | 1,298                                | —  | 72   | 6                      | 525   | 603                                 | 906   | 19  | —                      | 925  |
| 123,598                        | 55,098  | 389,483                              | 169  | 59,531   | 4,766                  | —   | 64,466                              | 753,116   | 3,405   | —                      | 756,521  |
| 159,150                        | 133,117   | 563,687                              | 218  | 76,654   | 6,137                  | —   | 83,009                              | 969,747   | 8,492   | —                      | 978,239  |
| 7,515                          | 4,328   | 24,658                               | 10   | 3,619  | 290                    | —   | 3,919                               | 45,788  | 265   | —                      | 46,053   |
| 48,541                         | 24,308  | 155,632                              | 67   | 23,380   | 1,872                  | 2,472   | 27,791                              | 295,774   | 1,318   | —                      | 297,092  |
| 6,673                          | 1,955   | 20,008                               | 9  | 3,214  | 257                    | 523   | 4,003                               | 40,658  | 93  | —                      | 40,751   |
| 2,145                          | —   | 5,803                                | 3  | 1,033  | 83                     | 1,525   | 2,644                               | 13,069  | (93)  | —                      | 12,976   |
| 8,551                          | 5,287   | 28,421                               | 12   | 4,119  | 330                    | —   | 4,461                               | 52,104  | 341   | —                      | 52,445   |
| 5,713                          | 552   | 16,008                               | 8  | 2,752  | 220                    | 2,575   | 5,555                               | 34,810  | (135)   | —                      | 34,675   |
| 28,550                         | 10,844  | 88,085                               | 39   | 13,751   | 1,101                  | 6,059   | 20,950                              | 173,965   | 349   | —                      | 174,314  |
| 8,130                          | 3,377   | 25,371                               | 11   | 3,916  | 313                    | —   | 4,240                               | 49,537  | 207   | —                      | 49,744   |
| 663                            | 276   | 2,070                                | 1  | 319  | 26                     | 526   | 872                                 | 4,040   | (17)  | —                      | 4,023  |
| 8,524                          | 2,574   | 25,635                               | 12   | 4,106  | 329                    | 1,727   | 6,174                               | 51,940  | 49  | —                      | 51,989   |
| 11,133                         | 11,309  | 41,429                               | 15   | 5,362  | 429                    | —   | 5,806                               | 67,837  | 717   | —                      | 68,554   |
| 573,774                        | 370,169   | 1,922,474                            | 787  | 276,357  | 22,121                 | —   | 299,265                             | 3,496,152   | 22,979  | —                      | 3,519,131  |
| 12,297                         | 7,929   | 41,198                               | 17   | 5,923  | 474                    | 3,200   | 9,614                               | 74,929  | 265   | —                      | 75,194   |
| 1,814                          | 2,137   | 7,045                                | 2  | 874  | 70                     | 55  | 1,001                               | 11,055  | 129   | —                      | 11,184   |
| 7,666                          | 8,109   | 28,848                               | 11   | 3,692  | 296                    | —   | 3,999                               | 46,711  | 509   | —                      | 47,220   |
| 16,323                         | 7,819   | 51,980                               | 22   | 7,862  | 629                    | 612   | 9,125                               | 99,462  | 447   | —                      | 99,909   |
| 13,102                         | 5,407   | 40,854                               | 18   | 6,311  | 505                    | 2,943   | 9,777                               | 79,836  | 131   | —                      | 79,967   |
| 717                            | 330   | 2,271                                | 1  | 346  | 28                     | 569   | 944                                 | 4,372   | (17)  | —                      | 4,355  |
| 2,155                          | 734   | 6,565                                | 3  | 1,038  | 83                     | 600   | 1,724                               | 13,133  | 14  | —                      | 13,147   |
| 22,327                         | 22,873  | 83,277                               | 31   | 10,754   | 861                    | —   | 11,646                              | 136,046   | 1,442   | —                      | 137,488  |
| 42,719                         | 44,705  | 160,278                              | 59   | 20,576   | 1,647                  | —   | 22,282                              | 260,300   | 2,759   | —                      | 263,059  |
| 51,284                         | 10,239  | 148,985                              | 70   | 24,701   | 1,977                  | 3,029   | 29,777                              | 312,490   | 481   | —                      | 312,971  |
| 8,576                          | 4,818   | 28,020                               | 12   | 4,131  | 331                    | —   | 4,474                               | 52,258  | 301   | —                      | 52,559   |
| 40,033                         | 8,612   | 116,919                              | 55   | 19,282   | 1,544                  | 2,382   | 23,263                              | 243,932   | 380   | —                      | 244,312  |
| 1,206                          | —   | 3,262                                | 2  | 581  | 46                     | 824   | 1,453                               | 7,346   | (51)  | —                      | 7,295  |
| 2,103                          | 1,021   | 6,710                                | 3  | 1,013  | 81                     | 852   | 1,949                               | 12,812  | 2   | —                      | 12,814   |
| 9,829                          | 2,672   | 29,264                               | 13   | 4,734  | 379                    | 953   | 6,079                               | 59,892  | 116   | —                      | 60,008   |
| 7,293                          | 1,156   | 20,886                               | 10   | 3,512  | 281                    | 2,779   | 6,582                               | 44,436  | (113)   | —                      | 44,323   |
| 11,955                         | 7,895   | 40,239                               | 16   | 5,758  | 461                    | —   | 6,235                               | 72,846  | 511   | —                      | 73,357   |

Utah Retirement Systems

Tier 2 Public Safety and Firefighter Contributory Retirement System

Schedule of Employer Allocations and Pension Amounts (Concluded)

at December 31, 2018

| Participating Employer  | Employer Contributions | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments |
|---|------------------------|--------------------------------|--|--|--|--|---|
| Washington County   | \$ 193,405             | 1.3029052%                     | \$ 32,645                                      | 246,229  | (130,800)  | 15,000   | 37,968  |
| Wayne County  | 3,540                  | 0.0238498                      | 598  | 4,507  | (2,394)  | 275  | 695   |
| Weber County Corp   | 253,441                | 1.7073504                      | 42,779   | 322,662  | (171,403)  | 19,657   | 49,754  |
| Weber Fire District   | 169,205                | 1.1398782                      | 28,560   | 215,419  | (114,433)  | 13,123   | 33,217  |
| Wellington City   | 2,219                  | 0.0149460                      | 374  | 2,825  | (1,500)  | 172  | 436   |
| West Bountiful City   | 29,333                 | 0.1976089                      | 4,951  | 37,345   | (19,838)   | 2,275  | 5,759   |
| West Valley City  | 542,174                | 3.6524471                      | 91,514   | 690,255  | (366,673)  | 42,051   | 106,436   |
| Woods Cross City  | 24,901                 | 0.1677520                      | 4,203  | 31,702   | (16,841)   | 1,931  | 4,888   |
| <b>Grand Total</b>  | <b>\$ 14,844,124</b>   | <b>100.0000000%</b>            | <b>\$ 2,505,563</b>                            | <b>18,898,433</b>                                    | <b>(10,039,094)</b>                                  | <b>1,151,305</b>                                   | <b>2,914,107</b>  |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                        |                                |  |  |  |  |   |
| Laverkin City   | \$ —                   | 0.0000000%                     | \$ —   | —  | —  | —  | —   |
| Springdale Town   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Garden City Fire District   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| Stockton Town   | —                      | 0.0000000                      | —  | —  | —  | —  | —   |
| <b>Grand Total</b>  | <b>\$ 14,844,124</b>   | <b>100.0000000%</b>            | <b>\$ 2,505,563</b>                            | <b>18,898,433</b>                                    | <b>(10,039,094)</b>                                  | <b>1,151,305</b>                                   | <b>2,914,107</b>  |

Columns may not add to total due to rounding.

Utah Retirement Systems

Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Retirement System  | Employer Contributions | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Net Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--|------------------------|--|--|--|--|---|------------------------|
| Noncontributory Retirement System                                  | \$ 854,876,397         | 4,456,889,519                                  | 8,196,650,737  | 1,331,117,689  | 29,290,489   | 1,704,157,479   | 477,071,477            |
| Contributory Retirement System                                     | 6,141,582              | 111,580,675                                    | 234,936,442  | 6,843,505  | —  | 86,014,672  | —                      |
| Public Safety Retirement System                                    | 148,083,004            | 730,176,210                                    | 1,332,728,257  | 238,045,186  | 32,822,388   | 241,703,420   | 72,934,577             |
| Firefighters Retirement System                                     | 7,029,071              | 53,399,929                                     | 230,327,132  | (91,666,500)   | 2,744,371  | 83,478,002  | 33,518,150             |
| Judges Retirement System   | 8,091,313              | 48,638,543                                     | 75,935,463   | 25,403,548   | 6,756,482  | 13,427,925  | 7,135,437              |
| Utah Governors and Legislators Retirement Plan                     | 391,883                | 2,640,357                                      | 3,912,507  | 1,558,808  | —  | 754,302   | —                      |
| Tier 2 Public Employees Contributory Retirement System             | 101,883,279            | 42,827,859                                     | 171,576,629  | (56,534,006)   | 300,586  | 23,481,199  | 10,734,536             |
| Tier 2 Public Safety & Firefighters Contributory Retirement System | 14,844,124             | 2,505,563                                      | 18,898,433   | (10,039,094)   | 1,151,305  | 2,914,107   | 2,383,807              |
| <b>Grand Total</b>   | <b>\$1,141,340,651</b> | <b>5,448,658,655</b>                           | <b>10,264,965,601</b>                                | <b>1,444,729,135</b>                                 | <b>73,065,621</b>                                      | <b>2,155,931,106</b>  | <b>603,777,984</b>     |

Columns may not add to total due to rounding.

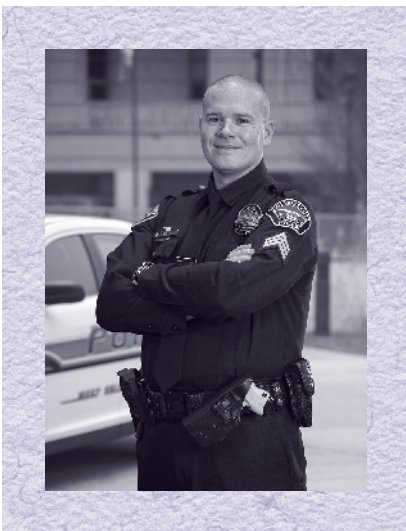
Utah Retirement Systems

| Deferred Outflows of Resources |   |                                      | Deferred Inflows of Resources                      |  |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|--------------------------------|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|
| Changes of Assumptions         | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
| 31,059                         | 13,141  | 97,168                               | 43   | 14,959   | 1,198                  | 2,491   | 18,691                              | 189,250   | 640   | —  | 189,890  |
| 569                            | 757   | 2,296                                | 1  | 274  | 22                     | 462   | 759                                 | 3,464   | 16  | —  | 3,480  |
| 40,700                         | 25,387  | 135,498                              | 56   | 19,603   | 1,569                  | 4,633   | 25,861                              | 247,996   | 1,245   | —  | 249,241  |
| 27,172                         | 7,547   | 81,059                               | 37   | 13,088   | 1,048                  | 3,099   | 17,272                              | 165,570   | 282   | —  | 165,852  |
| 356                            | 772   | 1,736                                | —  | 172  | 14                     | 553   | 739                                 | 2,171   | 10  | —  | 2,181  |
| 4,711                          | 2,760   | 15,505                               | 6  | 2,269  | 182                    | 1,007   | 3,464                               | 28,703  | 100   | —  | 28,803   |
| 87,067                         | 23,068  | 258,622                              | 119  | 41,936   | 3,357                  | 3,073   | 48,485                              | 530,525   | 1,216   | —  | 531,741  |
| 3,999                          | 3,117   | 13,935                               | 5  | 1,926  | 154                    | 2,555   | 4,640                               | 24,366  | 21  | —  | 24,387   |
| 2,383,807                      | 1,368,200   | 7,817,419                            | 3,266  | 1,148,154  | 91,915                 | 139,444   | 1,382,779                           | 14,525,195  | 76,488  | —  | 14,601,683   |
| —                              | 898   | 898                                  | —  | —  | —                      | 468   | 468                                 | —   | 24  | —  | 24   |
| —                              | 644   | 644                                  | —  | —  | —                      | —   | —                                   | —   | 42  | —  | 42   |
| —                              | 1,072   | 1,072                                | —  | —  | —                      | —   | —                                   | —   | 74  | —  | 74   |
| —                              | 1,148   | 1,148                                | —  | —  | —                      | 592   | 592                                 | —   | 33  | —  | 33   |
| 2,383,807                      | 1,371,962   | 7,821,181                            | 3,266  | 1,148,154  | 91,915                 | 140,504   | 1,383,839                           | 14,525,195  | 76,661  | —  | 14,601,856   |

| Deferred Outflows of Resources  |                                      |  | Deferred Inflows of Resources  |                        |   |                                     |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |  |  |  |
|---|--------------------------------------|--|--|------------------------|---|-------------------------------------|---|---|--|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Nonemployer Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |  |
| 57,903,737  | 2,268,423,182                        | 65,937,142   | 931,935,803  | —                      | 73,695,216  | 1,071,568,161                       | 1,041,344,744   | (9,733,847)   | —  | 1,031,610,897  |  |
| —   | 86,014,672                           | —  | 49,269,424   | —                      | —   | 49,269,424                          | 28,392,131  | 114,351   | —  | 28,506,482   |  |
| 7,381,334   | 354,841,719                          | 20,353,136   | 131,487,049  | 1,208,480              | 6,474,667   | 159,523,332                         | 199,431,429   | 678,242   | —  | 200,109,671  |  |
| 532,068   | 120,272,591                          | 17,854,860   | 45,709,405   | 5,762,595              | 542,726   | 69,869,586                          | 22,423,028  | (4,401)   | (8,747,688)                                      | 13,670,939   |  |
| —   | 27,319,844                           | —  | 7,324,361  | —                      | —   | 7,324,361                           | 12,356,757  | —   | (1,518,442)                                      | 10,838,315   |  |
| —   | 754,302                              | —  | 433,138  | —                      | —   | 433,138                             | 506,329   | —   | —  | 506,329  |  |
| 13,021,087  | 47,537,408                           | 8,851,587  | 9,534,546  | 769,448                | 136,097   | 19,291,678                          | 109,316,174   | 1,362,677   | —  | 110,678,851  |  |
| 1,371,962   | 7,821,181                            | 3,266  | 1,148,154  | 91,915                 | 140,504   | 1,383,839                           | 14,525,195  | 76,661  | —  | 14,601,856   |  |
| 80,210,188  | 2,912,984,899                        | 112,999,991  | 1,176,841,880  | 7,832,438              | 80,989,209  | 1,378,663,518                       | 1,428,295,787   | (7,506,316)   | (10,266,130)                                     | 1,410,523,341  |  |

# Notes to the Public Safety System Schedule of Changes in Fiduciary Net Position—Pension Trust Fund by Division and Schedules or Employer Allocations and Pension Amounts

December 31, 2018



## Note 1

### Description of Systems

A brief description of the Utah Retirement Systems (Systems) follows. For a more complete description of plan provisions, membership and benefit statistics, see the Systems Highlights on pages 14 through 30 and Summaries of Plan Provisions on pages 178 through 195.

#### A) General Information and Reporting Entity

**General** — The Utah Retirement Systems are comprised of the following pension trust funds:

- i) the **Public Employees Noncontributory Retirement System (Noncontributory System)**; the **Public Employees Contributory Retirement System (Contributory System)**; and the **Firefighters Retirement System** are multiple-employer, cost-sharing, public employee retirement systems;
- ii) the **Public Safety Retirement System** is a mixed agent and cost-sharing, multiple-employer retirement system;
- iii) the **Judges Retirement System** and the **Utah Governors and Legislators Retirement Plan** are single-employer service-employee retirement systems; and

- iv) the **Tier 2 Public Employees Contributory Retirement System** and the **Tier 2 Public Safety and Firefighter Contributory Retirement System** are multiple-employer, cost-sharing public employee retirement systems.

These Systems cover employees of the State of Utah and participating local government and public education entities.

**Reporting Entity** — These Schedules of Employer Allocations and Pension amounts cover all of the foregoing retirement systems administered by the Utah State Retirement Board (Board), the sole governing body for these Systems.

The Systems are established and governed by the respective sections of Title 49 of the Utah Code Annotated 1953, as amended. The Systems' defined benefit plans are amended statutorily by the State Legislature. The Utah State Retirement Office Act in Title 49 provides for the administration of the Systems under the direction of the Board, whose members are appointed by the Governor.



Notes to the Schedules of Employer Allocations and Pension Amounts (Continued)

December 31, 2018

**SUMMARY OF BENEFITS BY SYSTEM**

|   | Noncontributory System  | Contributory System  | Public Safety System  | Fire-fighters System | Judges System   | Tier 2 Public Employees System   | Tier 2 Public Safety and Firefighter System                                |
|---|---|--|---|----------------------|---|--|--|
| Final average salary is                                   | Highest 3 years   | Highest 5 years  | Highest 3 years   |                      | Highest 2 years   | Highest 5 years  | Highest 5 years  |
| Years of service required and/or age eligible for benefit | 30 years any age<br>25 years any age*<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 30 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 20 years any age<br>10 years age 60<br>4 years age 65       |                      | 25 years any age<br>20 years age 55*<br>10 years age 62<br>6 years age 70 | 35 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 | 25 years any age<br>20 years age 60*<br>10 years age 62*<br>4 years age 65 |
| Benefit percent per year of service**                     | 2.0% per year all years   | 1.25% per year to June 1975<br>2.0% per year July 1975 to present          | 2.5% per year up to 20 years<br>2.0% per year over 20 years |                      | 5.0% first 10 years<br>2.25% second 10 years<br>1.0% over 20 years        | 1.5% per year all years  | 1.5% per year all years  |

Note: The Utah Governors and Legislators Retirement Plan benefits are explained in the second paragraph of section B) below.

\*With actuarial reductions.

\*\*For members and retirees in the systems, prior to January 1, 1989, there may be a 3% benefit enhancement.

The Systems are fiduciary funds defined as pension (and other employee benefit) trust funds. Utah Retirement Systems is a component unit of the State of Utah.

**B) Retirement and Death Benefits**

Retirement Systems' benefits are specified by the statute in Note 1(A) and are defined benefit plans wherein benefits are based on age and/or years of service and highest average salary. Various plan options within the Systems may be selected by retiring members. Some options require actuarial reductions based on attained age, age of spouse, and similar actuarial factors. A brief summary of eligibility and benefits of the various Systems is shown in the table above.

The Utah Governors and Legislators Retirement Plan provides the following benefits. Former governors at age 65 receive \$1,400 per month per term. Legislators receive a benefit at age 65 with four or more years of service at the rate of \$30.40 per month per year of service. Retirement at age 62 with 10 or more years of service will receive an actuarial reduction. Both the governors'

**CONTRIBUTION RATES**

December 31, 2018

| System                               | Contribution Rates as a Percent of Covered Payroll |              |        |
|--------------------------------------|--|--------------|--------|
|                                      | Member   | Employer     | Other  |
| Noncontributory                      | —  | 18.47-22.19% | —      |
| Contributory                         | 6.00%  | 14.46-17.70  | —      |
| Public Safety:                       |  |              |        |
| Noncontributory                      | —  | 32.20-50.38  | —      |
| Contributory                         | 10.50-12.29  | 22.79-28.98  | —      |
| Firefighters:                        |  |              |        |
| Division A                           | 15.05  | 4.61         | 11.06% |
| Division B                           | 16.71  | 7.24         | 11.06  |
| Judges:                              |  |              |        |
| Noncontributory                      | —  | 43.68        | 8.23   |
| Governors and Legislators            | —  | \$ 384,103   | —      |
| Tier 2 Public Employees              | —  | 15.54-18.87% | —      |
| Tier 2 Public Safety and Firefighter | —  | 11.34-38.23  | —      |

and legislators' benefits are adjusted based on the CPI limited to 4% of the base benefit per year.

Death benefits for active and retired employees are in accordance with retirement statutes. Upon termination of employment, members of the Systems may leave their retirement account intact for future benefits based on vesting qualification or withdraw the accumulated funds in their individual member account and forfeit service credits and rights to future benefits upon which the contributions were based.

**C) Contributions**

As a condition of participation in the Defined Benefit Systems, employers and/or employees are required to contribute certain percentages of salaries and wages as authorized by statute and specified by the Board.

Employee contributions may be paid in part or in whole by the employer. Contributions in some Systems are also augmented by fees or insurance premium taxes.

## Notes to the Schedules of Employer Allocations and Pension Amounts *(Continued)*

December 31, 2018

Employee (member) contributions are placed into member accounts, and in Systems where it is authorized, interest is credited to member accounts. Upon termination of employment, a member may withdraw his or her account balance including interest that has been credited. Upon withdrawal a member forfeits the service credit that corresponds to the member contributions withdrawn.

The noncontributory retirement systems have no required member contributions flowing into them. However, where members had a balance transferred in or purchased service credit in the system, these balances and on-going interest, where authorized, are credited to individual member accounts that may be withdrawn upon the termination of employment.

### D) Covered Employees

#### The Public Employees Noncontributory Retirement System (Noncontributory System)

was established on July 1, 1986, and is comprised of two divisions, the State and School division and the Local Government division. These divisions are not separate plans. All eligible employees of the State and School entities hired subsequent to that date are automatically members of the Noncontributory System until July 1, 2011, when Tier 2 came into effect. Local government entities had the option of adopting the new System or remaining with the Contributory System.

All Contributory System members whose employers adopted the Noncontributory System were given the opportunity to transfer to the new System during limited window periods. All eligible new hires subsequent to adoption of the noncontributory plans are automatically members of that plan.

The **Public Employees Contributory Retirement System (Contributory System)** includes eligible public employees of the State of Utah and its political subdivisions including public education employees of those entities covered by the System. The System is comprised of two divisions, the State and School division and the Local Government division. These divisions are not separate plans. Members of this System are those who did not elect to transfer to the Public Employees Noncontributory Retirement System during the period when they were eligible to transfer or whose employers are not participants in the Noncontributory System.

The **Public Safety Retirement System** includes eligible State and local government employees directly involved in law enforcement (e.g., game wardens, prison guards, police officers, and highway patrol officers) and is comprised of eight divisions, the State of Utah, Division A with Social Security, Salt Lake City, Ogden, Provo, Logan, Bountiful, and Division B without Social Security. These divisions are not separate plans. The Public Safety System consists of

both contributory and noncontributory divisions. The noncontributory divisions were authorized by the Legislature effective July 1, 1989.

The **Firefighters Retirement System** includes eligible State and local government employees directly involved in fire fighting and is comprised of two divisions, Division A with Social Security and Division B without Social Security. These divisions are not separate plans.

The **Judges Retirement System** includes justices and judges of the court as authorized by state statutes.

The **Utah Governors and Legislators Retirement Plan** includes only governors and legislators of the State.

The **Tier 2 Public Employees Contributory Retirement System** includes eligible public employees entering into the Utah Retirement Systems on or after July 1, 2011, when Tier 2 came into effect.

The **Tier 2 Public Safety and Firefighter Contributory Retirement System** includes eligible public safety and firefighters entering into the Utah Retirement Systems on or after July 1, 2011, when Tier 2 came into effect.

As of December 31, 2018, participating members by System are included in the table below.

### PARTICIPATING MEMBERSHIP BY SYSTEM

|                             | Noncontributory System | Contributory System | Public Safety System | Firefighters System | Judges System | Utah Governors and Legislators Retirement Plan | Tier 2 Public Employees System | Tier 2 Public Safety and Firefighter System |
|-----------------------------|------------------------|---------------------|----------------------|---------------------|---------------|--|--------------------------------|---|
| Number of participating:    |                        |                     |                      |                     |               |  |                                |   |
| Employers                   | 463                    | 158                 | 134                  | 62                  | 1             | 1  | 476                            | 152   |
| Members:                    |                        |                     |                      |                     |               |  |                                |   |
| Active                      | 56,299                 | 519                 | 5,305                | 1,540               | 116           | 52   | 30,291                         | 3,301                                       |
| Terminated vested           | 46,756                 | 1,186               | 4,921                | 440                 | 8             | 85   | 1,971                          | 130   |
| Retirees and beneficiaries: |                        |                     |                      |                     |               |  |                                |   |
| Service benefits            | 51,547                 | 3,306               | 5,202                | 1,232               | 125           | 173  | 64                             | —   |
| Beneficiary benefits        | 4,857                  | 611                 | 765                  | 232                 | 30            | 77   | —                              | —   |

**Notes to the Schedules of Employer Allocations and Pension Amounts** (Continued)

December 31, 2018

**Note 2**

**Basis of Presentation**

The Schedules of Employer Allocations and Pension Amounts for the Noncontributory Retirement System, Contributory Retirement System, Public Safety Retirement System, Firefighters Retirement System, Judges Retirement System, Utah Governors and Legislators Retirement Plan, Tier 2 Public Employees Contributory Retirement System and the Tier 2 Public Safety and Firefighter Retirement System present amounts that are considered elements of the financial statements of the Systems or of its participating employers. Accordingly, they do not purport to be a complete presentation of the financial position or changes in financial position of the Systems or of its participating employers. The amounts presented in the Schedules were prepared in accordance with accounting principles generally accepted in the United State of America. Such preparation requires management of the Systems to make a number of estimates and assumptions related to the reported amounts. Due to the inherent nature of these estimates, actual results could differ from those estimates. The following are the significant accounting policies followed by the Systems:



**A) Allocation Percentage Methodology**

Each employer's proportion is equal to the ratio of the employer's actual contributions to the Systems during the plan year over the total of all employer contributions to the Systems during the plan year. This allocation method is a reasonable representation of each employer's proportionate share of the projected long-term contribution effort to the System and satisfies applicable requirements within Governmental Accounting Standards Board Statement Number 68 (GASB No. 68). The change in proportion each year is reflected in deferred outflows and deferred inflows of resources.

**B) Collective Net Pension Liability of Participating Employers and Actuarial Information**

The Systems used updated procedures to roll forward the total pension liability from January 1, 2018, to December 31, 2018. The components of the current-year pension liability/ (asset) of the employers as of December 31, 2018, were as shown in the schedule on page 298.

**C) Actuarial Assumptions**

Actuarial valuation of the ongoing Systems involve estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

## Notes to the Schedules of Employer Allocations and Pension Amounts *(Continued)*

December 31, 2018

The last experience study was performed in 2017 and the next experience study is scheduled to be conducted in 2020. The Schedule of Employers' Net Pension Liability presents multi-year trend information about whether the plan fiduciary net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the Required

Supplementary Information section. The total pension liability as of December 31, 2018, is based on the results of an actuarial valuation date of January 1, 2018, and rolled-forward using accepted actuarial procedures.

A summary of the actuarial assumptions, as of the latest actuarial valuation, is as shown in the table on page 299.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates

### NET PENSION LIABILITY BY DIVISION

Year Ended December 31, 2018

| System   | (1)<br>Total<br>Pension<br>Liability | (2)<br>Plan<br>Fiduciary<br>Net Position | (3)<br>Employers<br>Net Pension<br>Liability/<br>(Asset) | (4)<br>Plan<br>Fiduciary Net<br>Position as a<br>Percentage<br>of the Total<br>Pension<br>Liability | (5)<br>Projected<br>Covered<br>Payroll | (6)<br>Net Pension<br>Liability/<br>(Asset) as a<br>Percentage<br>of Covered<br>Payroll |
|--|--------------------------------------|--|--|---|--|---|
| <b>Noncontributory Retirement System</b>               |                                      |  |  |   |  |   |
| Local Government                                       | \$ 5,661,492,405                     | 4,925,120,031                            | 736,372,374  | 87.0%   | \$ 804,890,981                         | 91.5%   |
| State and School                                       | 23,461,454,081                       | 19,740,936,936                           | 3,720,517,145  | 84.1  | 2,525,657,176                          | 147.3   |
| <b>Total</b>   | <b>29,122,946,486</b>                | <b>24,666,056,967</b>                    | <b>4,456,889,519</b>                                     | <b>84.7</b>   | <b>3,330,548,157</b>                   | <b>133.8</b>  |
| <b>Contributory Retirement System</b>                  |                                      |  |  |   |  |   |
| Local Government                                       | 459,222,849                          | 418,642,569                              | 40,580,280   | 91.2  | 18,276,267                             | 222.0   |
| State and School                                       | 824,785,364                          | 753,784,969                              | 71,000,395   | 91.4  | 21,002,798                             | 338.1   |
| <b>Total</b>   | <b>1,284,008,213</b>                 | <b>1,172,427,538</b>                     | <b>111,580,675</b>                                       | <b>91.3</b>   | <b>39,279,065</b>                      | <b>284.1</b>  |
| <b>Public Safety Retirement System</b>                 |                                      |  |  |   |  |   |
| State of Utah  | 1,423,493,301                        | 1,184,118,188                            | 239,375,113  | 83.2  | 107,406,875                            | 222.9   |
| Other Division A (with Social Security)                | 1,679,707,073                        | 1,422,448,570                            | 257,258,503  | 84.7  | 138,269,182                            | 186.1   |
| Salt Lake City   | 392,051,728                          | 289,023,677                              | 103,028,051  | 73.7  | 29,357,367                             | 350.9   |
| Ogden  | 86,132,897                           | 63,869,244                               | 22,263,653   | 74.2  | 4,940,024                              | 450.7   |
| Provo  | 65,904,906                           | 50,793,158                               | 15,111,748   | 77.1  | 4,698,726                              | 321.6   |
| Logan  | 35,456,823                           | 28,646,987                               | 6,809,836  | 80.8  | 2,078,757                              | 327.6   |
| Bountiful  | 27,932,215                           | 20,402,504                               | 7,529,711  | 73.0  | 1,675,338                              | 449.4   |
| Other Division B (without Social Security)             | 547,564,034                          | 468,764,439                              | 78,799,595   | 85.6  | 60,050,030                             | 131.2   |
| <b>Total</b>   | <b>4,258,242,977</b>                 | <b>3,528,066,767</b>                     | <b>730,176,210</b>                                       | <b>82.9</b>   | <b>348,476,299</b>                     | <b>209.5</b>  |
| <b>Firefighters Retirement System</b>                  |                                      |  |  |   |  |   |
| Division A (with Social Security)                      | 229,603,428                          | 216,618,700                              | 12,984,728   | 94.3  | 29,680,466                             | 43.7  |
| Division B (without Social Security)                   | 1,031,688,546                        | 991,273,345                              | 40,415,201   | 96.1  | 83,906,696                             | 48.2  |
| <b>Total</b>   | <b>1,261,291,974</b>                 | <b>1,207,892,045</b>                     | <b>53,399,929</b>  | <b>95.8</b>   | <b>113,587,162</b>                     | <b>47.0</b>   |
| <b>Judges Retirement System</b>                        |                                      |  |  |   |  |   |
| Governors and Legislators Retirement Plan              | 244,206,713                          | 195,568,170                              | 48,638,543   | 80.1  | 18,801,879                             | 258.7   |
| Tier 2 Public Employees Retirement System              | 13,177,511                           | 10,537,154                               | 2,640,357  | 80.0  | 638,820                                | 413.3   |
| Tier 2 Public Safety and Firefighter Retirement System | 467,462,324                          | 424,634,465                              | 42,827,859   | 90.8  | 1,171,542,690                          | 3.7   |
| Tier 2 Public Safety and Firefighter Retirement System | 56,840,023                           | 54,334,460                               | 2,505,563  | 95.6  | 123,438,710                            | 2.0   |
| <b>Grand Total</b>                                     | <b>\$ 36,708,176,221</b>             | <b>31,259,517,566</b>                    | <b>5,448,658,655</b>                                     | <b>85.2%</b>  | <b>\$ 5,146,312,782</b>                | <b>105.9%</b>   |

## Notes to the Schedules of Employer Allocations and Pension Amounts (Continued)

December 31, 2018

### SUMMARY OF ACTUARIAL ASSUMPTIONS

|  | Noncontributory  | Contributory                         | Public Safety                        | Firefighters                         | Judges                               | Governors and Legislators                | Tier 2 Public Employees              | Tier 2 Public Safety and Firefighter |
|--|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|--------------------------------------|--------------------------------------|
| Valuation date   | 1/1/18   | 1/1/18                               | 1/1/18                               | 1/1/18                               | 1/1/18                               | 1/1/18                                   | 1/1/18                               | 1/1/18                               |
| Actuarial cost method  | Entry Age  | Entry Age                            | Entry Age                            | Entry Age                            | Entry Age                            | Entry Age                                | Entry Age                            | Entry Age                            |
| Amortization method  | Level Percent of Payroll   | Level Percent of Payroll             | Level Percent of Payroll             | Level Percent of Payroll             | Level Percent of Payroll             | Level Dollar Amount                      | Level Percent of Payroll             | Level Percent of Payroll             |
| Amortization period  | Open Group<br>20-Year<br>Open Period   | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period | Closed Group<br>16-Year<br>Closed Period | Open Group<br>20-Year<br>Open Period | Open Group<br>20-Year<br>Open Period |
| Actuarial asset valuation method (All Systems under same method) | Based on the total fair value income of investments with the excess or shortfall of actual investment income over or under the expected investment return smoothed over five years. One-fifth of the excess or shortfall is recognized each year for five years. |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Actuarial assumptions:   |  |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Investment rate of return  | 6.95%  | 6.95%                                | 6.95%                                | 6.95%                                | 6.95%                                | 6.95%                                    | 6.95%                                | 6.95%                                |
| Projected salary increases*                                      | 3.25-9.75%   | 3.25-9.75%                           | 3.25-7.25%                           | 3.25-8.75%                           | 3.25%                                | None                                     | 3.25-9.75%                           | 3.25-8.75%                           |
| Inflation rate   | 2.50%  | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                    | 2.50%                                | 2.50%                                |
| Post-retirement cost-of-living adjustment                        | 2.50%  | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                | 2.50%                                    | 2.50%                                | 2.50%                                |
| Mortality: (Non-educators)                                       | Male: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 110% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017.   |                                      |                                      |                                      |                                      |  |                                      |                                      |
| Mortality: (Educators)   | Male: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for males, projected with Scale AA from the year 2017.<br>Female: 90% of 2017 Public Retirees of Utah (PR Utah) Mortality Table for females, projected with Scale AA from the year 2017.     |                                      |                                      |                                      |                                      |  |                                      |                                      |

Note: All post-retirement cost-of-living adjustments are noncompounding and are based on the original benefit except for Judges, which is a compounding benefit. The cost-of-living adjustments are also limited to the actual CPI increase for the year, although unused CPI increases not met may be carried forward to subsequent years.

\*Composed of 2.50% inflation, plus 0.75% productivity increase rate, plus step-rate promotional increases for members with less than 25 years of service.

## Notes to the Schedules of Employer Allocations and Pension Amounts *(Continued)*

December 31, 2018

of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Systems target asset allocation, as of December 31, 2018, are summarized in the top table below.

### D) Discount Rate

The discount rate used to measure the total pension liability was 6.95%. The projection of cash flows used to determine the discount rate assumed contributions from participating

employers will be made based on the actuarially determined rates based on the Board's funding policy, which establishes the contractually required rates under Utah State Code. Based on those assumptions, the Systems' fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

### E) Sensitivity to the Discount Rate

The table to the right presents the current-period net pension liability/(asset) of the employers calculated using the current-period discount rate assumption of 6.95%, as well as what the net pension liability/(asset) would be if it were calculated using a 1.00% point lower (5.95%) or a 1.00% point higher (7.95%) than the current assumption.

### TARGET ALLOCATIONS

| Asset Class                        | Target Asset Allocation | Expected Return Arithmetic Basis |   |
|------------------------------------|-------------------------|----------------------------------|---|
|                                    |                         | Real Return Arithmetic Basis     | Long-term Expected Portfolio Real Rate of Return* |
| Equity securities                  | 40%                     | 6.15%                            | 2.46%   |
| Debt securities                    | 20                      | 0.40                             | 0.08  |
| Real assets                        | 15                      | 5.75                             | 0.86  |
| Private equity                     | 9                       | 9.95                             | 0.89  |
| Absolute return                    | 16                      | 2.85                             | 0.46  |
| Cash and cash equivalents          | 0                       | 0.00                             | 0.00  |
| <b>Totals</b>                      | <b>100%</b>             |                                  | <b>4.75%</b>                                      |
| Inflation                          |                         |                                  | 2.50%   |
| Expected arithmetic nominal return |                         |                                  | 7.25%   |

\*The total URS Defined Benefit long-term expected rate of return is 6.95%, which is comprised of a 2.50% inflation assumption and a 4.45% net real rate of return assumption.

### CHANGES IN DISCOUNT RATE

Year ended December 31, 2018

| System   | Net Pension Liability/(Asset) 1% Decrease (5.95%) | Net Pension Liability/(Asset) Current Discount Rate (6.95%) | Net Pension Liability/(Asset) 1% Increase (7.95%) |
|--|---|---|---|
| <b>Noncontributory Retirement System</b>               |   |   |   |
| Local Government                                       | \$ 1,509,165,864                                  | 736,372,374   | 92,839,498  |
| State and School                                       | 6,687,484,874                                     | 3,720,517,145   | 1,238,278,191                                     |
| <b>Total</b>   | <b>8,196,650,738</b>                              | <b>4,456,889,519</b>  | <b>1,331,117,689</b>                              |
| <b>Contributory Retirement System</b>                  |   |   |   |
| Local Government                                       | 86,145,305  | 40,580,280  | 2,223,977   |
| State and School                                       | 148,791,137                                       | 71,000,395  | 4,619,528   |
| <b>Total</b>   | <b>234,936,442</b>                                | <b>111,580,675</b>  | <b>6,843,505</b>                                  |
| <b>Public Safety Retirement System</b>                 |   |   |   |
| State of Utah  | 431,524,139                                       | 239,375,113   | 81,430,621  |
| Other Division A (with Social Security)                | 504,272,072                                       | 257,258,503   | 56,737,787  |
| Salt Lake City   | 155,807,761                                       | 103,028,051   | 59,653,139  |
| Ogden  | 33,874,092  | 22,263,653  | 12,757,018  |
| Provo  | 24,169,945  | 15,111,748  | 7,692,917   |
| Logan  | 11,762,835  | 6,809,836   | 2,801,647   |
| Bountiful  | 11,131,858  | 7,529,711   | 4,554,737   |
| Other Division B (without Social Security)             | 160,185,555                                       | 78,799,595  | 12,417,320  |
| <b>Total</b>   | <b>1,332,728,257</b>                              | <b>730,176,210</b>  | <b>238,045,186</b>                                |
| <b>Firefighters Retirement System</b>                  |   |   |   |
| Division A (with Social Security)                      | 48,454,523  | 12,984,728  | (15,736,277)                                      |
| Division B (without Social Security)                   | 181,872,609                                       | 40,415,201  | (75,930,223)                                      |
| <b>Total</b>   | <b>230,327,132</b>                                | <b>53,399,929</b>   | <b>(91,666,500)</b>                               |
| Judges Retirement System                               | 75,935,463  | 48,638,543  | 25,403,548  |
| Governors and Legislators Retirement Plan              | 3,912,507   | 2,640,357   | 1,558,808   |
| Tier 2 Public Employees Retirement System              | 171,576,629                                       | 42,827,859  | (56,534,006)                                      |
| Tier 2 Public Safety and Firefighter Retirement System | 18,898,433  | 2,505,563   | (10,039,094)                                      |
| <b>Grand Total</b>                                     | <b>\$ 10,264,965,601</b>                          | <b>5,448,658,655</b>  | <b>1,444,729,136</b>                              |

## Notes to the Schedules of Employer Allocations and Pension Amounts (Continued)

December 31, 2018



### Note 3

## Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred outflows of resources and deferred inflows of resources represent the inflows or outflows that have been deferred or delayed until a future period. What is being deferred is the recognition of those outflows and inflows as revenues and expenses.

### A) Difference Between Expected and Actual Experience

The difference between expected and actual experience with regard to economic and demographic factors is amortized over the average remaining service lives of the members (active

and inactive members). The first year of amortization is recognized as a pension expense with the remaining years shown as either a deferred inflow or deferred outflow of resources. The collective amounts of the difference between the expected and actual experience for the year ended December 31, 2018, are shown in the left table below.

### DIFFERENCES BETWEEN EXPECTED AND ACTUAL EXPERIENCE

December 31, 2018

| System   | Deferred Outflows    | Deferred Inflows   |
|--|----------------------|--------------------|
| <b>Noncontributory Retirement System</b>               |                      |                    |
| Local Government                                       | \$ 9,470,779         | 13,734,101         |
| State and School                                       | 19,819,710           | 52,203,041         |
| <b>Total</b>   | <b>29,290,489</b>    | <b>65,937,142</b>  |
| <b>Contributory Retirement System</b>                  |                      |                    |
| Local Government                                       | —                    | —                  |
| State and School                                       | —                    | —                  |
| <b>Total</b>   | <b>—</b>             | <b>—</b>           |
| <b>Public Safety Retirement System</b>                 |                      |                    |
| State of Utah  | 1,397,729            | 5,433,454          |
| Other Division A (with Social Security)                | —                    | 12,243,009         |
| Salt Lake City   | 1,785,729            | —                  |
| Ogden  | 379,429              | 980,568            |
| Provo  | 453,535              | 685,781            |
| Logan  | —                    | 744,436            |
| Bountiful  | 157,772              | 265,888            |
| Other Division B (without Social Security)             | 28,648,194           | —                  |
| <b>Total</b>   | <b>32,822,388</b>    | <b>20,353,136</b>  |
| <b>Firefighters Retirement System</b>                  |                      |                    |
| Other Division A (with Social Security)                | 2,744,371            | 2,341,362          |
| Other Division B (without Social Security)             | —                    | 15,513,498         |
| <b>Total</b>   | <b>2,744,371</b>     | <b>17,854,860</b>  |
| Judges Retirement System                               | 6,756,482            | —                  |
| Governors and Legislators Retirement Plan              | —                    | —                  |
| Tier 2 Public Employees Retirement System              | 300,586              | 8,851,587          |
| Tier 2 Public Safety and Firefighter Retirement System | 1,151,305            | 3,266              |
| <b>Grand Total</b>                                     | <b>\$ 73,065,621</b> | <b>112,999,991</b> |

### CHANGES IN ASSUMPTIONS

December 31, 2018

| System   | Deferred Outflows     | Deferred Inflows |
|--|-----------------------|------------------|
| <b>Noncontributory Retirement System</b>               |                       |                  |
| Local Government                                       | \$ 98,645,479         | —                |
| State and School                                       | 378,425,998           | —                |
| <b>Total</b>   | <b>477,071,477</b>    | <b>—</b>         |
| <b>Contributory Retirement System</b>                  |                       |                  |
| Local Government                                       | —                     | —                |
| State and School                                       | —                     | —                |
| <b>Total</b>   | <b>—</b>              | <b>—</b>         |
| <b>Public Safety Retirement System</b>                 |                       |                  |
| State of Utah  | 16,911,235            | —                |
| Other Division A (with Social Security)                | 29,570,896            | —                |
| Salt Lake City   | 7,068,399             | —                |
| Ogden  | 505,834               | —                |
| Provo  | 1,504,912             | —                |
| Logan  | 489,104               | —                |
| Bountiful  | 614,798               | —                |
| Other Division B (without Social Security)             | 16,269,399            | 1,208,480        |
| <b>Total</b>   | <b>72,934,577</b>     | <b>1,208,480</b> |
| <b>Firefighters Retirement System</b>                  |                       |                  |
| Other Division A (with Social Security)                | 6,906,292             | 1,507,350        |
| Other Division B (without Social Security)             | 26,611,858            | 4,255,245        |
| <b>Total</b>   | <b>33,518,150</b>     | <b>5,762,595</b> |
| Judges Retirement System                               | 7,135,437             | —                |
| Governors and Legislators Retirement Plan              | —                     | —                |
| Tier 2 Public Employees Retirement System              | 10,734,536            | 769,448          |
| Tier 2 Public Safety and Firefighter Retirement System | 2,383,807             | 91,915           |
| <b>Grand Total</b>                                     | <b>\$ 603,777,984</b> | <b>7,832,438</b> |

## Notes to the Schedules of Employer Allocations and Pension Amounts *(Continued)*

December 31, 2018

### B) Changes in Assumptions

The changes in assumptions about future economic or demographic factors or other inputs is amortized over the average remaining service lives of the members (active and inactive members). The first year of amortization is recognized as a pension expense with the remaining years shown as either a deferred inflow or deferred outflow of resources.

#### Assumptions and Methods

Every three years in conjunction with the actuarial valuation the actuary performs an experience study.

Based upon the 2017 experience study, the actuary recommended some changes in the actuarial assumptions that were adopted by the Board. Some of the changes were to decrease the earnings assumptions from 7.2% to 6.95%, decrease the inflation assumptions from 2.6% to 2.5%, and construct a new post-retirement mortality table based on actual experience (increases life expectancy for most groups). Additional changes by the Board were a decrease to the wage inflation assumption from 3.35% to 3.25% and a decrease to the payroll growth assumption from 3.1% to 3.0%.

### C) Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments

The difference between the System's expected rate of return of 6.95% and actual investment earnings on pension plan investments is amortized over a five-year closed period in accordance with GASB Statement No. 68. The first year of amortization is recognized as pension expense with the remaining years shown as either a deferred outflow or deferred inflow of resources. The collective deferred outflow amounts of the difference between expected and

#### NET DIFFERENCE BETWEEN PROJECTED AND ACTUAL INVESTMENT EARNINGS ON PLAN INVESTMENTS

December 31, 2018

| System   | Deferred Outflows       | Deferred Inflows     |
|--|-------------------------|----------------------|
| <b>Noncontributory Retirement System</b>               |                         |                      |
| Local Government                                       | \$ 336,350,427          | 183,119,660          |
| State and School                                       | 1,367,807,052           | 748,816,143          |
| <b>Total</b>   | <b>1,704,157,479</b>    | <b>931,935,803</b>   |
| <b>Contributory Retirement System</b>                  |                         |                      |
| Local Government                                       | 30,581,967              | 17,245,429           |
| State and School                                       | 55,432,705              | 32,023,995           |
| <b>Total</b>   | <b>86,014,672</b>       | <b>49,269,424</b>    |
| <b>Public Safety Retirement System</b>                 |                         |                      |
| State of Utah  | 81,530,761              | 44,446,192           |
| Other Division A (with Social Security)                | 98,026,634              | 53,632,627           |
| Salt Lake City   | 19,814,195              | 10,787,734           |
| Ogden  | 4,446,695               | 2,452,099            |
| Provo  | 3,503,297               | 1,912,395            |
| Logan  | 1,976,763               | 1,078,735            |
| Bountiful  | 1,420,345               | 781,608              |
| Other Division B (without Social Security)             | 30,984,730              | 16,395,659           |
| <b>Total</b>   | <b>241,703,420</b>      | <b>131,487,049</b>   |
| <b>Firefighters Retirement System</b>                  |                         |                      |
| Other Division A (with Social Security)                | 14,718,041              | 7,951,963            |
| Other Division B (without Social Security)             | 68,759,961              | 37,757,442           |
| <b>Total</b>   | <b>83,478,002</b>       | <b>45,709,405</b>    |
| Judges Retirement System                               | 13,427,925              | 7,324,361            |
| Governors and Legislators Retirement Plan              | 754,302                 | 433,138              |
| Tier 2 Public Employees Retirement System              | 23,481,199              | 9,534,546            |
| Tier 2 Public Safety and Firefighter Retirement System | 2,914,107               | 1,148,154            |
| <b>Grand Total</b>                                     | <b>\$ 2,155,931,106</b> | <b>1,176,841,880</b> |

#### PROPORTIONATE SHARE OF GROSS PENSION EXPENSE

December 31, 2018

| System   |                         |
|--|-------------------------|
| <b>Noncontributory Retirement System</b>               |                         |
| Local Government                                       | \$ 203,850,263          |
| State and School                                       | 837,494,481             |
| <b>Total</b>   | <b>1,041,344,744</b>    |
| <b>Contributory Retirement System</b>                  |                         |
| Local Government                                       | 8,809,238               |
| State and School                                       | 19,582,893              |
| <b>Total</b>   | <b>28,392,131</b>       |
| <b>Public Safety Retirement System</b>                 |                         |
| State of Utah  | 61,822,028              |
| Other Division A (with Social Security)                | 79,997,209              |
| Salt Lake City   | 21,999,491              |
| Ogden  | 4,755,024               |
| Provo  | 2,959,535               |
| Logan  | 1,063,559               |
| Bountiful  | 1,572,472               |
| Other Division B (without Social Security)             | 25,262,111              |
| <b>Total</b>   | <b>199,431,429</b>      |
| <b>Firefighters Retirement System</b>                  |                         |
| Other Division A (with Social Security)                | 7,280,460               |
| Other Division B (without Social Security)             | 15,142,568              |
| <b>Total</b>   | <b>22,423,028</b>       |
| Judges Retirement System                               | 12,356,757              |
| Governors and Legislators Retirement Plan              | 506,329                 |
| Tier 2 Public Employees Retirement System              | 109,316,174             |
| Tier 2 Public Safety and Firefighter Retirement System | 14,525,195              |
| <b>Grand Total</b>                                     | <b>\$ 1,428,295,787</b> |



## Notes to the Schedules of Employer Allocations and Pension Amounts *(Concluded)*

December 31, 2018

actual experience for the year ended December 31, 2018, is \$2,155,931,106 and deferred inflows of \$1,176,841,880 as illustrated in the bottom-left table on page 302.

### D) Changes in Proportion and Differences Between Contributions and Proportionate Share of Contributions

The change in employer proportionate share is the amount of difference between the employer proportionate share of the net pension liability/(asset) in the prior year compared to the current year. The difference between the employer contributions and proportionate share of contributions is the difference between the total amount of the employer contributions and the amount of the proportionate share of the employer contributions. The change in proportionate share and the difference between employer contributions and proportionate share of contributions is amortized over the average remaining service lives of the members (active and inactive members). The first year of amortization is recognized as pension expense with the remaining years shown as either a deferred outflow or deferred inflow of resources.

### E) Proportionate Share of Allocable Gross Pension Expense

The collective gross pension expense includes certain current period changes in the collective net pension liability/(asset), projected earnings on pension plan investments and amortization of deferred inflows of resources and deferred outflows of resources for the current period. The collective pension expense for the year ended December 31, 2018, is as shown in the bottom-right table on page 302.

### F) Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions

The change in the employer's proportion of the collective net pension liability/(asset), since the prior measurement date (December 31, 2017), the net effect of the change on the employer's proportionate share of the collective net pension liability/(asset), and collective deferred outflows of resources and deferred inflows of resources related to pensions, determined at the beginning of the measurement period, is recognized in the employer's pension expense, beginning in the current period, using average remaining services lives for both active and inactive members. The table to the right illustrates the average remaining service lives for the cost sharing retirement plans.

### G) Proportionate Share of Nonemployer Contributions

The Firefighters Retirement System collects fire insurance premium tax. Fire insurance premium taxes are collected by the Utah State Treasurer and are used to help fund the Firefighters Retirement System. The proportionate share of nonemployer contributions is based upon the same methodology used to calculate each employer's proportionate share of the net pension liability/(asset) and was equal to \$8,747,688 in calendar year 2018 and was used to offset gross pension plan expense in the Firefighters Retirement System.

The Judges Retirement System collects court fees from the Utah Judiciary System and is used to help fund the retirement system. The Judges Retirement System collected \$1,518,442 in court fees in calendar year 2018 and was used to offset gross pension plan expense.

### NET AMORTIZATION OF DEFERRED AMOUNTS FROM CHANGES IN PROPORTION AND DIFFERENCES BETWEEN EMPLOYER CONTRIBUTIONS AND PROPORTIONATE SHARE OF CONTRIBUTIONS

Year ended December 31, 2018

| Cost Sharing Retirement System                         | Average Remaining Service Lives |
|--|---------------------------------|
| <b>Noncontributory Retirement System</b>               |                                 |
| Local Government                                       | 3.70                            |
| State and School                                       | 3.62                            |
| <b>Contributory Retirement System</b>                  |                                 |
| Local Government                                       | 0.65                            |
| State and School                                       | 0.32                            |
| <b>Public Safety Retirement System</b>                 |                                 |
| State of Utah  | 2.99                            |
| Other Division A (with Social Security)                | 3.08                            |
| Other Division B (without Social Security)             | 4.35                            |
| <b>Firefighters Retirement System</b>                  |                                 |
| Other Division A (with Social Security)                | 6.24                            |
| Other Division B (without Social Security)             | 5.14                            |
| Tier 2 Public Employees Retirement System              | 12.21                           |
| Tier 2 Public Safety and Firefighter Retirement System | 17.98                           |

### H) Total Employer Net Pension Plan Expense

This amount is equal to the gross pension expense less net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate of contributions and any proportionate share of nonemployer contributions.

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

# Schedule of Employer Allocations and Pension Amounts

at December 31, 2018

| Participating Employer                     | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--|--------------------------------|--|--|--|--|---|------------------------|
| 4 Corners Comm Behavior Health             | N/A                            | \$ 1,798,332                                   | 3,768,872  | 165,193  | 22,881   | 825,312   | 245,872                |
| Active Re Entry Inc                        | N/A                            | 416,385  | 749,471  | 137,809  | 2,219  | 153,164   | 42,421                 |
| Alpine City                                | N/A                            | 570,701  | 1,185,941  | 59,897   | 7,292  | 261,440   | 77,424                 |
| Alpine School District                     | N/A                            | 281,946,910                                    | 512,788,828  | 89,240,650   | 1,493,123  | 105,085,901   | 28,787,576             |
| Alpine Uniserv                             | N/A                            | 124,276  | 223,382  | 41,362   | 662  | 45,689  | 12,641                 |
| American Fork City                         | N/A                            | 6,252,254                                      | 13,335,551   | 444,805  | 122,426  | 2,895,659   | 941,252                |
| American Leadership Academy                | N/A                            | 4,900,841                                      | 8,952,189  | 1,524,018  | 26,217   | 1,813,444   | 508,131                |
| Ames Charter School                        | N/A                            | 2,114,693                                      | 3,809,146  | 697,783  | 11,272   | 778,104   | 215,637                |
| Annabella Town                             | N/A                            | 64,411   | 132,008  | 8,121  | 828  | 29,421  | 8,629                  |
| Ash Creek SS District                      | N/A                            | 719,929  | 1,482,844  | 85,314   | 9,237  | 329,185   | 96,883                 |
| Ashley Valley Improv Dist                  | N/A                            | 596,872  | 1,236,849  | 65,211   | 7,636  | 273,267   | 80,768                 |
| Ashley Valley Sewer Mgmt Board             | N/A                            | 314,140  | 643,818  | 39,606   | 4,040  | 143,489   | 42,083                 |
| Ballard Town                               | N/A                            | 133,858  | 275,871  | 15,744   | 1,717  | 61,214  | 18,023                 |
| Bear Lake SSD                              | N/A                            | 93,981   | 192,610  | 11,849   | 1,209  | 42,927  | 12,590                 |
| Bear River Assn of Govts                   | N/A                            | 921,499  | 1,915,288  | 96,439   | 11,772   | 422,160   | 125,039                |
| Bear River Health Dept                     | N/A                            | 3,257,081                                      | 6,785,275  | 329,336  | 41,562   | 1,492,871   | 442,883                |
| Bear River Mental Health                   | N/A                            | 2,524,108                                      | 5,265,796  | 249,694  | 32,187   | 1,157,265   | 343,663                |
| Bear River Water District                  | N/A                            | 132,563  | 282,044  | 9,056  | 1,674  | 61,035  | 18,376                 |
| Beaver City                                | N/A                            | 741,011  | 1,542,976  | 75,462   | 9,458  | 339,606   | 100,716                |
| Beaver County                              | N/A                            | 5,379,579                                      | 10,801,488   | 955,336  | 24,578   | 2,169,945   | 660,194                |
| Beaver Housing Authority                   | N/A                            | 84,797   | 173,788  | 10,691   | 1,091  | 38,732  | 11,360                 |
| Beaver School District                     | N/A                            | 7,191,949                                      | 13,021,125   | 2,323,404  | 38,384   | 2,651,718   | 737,847                |
| Beaver Valley Hospital                     | N/A                            | 3,208,956                                      | 6,653,910  | 347,459  | 41,041   | 1,469,358   | 434,484                |
| Benchland Water Company                    | N/A                            | 307,701  | 636,255  | 34,630   | 3,940  | 140,811   | 41,556                 |
| Bicknell Town                              | N/A                            | 24,607   | 50,432   | 3,102  | 316  | 11,240  | 3,296                  |
| Big Cottonwood Canyon Imp Dist             | N/A                            | 49,730   | 101,920  | 6,270  | 640  | 22,715  | 6,662                  |
| Big Plains Water & Sewer Spec Service Dist | N/A                            | 24,262   | 51,299   | 1,893  | 308  | 11,156  | 3,344                  |
| Big Water Municipal Corp                   | N/A                            | 29,140   | 62,329   | 2,482  | 429  | 11,833  | 4,130                  |
| Blanding City                              | N/A                            | 1,036,474                                      | 2,106,818  | 155,517  | 8,205  | 442,715   | 132,416                |
| Bluffdale City                             | N/A                            | 1,097,709                                      | 2,329,003  | 79,682   | 14,611   | 505,813   | 152,551                |
| Bona Vista Water Improve                   | N/A                            | 346,000  | 713,358  | 40,485   | 4,437  | 158,240   | 46,604                 |
| Bountiful Irrigation District              | N/A                            | 352,723  | 728,606  | 40,246   | 4,519  | 161,379   | 47,592                 |
| Box Elder Co Mosq Dist                     | N/A                            | 184,107  | 381,330  | 20,248   | 2,356  | 84,281  | 24,903                 |
| Box Elder County                           | N/A                            | 8,500,274                                      | 17,174,217   | 1,387,604  | 50,562   | 3,603,576   | 1,030,381              |
| Box Elder School District                  | N/A                            | 50,620,283                                     | 91,867,587   | 16,174,017   | 268,416  | 18,816,172  | 5,165,992              |
| Bridgerland Applied Tech Ctr               | N/A                            | 5,819,176                                      | 10,496,619   | 1,909,168  | 31,028   | 2,142,371   | 594,374                |
| Brigham City                               | N/A                            | 5,682,064                                      | 11,867,476   | 598,204  | 81,123   | 2,577,926   | 788,054                |
| Cache County                               | N/A                            | 12,223,553                                     | 24,806,749   | 1,929,418  | 89,530   | 5,091,188   | 1,559,326              |
| Cache Metro Planning Org                   | N/A                            | 66,481   | 136,251  | 8,382  | 855  | 30,366  | 8,906                  |
| Cache School District                      | N/A                            | 72,741,911                                     | 132,284,548  | 23,013,987   | 382,642  | 27,290,695  | 7,369,832              |
| Canyons School District                    | N/A                            | 145,895,531                                    | 265,804,830  | 45,891,062   | 779,935  | 53,928,287  | 15,079,779             |
| Carbon County                              | N/A                            | 6,076,191                                      | 12,348,434   | 927,056  | 42,227   | 2,589,158   | 756,916                |
| Carbon County Rec/Trans SSD                | N/A                            | 34,926   | 71,580   | 4,403  | 449  | 15,953  | 4,679                  |
| Carbon School District                     | N/A                            | 15,233,382                                     | 27,664,789   | 4,856,957  | 81,240   | 5,632,462   | 1,565,754              |
| Castle Dale City                           | N/A                            | 82,750   | 171,976  | 8,672  | 1,058  | 37,909  | 11,227                 |
| Castle Valley SSD                          | N/A                            | 504,270  | 1,050,852  | 47,830   | 4,276  | 281,219   | 44,981                 |
| Cedar City                                 | N/A                            | 5,792,160                                      | 12,172,102   | 557,030  | 90,903   | 2,617,284   | 830,632                |
| Cedar City Housing Auth                    | N/A                            | 130,589  | 272,411  | 12,936   | 1,665  | 59,872  | 17,779                 |
| Cedar Mtn Fire Protection Dist             | N/A                            | 9,766  | 30,720   | (6,796)  | 838  | 5,684   | 2,733                  |
| Centerfield City                           | N/A                            | 49,238   | 100,910  | 6,208  | 633  | 22,490  | 6,596                  |
| Centerville City                           | N/A                            | 3,343,538                                      | 6,763,220  | 527,573  | 16,807   | 1,525,521   | 363,609                |
| Central Davis Sewer Dist                   | N/A                            | 727,332  | 1,500,417  | 84,473   | 9,325  | 332,678   | 98,018                 |
| Central Iron Co Water Conserv              | N/A                            | 116,064  | 248,196  | 7,001  | 1,462  | 53,497  | 16,164                 |
| Central UT Public Health                   | N/A                            | 1,088,254                                      | 2,270,628  | 107,424  | 13,877   | 498,962   | 148,186                |
| Central Utah Counseling Center             | N/A                            | 1,961,563                                      | 4,069,741  | 210,655  | 25,080   | 898,296   | 265,732                |
| Central Utah Water Dist                    | N/A                            | 5,460,420                                      | 11,328,441   | 586,793  | 69,818   | 2,500,570   | 739,686                |
| Central Wasatch Commission                 | N/A                            | 38,683   | 83,997   | 1,390  | 484  | 17,890  | 5,463                  |
| Central Weber Sewer Dist                   | N/A                            | 1,172,881                                      | 2,459,173  | 106,929  | 14,920   | 538,324   | 160,424                |
| City of Aurora                             | N/A                            | 56,932   | 116,680  | 7,178  | 732  | 26,005  | 7,627                  |
| City of Bountiful                          | N/A                            | 13,661,655                                     | 23,919,501   | 5,164,350  | 239,451  | 4,234,893   | 1,453,063              |
| City of Cedar Hills                        | N/A                            | 754,736  | 1,559,140  | 86,036   | 9,670  | 345,315   | 101,842                |
| City of Draper                             | N/A                            | 8,665,026                                      | 19,103,748   | 110,190  | 240,204  | 4,286,907   | 1,448,359              |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|   |                                      |  |   |                        |   |                                     |   |   |  |  |
| 37,081  | 1,131,146                            | 41,542   | 446,097   | 764                    | 11,046  | 499,449                             | 594,665   | (3,353)   | —  | 591,312  |
| 16,211  | 214,015                              | 5,933  | 83,814  | 8                      | 3,157   | 92,912                              | 94,820  | 6,033   | —  | 100,853  |
| 13,009  | 359,165                              | 12,212   | 141,704   | 150                    | 25,617  | 179,683                             | 176,957   | 1,776   | —  | 178,733  |
| 4,914,068   | 140,280,668                          | 4,382,499  | 57,401,916  | 42,938                 | —   | 61,827,353                          | 69,151,668  | 2,475,971   | —  | 71,627,639   |
| 11,766  | 70,758                               | 1,744  | 25,013  | —                      | 13,639  | 40,396                              | 27,975  | (14,911)  | —  | 13,064   |
| 140,951   | 4,100,288                            | 248,537  | 1,570,117   | 38,276                 | 176,801   | 2,033,731                           | 2,144,028   | (9,703)   | (58,199)   | 2,076,126  |
| 116,143   | 2,463,935                            | 81,247   | 987,759   | 1,164                  | 194,468   | 1,264,638                           | 1,253,993   | (30,255)  | —  | 1,223,738  |
| 70,500  | 1,075,513                            | 30,375   | 425,695   | 66                     | 1,940   | 458,076                             | 484,523   | 33,428  | —  | 517,951  |
| 1,440   | 40,318                               | 1,201  | 16,018  | —                      | 224   | 17,443                              | 17,831  | 562   | —  | 18,393   |
| 47,683  | 482,988                              | 14,136   | 178,932   | 68                     | —   | 193,136                             | 207,879   | 21,782  | —  | 229,661  |
| 5,199   | 366,870                              | 12,438   | 148,248   | 125                    | 23,104  | 183,915                             | 181,031   | (7,496)   | —  | 173,535  |
| 6,188   | 195,800                              | 5,859  | 78,120  | —                      | 1,110   | 85,089                              | 86,964  | 1,644   | —  | 88,608   |
| 814   | 81,768                               | 2,644  | 33,267  | 14                     | 2,541   | 38,466                              | 38,839  | (570)   | —  | 38,269   |
| 3,262   | 59,988                               | 1,753  | 23,371  | —                      | 601   | 25,725                              | 26,017  | 1,501   | —  | 27,518   |
| 7,058   | 566,029                              | 19,753   | 228,801   | 245                    | 48,014  | 296,813                             | 286,164   | (15,228)  | —  | 270,936  |
| 28,804  | 2,006,120                            | 71,319   | 808,500   | 1,010                  | 27,219  | 908,048                             | 1,029,604   | 5,815   | —  | 1,035,419  |
| 13,838  | 1,546,953                            | 55,988   | 626,455   | 851                    | 71,414  | 754,708                             | 806,602   | (57,189)  | —  | 749,413  |
| 3,252   | 84,337                               | 3,468  | 32,828  | 95                     | 4,039   | 40,430                              | 48,747  | 249   | —  | 48,996   |
| 14,572  | 464,352                              | 16,156   | 183,949   | 223                    | 34,034  | 234,362                             | 233,400   | (23,393)  | —  | 210,007  |
| 93,333  | 2,948,050                            | 219,505  | 1,180,964   | 992                    | 33,086  | 1,434,547                           | 1,762,758   | 60,303  | —  | 1,823,061  |
| 5,342   | 56,525                               | 1,582  | 21,087  | —                      | —   | 22,669                              | 23,474  | 2,715   | —  | 26,189   |
| 37,733  | 3,465,682                            | 109,099  | 1,448,407   | 764                    | 69,192  | 1,627,462                           | 1,717,838   | (20,207)  | —  | 1,697,631  |
| 92,680  | 2,037,563                            | 67,277   | 796,968   | 710                    | 33,320  | 898,275                             | 978,214   | 26,740  | —  | 1,004,954  |
| 16,954  | 203,261                              | 6,280  | 76,443  | 52                     | —   | 82,775                              | 91,734  | 10,010  | —  | 101,744  |
| 523   | 15,375                               | 459  | 6,119   | —                      | 658   | 7,236                               | 6,812   | 175   | —  | 6,987  |
| 1,378   | 31,395                               | 928  | 12,367  | —                      | 965   | 14,260                              | 13,767  | 126   | —  | 13,893   |
| 11,035  | 25,843                               | 604  | 6,012   | 14                     | —   | 6,630                               | 8,550   | 3,993   | —  | 12,543   |
| 4,951   | 21,343                               | 1,343  | 6,309   | 34                     | 322   | 8,008                               | 14,180  | 3,270   | —  | 17,450   |
| 49,973  | 633,309                              | 33,087   | 240,703   | 176                    | 11,363  | 285,329                             | 324,348   | 14,793  | —  | 339,141  |
| 163,774   | 836,749                              | 27,234   | 272,366   | 707                    | 1,386   | 301,693                             | 394,725   | 146,089   | —  | 540,814  |
| 3,334   | 212,615                              | 6,861  | 85,986  | 39                     | 23,084  | 115,970                             | 100,721   | (7,022)   | —  | 93,699   |
| 1,496   | 214,986                              | 7,128  | 87,638  | 52                     | 9,713   | 104,531                             | 104,291   | (6,572)   | —  | 97,719   |
| 4,412   | 115,952                              | 3,819  | 45,730  | 37                     | —   | 49,586                              | 55,629  | 1,993   | —  | 57,622   |
| 73,571  | 4,758,090                            | 302,338  | 1,964,648   | 1,335                  | 135,953   | 2,404,274                           | 2,688,496   | (38,862)  | —  | 2,649,634  |
| 1,569,645   | 25,820,225                           | 773,151  | 10,281,950  | 6,317                  | 83,966  | 11,145,384                          | 12,230,549  | 544,761   | —  | 12,775,310   |
| 40,464  | 2,808,237                            | 84,866   | 1,171,563   | 300                    | 177,958   | 1,434,687                           | 1,348,761   | (11,199)  | —  | 1,337,562  |
| 75,728  | 3,522,831                            | 206,907  | 1,401,942   | 21,776                 | 53,015  | 1,683,640                           | 1,828,516   | 1,969   | (33,029)   | 1,797,456  |
| 144,480   | 6,884,524                            | 475,051  | 2,769,183   | 12,549                 | 104,427   | 3,361,210                           | 3,979,686   | 39,267  | (16,388)   | 4,002,565  |
| 1,326   | 41,453                               | 1,240  | 16,532  | —                      | —   | 17,772                              | 18,404  | 867   | —  | 19,271   |
| 2,574,888   | 37,618,057                           | 1,110,910  | 14,923,703  | 9,840                  | —   | 16,044,453                          | 17,704,108  | 1,243,753   | —  | 18,947,861   |
| 1,431,502   | 71,219,503                           | 2,357,870  | 29,398,366  | 28,984                 | 393,715   | 32,178,935                          | 36,595,979  | 197,998   | —  | 36,793,977   |
| 23,718  | 3,412,019                            | 208,560  | 1,408,523   | 1,310                  | 426,683   | 2,045,076                           | 1,954,355   | (210,218)   | —  | 1,744,137  |
| 540   | 21,621                               | 651  | 8,685   | —                      | 574   | 9,910                               | 9,669   | (153)   | —  | 9,516  |
| 36,590  | 7,316,046                            | 237,541  | 3,074,367   | 2,249                  | 253,201   | 3,567,358                           | 3,721,621   | (198,387)   | —  | 3,523,234  |
| 2,452   | 52,646                               | 1,773  | 20,547  | 22                     | 363   | 22,705                              | 25,678  | 649   | —  | 26,327   |
| 1,983   | 332,459                              | 6,688  | 155,421   | 45                     | 23,618  | 185,772                             | 135,040   | (5,860)   | —  | 129,180  |
| 63,592  | 3,602,411                            | 223,815  | 1,420,833   | 26,574                 | 114,759   | 1,785,981                           | 1,922,560   | (46,953)  | (40,203)   | 1,835,404  |
| 3,771   | 83,087                               | 2,894  | 32,411  | 44                     | 771   | 36,120                              | 41,703  | 1,500   | —  | 43,203   |
| 4,543   | 13,798                               | 335  | 2,740   | 76                     | 1,000   | 4,151                               | 13,759  | 1,250   | —  | 15,009   |
| 774   | 30,493                               | 918  | 12,244  | —                      | 35,858  | 49,020                              | 13,630  | (21,925)  | —  | (8,295)  |
| 36,957  | 1,942,894                            | 104,800  | 837,201   | 248                    | 92,911  | 1,035,160                           | 989,785   | 25,193  | —  | 1,014,978  |
| 1,234   | 441,255                              | 14,505   | 180,742   | 90                     | 18,369  | 213,706                             | 212,720   | (13,778)  | —  | 198,942  |
| 6,368   | 77,491                               | 3,157  | 28,725  | 95                     | —   | 31,977                              | 44,141  | 3,262   | —  | 47,403   |
| 15,184  | 676,209                              | 24,169   | 270,088   | 370                    | 34,128  | 328,755                             | 348,123   | (5,677)   | —  | 342,446  |
| 43,640  | 1,232,748                            | 41,350   | 487,138   | 455                    | 79,919  | 608,862                             | 600,697   | (3,179)   | —  | 597,518  |
| 97,098  | 3,407,172                            | 115,058  | 1,356,055   | 1,263                  | 37,090  | 1,509,466                           | 1,671,551   | (1,807)   | —  | 1,669,744  |
| 17,564  | 41,401                               | 1,175  | 9,557   | 43                     | —   | 10,775                              | 16,195  | 6,219   | —  | 22,414   |
| 26,625  | 740,293                              | 27,199   | 290,932   | 509                    | 25,952  | 344,592                             | 389,119   | (6,682)   | —  | 382,437  |
| 728   | 35,092                               | 1,062  | 14,158  | —                      | 218   | 15,438                              | 15,760  | 348   | —  | 16,108   |
| 54,416  | 5,981,823                            | 397,352  | 2,305,672   | 1,921                  | 145,996   | 2,850,941                           | 3,519,870   | (73,668)  | —  | 3,446,202  |
| 3,774   | 460,601                              | 15,262   | 187,522   | 113                    | 26,659  | 229,556                             | 223,284   | (9,414)   | —  | 213,870  |
| 303,047   | 6,278,517                            | 397,049  | 2,323,678   | 95,679                 | 285,810   | 3,102,216                           | 3,031,740   | 30,149  | (148,558)  | 2,913,331  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer         | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| City of Duchesne               | N/A                            | \$ 188,987                                     | 393,077  | 19,575   | 2,414  | 86,592  | 25,660                 |
| City of Enterprise             | N/A                            | 282,719  | 581,525  | 34,090   | 3,630  | 129,235   | 37,998                 |
| City of Green River            | N/A                            | 254,371  | 532,359  | 23,915   | 3,239  | 116,704   | 34,733                 |
| City of Harrisville            | N/A                            | 929,704  | 1,883,444  | 146,844  | 6,764  | 390,517   | 117,766                |
| City of Helper                 | N/A                            | 471,568  | 953,898  | 77,119   | 2,753  | 194,075   | 58,937                 |
| City of Holladay               | N/A                            | 786,129  | 1,629,222  | 85,749   | 10,057   | 359,923   | 106,389                |
| City of Kanab                  | N/A                            | 802,238  | 1,681,776  | 82,270   | 10,565   | 355,395   | 112,334                |
| City of Milford                | N/A                            | 204,511  | 428,669  | 18,739   | 2,602  | 93,859  | 27,965                 |
| City of Moab                   | N/A                            | 3,345,470                                      | 6,884,563  | 430,999  | 31,572   | 1,455,543   | 438,024                |
| City of Monticello             | N/A                            | 424,264  | 875,801  | 53,072   | 4,138  | 183,866   | 55,865                 |
| City of Naples                 | N/A                            | 661,521  | 1,352,876  | 92,710   | 4,109  | 308,491   | 71,899                 |
| City of North Salt Lake        | N/A                            | 3,815,631                                      | 7,715,008  | 613,480  | 26,157   | 1,601,479   | 480,693                |
| City of Orem                   | N/A                            | 18,103,879                                     | 41,306,169   | (1,043,394)  | 2,223,096  | 10,431,474  | 3,404,628              |
| City of Riverton               | N/A                            | 3,774,486                                      | 7,845,015  | 395,056  | 48,218   | 1,729,173   | 512,157                |
| City of Santa Clara            | N/A                            | 1,206,058                                      | 2,599,303  | 52,815   | 26,698   | 588,288   | 185,560                |
| City of Saratoga Springs       | N/A                            | 4,007,996                                      | 8,899,721  | (15,639)   | 547,894  | 2,015,902   | 767,544                |
| City of South Jordan           | N/A                            | 13,076,113                                     | 28,547,622   | 381,589  | 329,179  | 6,360,315   | 2,114,408              |
| City of South Salt Lake        | N/A                            | 9,022,011                                      | 19,949,524   | 96,163   | 257,053  | 4,447,380   | 1,529,416              |
| City of St George              | N/A                            | 26,441,515                                     | 55,184,579   | 2,795,734  | 357,307  | 11,927,978  | 3,646,984              |
| City of Taylorsville           | N/A                            | 1,435,549                                      | 2,982,420  | 151,192  | 18,343   | 657,596   | 194,713                |
| City of Uintah                 | N/A                            | 85,082   | 174,615  | 10,548   | 1,094  | 38,874  | 11,412                 |
| City of Washington Terrace     | N/A                            | 700,034  | 1,481,180  | 51,840   | 13,291   | 334,930   | 103,021                |
| City of Wendover               | N/A                            | 191,542  | 410,069  | 11,266   | 3,789  | 88,168  | 27,069                 |
| City of West Haven             | N/A                            | 495,480  | 1,031,535  | 50,593   | 6,325  | 227,070   | 67,333                 |
| City of West Jordan            | N/A                            | 19,026,363                                     | 45,020,937   | (2,363,322)  | 2,768,770  | 11,151,858  | 4,304,445              |
| City of Woodland Hills         | N/A                            | 188,348  | 391,437  | 19,738   | 2,406  | 86,285  | 25,555                 |
| Clearfield City                | N/A                            | 4,373,547                                      | 8,927,301  | 632,888  | 35,023   | 1,860,791   | 561,547                |
| Cleveland Town                 | N/A                            | 9,946  | 22,649   | (421)  | 121  | 4,649   | 1,467                  |
| Clinton City                   | N/A                            | 2,659,441                                      | 5,679,441  | 178,653  | 49,114   | 1,299,082   | 370,562                |
| Coalville City                 | N/A                            | 205,524  | 429,278  | 19,952   | 2,619  | 94,254  | 28,013                 |
| Color Country Uniserv          | N/A                            | 101,351  | 183,697  | 32,593   | 541  | 37,385  | 10,412                 |
| Corinne City                   | N/A                            | 282,312  | 599,302  | 15,472   | —  | 212,755   | —                      |
| Cottonwood Heights City        | N/A                            | 3,258,198                                      | 6,763,856  | 382,926  | 717,381  | 1,377,167   | 587,591                |
| Cottonwood Heights P&R Srv     | N/A                            | 671,494  | 1,394,665  | 71,014   | 8,581  | 307,580   | 91,055                 |
| Cottonwood Imp District        | N/A                            | 1,455,288                                      | 3,001,371  | 169,571  | 18,660   | 665,607   | 196,074                |
| Council On Aging Golden Age SS | N/A                            | 196,809  | 407,664  | 21,626   | 2,518  | 90,097  | 26,622                 |
| Daggett County                 | N/A                            | 577,058  | 1,180,918  | 79,207   | 5,087  | 250,542   | 74,758                 |
| Daggett School District        | N/A                            | 1,781,451                                      | 3,231,888  | 570,611  | 9,513  | 657,368   | 183,207                |
| Davis & Weber County Canal Co  | N/A                            | 1,505,791                                      | 3,199,713  | 80,213   | 12   | 1,134,443   | 421                    |
| Davis Co Mosquito Abate        | N/A                            | 182,781  | 376,901  | 21,345   | 2,344  | 83,595  | 24,623                 |
| Davis Applied Tech College     | N/A                            | 4,798,125                                      | 8,692,704  | 1,545,852  | 25,613   | 1,769,560   | 492,636                |
| Davis Behavioral Health Inc    | N/A                            | 6,351,207                                      | 13,282,645   | 604,082  | 80,890   | 2,913,464   | 866,684                |
| Davis Co Housing Authority     | N/A                            | 733,373  | 1,545,777  | 52,966   | 3,448  | 472,892   | 36,715                 |
| Davis County                   | N/A                            | 34,297,393                                     | 69,742,477   | 5,140,078  | 277,888  | 14,624,299  | 4,390,272              |
| Davis School District          | N/A                            | 291,702,601                                    | 530,274,702  | 92,449,066   | 1,535,639  | 109,327,204   | 29,570,057             |
| Davis Uniserv                  | N/A                            | 71,665   | 128,814  | 23,852   | 382  | 26,347  | 7,289                  |
| Ddi Vantage                    | N/A                            | 8,843,633                                      | 18,897,137   | 394,489  | 460  | 6,651,240   | 16,441                 |
| Delta City                     | N/A                            | 439,203  | 914,110  | 45,039   | 5,607  | 201,267   | 59,670                 |
| Dixie Applied Tech College     | N/A                            | 763,064  | 1,374,240  | 251,974  | 4,067  | 280,750   | 77,793                 |
| Dixie State University         | N/A                            | 6,856,259                                      | 12,442,090   | 2,189,730  | 36,457   | 2,588,202   | 673,557                |
| Duchesne Co Mosquito Dist      | N/A                            | 137,891  | 292,720  | 7,557  | —  | 103,917   | —                      |
| Duchesne Co Water Conserv Dist | N/A                            | 156,253  | 321,893  | 18,474   | 2,005  | 71,449  | 21,030                 |
| Duchesne County                | N/A                            | 6,328,530                                      | 13,082,393   | 749,404  | 37,146   | 3,225,807   | 602,503                |
| Duchesne School District       | N/A                            | 20,818,888                                     | 38,112,026   | 6,383,433  | 107,875  | 7,959,370   | 2,086,098              |
| E Duchesne Cul Water Imp Dist  | N/A                            | 50,026   | 102,527  | 6,307  | 643  | 22,850  | 6,702                  |
| Eagle Mountain City            | N/A                            | 1,970,703                                      | 4,121,372  | 187,494  | 25,100   | 904,010   | 268,917                |
| East Carbon City               | N/A                            | 284,156  | 584,498  | 37,902   | 2,567  | 121,099   | 37,076                 |
| East Hollywood High School     | N/A                            | 1,229,476                                      | 2,251,610  | 378,013  | 6,581  | 455,412   | 127,864                |
| Educators Mutual Insurance     | N/A                            | 8,313,074                                      | 15,120,218   | 2,611,165  | 41,609   | 3,267,445   | 795,895                |
| Elk Ridge City                 | N/A                            | 106,896  | 232,692  | 3,418  | 1,334  | 49,463  | 15,132                 |
| Emery Co Care & Rehab Ctr      | N/A                            | 1,321,843                                      | 2,825,149  | 58,506   | 71   | 994,081   | 2,541                  |
| Emery County                   | N/A                            | 4,324,691                                      | 8,736,807  | 703,801  | 27,990   | 1,819,587   | 536,754                |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      |  |   |                        | Deferred Inflows of Resources   |                                     |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |                                      |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--------------------------------------|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions |                                      | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Contributions |  |  |
| 2,772   | 117,438                              | 4,078  | 46,921  | 53                     | 10,409  | 61,461                              | 59,009  | (2,453)   | —                                    | —  | 56,556   |
| 8,959   | 179,822                              | 5,475  | 70,278  | 19                     | 2,093   | 77,865                              | 80,712  | 1,764   | —                                    | —  | 82,476   |
| 17,004  | 171,680                              | 5,805  | 63,109  | 101                    | 5,424   | 74,439                              | 83,251  | 3,513   | —                                    | —  | 86,764   |
| 48,096  | 563,143                              | 31,931   | 212,384   | 160                    | 9,738   | 254,213                             | 295,695   | 22,355  | —                                    | —  | 318,050  |
| 3,254   | 259,019                              | 18,092   | 105,469   | 112                    | 29,179  | 152,852                             | 155,912   | (23,224)  | —                                    | —  | 132,688  |
| 24,070  | 500,439                              | 16,400   | 195,252   | 166                    | 30,465  | 242,283                             | 238,653   | (2,545)   | —                                    | —  | 236,108  |
| 7,139   | 485,433                              | 33,329   | 192,662   | 3,310                  | 19,641  | 248,942                             | 276,883   | (4,758)   | (4,845)                              | —  | 267,280  |
| 11,244  | 135,670                              | 4,730  | 50,731  | 88                     | —   | 55,549                              | 67,701  | 5,444   | —                                    | —  | 73,145   |
| 364,901   | 2,290,040                            | 102,063  | 788,966   | 1,055                  | 35,685  | 927,769                             | 1,101,309   | 118,160   | —                                    | —  | 1,219,469  |
| 20,479  | 264,348                              | 13,408   | 99,544  | 161                    | 31,296  | 144,409                             | 144,462   | 4,281   | —                                    | —  | 148,743  |
| 61,666  | 446,165                              | 20,304   | 169,048   | 139                    | 31,515  | 221,006                             | 207,525   | (12,666)  | —                                    | —  | 194,859  |
| 141,173   | 2,249,502                            | 131,166  | 871,428   | 559                    | 24,533  | 1,027,686                           | 1,197,335   | 66,841  | —                                    | —  | 1,264,176  |
| 147,727   | 16,206,925                           | 763,780  | 5,670,956   | 250,654                | 189,692   | 6,875,082                           | 5,777,623   | 52,685  | (237,062)                            | —  | 5,593,246  |
| 29,622  | 2,319,170                            | 80,907   | 937,176   | 1,004                  | 102,478   | 1,121,565                           | 1,172,071   | (33,038)  | —                                    | —  | 1,139,033  |
| 67,716  | 868,262                              | 33,223   | 318,498   | 6,211                  | 23,199  | 381,131                             | 395,370   | 12,541  | (9,308)                              | —  | 398,603  |
| 177,137   | 3,508,477                            | 133,769  | 1,083,543   | 44,826                 | 8,471   | 1,270,609                           | 1,412,005   | 68,827  | (32,421)                             | —  | 1,448,411  |
| 1,381,300   | 10,185,202                           | 549,223  | 3,446,266   | 118,923                | 28,488  | 4,142,900                           | 4,548,049   | 1,123,093   | (183,201)                            | —  | 5,487,941  |
| 148,264   | 6,382,113                            | 468,141  | 2,412,572   | 113,574                | 140,955   | 3,135,242                           | 3,197,709   | (105,895)   | (177,294)                            | —  | 2,914,520  |
| 417,106   | 16,349,375                           | 911,228  | 6,476,820   | 80,024                 | 97,302  | 7,565,374                           | 8,624,361   | 235,511   | (117,194)                            | —  | 8,742,678  |
| 83,754  | 954,406                              | 30,649   | 356,452   | 370                    | 67,500  | 454,971                             | 444,294   | (20,352)  | —                                    | —  | 423,942  |
| 11,560  | 62,940                               | 1,611  | 21,155  | 2                      | 1,755   | 24,523                              | 23,835  | 4,175   | —                                    | —  | 28,010   |
| 7,676   | 458,918                              | 17,524   | 181,861   | 2,615                  | 1,798   | 203,798                             | 211,488   | 3,177   | (4,011)                              | —  | 210,654  |
| 21,745  | 140,771                              | 5,084  | 47,305  | 214                    | 7,646   | 60,249                              | 73,447  | 6,284   | —                                    | —  | 79,731   |
| 23,451  | 324,179                              | 10,785   | 123,001   | 148                    | 2,926   | 136,860                             | 155,852   | 6,384   | —                                    | —  | 162,236  |
| 386,772   | 18,611,845                           | 1,077,163  | 6,028,246   | 355,021                | 140,566   | 7,600,996                           | 6,408,028   | 148,230   | (357,765)                            | —  | 6,198,493  |
| 49,658  | 163,904                              | 4,034  | 46,766  | 50                     | 88  | 50,938                              | 58,449  | 21,274  | —                                    | —  | 79,723   |
| 67,001  | 2,524,362                            | 146,178  | 1,010,077   | 1,139                  | 42,128  | 1,199,522                           | 1,429,448   | (57,142)  | —                                    | —  | 1,372,306  |
| 504   | 6,741                                | 403  | 2,443   | 21                     | 1,539   | 4,406                               | 5,389   | (1,509)   | —                                    | —  | 3,880  |
| 58,786  | 1,777,544                            | 99,611   | 708,136   | 16,157                 | 8,894   | 832,798                             | 882,195   | 35,581  | (24,718)                             | —  | 893,058  |
| 6,257   | 131,143                              | 4,608  | 51,003  | 74                     | 291   | 55,976                              | 66,274  | 2,212   | —                                    | —  | 68,486   |
| 25,702  | 74,040                               | 1,554  | 20,413  | 12                     | 1,199   | 23,178                              | 24,418  | 13,686  | —                                    | —  | 38,104   |
| —   | 212,755                              | —  | 119,974   | —                      | —   | 119,974                             | 61,285  | 14,630  | —                                    | —  | 75,915   |
| 120,191   | 2,802,330                            | 30,430   | 734,123   | 30,264                 | 66,965  | 861,782                             | 1,113,452   | 47,801  | —                                    | —  | 1,161,253  |
| 16,048  | 423,264                              | 14,298   | 166,740   | 170                    | 10,813  | 192,021                             | 207,364   | 11,335  | —                                    | —  | 218,699  |
| 7,227   | 887,568                              | 28,951   | 361,648   | 173                    | 75,433  | 466,205                             | 424,753   | (28,844)  | —                                    | —  | 395,909  |
| 601   | 119,838                              | 4,086  | 48,885  | 40                     | 17,503  | 70,514                              | 59,498  | (10,479)  | —                                    | —  | 49,019   |
| 8,839   | 339,226                              | 17,361   | 136,031   | 132                    | 232,800   | 386,324                             | 182,713   | (168,591)   | —                                    | —  | 14,122   |
| 50,717  | 900,805                              | 27,594   | 358,834   | 242                    | 65,562  | 452,232                             | 432,407   | (7,747)   | —                                    | —  | 424,660  |
| 1,243   | 1,136,119                            | 347  | 639,577   | 30                     | 1,320   | 641,274                             | 330,805   | 49,357  | —                                    | —  | 380,162  |
| 8,215   | 118,777                              | 3,630  | 45,423  | 21                     | 2,015   | 51,089                              | 53,273  | 84  | —                                    | —  | 53,357   |
| 150,008   | 2,437,817                            | 73,276   | 966,363   | 555                    | —   | 1,040,194                           | 1,151,991   | 95,887  | —                                    | —  | 1,247,878  |
| 228,446   | 4,089,484                            | 144,026  | 1,575,863   | 2,443                  | 71,562  | 1,793,894                           | 2,067,673   | 47,494  | —                                    | —  | 2,115,167  |
| 43,216  | 556,271                              | 5,881  | 263,916   | 81                     | 17,037  | 286,915                             | 185,544   | 74,679  | —                                    | —  | 260,223  |
| 257,771   | 19,550,230                           | 1,102,182  | 7,949,893   | 6,116                  | 990,959   | 10,049,150                          | 10,815,429  | (625,530)   | —                                    | —  | 10,189,899   |
| 3,507,167   | 143,940,067                          | 4,447,200  | 59,783,356  | 38,424                 | 267,600   | 64,536,580                          | 70,848,883  | 1,460,407   | —                                    | —  | 72,309,290   |
| 212   | 34,230                               | 1,006  | 14,424  | —                      | 13,037  | 28,467                              | 16,132  | (15,864)  | —                                    | —  | 268  |
| 18,676  | 6,686,817                            | 13,557   | 3,745,012   | 1,179                  | —   | 3,759,748                           | 2,072,982   | 409,515   | —                                    | —  | 2,482,497  |
| 7,957   | 274,501                              | 9,535  | 109,034   | 128                    | 10,976  | 129,673                             | 137,845   | (7,904)   | —                                    | —  | 129,941  |
| 191,120   | 553,730                              | 10,939   | 153,605   | 22                     | —   | 164,566                             | 174,572   | 87,778  | —                                    | —  | 262,350  |
| 160,729   | 3,458,945                            | 101,824  | 1,418,501   | 513                    | 248,427   | 1,769,265                           | 1,631,574   | (90,831)  | —                                    | —  | 1,540,743  |
| —   | 103,917                              | —  | 58,600  | —                      | —   | 58,600                              | 29,934  | 5,400   | —                                    | —  | 35,334   |
| 14,991  | 109,475                              | 3,073  | 38,835  | 15                     | 965   | 42,888                              | 45,184  | 6,274   | —                                    | —  | 51,458   |
| 448,344   | 4,313,800                            | 162,898  | 1,775,828   | 1,566                  | 84,677  | 2,024,969                           | 1,939,809   | 320,306   | —                                    | —  | 2,260,115  |
| 114,311   | 10,267,654                           | 326,721  | 4,355,003   | 4,066                  | 127,073   | 4,812,863                           | 5,245,552   | 4,985   | —                                    | —  | 5,250,537  |
| 880   | 31,075                               | 933  | 12,440  | —                      | 348   | 13,721                              | 13,849  | 316   | —                                    | —  | 14,165   |
| 44,963  | 1,242,990                            | 44,682   | 488,973   | 757                    | 86,965  | 621,377                             | 641,489   | (82,549)  | —                                    | —  | 558,940  |
| 3,589   | 164,331                              | 9,682  | 65,580  | 108                    | 46,393  | 121,763                             | 98,095  | (29,704)  | —                                    | —  | 68,391   |
| 113,678   | 703,535                              | 20,886   | 247,856   | 339                    | 2,687   | 271,768                             | 320,670   | 45,027  | —                                    | —  | 365,697  |
| 37,685  | 4,142,634                            | 111,889  | 1,799,794   | 219                    | 197,157   | 2,109,059                           | 1,925,300   | (116,298)   | —                                    | —  | 1,809,002  |
| 15,877  | 81,806                               | 3,302  | 26,402  | 125                    | 12,657  | 42,486                              | 45,422  | (7,435)   | —                                    | —  | 37,987   |
| 3,118   | 999,811                              | 2,095  | 559,694   | 182                    | 72  | 562,043                             | 310,621   | 113,963   | —                                    | —  | 424,584  |
| 48,897  | 2,433,228                            | 150,995  | 990,951   | 623                    | 285,519   | 1,428,088                           | 1,358,880   | (217,583)   | —                                    | —  | 1,141,297  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** *(Continued)*

at December 31, 2018

| Participating Employer         | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| Emery County Recreation SSD    | N/A                            | \$ 13,292                                      | 30,269   | (561)  | 162  | 6,213   | 1,961                  |
| Emery School District          | N/A                            | 13,629,091                                     | 24,736,946   | 4,345,247  | 71,311   | 5,133,414   | 1,370,024              |
| Emery Town                     | N/A                            | 78,634   | 166,927  | 4,309  | —  | 59,260  | —                      |
| Emery Water Conserv Dist       | N/A                            | 196,670  | 413,710  | 16,931   | 2,498  | 90,331  | 26,981                 |
| Enoch City                     | N/A                            | 582,000  | 1,196,451  | 77,697   | 4,939  | 248,790   | 75,552                 |
| Ephraim City                   | N/A                            | 1,374,491                                      | 2,793,536  | 206,202  | 10,738   | 587,664   | 175,423                |
| Escalante City                 | N/A                            | 142,417  | 291,879  | 17,956   | 1,832  | 65,052  | 19,078                 |
| Eureka City Corporation        | N/A                            | 66,871   | 137,050  | 8,431  | 860  | 30,545  | 8,958                  |
| Fairview City                  | N/A                            | 284,641  | 576,084  | 44,334   | 2,267  | 121,963   | 36,222                 |
| Farmington City                | N/A                            | 3,332,599                                      | 7,108,781  | 234,826  | 63,833   | 1,547,603   | 500,535                |
| Farr West City                 | N/A                            | 298,556  | 615,103  | 35,258   | 3,831  | 136,521   | 40,187                 |
| Fast Forward Charter HS        | N/A                            | 1,104,147                                      | 2,021,792  | 339,701  | 5,910  | 408,964   | 114,811                |
| Ferron City                    | N/A                            | 74,855   | 158,849  | 5,419  | 947  | 34,445  | 10,351                 |
| Fillmore City                  | N/A                            | 291,850  | 607,350  | 29,985   | 3,726  | 133,738   | 39,647                 |
| Five-County Assn of Govts      | N/A                            | 1,338,640                                      | 2,804,124  | 120,981  | 14,828   | 665,536   | 158,777                |
| Fountain Green City            | N/A                            | 130,475  | 261,986  | 22,181   | 898  | 55,003  | 16,325                 |
| Fox Hollow Golf Course         | N/A                            | 119,309  | 247,831  | 12,595   | 1,525  | 54,651  | 16,180                 |
| Francis City                   | N/A                            | 111,610  | 231,611  | 11,952   | 1,427  | 51,114  | 15,122                 |
| Fruit Heights City             | N/A                            | 304,095  | 630,714  | 32,809   | 3,889  | 139,251   | 41,184                 |
| Garfield County                | N/A                            | 3,561,856                                      | 7,187,614  | 586,878  | 20,237   | 1,520,194   | 426,055                |
| Garfield School District       | N/A                            | 5,414,198                                      | 9,798,802  | 1,751,844  | 28,894   | 1,995,948   | 555,213                |
| Garland City                   | N/A                            | 507,242  | 1,063,096  | 44,587   | 387  | 327,484   | 18,333                 |
| Genola Town                    | N/A                            | 74,712   | 153,120  | 9,419  | 961  | 34,126  | 10,009                 |
| Grand Co Cemetery Mtce Dist    | N/A                            | 76,505   | 161,710  | 6,013  | 970  | 35,174  | 10,542                 |
| Grand County                   | N/A                            | 4,908,424                                      | 10,118,032   | 612,520  | 45,802   | 2,218,983   | 611,413                |
| Grand School District          | N/A                            | 9,005,413                                      | 16,446,342   | 2,803,059  | 48,171   | 3,331,959   | 933,465                |
| Grand Water/Sewer Service      | N/A                            | 206,885  | 436,908  | 16,545   | 2,622  | 95,101  | 28,484                 |
| Granger-Hunter Imp Dist        | N/A                            | 2,832,324                                      | 5,897,163  | 288,782  | 36,152   | 1,298,034   | 384,933                |
| Granite School District        | N/A                            | 310,533,912                                    | 565,242,738  | 97,755,839   | 1,621,501  | 117,413,265   | 31,225,176             |
| Granite Uniserv                | N/A                            | 323,945  | 582,279  | 107,817  | 1,726  | 119,095   | 32,950                 |
| Grantsville City               | N/A                            | 1,657,260                                      | 3,384,277  | 241,770  | 12,556   | 697,968   | 212,143                |
| Gunnison City                  | N/A                            | 187,989  | 389,255  | 20,760   | 2,406  | 86,053  | 25,421                 |
| Gunnison Valley Hospital       | N/A                            | 4,033,526                                      | 8,354,794  | 443,320  | 51,614   | 1,846,507   | 545,599                |
| Gunnison Valley Police Dept    | N/A                            | 276,627  | 567,409  | 38,811   | 83,137   | 112,538   | 54,068                 |
| Heber City                     | N/A                            | 3,572,114                                      | 7,296,139  | 515,484  | 27,340   | 1,514,664   | 457,619                |
| Heber Light & Power            | N/A                            | 2,197,499                                      | 4,550,565  | 242,408  | 28,123   | 1,005,936   | 297,176                |
| Heber Valley Historic Railroad | N/A                            | 312,243  | 576,372  | 92,603   | 1,675  | 116,030   | 32,779                 |
| Heber Valley SSD               | N/A                            | 143,948  | 295,015  | 18,148   | 1,851  | 65,750  | 19,283                 |
| Herriman City                  | N/A                            | 4,834,563                                      | 10,022,659   | 543,184  | 396,989  | 2,154,405   | 725,301                |
| High Desert Uniserv            | N/A                            | 51,071   | 93,424   | 15,781   | 273  | 18,909  | 5,304                  |
| High School Activities Assn    | N/A                            | 671,751  | 1,213,452  | 219,080  | 3,583  | 247,453   | 68,731                 |
| Highland City                  | N/A                            | 933,634  | 1,931,420  | 104,425  | 11,954   | 427,293   | 126,142                |
| Hinckley Town                  | N/A                            | 53,993   | 116,723  | 2,322  | 677  | 24,945  | 7,594                  |
| Honeyville City                | N/A                            | 202,400  | 429,662  | 11,092   | —  | 152,532   | —                      |
| Hooper City                    | N/A                            | 214,934  | 457,841  | 14,281   | 2,712  | 98,985  | 29,827                 |
| Hooper Water Improv Dist       | N/A                            | 371,014  | 764,917  | 43,422   | 4,758  | 169,679   | 49,972                 |
| Housing Auth of Carbon Co      | N/A                            | 188,498  | 392,045  | 19,532   | 2,408  | 86,367  | 25,593                 |
| Housing Auth of SL County      | N/A                            | 2,266,893                                      | 4,795,451  | 175,283  | 28,708   | 1,042,435   | 312,594                |
| Housing Authority of SLC       | N/A                            | 2,450,023                                      | 5,151,044  | 211,963  | 30,391   | 1,142,132   | 327,948                |
| Housing Authority Ogden City   | N/A                            | 499,870  | 1,040,857  | 50,906   | 6,380  | 229,091   | 67,941                 |
| Huntington City                | N/A                            | 131,728  | 269,972  | 16,608   | 1,694  | 60,169  | 17,646                 |
| Hurricane City                 | N/A                            | 4,438,981                                      | 9,031,218  | 659,456  | 36,098   | 1,898,246   | 568,635                |
| Hurricane Valley Fire SSD      | N/A                            | 288,972  | 1,010,700  | (293,313)  | 50,318   | 280,675   | 131,275                |
| Hyde Park City                 | N/A                            | 369,339  | 759,291  | 44,833   | 4,743  | 168,812   | 49,617                 |
| Hyrum City                     | N/A                            | 1,022,829                                      | 2,108,982  | 119,543  | 13,117   | 467,789   | 137,779                |
| Impact Mitigation SSD          | N/A                            | 79,473   | 162,877  | 10,020   | 1,022  | 36,301  | 10,646                 |
| Intech Collegiate High School  | N/A                            | 654,393  | 1,203,140  | 197,672  | 3,506  | 242,780   | 68,374                 |
| Iron County                    | N/A                            | 7,942,816                                      | 16,119,649   | 1,245,573  | 51,159   | 3,335,274   | 987,335                |
| Iron School District           | N/A                            | 37,571,618                                     | 68,130,911   | 12,047,722   | 199,364  | 13,948,578  | 3,834,570              |
| Itineris High School           | N/A                            | 1,310,890                                      | 2,379,593  | 418,845  | 7,001  | 483,842   | 134,907                |
| Ivins City                     | N/A                            | 1,835,160                                      | 3,751,094  | 260,881  | 15,306   | 783,364   | 236,591                |
| Jordan River Commission        | N/A                            | 69,626   | 142,696  | 8,778  | 895  | 31,803  | 9,327                  |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      |  |   | Deferred Inflows of Resources |   |                                     |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |  |  |  |
|---|--------------------------------------|--|---|-------------------------------|---|-------------------------------------|---|---|--|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions        | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |  |
| 575   | 8,911                                | 539  | 3,265   | 28                            | 1,948   | 5,780                               | 7,200   | (859)   | —  | 6,341  |  |
| 22,490  | 6,597,239                            | 201,457  | 2,810,986   | 1,301                         | 388,759   | 3,402,503                           | 3,249,964   | (269,393)   | —  | 2,980,571  |  |
| —   | 59,260                               | —  | 33,417  | —                             | —   | 33,417                              | 17,070  | (1,828)   | —  | 15,242   |  |
| 8,292   | 128,102                              | 4,691  | 48,766  | 98                            | 3,818   | 57,373                              | 66,820  | 2,352   | —  | 69,172   |  |
| 16,078  | 345,359                              | 19,729   | 134,758   | 217                           | 22,190  | 176,894                             | 198,578   | (7,476)   | —  | 191,102  |  |
| 135,022   | 908,847                              | 43,741   | 319,530   | 229                           | 7,130   | 370,630                             | 428,578   | 73,354  | —  | 501,932  |  |
| 1,637   | 87,599                               | 2,656  | 35,416  | —                             | 3,867   | 41,939                              | 39,425  | (9,201)   | —  | 30,224   |  |
| 2,949   | 43,312                               | 1,247  | 16,629  | —                             | 7,583   | 25,459                              | 18,512  | (1,435)   | —  | 17,077   |  |
| 49,709  | 210,161                              | 8,653  | 66,420  | 22                            | 35,725  | 110,820                             | 85,205  | 10,374  | —  | 95,579   |  |
| 110,774   | 2,222,745                            | 133,600  | 839,284   | 20,818                        | 78,402  | 1,072,104                           | 1,133,667   | 22,076  | (31,709)   | 1,124,034  |  |
| 16,208  | 196,747                              | 5,879  | 74,202  | 30                            | 1,064   | 81,175                              | 86,398  | 8,574   | —  | 94,972   |  |
| 61,844  | 591,529                              | 18,731   | 222,588   | 302                           | —   | 241,621                             | 287,670   | 32,678  | —  | 320,348  |  |
| 1,017   | 46,760                               | 1,918  | 18,543  | 50                            | 18,392  | 38,903                              | 27,045  | (9,701)   | —  | 17,344   |  |
| 10,112  | 187,223                              | 6,328  | 72,454  | 85                            | 4,541   | 83,408                              | 91,511  | 3,671   | —  | 95,182   |  |
| 12,119  | 851,260                              | 26,304   | 363,049   | 439                           | 19,618  | 409,410                             | 415,751   | (5,662)   | —  | 410,089  |  |
| 74  | 72,300                               | 4,189  | 30,007  | —                             | 5,732   | 39,928                              | 38,189  | (3,187)   | —  | 35,002   |  |
| 7,140   | 79,496                               | 2,544  | 29,626  | 30                            | 1,088   | 33,288                              | 36,880  | 1,930   | —  | 38,810   |  |
| 8,469   | 76,132                               | 2,357  | 27,716  | 26                            | —   | 30,099                              | 34,233  | 3,801   | —  | 38,034   |  |
| 6,765   | 191,089                              | 6,390  | 75,522  | 69                            | 991   | 82,972                              | 92,885  | 3,953   | —  | 96,838   |  |
| 34,976  | 2,001,462                            | 125,104  | 829,704   | 462                           | 71,458  | 1,026,728                           | 1,109,716   | (7,433)   | —  | 1,102,283  |  |
| 45,453  | 2,625,508                            | 81,811   | 1,090,345   | 545                           | 133,338   | 1,306,039                           | 1,289,334   | 776   | —  | 1,290,110  |  |
| 3,739   | 349,943                              | 7,594  | 183,313   | 84                            | 16,533  | 207,524                             | 135,442   | (23,261)  | —  | 112,181  |  |
| 2,282   | 47,378                               | 1,393  | 18,579  | —                             | —   | 19,972                              | 20,683  | 1,814   | —  | 22,497   |  |
| 9,961   | 56,647                               | 1,899  | 18,959  | 45                            | —   | 20,903                              | 26,895  | 5,310   | —  | 32,205   |  |
| 152,778   | 3,028,976                            | 139,600  | 1,207,122   | 1,413                         | 59,466  | 1,407,601                           | 1,583,283   | 22,118  | —  | 1,605,401  |  |
| 250,660   | 4,564,255                            | 148,987  | 1,814,999   | 2,110                         | 26,227  | 1,992,323                           | 2,300,529   | 67,801  | —  | 2,368,330  |  |
| 25,431  | 151,638                              | 5,099  | 51,275  | 119                           | 5,575   | 62,068                              | 72,282  | 4,664   | —  | 76,946   |  |
| 15,402  | 1,734,521                            | 61,708   | 703,106   | 849                           | 115,894   | 881,557                             | 891,565   | (68,702)  | —  | 822,863  |  |
| 6,655,997   | 156,915,939                          | 4,698,712  | 64,264,782  | 40,845                        | 2,116,143   | 71,120,482                          | 75,541,244  | 298,294   | —  | 75,839,538   |  |
| 20,207  | 173,978                              | 4,545  | 65,199  | —                             | —   | 69,744                              | 72,921  | 19,476  | —  | 92,397   |  |
| 66,446  | 989,113                              | 58,814   | 378,593   | 514                           | 14,577  | 452,498                             | 557,265   | 3,824   | —  | 561,089  |  |
| 1,534   | 115,414                              | 3,888  | 46,696  | 37                            | 81,157  | 131,778                             | 56,669  | (52,519)  | —  | 4,150  |  |
| 103,739   | 2,547,459                            | 83,709   | 1,001,875   | 810                           | 25,155  | 1,111,549                           | 1,219,226   | 66,099  | —  | 1,285,325  |  |
| 57,738  | 307,481                              | 932  | 59,777  | 3,493                         | 586   | 64,788                              | 90,717  | 22,269  | —  | 112,986  |  |
| 238,097   | 2,237,720                            | 122,877  | 821,802   | 1,041                         | —   | 945,720                             | 1,183,351   | 141,939   | —  | 1,325,290  |  |
| 45,242  | 1,376,477                            | 45,491   | 545,846   | 430                           | 70,091  | 661,858                             | 662,853   | (29,279)  | —  | 633,574  |  |
| 14,329  | 164,813                              | 5,700  | 62,991  | 123                           | —   | 68,814                              | 86,225  | 12,680  | —  | 98,905   |  |
| —   | 86,884                               | 2,685  | 35,797  | —                             | 7,520   | 46,002                              | 39,849  | (3,891)   | —  | 35,958   |  |
| 392,633   | 3,669,328                            | 84,087   | 1,162,200   | 15,804                        | 1,336   | 1,263,427                           | 1,530,313   | 174,458   | —  | 1,704,771  |  |
| 12,616  | 37,102                               | 858  | 10,295  | 13                            | 1,199   | 12,365                              | 13,209  | 4,950   | —  | 18,159   |  |
| 7,094   | 326,861                              | 9,949  | 135,259   | 49                            | 15,406  | 160,663                             | 157,541   | (3,956)   | —  | 153,585  |  |
| 6,413   | 571,802                              | 19,141   | 231,935   | 165                           | 38,361  | 289,602                             | 279,362   | (15,460)  | —  | 263,902  |  |
| 5,077   | 38,293                               | 1,590  | 13,345  | 56                            | 3,474   | 18,465                              | 22,004  | (107)   | —  | 21,897   |  |
| —   | 152,532                              | —  | 86,014  | —                             | —   | 86,014                              | 43,937  | 7,459   | —  | 51,396   |  |
| 6,627   | 138,151                              | 5,675  | 53,218  | 159                           | 23,244  | 82,296                              | 79,670  | (9,587)   | —  | 70,083   |  |
| 17,316  | 241,725                              | 7,356  | 92,202  | 42                            | 52  | 99,652                              | 107,988   | 7,529   | —  | 115,517  |  |
| 7,741   | 122,109                              | 4,066  | 46,799  | 53                            | 21,632  | 72,550                              | 58,844  | (10,436)  | —  | 48,408   |  |
| 40,159  | 1,423,896                            | 56,650   | 561,735   | 1,373                         | 55,543  | 675,301                             | 801,461   | (17,171)  | —  | 784,290  |  |
| 57,394  | 1,557,865                            | 56,684   | 617,791   | 1,153                         | 60,472  | 736,100                             | 820,826   | (70,137)  | —  | 750,689  |  |
| 5,816   | 309,228                              | 10,899   | 124,088   | 151                           | 37,723  | 172,861                             | 157,446   | (12,866)  | —  | 144,580  |  |
| 2,598   | 82,107                               | 2,457  | 32,758  | —                             | 13,586  | 48,801                              | 36,466  | (5,155)   | —  | 31,311   |  |
| 190,571   | 2,693,550                            | 141,013  | 1,031,855   | 793                           | 23,233  | 1,196,894                           | 1,395,146   | 98,421  | —  | 1,493,567  |  |
| 13,074  | 475,342                              | 38,721   | 149,554   | 24,441                        | 27,641  | 240,357                             | 210,501   | 4,635   | (38,074)   | 177,062  |  |
| 16,749  | 239,921                              | 7,114  | 91,816  | 22                            | 2,643   | 101,595                             | 104,971   | 3,831   | —  | 108,802  |  |
| 17,352  | 636,037                              | 20,300   | 254,186   | 117                           | 30,590  | 305,193                             | 297,961   | (8,067)   | —  | 289,894  |  |
| 370   | 48,339                               | 1,482  | 19,763  | —                             | 25,788  | 47,033                              | 22,001  | (9,984)   | —  | 12,017   |  |
| 44,663  | 359,323                              | 11,528   | 131,968   | 219                           | 9,710   | 153,425                             | 175,643   | 28,227  | —  | 203,870  |  |
| 221,453   | 4,595,221                            | 289,884  | 1,813,582   | 1,920                         | 210,546   | 2,315,932                           | 2,610,257   | (97,404)  | —  | 2,512,853  |  |
| 394,002   | 18,376,514                           | 570,323  | 7,622,906   | 4,317                         | 71,999  | 8,269,545                           | 9,027,980   | 123,330   | —  | 9,151,310  |  |
| 14,576  | 640,326                              | 20,427   | 264,063   | 190                           | 24,392  | 309,072                             | 319,655   | 3,943   | —  | 323,598  |  |
| 35,081  | 1,070,342                            | 60,451   | 425,122   | 494                           | 131,339   | 617,406                             | 601,313   | (41,268)  | —  | 560,045  |  |
| 2,873   | 44,898                               | 1,299  | 17,315  | —                             | 2,289   | 20,903                              | 19,275  | 219   | —  | 19,494   |  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** *(Continued)*

at December 31, 2018

| Participating Employer             | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|------------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| Jordan School District             | N/A                            | \$ 205,306,729                                 | 373,734,238  | 64,746,731   | 1,089,250  | 76,426,575  | 21,023,066             |
| Jordan Uniserv                     | N/A                            | 211,796  | 383,997  | 68,021   | 1,130  | 78,134  | 21,766                 |
| Jordan Valley Water Conserv        | N/A                            | 6,958,792                                      | 14,410,303   | 758,655  | 82,445   | 3,338,932   | 868,725                |
| Jordanelle SSD                     | N/A                            | 1,134,583                                      | 2,355,666  | 120,590  | 14,502   | 519,661   | 153,802                |
| Juab County                        | N/A                            | 2,680,242                                      | 5,478,007  | 380,295  | 22,246   | 1,176,445   | 331,121                |
| Juab School District               | N/A                            | 10,340,078                                     | 18,746,539   | 3,321,209  | 55,206   | 3,814,554   | 1,062,555              |
| Juab Special Service Fire District | N/A                            | 17,363   | 35,585   | 2,189  | 223  | 7,931   | 2,326                  |
| Kamas City                         | N/A                            | 374,220  | 752,637  | 63,548   | 2,187  | 155,717   | 46,495                 |
| Kane County                        | N/A                            | 4,377,471                                      | 8,907,469  | 668,481  | 27,364   | 1,824,178   | 552,267                |
| Kane County Water Conserv Dist     | N/A                            | 301,211  | 630,103  | 28,528   | 3,836  | 138,181   | 41,112                 |
| Kane School District               | N/A                            | 6,992,437                                      | 12,701,406   | 2,227,895  | 37,351   | 2,581,550   | 720,176                |
| Kaysville City                     | N/A                            | 5,438,561                                      | 11,209,304   | 694,461  | 58,866   | 2,429,487   | 704,632                |
| Kearns Improvement Dist            | N/A                            | 1,878,845                                      | 3,909,226  | 184,961  | 17,607   | 1,009,057   | 185,352                |
| Laverkin City                      | N/A                            | 770,297  | 1,557,822  | 122,143  | 5,545  | 326,758   | 97,332                 |
| Layton City                        | N/A                            | 12,834,315                                     | 28,132,741   | 317,467  | 328,741  | 6,357,604   | 2,051,905              |
| Lehi City                          | N/A                            | 11,523,545                                     | 24,892,449   | 546,871  | 255,162  | 5,489,401   | 1,794,126              |
| Lewiston City                      | N/A                            | 135,595  | 288,080  | 9,568  | 1,714  | 62,411  | 18,772                 |
| Lindon City                        | N/A                            | 3,064,379                                      | 6,165,226  | 515,569  | 19,561   | 1,283,506   | 382,586                |
| Logan City                         | N/A                            | 17,827,221                                     | 37,334,343   | 1,769,392  | 134,794  | 8,414,510   | 2,527,638              |
| Logan School District              | N/A                            | 23,727,015                                     | 43,229,044   | 7,437,802  | 123,779  | 8,984,754   | 2,385,349              |
| Lone Peak PS District              | N/A                            | 1,771,992                                      | 4,180,481  | (196,770)  | 509,243  | 988,193   | 455,722                |
| Maeser Water Improve Dist          | N/A                            | 249,908  | 512,176  | 31,508   | 3,214  | 114,150   | 33,478                 |
| Magna Mosquito Abatement           | N/A                            | 83,955   | 172,062  | 10,585   | 1,080  | 38,348  | 11,247                 |
| Manti City                         | N/A                            | 362,925  | 759,042  | 34,492   | 4,623  | 166,485   | 49,527                 |
| Mapleton City                      | N/A                            | 1,604,500                                      | 3,274,121  | 229,737  | 14,233   | 690,545   | 207,392                |
| Marriott-Slaterville City          | N/A                            | 139,162  | 288,020  | 15,467   | 1,781  | 63,696  | 18,810                 |
| Mayfield Town                      | N/A                            | 43,776   | 89,717   | 5,519  | 563  | 19,995  | 5,864                  |
| Mendon City                        | N/A                            | 45,076   | 93,955   | 4,520  | 575  | 20,662  | 6,133                  |
| Metro Water Dist SLC/Sandy         | N/A                            | 3,019,607                                      | 6,222,592  | 355,555  | 38,735   | 1,380,847   | 406,540                |
| Midvale City                       | N/A                            | 2,750,895                                      | 5,751,040  | 263,171  | 35,042   | 1,261,811   | 375,263                |
| Midvalley Improvement District     | N/A                            | 501,756  | 1,033,387  | 59,521   | 6,438  | 229,422   | 67,518                 |
| Midway City                        | N/A                            | 487,635  | 1,020,689  | 45,737   | 6,208  | 223,731   | 66,594                 |
| Military Installation Devel        | N/A                            | 104,901  | 214,990  | 13,226   | 1,349  | 47,915  | 14,053                 |
| Millard Co Care & Rehab Inc        | N/A                            | 968,245  | 2,038,056  | 82,405   | 12,293   | 444,773   | 132,908                |
| Millard County                     | N/A                            | 6,159,021                                      | 12,465,706   | 985,529  | 42,938   | 2,576,057   | 777,491                |
| Millard School District            | N/A                            | 18,029,130                                     | 32,853,809   | 5,636,436  | 92,716   | 6,921,590   | 1,783,470              |
| Millcreek City                     | N/A                            | 855,153  | 1,781,947  | 86,128   | 10,911   | 391,977   | 116,307                |
| Millville City                     | N/A                            | 114,950  | 237,048  | 13,411   | 1,474  | 52,574  | 15,486                 |
| Minersville Town                   | N/A                            | 120,534  | 247,645  | 14,742   | 1,548  | 55,084  | 16,184                 |
| Moab Valley Fire Protection        | N/A                            | 78,480   | 258,136  | (67,318)   | 12,342   | 73,881  | 33,173                 |
| Monroe City                        | N/A                            | 348,813  | 717,252  | 42,222   | 4,480  | 159,437   | 46,869                 |
| Monticello Academy                 | N/A                            | 1,505,758                                      | 2,788,198  | 440,049  | 8,083  | 560,253   | 158,661                |
| Morgan City Corporation            | N/A                            | 581,972  | 1,204,295  | 64,825   | 7,450  | 266,367   | 78,652                 |
| Morgan County                      | N/A                            | 1,629,158                                      | 3,366,275  | 199,924  | 19,592   | 718,789   | 220,857                |
| Morgan School District             | N/A                            | 9,621,696                                      | 17,511,215   | 3,040,253  | 51,422   | 3,555,023   | 993,258                |
| Moroni City                        | N/A                            | 112,574  | 230,351  | 15,621   | 915  | 48,491  | 14,502                 |
| Mount Pleasant City                | N/A                            | 853,766  | 1,727,831  | 134,762  | 6,016  | 361,535   | 107,819                |
| Mountain Regional Water SSD        | N/A                            | 1,256,115                                      | 2,598,287  | 140,681  | 16,084   | 574,870   | 169,698                |
| Mountainland Assn of Govt          | N/A                            | 1,983,610                                      | 4,120,508  | 204,735  | 21,955   | 987,347   | 231,903                |
| Mountainland AIC                   | N/A                            | 2,004,362                                      | 3,602,762  | 667,100  | 10,678   | 736,881   | 203,870                |
| Mt Olympus Improvement Dist        | N/A                            | 1,274,051                                      | 2,636,229  | 142,069  | 16,311   | 583,119   | 172,171                |
| Murray City                        | N/A                            | 19,513,519                                     | 42,366,327   | 737,771  | 463,324  | 9,697,742   | 3,004,123              |
| Murray School District             | N/A                            | 29,307,932                                     | 53,234,996   | 9,329,569  | 155,382  | 10,902,040  | 2,992,770              |
| Myton City                         | N/A                            | 63,356   | 131,956  | 6,430  | 809  | 29,038  | 8,613                  |
| N Tooele Co Fire Protection SD     | N/A                            | 27,045   | 108,809  | (38,560)   | 6,229  | 30,715  | 15,252                 |
| N Ut Environmental Rsrc Agcy       | N/A                            | 302,758  | 623,686  | 35,810   | 3,884  | 138,439   | 40,748                 |
| Nebo Credit Union                  | N/A                            | 595,394  | 1,233,881  | 64,980   | 7,617  | 272,594   | 80,574                 |
| Nebo School District               | N/A                            | 129,017,265                                    | 234,492,252  | 40,996,929   | 688,538  | 47,695,046  | 13,281,163             |
| Nephi City                         | N/A                            | 1,839,569                                      | 3,768,920  | 251,115  | 16,480   | 795,014   | 238,888                |
| Nibley City Corporation            | N/A                            | 480,225  | 1,006,649  | 43,955   | 6,110  | 220,400   | 65,671                 |
| Noah Webster Academy Inc           | N/A                            | 1,073,686                                      | 1,988,002  | 313,876  | 5,765  | 399,480   | 113,125                |
| North Davis Co Sewer Dist          | N/A                            | 2,224,073                                      | 4,597,355  | 248,206  | 26,098   | 1,073,185   | 274,125                |



Utah Retirement Systems

| Deferred Outflows of Resources  |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions |  |
| 5,408,096   | 103,946,987                          | 3,232,907  | 41,724,586  | 34,744                 | 432,157   | 45,424,394                          | 50,789,120  | 1,682,897   | —  | 52,472,017   |
| 798   | 101,828                              | 3,260  | 42,660  | 27                     | 23,739  | 69,686                              | 51,153  | (10,052)  | —  | 41,101   |
| 19,316  | 4,309,418                            | 130,621  | 1,821,223   | 1,011                  | 42,058  | 1,994,913                           | 2,023,279   | (25,589)  | —  | 1,997,690  |
| 35,124  | 723,089                              | 24,081   | 281,742   | 279                    | 8,887   | 314,989                             | 349,422   | 9,194   | —  | 358,616  |
| 96,989  | 1,626,801                            | 84,663   | 640,570   | 619                    | 43,591  | 769,443                             | 863,374   | 17,584  | —  | 880,958  |
| 396,007   | 5,328,322                            | 159,095  | 2,082,667   | 1,307                  | —   | 2,243,069                           | 2,496,847   | 200,275   | —  | 2,697,122  |
| 7,912   | 18,392                               | 324  | 4,318   | —                      | —   | 4,642                               | 4,807   | 2,933   | —  | 7,740  |
| 17,249  | 221,648                              | 13,231   | 84,837  | 35                     | 7,394   | 105,497                             | 114,997   | 13,859  | —  | 128,856  |
| 103,642   | 2,507,451                            | 163,829  | 989,901   | 1,331                  | 35,229  | 1,190,290                           | 1,469,665   | 32,858  | —  | 1,502,523  |
| 5,316   | 188,445                              | 6,846  | 74,734  | 117                    | 16,134  | 97,831                              | 98,251  | (3,682)   | —  | 94,569   |
| 51,744  | 3,390,821                            | 109,692  | 1,408,629   | 1,080                  | 11,790  | 1,531,191                           | 1,713,913   | (5,064)   | —  | 1,708,849  |
| 112,263   | 3,305,248                            | 185,810  | 1,323,436   | 10,959                 | 104,336   | 1,624,541                           | 1,725,198   | 43,466  | (15,963)   | 1,752,701  |
| 15,944  | 1,227,960                            | 27,699   | 555,936   | 198                    | 12,888  | 596,721                             | 515,040   | (8,159)   | —  | 506,881  |
| 179,578   | 609,213                              | 25,005   | 177,886   | 85                     | 6,735   | 209,711                             | 235,462   | 35,969  | —  | 271,431  |
| 105,470   | 8,843,720                            | 613,810  | 3,455,449   | 139,327                | 265,219   | 4,473,805                           | 4,459,435   | (179,224)   | (216,830)  | 4,063,381  |
| 453,299   | 7,991,988                            | 452,525  | 2,973,311   | 83,185                 | 43,071  | 3,552,092                           | 3,996,597   | 214,722   | (126,544)  | 4,084,775  |
| 2,506   | 85,403                               | 3,508  | 33,584  | 94                     | 14,538  | 51,724                              | 49,383  | (6,348)   | —  | 43,035   |
| 102,576   | 1,788,229                            | 104,092  | 699,479   | 209                    | 1,724   | 805,504                             | 928,144   | 61,058  | —  | 989,202  |
| 86,913  | 11,163,855                           | 1,357,416  | 4,581,084   | 114,714                | 139,108   | 6,192,322                           | 4,629,317   | (40,017)  | (166,486)  | 4,422,814  |
| 134,506   | 11,628,388                           | 361,489  | 4,917,180   | 3,386                  | 358,203   | 5,640,258                           | 5,807,580   | (20,219)  | —  | 5,787,361  |
| 53,647  | 2,006,805                            | 82,942   | 529,362   | 43,449                 | 15,030  | 670,783                             | 634,512   | 8,261   | (32,637)   | 610,136  |
| 171   | 151,013                              | 4,661  | 62,147  | —                      | 3,933   | 70,741                              | 69,182  | (4,183)   | —  | 64,999   |
| 12,203  | 62,878                               | 1,566  | 20,878  | —                      | 1,148   | 23,592                              | 23,241  | 3,075   | —  | 26,316   |
| 5,565   | 226,200                              | 8,234  | 90,049  | 140                    | 25,823  | 124,246                             | 118,193   | (6,328)   | —  | 111,865  |
| 29,901  | 942,071                              | 49,433   | 375,160   | 320                    | 36,040  | 560,953                             | 507,965   | (14,620)  | —  | 493,345  |
| 5,026   | 89,313                               | 2,866  | 34,569  | 26                     | 44  | 37,505                              | 41,796  | 2,131   | —  | 43,927   |
| 6,223   | 32,645                               | 816  | 10,886  | —                      | 197   | 11,899                              | 12,118  | 2,512   | —  | 14,630   |
| 2,034   | 29,404                               | 992  | 11,188  | 14                     | —   | 12,194                              | 14,309  | 1,082   | —  | 15,391   |
| 8,078   | 1,834,200                            | 59,588   | 750,457   | 312                    | 43,110  | 853,467                             | 875,492   | (19,084)  | —  | 856,408  |
| 37,774  | 1,709,890                            | 62,184   | 682,580   | 1,039                  | 19,846  | 765,649                             | 893,170   | (4,331)   | —  | 888,839  |
| 32,583  | 335,961                              | 9,844  | 124,709   | 46                     | —   | 134,599                             | 144,785   | 18,069  | —  | 162,854  |
| 8,372   | 304,905                              | 11,142   | 120,980   | 196                    | 18,531  | 150,849                             | 159,765   | 797   | —  | 160,562  |
| 4,649   | 67,966                               | 1,957  | 26,086  | —                      | 45,772  | 73,815                              | 29,040  | (13,691)  | —  | 15,349   |
| 43,197  | 633,171                              | 23,216   | 240,067   | 493                    | 7,317   | 271,093                             | 330,462   | 12,486  | —  | 342,948  |
| 17,696  | 3,414,182                            | 215,898  | 1,401,069   | 1,069                  | 288,906   | 1,906,942                           | 1,965,636   | (148,381)   | —  | 1,817,255  |
| 73,262  | 8,871,038                            | 265,517  | 3,796,100   | 2,035                  | 187,360   | 4,251,012                           | 4,355,476   | 45,432  | —  | 4,400,908  |
| 379,224   | 898,419                              | 18,770   | 212,267   | 269                    | —   | 231,306                             | 270,860   | 142,082   | —  | 412,942  |
| 2,360   | 71,894                               | 2,284  | 28,566  | 13                     | 9,475   | 40,338                              | 33,523  | (2,264)   | —  | 31,259   |
| 5,926   | 78,742                               | 2,307  | 29,966  | 6                      | 890   | 33,169                              | 34,083  | 2,824   | —  | 36,907   |
| 12,773  | 132,169                              | 10,413   | 39,834  | 6,463                  | 1,642   | 58,352                              | 41,519  | 3,790   | (10,226)   | 35,083   |
| 8,116   | 218,902                              | 6,734  | 86,710  | 22                     | 8,341   | 101,807                             | 99,323  | 2,334   | —  | 101,657  |
| 31,531  | 758,528                              | 28,250   | 303,848   | 664                    | 168,852   | 501,614                             | 424,989   | (65,360)  | —  | 359,629  |
| 14,566  | 367,035                              | 11,966   | 144,570   | 106                    | 37,172  | 193,814                             | 174,559   | (6,377)   | —  | 168,182  |
| 13,361  | 972,599                              | 54,534   | 390,507   | 3,422                  | 115,884   | 564,347                             | 520,245   | (59,415)  | (4,960)  | 455,870  |
| 346,988   | 4,946,691                            | 153,894  | 1,938,621   | 1,762                  | 29,268  | 2,123,545                           | 2,394,083   | 80,279  | —  | 2,474,362  |
| 20,252  | 84,160                               | 3,591  | 26,315  | 30                     | 2,831   | 32,767                              | 36,356  | 7,806   | —  | 44,162   |
| 26,870  | 502,240                              | 28,191   | 196,748   | 113                    | 497   | 225,549                             | 263,703   | 17,675  | —  | 281,378  |
| 10,835  | 771,487                              | 25,728   | 312,050   | 220                    | 20,431  | 358,429                             | 375,561   | 1,788   | —  | 377,349  |
| 37,475  | 1,278,680                            | 35,403   | 540,104   | 326                    | —   | 575,833                             | 574,371   | 33,957  | —  | 608,328  |
| 74,133  | 1,025,562                            | 28,123   | 403,411   | —                      | 7,970   | 439,504                             | 451,185   | 54,398  | —  | 505,583  |
| 18,184  | 789,785                              | 26,176   | 316,494   | 231                    | 23,309  | 366,210                             | 381,901   | (7,937)   | —  | 373,964  |
| 444,685   | 13,609,874                           | 799,234  | 5,277,145   | 174,640                | 251,411   | 6,502,430                           | 6,456,198   | 80,194  | (272,152)  | 6,264,240  |
| 1,074,332   | 15,124,524                           | 451,205  | 5,956,099   | 4,004                  | 195,128   | 6,606,436                           | 7,126,689   | 272,457   | —  | 7,399,146  |
| 9,012   | 47,472                               | 1,385  | 15,728  | 19                     | 14,185  | 31,317                              | 19,991  | (1,096)   | —  | 18,895   |
| 5,321   | 57,517                               | 4,506  | 16,243  | 2,975                  | 1,888   | 25,612                              | 26,002  | 601   | (4,607)  | 21,996   |
| 104,502   | 287,573                              | 5,953  | 75,246  | 29                     | —   | 81,228                              | 87,528  | 49,605  | —  | 137,133  |
| 21,214  | 381,999                              | 12,416   | 147,880   | 125                    | 4,028   | 164,449                             | 180,692   | 3,677   | —  | 184,369  |
| 1,682,233   | 63,346,980                           | 2,030,737  | 26,024,662  | 20,735                 | 524,584   | 28,600,718                          | 31,734,811  | 843,873   | —  | 32,578,684   |
| 37,292  | 1,087,674                            | 56,987   | 431,404   | 482                    | 27,268  | 516,141                             | 594,970   | (2,921)   | —  | 592,049  |
| 26,819  | 319,000                              | 11,114   | 119,122   | 206                    | —   | 130,442                             | 159,048   | 15,016  | —  | 174,064  |
| 15,368  | 533,738                              | 20,132   | 216,659   | 473                    | 11,662  | 248,926                             | 302,901   | (376)   | —  | 302,525  |
| 13,195  | 1,386,603                            | 40,390   | 586,069   | 233                    | 22,537  | 649,229                             | 633,861   | 800   | —  | 634,661  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer         | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| North Davis Fire District      | N/A                            | \$ 409,868                                     | 1,474,622  | (451,413)  | 78,705   | 431,874   | 201,592                |
| North Emery Water Users SSD    | N/A                            | 28,641   | 65,232   | (1,218)  | 348  | 13,388  | 4,226                  |
| North Fork SSD                 | N/A                            | 109,418  | 261,398  | (15,752)   | 5,790  | 64,923  | 23,446                 |
| North Logan City               | N/A                            | 591,506  | 1,358,968  | (40,046)   | 20,751   | 316,181   | 107,690                |
| North Ogden City               | N/A                            | 2,638,420                                      | 5,378,710  | 390,206  | 19,521   | 1,113,777   | 336,656                |
| North Park Police Agency       | N/A                            | 556,830  | 1,107,769  | 108,704  | 1,643  | 218,594   | 66,752                 |
| North Pointe Solid Waste       | N/A                            | 789,186  | 1,642,276  | 81,118   | 10,076   | 361,637   | 107,204                |
| North Sanpete School Dist      | N/A                            | 11,214,573                                     | 20,311,805   | 3,617,204  | 59,859   | 4,135,512   | 1,151,058              |
| North Summit School District   | N/A                            | 6,633,737                                      | 11,986,884   | 2,160,723  | 35,387   | 2,443,973   | 678,987                |
| North View Fire District       | N/A                            | 297,254  | 1,076,625  | (332,407)  | 57,366   | 311,793   | 146,534                |
| Northeastern Counseling Ctr    | N/A                            | 1,517,393                                      | 3,172,576  | 144,941  | 19,328   | 696,029   | 207,014                |
| NUAMES Charter School          | N/A                            | 2,916,448                                      | 5,298,986  | 928,169  | 15,579   | 1,076,844   | 300,470                |
| Oakley City                    | N/A                            | 352,301  | 755,778  | 13,541   | 29   | 264,639   | 1,051                  |
| Ogden City Corp                | N/A                            | 36,216,674                                     | 69,023,282   | 9,197,553  | 544,134  | 14,117,860  | 3,528,359              |
| Ogden School District          | N/A                            | 50,895,885                                     | 92,726,191   | 16,009,350   | 272,081  | 18,812,948  | 5,260,588              |
| Ogden Weber/NEA/UEA Uniserv    | N/A                            | 145,904  | 262,256  | 48,560   | 777  | 53,640  | 14,840                 |
| Ogden-Weber Tech College       | N/A                            | 3,881,791                                      | 6,997,825  | 1,276,647  | 20,695   | 1,428,771   | 396,209                |
| Oquirrh Rec And Parks District | N/A                            | 661,020  | 1,362,590  | 77,534   | 8,478  | 302,300   | 89,019                 |
| Orangeville City               | N/A                            | 84,278   | 173,587  | 9,988  | 1,081  | 38,536  | 11,342                 |
| Orderville Town                | N/A                            | 65,775   | 136,163  | 7,288  | 842  | 30,107  | 8,892                  |
| Panguitch City Corporation     | N/A                            | 179,361  | 376,136  | 16,300   | 2,282  | 82,326  | 24,537                 |
| Park City                      | N/A                            | 14,568,026                                     | 30,261,854   | 1,607,446  | 118,710  | 6,946,588   | 1,681,231              |
| Park City Fire Service         | N/A                            | 2,319,613                                      | 9,743,607  | (3,781,023)  | 13,827   | 3,544,560   | 1,369,500              |
| Park City School District      | N/A                            | 36,930,421                                     | 67,178,963   | 11,694,197   | 197,345  | 13,642,319  | 3,810,119              |
| Parowan City                   | N/A                            | 1,051,052                                      | 2,138,222  | 153,251  | 9,998  | 457,077   | 136,142                |
| Payson City                    | N/A                            | 4,664,162                                      | 9,614,643  | 582,115  | 52,528   | 2,060,241   | 623,862                |
| Perry City                     | N/A                            | 766,067  | 1,545,519  | 128,026  | 4,468  | 315,706   | 95,480                 |
| Piute County                   | N/A                            | 572,019  | 1,157,889  | 89,049   | 4,517  | 244,888   | 72,759                 |
| Piute School District          | N/A                            | 2,129,670                                      | 3,862,065  | 683,314  | 11,371   | 785,736   | 218,913                |
| Plain City                     | N/A                            | 259,595  | 538,194  | 28,173   | 3,320  | 118,862   | 35,144                 |
| Pleasant Grove City            | N/A                            | 4,234,718                                      | 8,998,347  | 325,892  | 78,120   | 1,954,378   | 629,246                |
| Pleasant View City             | N/A                            | 1,205,604                                      | 2,434,335  | 196,980  | 7,736  | 504,012   | 151,119                |
| Price City                     | N/A                            | 3,270,424                                      | 6,684,100  | 461,925  | 31,944   | 1,414,998   | 429,139                |
| Price River Water Improve      | N/A                            | 1,024,363                                      | 2,120,075  | 113,862  | 13,113   | 468,862   | 138,458                |
| Providence City                | N/A                            | 415,067  | 865,455  | 41,399   | 5,294  | 190,280   | 56,485                 |
| Provo City Corp                | N/A                            | 33,469,703                                     | 67,617,377   | 5,294,789  | 670,801  | 14,671,474  | 5,012,976              |
| Provo Housing Authority        | N/A                            | 793,080  | 1,665,909  | 64,849   | 6,228  | 453,530   | 66,518                 |
| Provo River Water Users        | N/A                            | 664,416  | 1,371,589  | 76,455   | 8,515  | 303,946   | 89,597                 |
| Provo School District          | N/A                            | 59,730,904                                     | 108,938,622  | 18,672,476   | 315,782  | 22,341,348  | 6,102,262              |
| Recreation & Habilitation Svcs | N/A                            | 38,501   | 78,907   | 4,854  | 495  | 17,586  | 5,158                  |
| Redmond Town                   | N/A                            | 73,554   | 150,746  | 9,273  | 946  | 33,597  | 9,853                  |
| Rich County                    | N/A                            | 846,035  | 1,724,838  | 124,176  | 6,640  | 359,325   | 108,354                |
| Rich School District           | N/A                            | 3,844,987                                      | 6,953,837  | 1,247,809  | 20,515   | 1,417,052   | 393,960                |
| Richfield City                 | N/A                            | 1,699,769                                      | 3,424,069  | 283,498  | 11,421   | 710,953   | 213,096                |
| Richmond City                  | N/A                            | 199,362  | 420,992  | 15,967   | 2,527  | 91,642  | 27,447                 |
| Riverdale City                 | N/A                            | 3,462,958                                      | 7,331,394  | 297,122  | 64,008   | 1,584,506   | 516,639                |
| Roosevelt City                 | N/A                            | 1,832,791                                      | 3,720,970  | 281,095  | 13,446   | 775,828   | 232,762                |
| Roosevelt City Housing         | N/A                            | 29,682   | 60,833   | 3,742  | 382  | 13,558  | 3,976                  |
| Roy City                       | N/A                            | 6,431,307                                      | 13,808,156   | 392,712  | 132,990  | 3,058,798   | 965,735                |
| Roy Water Conserv Dist         | N/A                            | 336,108  | 688,839  | 42,375   | 4,323  | 153,523   | 45,025                 |
| S Utah Valley Electric Svc Dst | N/A                            | 701,668  | 1,455,779  | 75,354   | 8,972  | 321,327   | 95,054                 |
| S Utah Valley Solid Waste      | N/A                            | 638,171  | 1,319,591  | 71,823   | 8,173  | 292,041   | 86,187                 |
| Salem City                     | N/A                            | 2,061,959                                      | 4,184,885  | 313,046  | 16,518   | 882,957   | 263,224                |
| Salina City                    | N/A                            | 393,047  | 796,366  | 61,144   | 2,932  | 167,060   | 49,866                 |
| Salt Lake Arts Academy         | N/A                            | 1,546,444                                      | 2,812,598  | 490,054  | 8,264  | 571,225   | 159,514                |
| Salt Lake City Corp            | N/A                            | 194,258,687                                    | 372,393,759  | 47,103,218   | 2,809,627  | 76,463,853  | 24,494,612             |
| Salt Lake City Public Library  | N/A                            | 3,673,440                                      | 7,658,229  | 367,311  | 46,858   | 1,683,968   | 499,831                |
| Salt Lake Co Serv Area 3       | N/A                            | 136,638  | 280,033  | 17,227   | 1,757  | 62,412  | 18,304                 |
| Salt Lake Community College    | N/A                            | 22,294,500                                     | 40,727,681   | 6,886,820  | 113,816  | 8,631,210   | 2,192,235              |
| Salt Lake County               | N/A                            | 144,338,052                                    | 296,306,337  | 18,907,010   | 1,368,847  | 64,081,522  | 18,470,404             |
| Salt Lake School District      | N/A                            | 141,993,301                                    | 258,530,200  | 44,609,544   | 736,824  | 54,020,355  | 14,180,181             |
| San Juan County                | N/A                            | 4,603,724                                      | 9,412,509  | 642,805  | 41,631   | 1,989,209   | 597,023                |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      |  |   |                        | Deferred Inflows of Resources   |                                     |   |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |  |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|---|--|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Proportionate Share of Nonemployer Contributions                                  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |  |  |
|   |                                      |  |   |                        |   |                                     |   |   |   |  |  |  |
| 19,792  | 731,963                              | 64,817   | 232,225   | 41,379                 | 2,242   | 340,663                             | 253,015   | 4,103   | (65,341)  | 191,777  |  |  |
| 3,872   | 21,834                               | 1,162  | 7,035   | 60                     | 6,291   | 14,548                              | 15,528  | (2,077)   | —   | 13,451   |  |  |
| 8,264   | 102,423                              | 5,611  | 35,242  | 2,564                  | 16,582  | 59,999                              | 36,559  | (5,844)   | (4,074)   | 26,641   |  |  |
| 12,092  | 456,714                              | 24,668   | 170,406   | 7,857                  | 200,294   | 403,225                             | 225,252   | (189,249)   | (11,955)  | 24,025   |  |  |
| 96,611  | 1,566,565                            | 92,024   | 604,540   | 723                    | 7,046   | 704,333                             | 870,691   | 47,288  | —   | 917,979  |  |  |
| 111,096   | 398,085                              | 24,567   | 119,180   | 70                     | 1,979   | 145,796                             | 181,179   | 94,900  | —   | 276,079  |  |  |
| 19,131  | 498,048                              | 17,109   | 195,922   | 228                    | 2,604   | 215,863                             | 247,395   | 4,663   | —   | 252,058  |  |  |
| 60,142  | 5,406,571                            | 170,789  | 2,258,610   | 1,253                  | 11,653  | 2,442,305                           | 2,686,739   | (6,013)   | —   | 2,680,726  |  |  |
| 383,503   | 3,541,850                            | 98,574   | 1,335,759   | 512                    | 13,359  | 1,448,204                           | 1,559,649   | 133,592   | —   | 1,693,241  |  |  |
| 6,932   | 522,625                              | 46,106   | 167,170   | 29,519                 | 12,571  | 255,366                             | 197,876   | (1,902)   | (46,442)  | 149,532  |  |  |
| 12,866  | 935,237                              | 34,330   | 376,507   | 576                    | 62,985  | 474,398                             | 493,025   | (34,106)  | —   | 458,919  |  |  |
| 344,016   | 1,736,909                            | 45,874   | 587,533   | 462                    | —   | 633,869                             | 716,333   | 205,039   | —   | 921,372  |  |  |
| 1,640   | 267,359                              | 867  | 148,869   | 75                     | —   | 149,811                             | 86,274  | 31,599  | —   | 117,873  |  |  |
| 175,180   | 18,365,533                           | 2,107,107  | 7,725,542   | 251,548                | 49,313  | 10,133,510                          | 9,599,762   | 50,691  | (366,560)   | 9,283,893  |  |  |
| 202,454   | 24,548,071                           | 822,525  | 10,255,664  | 10,109                 | 2,677,629   | 13,765,927                          | 12,766,310  | (1,075,628)   | —   | 11,690,682   |  |  |
| 14,999  | 84,256                               | 2,047  | 29,366  | —                      | 411   | 31,824                              | 32,843  | 8,627   | —   | 41,470   |  |  |
| 3,007   | 1,848,682                            | 56,250   | 781,473   | 166                    | 316,591   | 1,154,480                           | 895,352   | (306,310)   | —   | 589,042  |  |  |
| 28,119  | 427,916                              | 13,084   | 164,277   | 72                     | 34,674  | 212,107                             | 192,125   | 213   | —   | 192,338  |  |  |
| 1,437   | 52,396                               | 1,655  | 20,946  | 8                      | —   | 22,609                              | 24,335  | 779   | —   | 25,114   |  |  |
| 2,396   | 42,237                               | 1,358  | 16,339  | 12                     | —   | 17,709                              | 19,790  | 1,030   | —   | 20,820   |  |  |
| 9,919   | 119,064                              | 4,166  | 44,489  | 78                     | 3,664   | 52,397                              | 59,587  | (883)   | —   | 58,704   |  |  |
| 511,079   | 9,257,608                            | 395,639  | 3,789,117   | 5,370                  | 113,432   | 4,303,558                           | 4,730,488   | 289,855   | —   | 5,020,343  |  |  |
| 31,027  | 4,958,914                            | 768,464  | 1,941,483   | 209,787                | 14,589  | 2,934,323                           | 965,501   | 2,944   | (311,876)   | 656,569  |  |  |
| 1,515,885   | 19,165,668                           | 587,774  | 7,440,580   | 6,491                  | 163,141   | 8,197,986                           | 9,153,921   | 440,481   | —   | 9,594,402  |  |  |
| 14,336  | 617,553                              | 29,334   | 248,735   | 98                     | 34,544  | 312,711                             | 315,444   | (4,825)   | —   | 310,619  |  |  |
| 46,172  | 2,782,803                            | 140,593  | 1,118,716   | 5,429                  | 73,155  | 1,337,893                           | 1,476,238   | 4,121   | (7,104)   | 1,473,255  |  |  |
| 52,107  | 467,761                              | 28,775   | 171,741   | 140                    | 6,564   | 207,220                             | 247,321   | 43,894  | —   | 291,215  |  |  |
| 8,604   | 330,768                              | 17,523   | 133,348   | 47                     | 27,487  | 178,405                             | 171,863   | (16,543)  | —   | 155,320  |  |  |
| 5,270   | 1,021,290                            | 32,853   | 428,962   | 277                    | 105,984   | 568,076                             | 515,287   | (50,919)  | —   | 464,368  |  |  |
| 24,346  | 181,672                              | 5,434  | 64,473  | 57                     | 4,368   | 74,332                              | 79,033  | 11,910  | —   | 90,943   |  |  |
| 64,070  | 2,725,814                            | 166,068  | 1,060,172   | 24,363                 | 121,773   | 1,372,376                           | 1,429,521   | (43,720)  | (37,064)  | 1,348,737  |  |  |
| 39,654  | 702,521                              | 42,252   | 274,307   | 172                    | 8,411   | 325,142                             | 377,989   | 32,294  | —   | 410,283  |  |  |
| 63,361  | 1,939,442                            | 109,173  | 769,780   | 4,126                  | 111,986   | 995,065                             | 1,017,596   | (54,429)  | (5,882)   | 957,285  |  |  |
| 3,348   | 623,781                              | 21,093   | 254,461   | 190                    | 55,548  | 331,292                             | 307,629   | (27,621)  | —   | 280,008  |  |  |
| 23,628  | 275,687                              | 9,162  | 103,021   | 136                    | 9,087   | 121,406                             | 132,105   | 1,137   | —   | 133,242  |  |  |
| 103,420   | 20,458,671                           | 1,814,559  | 7,989,686   | 221,320                | 359,933   | 10,385,498                          | 9,074,867   | (284,787)   | (320,516)   | 8,469,564  |  |  |
| 3,008   | 529,284                              | 10,856   | 250,683   | 167                    | 18,117  | 279,823                             | 222,480   | 6,382   | —   | 228,862  |  |  |
| 1,455   | 403,513                              | 13,343   | 165,094   | 91                     | 15,342  | 193,870                             | 195,439   | (7,662)   | —   | 187,777  |  |  |
| 802,709   | 29,562,101                           | 949,357  | 12,197,864  | 11,229                 | 1,408,169   | 14,566,619                          | 14,933,135  | (447,600)   | —   | 14,485,535   |  |  |
| 452   | 23,691                               | 718  | 9,574   | —                      | 2,305   | 12,597                              | 10,658  | (723)   | —   | 9,935  |  |  |
| 1,162   | 45,558                               | 1,372  | 18,291  | —                      | 163   | 19,826                              | 20,362  | 646   | —   | 21,008   |  |  |
| 115,101   | 589,420                              | 28,392   | 195,107   | 209                    | 36,736  | 260,444                             | 275,119   | (9,200)   | —   | 265,919  |  |  |
| 93,432  | 1,924,959                            | 57,667   | 774,280   | 347                    | —   | 832,294                             | 910,425   | 50,696  | —   | 961,121  |  |  |
| 14,833  | 950,303                              | 58,125   | 387,293   | 152                    | 41,602  | 487,172                             | 522,127   | (12,135)  | —   | 509,992  |  |  |
| 18,214  | 139,830                              | 4,910  | 49,411  | 114                    | 14,786  | 69,221                              | 69,617  | 255   | —   | 69,872   |  |  |
| 46,288  | 2,211,441                            | 154,604  | 861,754   | 24,479                 | 37,821  | 1,078,658                           | 1,139,191   | (6,935)   | (38,243)  | 1,094,013  |  |  |
| 43,194  | 1,065,230                            | 61,506   | 421,763   | 344                    | 38,808  | 522,421                             | 581,442   | 1,464   | —   | 582,906  |  |  |
| —   | 17,916                               | 554  | 7,381   | —                      | 636   | 8,571                               | 8,217   | (396)   | —   | 7,821  |  |  |
| 146,457   | 4,303,980                            | 282,831  | 1,663,064   | 50,602                 | 47,460  | 2,043,957                           | 2,193,333   | 23,327  | (78,196)  | 2,138,464  |  |  |
| 5,142   | 208,013                              | 6,269  | 83,583  | —                      | 2,279   | 92,131                              | 93,045  | 2,163   | —   | 95,208   |  |  |
| 39,072  | 464,425                              | 14,792   | 174,253   | 163                    | 1,205   | 190,413                             | 214,873   | 20,010  | —   | 234,883  |  |  |
| 12,938  | 399,339                              | 13,025   | 158,544   | 107                    | 96,707  | 268,383                             | 190,255   | (48,163)  | —   | 142,092  |  |  |
| 66,958  | 1,229,657                            | 64,119   | 480,379   | 269                    | 9,554   | 554,321                             | 632,945   | 45,125  | —   | 678,070  |  |  |
| 2,401   | 222,259                              | 12,716   | 90,902  | 53                     | 25,985  | 129,656                             | 121,364   | (17,501)  | —   | 103,863  |  |  |
| 92,862  | 831,865                              | 24,570   | 311,566   | 268                    | —   | 336,404                             | 382,802   | 44,891  | —   | 427,693  |  |  |
| 482,214   | 104,250,306                          | 5,739,640  | 41,674,989  | 1,153,358              | 1,200,989   | 49,768,976                          | 51,398,680  | (843,385)   | (1,683,189)   | 48,872,106   |  |  |
| 89,094  | 2,319,751                            | 80,973   | 911,778   | 1,190                  | 34,476  | 1,028,417                           | 1,167,711   | 13,992  | —   | 1,181,703  |  |  |
| 2,559   | 85,032                               | 2,548  | 33,979  | —                      | 1,207   | 37,734                              | 37,825  | 515   | —   | 38,340   |  |  |
| 599,824   | 11,537,085                           | 330,592  | 4,735,700   | 2,942                  | 827,992   | 5,897,226                           | 5,449,337   | 193,417   | —   | 5,642,754  |  |  |
| 1,372,978   | 85,293,751                           | 4,066,451  | 34,832,460  | 32,853                 | 1,179,141   | 40,110,905                          | 45,441,835  | (728,063)   | —   | 44,713,772   |  |  |
| 289,155   | 69,226,515                           | 2,120,950  | 29,593,653  | 17,206                 | 1,652,076   | 33,383,885                          | 34,393,809  | (979,190)   | —   | 33,414,619   |  |  |
| 62,827  | 2,690,690                            | 140,268  | 1,080,213   | 1,014                  | 139,104   | 1,360,599                           | 1,465,154   | (47,659)  | —   | 1,417,495  |  |  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer              | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|-------------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| San Juan Mental Health              | N/A                            | \$ 534,685                                     | 1,113,056  | 54,671   | 6,825  | 245,032   | 72,655                 |
| San Juan School District            | N/A                            | 20,253,594                                     | 36,798,345   | 6,443,189  | 107,774  | 7,507,634   | 2,077,346              |
| Sandy City                          | N/A                            | 19,999,220                                     | 46,176,196   | (1,588,410)  | 2,288,238  | 11,503,351  | 3,988,074              |
| Sandy Suburban Imp Dist             | N/A                            | 876,193  | 1,799,258  | 107,855  | 11,259   | 400,382   | 117,587                |
| Sanpete County                      | N/A                            | 3,509,897                                      | 7,094,815  | 574,176  | 21,348   | 1,452,763   | 439,240                |
| Santaquin City                      | N/A                            | 1,904,560                                      | 3,850,821  | 306,346  | 12,980   | 799,199   | 239,851                |
| Sevier County                       | N/A                            | 4,947,044                                      | 9,957,561  | 845,934  | 27,331   | 2,031,769   | 613,553                |
| Sevier School District              | N/A                            | 21,923,912                                     | 39,668,413   | 7,098,343  | 116,602  | 8,108,667   | 2,239,019              |
| Six-County Assoc of Govt            | N/A                            | 714,155  | 1,472,748  | 83,301   | 9,158  | 326,628   | 96,213                 |
| Slc Mosquito Abatement              | N/A                            | 373,166  | 783,731  | 33,047   | 4,743  | 171,335   | 51,120                 |
| Smithfield City Corp                | N/A                            | 1,449,390                                      | 3,074,122  | 113,877  | 26,291   | 669,179   | 213,466                |
| Snow College                        | N/A                            | 5,343,501                                      | 9,696,416  | 1,703,313  | 27,628   | 2,036,357   | 525,250                |
| Snyder Basin Special Rec Dist       | N/A                            | 724,759  | 1,536,678  | 53,453   | 9,168  | 333,445   | 100,150                |
| Snyderville Basin W R D             | N/A                            | 2,286,492                                      | 4,710,311  | 270,361  | 29,335   | 1,045,527   | 307,747                |
| So Davis Metro Fire Agency          | N/A                            | 1,508,004                                      | 5,568,032  | (1,773,178)  | 305,438  | 1,639,626   | 773,233                |
| So Davis Recreation Center          | N/A                            | 379,898  | 793,617  | 36,788   | 4,841  | 174,228   | 51,788                 |
| So SI Valley Mosq Abate             | N/A                            | 177,263  | 373,386  | 14,891   | 2,250  | 81,440  | 24,349                 |
| So Utah Valley Animal Svcs SSD      | N/A                            | 69,613   | 147,000  | 5,575  | 883  | 31,999  | 9,584                  |
| So Utah Valley Power Systems        | N/A                            | 73,438   | 150,509  | 9,259  | 945  | 33,544  | 9,838                  |
| Soldier Hollow Charter School       | N/A                            | 824,638  | 1,510,696  | 253,176  | 4,414  | 305,495   | 85,794                 |
| Solid Waste SSD #1                  | N/A                            | 113,415  | 246,419  | 3,967  | 1,417  | 52,458  | 16,027                 |
| South Davis Sewer Dist              | N/A                            | 2,071,915                                      | 4,322,949  | 192,760  | 17,652   | 1,153,431   | 186,200                |
| South Davis Water Dist              | N/A                            | 274,412  | 563,040  | 34,122   | 3,527  | 125,372   | 36,799                 |
| South Ogden City                    | N/A                            | 3,736,113                                      | 8,000,807  | 247,762  | 79,714   | 1,744,851   | 578,226                |
| South Ogden Conserv Dist            | N/A                            | 905,824  | 1,892,366  | 87,659   | 11,543   | 415,430   | 123,487                |
| South Sanpete School Dist           | N/A                            | 15,764,178                                     | 28,527,472   | 5,103,040  | 84,125   | 5,811,226   | 1,616,371              |
| South Summit School District        | N/A                            | 8,165,178                                      | 14,787,817   | 2,634,335  | 43,582   | 3,010,934   | 838,007                |
| South Valley Sewer District         | N/A                            | 2,332,092                                      | 4,854,947  | 238,286  | 29,769   | 1,068,749   | 316,907                |
| South Valley Water Reclamation      | N/A                            | 2,134,525                                      | 4,426,192  | 231,002  | 27,299   | 977,391   | 289,019                |
| South Weber City                    | N/A                            | 321,997  | 679,215  | 26,336   | 4,084  | 147,979   | 44,286                 |
| Southeastern Utah AOG               | N/A                            | 552,062  | 1,149,721  | 56,084   | 7,046  | 253,019   | 75,046                 |
| Southeastern Utah Health            | N/A                            | 654,764  | 1,373,350  | 59,317   | 8,328  | 300,545   | 89,588                 |
| Southern Utah University            | N/A                            | 14,868,397                                     | 27,069,735   | 4,690,447  | 79,355   | 5,527,932   | 1,508,472              |
| Southwest Applied Tech              | N/A                            | 1,881,389                                      | 3,443,616  | 579,857  | 10,070   | 696,733   | 195,535                |
| Southwest Educ Development Ctr      | N/A                            | 465,816  | 854,717  | 141,992  | 2,494  | 172,678   | 48,555                 |
| Space Dynamics Lab / USU            | N/A                            | 3,621,562                                      | 6,536,051  | 1,185,562  | 19,313   | 1,333,589   | 370,144                |
| Spanish Fork City                   | N/A                            | 9,559,162                                      | 19,558,510   | 1,317,541  | 86,218   | 4,145,509   | 1,240,273              |
| Spring City                         | N/A                            | 122,091  | 252,674  | 13,579   | 1,563  | 55,882  | 16,501                 |
| Springville City                    | N/A                            | 7,484,601                                      | 15,519,816   | 852,334  | 91,593   | 3,347,694   | 1,014,639              |
| Stansbury Park Improvement District | N/A                            | 175,336  | 360,613  | 21,168   | 2,252  | 80,147  | 23,564                 |
| Stansbury Service Agency            | N/A                            | 71,320   | 162,529  | (3,100)  | 869  | 33,341  | 10,530                 |
| St George Housing Auth              | N/A                            | 115,219  | 237,864  | 13,251   | 1,477  | 52,709  | 15,538                 |
| State of Utah                       | N/A                            | 1,170,480,856                                  | 2,120,490,162  | 379,466,867  | 13,117,886   | 430,053,239   | 113,517,129            |
| Stockton Town                       | N/A                            | 76,765   | 150,473  | 16,930   | —  | 29,251  | 8,824                  |
| Success Academy                     | N/A                            | 1,140,705                                      | 2,076,257  | 360,285  | 6,096  | 421,485   | 117,770                |
| Summit Academy High School          | N/A                            | 1,261,652                                      | 2,350,889  | 357,709  | 6,785  | 470,630   | 133,931                |
| Summit Academy Inc                  | N/A                            | 5,845,935                                      | 10,825,256   | 1,708,137  | 31,386   | 2,175,152   | 616,012                |
| Summit County                       | N/A                            | 17,100,264                                     | 34,545,711   | 2,771,136  | 113,965  | 7,174,935   | 2,148,942              |
| Sunset City                         | N/A                            | 800,710  | 1,621,476  | 127,848  | 5,437  | 334,055   | 100,981                |
| SW Behavioral Health Center         | N/A                            | 4,727,357                                      | 9,857,143  | 471,399  | 60,297   | 2,167,185   | 643,338                |
| Sw Mosquito Abatement/Control       | N/A                            | 109,210  | 233,243  | 6,807  | 1,377  | 50,324  | 15,192                 |
| SW Ut Public Health Dept            | N/A                            | 1,535,894                                      | 3,198,993  | 155,773  | 19,601   | 703,941   | 208,806                |
| Syracuse City Corp                  | N/A                            | 3,514,476                                      | 7,583,745  | 187,586  | 77,664   | 1,654,770   | 551,126                |
| Taylor West Weber Wtr Imp Dist      | N/A                            | 121,419  | 253,300  | 12,015   | 1,548  | 55,669  | 16,531                 |
| Taylorville-Bennion Imp             | N/A                            | 1,525,912                                      | 3,160,452  | 167,880  | 19,526   | 698,537   | 206,391                |
| Timber Lakes Water SSD              | N/A                            | 174,547  | 365,138  | 16,529   | 2,223  | 80,074  | 23,824                 |
| Timpanogos SSD                      | N/A                            | 1,476,058                                      | 3,075,461  | 148,895  | 18,834   | 676,568   | 200,737                |
| Tintic School District              | N/A                            | 1,968,248                                      | 3,552,877  | 643,837  | 10,497   | 724,834   | 201,210                |
| Tooele Applied Tech College         | N/A                            | 1,382,226                                      | 2,510,355  | 440,689  | 7,383  | 510,275   | 142,334                |
| Tooele City                         | N/A                            | 5,082,890                                      | 10,401,120   | 714,986  | 44,084   | 2,169,067   | 657,821                |
| Tooele County                       | N/A                            | 10,526,814                                     | 21,518,313   | 1,483,023  | 86,291   | 4,551,485   | 1,340,756              |
| Tooele County Housing               | N/A                            | 202,583  | 427,932  | 16,122   | 2,568  | 93,129  | 27,899                 |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      |  |   |                        | Deferred Inflows of Resources   |                                     |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |   |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|---|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions |   | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |  |
|   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Nonemployer Contributions  | Proportionate Share of Employer Contributions |  |  |
| 17,895  | 342,407                              | 11,629   | 132,735   | 158                    | 40,618  | 185,140                             | 168,066   | (998)   | —   | 167,068  |  |
| 100,091   | 9,792,845                            | 315,450  | 4,098,889   | 3,015                  | 122,807   | 4,540,161                           | 4,953,569   | (38,687)  | —   | 4,914,882  |  |
| 146,090   | 17,925,753                           | 956,942  | 6,238,799   | 291,951                | 339,762   | 7,827,454                           | 6,558,232   | (126,810)   | (294,916)                                     | 6,136,506  |  |
| 9,961   | 539,189                              | 16,681   | 217,843   | 32                     | 15,163  | 249,719                             | 246,669   | (6,221)   | —   | 240,448  |  |
| 25,109  | 1,938,460                            | 130,290  | 789,946   | 705                    | 84,353  | 1,005,294                           | 1,138,194   | (27,621)  | —   | 1,110,573  |  |
| 50,949  | 1,102,979                            | 65,588   | 434,871   | 281                    | 12,088  | 512,828                             | 597,856   | 42,677  | —   | 640,533  |  |
| 94,062  | 2,766,715                            | 187,124  | 1,105,918   | 773                    | 200,095   | 1,493,910                           | 1,581,806   | (130,075)   | —   | 1,451,731  |  |
| 186,000   | 10,650,288                           | 327,580  | 4,432,376   | 1,953                  | 70,592  | 4,832,501                           | 5,191,700   | (19,439)  | —   | 5,172,261  |  |
| 9,767   | 441,766                              | 14,196   | 177,473   | 84                     | 25,178  | 216,931                             | 208,301   | (20,184)  | —   | 188,117  |  |
| 16,418  | 243,616                              | 8,780  | 92,545  | 174                    | 7,216   | 108,715                             | 125,335   | 3,111   | —   | 128,446  |  |
| 41,171  | 950,107                              | 51,494   | 362,766   | 6,893                  | 31,384  | 452,537                             | 488,264   | (16,187)  | (10,331)                                      | 461,746  |  |
| 64,827  | 2,654,062                            | 76,913   | 1,117,438   | 321                    | 101,359   | 1,296,031                           | 1,256,758   | 26,994  | —   | 1,283,752  |  |
| 155,857   | 598,620                              | 18,448   | 179,549   | 471                    | 2,036   | 200,504                             | 260,310   | 98,018  | —   | 358,328  |  |
| 69,188  | 1,451,797                            | 44,974   | 568,278   | 223                    | 6,765   | 620,240                             | 661,157   | 32,291  | —   | 693,448  |  |
| 61,198  | 2,779,495                            | 249,855  | 880,884   | 160,573                | 6,059   | 1,297,371                           | 975,312   | 13,640  | (253,383)                                     | 735,569  |  |
| 10,995  | 241,852                              | 8,530  | 94,272  | 138                    | 7,043   | 109,983                             | 122,648   | (1,286)   | —   | 121,362  |  |
| 9,773   | 117,812                              | 4,276  | 43,947  | 93                     | 165   | 48,481                              | 60,808  | 3,387   | —   | 64,195   |  |
| 5,432   | 47,898                               | 1,715  | 17,254  | 40                     | 637   | 19,646                              | 24,309  | 2,940   | —   | 27,249   |  |
| 511   | 44,838                               | 1,370  | 18,263  | —                      | 297   | 19,930                              | 20,330  | 148   | —   | 20,478   |  |
| 24,987  | 420,690                              | 14,051   | 166,247   | 231                    | 41,408  | 221,937                             | 215,596   | (35,198)  | —   | 180,398  |  |
| 2,997   | 72,899                               | 3,459  | 28,017  | 128                    | 16,598  | 48,202                              | 47,654  | (7,611)   | —   | 40,043   |  |
| 25,818  | 1,383,101                            | 28,186   | 637,144   | 237                    | 9,954   | 675,521                             | 562,096   | 43,707  | —   | 605,803  |  |
| 722   | 166,420                              | 5,180  | 68,231  | 6                      | 2,069   | 75,486                              | 76,714  | 122   | —   | 76,836   |  |
| 65,358  | 2,468,149                            | 173,206  | 948,433   | 31,890                 | 74,833  | 1,228,362                           | 1,250,797   | (7,344)   | (49,875)                                      | 1,193,578  |  |
| 6,125   | 556,585                              | 20,346   | 224,780   | 330                    | 47,491  | 292,947                             | 292,530   | (35,778)  | —   | 256,752  |  |
| 25,860  | 7,537,582                            | 237,934  | 3,174,661   | 1,562                  | 49,523  | 3,463,680                           | 3,750,827   | (64,253)  | —   | 3,686,574  |  |
| 188,666   | 4,081,189                            | 124,268  | 1,644,454   | 905                    | 12,750  | 1,782,377                           | 1,955,196   | 69,160  | —   | 2,024,356  |  |
| 73,115  | 1,488,540                            | 50,743   | 578,935   | 692                    | —   | 630,370                             | 733,302   | 32,073  | —   | 765,375  |  |
| 44,938  | 1,338,647                            | 44,767   | 530,123   | 473                    | 14,230  | 589,593                             | 650,875   | 14,988  | —   | 665,863  |  |
| 8,415   | 204,764                              | 7,860  | 79,816  | 177                    | 33,892  | 121,745                             | 111,579   | (8,423)   | —   | 103,156  |  |
| 13,064  | 348,175                              | 12,054   | 137,042   | 168                    | 22,980  | 172,244                             | 174,101   | (20,229)  | —   | 153,872  |  |
| 5,538   | 403,999                              | 15,233   | 162,407   | 289                    | 69,519  | 247,448                             | 217,820   | (52,081)  | —   | 165,739  |  |
| 259,305   | 7,375,064                            | 237,141  | 3,017,923   | 2,496                  | 36,627  | 3,294,187                           | 3,690,642   | 128,575   | —   | 3,819,217  |  |
| 75,378  | 977,716                              | 31,796   | 379,259   | 503                    | 16,227  | 427,785                             | 488,719   | 65,061  | —   | 553,780  |  |
| 20,259  | 243,986                              | 8,056  | 93,922  | 142                    | 17,745  | 119,865                             | 123,222   | 13,012  | —   | 136,234  |  |
| 222,917   | 1,945,963                            | 53,121   | 729,155   | 215                    | —   | 782,491                             | 843,073   | 141,621   | —   | 984,694  |  |
| 255,004   | 5,727,004                            | 287,365  | 2,250,947   | 2,136                  | 1,727   | 2,542,175                           | 3,031,146   | 158,291   | —   | 3,189,437  |  |
| 26,336  | 100,282                              | 2,513  | 30,328  | 23                     | 6,582   | 39,446                              | 36,653  | 16,028  | —   | 52,681   |  |
| 52,138  | 4,506,064                            | 215,031  | 1,815,720   | 9,339                  | 205,732   | 2,245,822                           | 2,401,796   | (150,123)   | (11,794)                                      | 2,239,879  |  |
| 79,885  | 185,848                              | 3,392  | 43,585  | 12                     | —   | 46,989                              | 50,014  | 29,530  | —   | 79,544   |  |
| 32,282  | 77,022                               | 2,902  | 17,517  | 150                    | —   | 20,569                              | 38,772  | 10,954  | —   | 49,726   |  |
| 2,085   | 71,809                               | 2,315  | 28,629  | 16                     | 670   | 31,630                              | 33,903  | 588   | —   | 34,491   |  |
| 7,653,798   | 564,342,052                          | 19,012,100   | 235,014,944   | 219,100                | 24,780,204  | 279,026,348                         | 295,194,888   | (9,371,307)   | (1,609,573)                                   | 284,214,008  |  |
| 13,060  | 51,135                               | 3,653  | 16,004  | —                      | 684   | 20,341                              | 23,871  | 7,714   | —   | 31,585   |  |
| 82,969  | 628,320                              | 18,263   | 229,837   | 211                    | —   | 248,311                             | 284,048   | 45,307  | —   | 329,355  |  |
| 59,449  | 670,795                              | 24,952   | 254,733   | 676                    | —   | 280,361                             | 371,582   | 28,803  | —   | 400,385  |  |
| 779,901   | 3,602,451                            | 109,711  | 1,179,661   | 2,582                  | —   | 1,291,954                           | 1,650,393   | 469,655   | —   | 2,120,048  |  |
| 450,088   | 9,887,930                            | 588,012  | 3,905,108   | 2,310                  | 103,735   | 4,599,165                           | 5,332,713   | 343,334   | —   | 5,676,047  |  |
| 23,102  | 463,575                              | 28,599   | 181,623   | 157                    | 11,381  | 221,760                             | 258,257   | (4,817)   | —   | 253,440  |  |
| 93,992  | 2,964,812                            | 104,373  | 1,173,345   | 1,548                  | 15,623  | 1,294,889                           | 1,504,768   | 22,369  | —   | 1,527,137  |  |
| 8,645   | 75,538                               | 2,942  | 27,033  | 86                     | —   | 30,061                              | 41,188  | 4,157   | —   | 45,345   |  |
| 7,671   | 940,019                              | 33,570   | 381,261   | 470                    | 63,084  | 478,385                             | 484,772   | (42,172)  | —   | 442,600  |  |
| 171,521   | 2,455,081                            | 165,750  | 897,987   | 31,407                 | 42,879  | 1,138,023                           | 1,217,997   | 83,579  | (48,636)                                      | 1,252,940  |  |
| 7,542   | 81,290                               | 2,693  | 30,135  | 41                     | —   | 32,869                              | 38,794  | 4,049   | —   | 42,843   |  |
| 23,356  | 947,810                              | 31,646   | 379,019   | 304                    | 43,352  | 454,321                             | 460,977   | (5,156)   | —   | 455,821  |  |
| 10,752  | 116,873                              | 3,968  | 43,307  | 68                     | 811   | 48,154                              | 56,938  | 3,949   | —   | 60,887   |  |
| 17,280  | 913,419                              | 32,367   | 366,393   | 462                    | 59,297  | 458,519                             | 467,159   | (7,497)   | —   | 459,662  |  |
| 20,260  | 956,801                              | 28,927   | 396,289   | 122                    | 26,421  | 451,759                             | 458,890   | 14,328  | —   | 473,218  |  |
| 94,955  | 754,947                              | 21,650   | 278,446   | 210                    | —   | 300,306                             | 338,387   | 57,869  | —   | 396,256  |  |
| 44,903  | 2,915,875                            | 167,589  | 1,176,749   | 1,445                  | 87,584  | 1,433,367                           | 1,681,257   | (88,485)  | —   | 1,592,772  |  |
| 141,485   | 6,120,017                            | 335,156  | 2,472,691   | 2,598                  | 47,678  | 2,858,123                           | 3,388,967   | 37,844  | —   | 3,426,811  |  |
| 3,813   | 127,409                              | 5,003  | 50,208  | 117                    | 59  | 55,387                              | 70,903  | 1,186   | —   | 72,089   |  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** (Continued)

at December 31, 2018

| Participating Employer         | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|--------------------------------|--------------------------------|--|--|--|--|---|------------------------|
| Tooele School District         | N/A                            | \$ 57,739,697                                  | 104,816,496  | 18,445,168   | 308,377  | 21,311,729  | 5,942,455              |
| Tooele Valley Mosquito Abtmnt  | N/A                            | 16,998   | 34,836   | 2,143  | 219  | 7,764   | 2,277                  |
| Toquerville City               | N/A                            | 84,952   | 186,879  | 1,272  | 1,055  | 39,401  | 12,142                 |
| Torrey Town                    | N/A                            | 13,514   | 30,064   | (46)   | 166  | 6,283   | 1,951                  |
| Town of Alta                   | N/A                            | 345,167  | 711,175  | 40,732   | 4,429  | 157,837   | 46,464                 |
| Town of Apple Valley           | N/A                            | 25,268   | 53,134   | 2,190  | 321  | 11,605  | 3,466                  |
| Town of Brian Head             | N/A                            | 840,071  | 1,689,143  | 143,266  | 5,097  | 348,991   | 104,547                |
| Town of Daniel                 | N/A                            | 39,702   | 81,368   | 5,006  | 511  | 18,135  | 5,319                  |
| Town of Garden City            | N/A                            | 167,167  | 352,922  | 13,450   | 2,119  | 76,839  | 23,010                 |
| Town of Goshen                 | N/A                            | 30,237   | 68,858   | (1,279)  | 369  | 14,133  | 4,461                  |
| Town of Levan                  | N/A                            | 103,874  | 212,886  | 13,096   | 1,336  | 47,446  | 13,915                 |
| Town of Manila                 | N/A                            | 140,259  | 300,154  | 6,252  | 249  | 99,869  | 2,947                  |
| Town of Mantua                 | N/A                            | 133,258  | 271,932  | 19,025   | 26,474   | 56,380  | 22,970                 |
| Town of Paragonah              | N/A                            | 104,039  | 222,804  | 4,281  | 7  | 78,193  | 259                    |
| Town of Randolph               | N/A                            | 37,252   | 76,347   | 4,697  | 479  | 17,016  | 4,990                  |
| Town of Springdale             | N/A                            | 1,408,405                                      | 2,833,853  | 241,046  | 6,938  | 579,086   | 173,715                |
| Trans-Jordan Cities            | N/A                            | 1,193,643                                      | 2,487,092  | 120,361  | 15,230   | 547,123   | 162,333                |
| Tremonton City                 | N/A                            | 1,623,250                                      | 3,297,305  | 245,306  | 13,245   | 693,292   | 207,659                |
| Tridell-Lapoint Water          | N/A                            | 34,723   | 79,059   | (1,458)  | 423  | 16,229  | 5,122                  |
| Tuacahn High School            | N/A                            | 1,211,170                                      | 2,229,765  | 363,645  | 6,493  | 449,586   | 126,748                |
| Uintah Animal Control/Shelter  | N/A                            | 198,059  | 411,161  | 21,092   | 2,532  | 90,713  | 26,845                 |
| Uintah Basin Applied Tech Ctr  | N/A                            | 3,516,900                                      | 6,447,622  | 1,076,122  | 18,832   | 1,303,264   | 366,220                |
| Uintah Basin Assn of Govt      | N/A                            | 738,245  | 1,561,562  | 57,189   | 9,350  | 339,477   | 101,792                |
| Uintah Basin Asst Council      | N/A                            | 34,326   | 73,930   | 1,681  | 431  | 15,846  | 4,812                  |
| Uintah Co Care Center SSD      | N/A                            | 1,653,898                                      | 3,449,137  | 164,517  | 21,094   | 758,230   | 225,109                |
| Uintah County                  | N/A                            | 9,530,111                                      | 19,538,724   | 1,301,151  | 84,280   | 4,096,126   | 1,237,346              |
| Uintah Fire Suppression SSD    | N/A                            | 79,509   | 250,192  | (59,331)   | 11,330   | 71,327  | 31,296                 |
| Uintah Highlands Improv Dist   | N/A                            | 61,470   | 129,866  | 4,877  | 779  | 28,259  | 8,466                  |
| Uintah Mosquito Abate District | N/A                            | 133,243  | 273,076  | 16,799   | 1,714  | 60,861  | 17,849                 |
| Uintah Recreation District     | N/A                            | 753,046  | 1,563,526  | 80,022   | 9,625  | 344,911   | 102,083                |
| Uintah School District         | N/A                            | 29,077,667                                     | 53,062,776   | 9,059,372  | 152,758  | 10,947,853  | 2,950,951              |
| Uintah Transportation SSD      | N/A                            | 105,330  | 233,661  | 131  | 1,302  | 48,943  | 15,171                 |
| Uintah Water Conserv Dist      | N/A                            | 388,694  | 796,613  | 49,005   | 4,999  | 177,543   | 52,070                 |
| Unified Fire Authority         | N/A                            | 14,696,775                                     | 60,231,109   | (22,754,493)   | 48,906   | 21,881,644  | 8,389,961              |
| Unified Police Department      | N/A                            | 31,154,439                                     | 63,846,829   | 4,436,745  | 9,747,773  | 12,585,377  | 6,153,658              |
| University of Utah             | N/A                            | 120,783,358                                    | 221,531,747  | 36,618,764   | 613,945  | 47,387,394  | 11,600,885             |
| University of Utah Hospital    | N/A                            | 54,001,597                                     | 99,492,059   | 15,794,834   | 244,399  | 23,209,409  | 4,666,629              |
| Upper Country Water Dist       | N/A                            | 84,376   | 172,926  | 10,638   | 1,085  | 38,540  | 11,303                 |
| Ut Municipal Power Agency      | N/A                            | 1,425,382                                      | 2,970,554  | 143,279  | 18,185   | 653,372   | 193,886                |
| Ut Public Employees Assn       | N/A                            | 127,662  | 264,820  | 13,745   | 1,632  | 58,461  | 17,291                 |
| UT School Board Risk Mgmt      | N/A                            | 1,068,860                                      | 1,938,876  | 342,540  | 5,707  | 394,397   | 109,907                |
| Utah Assn of Counties          | N/A                            | 429,573  | 890,400  | 46,763   | 5,495  | 196,683   | 58,143                 |
| Utah Co Academy of Sciences    | N/A                            | 1,460,365                                      | 2,654,530  | 463,908  | 7,802  | 539,306   | 150,533                |
| Utah Co Housing Authority      | N/A                            | 771,820  | 1,622,942  | 65,149   | 8,495  | 384,829   | 91,531                 |
| Utah Communications Authority  | N/A                            | 2,831,259                                      | 5,118,123  | 920,577  | 15,104   | 1,043,257   | 289,935                |
| Utah Counties Indemnity Pool   | N/A                            | 305,856  | 629,570  | 36,542   | 3,926  | 139,832   | 41,136                 |
| Utah County                    | N/A                            | 41,017,089                                     | 84,734,842   | 4,962,527  | 6,169,608  | 18,084,933  | 6,591,535              |
| Utah Dairy Council             | N/A                            | 189,318  | 341,515  | 62,094   | 1,010  | 69,701  | 19,339                 |
| Utah Education Association     | N/A                            | 1,634,781                                      | 2,960,014  | 527,962  | 8,726  | 602,772   | 167,732                |
| Utah Housing Corporation       | N/A                            | 8,279,586                                      | 15,659,985   | 2,081,388  | 33,219   | 3,910,998   | 642,780                |
| Utah Lake Commission           | N/A                            | 10,982   | 22,506   | 1,385  | 141  | 5,016   | 1,471                  |
| Utah League Cities/Towns       | N/A                            | 1,036,931                                      | 2,204,795  | 54,229   | 13   | 781,060   | 474                    |
| Utah Local Governments Trust   | N/A                            | 1,015,989                                      | 2,106,792  | 109,940  | 12,994   | 465,218   | 137,568                |
| Utah Retirement Systems        | N/A                            | 31,833,729                                     | 57,728,705   | 10,214,276   | 169,972  | 11,744,930  | 3,272,222              |
| Utah Safety Council            | N/A                            | 440,673  | 807,932  | 134,815  | 2,359  | 163,304   | 45,890                 |
| Utah School Boards Association | N/A                            | 946,515  | 1,722,684  | 299,040  | 5,059  | 349,723   | 97,714                 |
| Utah School Employees Assn     | N/A                            | 425,901  | 771,404  | 137,363  | 2,274  | 157,058   | 43,715                 |
| Utah State Fair Corp           | N/A                            | 570,221  | 1,034,247  | 182,828  | 3,045  | 210,396   | 58,626                 |
| Utah State University          | N/A                            | 50,224,593                                     | 91,324,979   | 15,873,594   | 261,016  | 19,110,456  | 4,972,988              |
| Utah Valley Dispatch SSD       | N/A                            | 1,238,119                                      | 2,582,365  | 122,924  | 15,790   | 567,631   | 168,537                |
| Utah Valley University         | N/A                            | 28,962,862                                     | 52,986,053   | 8,871,876  | 145,738  | 11,371,601  | 2,805,311              |
| Utah Zoological Society        | N/A                            | 3,286,371                                      | 6,894,025  | 297,021  | 41,793   | 1,508,528   | 449,712                |

Utah Retirement Systems

| Deferred Outflows of Resources  |                                      |  |   |                        | Deferred Inflows of Resources   |                                     |   | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions   |                                      |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--------------------------------------|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions |                                      | Proportionate Share of Nonemployer Contributions | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Contributions  | Proportionate Share of Contributions |  |  |
| 1,773,697   | 29,336,258                           | 900,133  | 11,631,053  | 8,391                  | 482,534   | 13,022,111                          | 14,084,341  | 169,438   | —                                    | —  | 14,253,779   |
| 671   | 10,931                               | 317  | 4,227   | —                      | 1,850   | 6,394                               | 4,705   | (2,495)   | —                                    | —  | 2,210  |
| 29,289  | 81,887                               | 2,812  | 20,956  | 117                    | —   | 23,885                              | 38,371  | 13,130  | —                                    | —  | 51,501   |
| 1,182   | 9,582                                | 479  | 3,329   | 22                     | 602   | 4,432                               | 6,494   | (64)  | —                                    | —  | 6,430  |
| 4,933   | 213,663                              | 6,800  | 85,785  | 35                     | 5,430   | 98,050                              | 99,936  | 871   | —                                    | —  | 100,807  |
| 7,534   | 22,926                               | 600  | 6,265   | 12                     | 12,439  | 19,316                              | 8,562   | 2,562   | —                                    | —  | 11,124   |
| 60,875  | 519,510                              | 29,718   | 190,151   | 75                     | 2,066   | 222,010                             | 258,728   | 61,030  | —                                    | —  | 319,758  |
| 12,064  | 36,029                               | 740  | 9,873   | —                      | —   | 10,613                              | 10,991  | 6,222   | —                                    | —  | 17,213   |
| 7,958   | 109,926                              | 4,109  | 41,434  | 95                     | 4,497   | 50,135                              | 58,277  | (2,546)   | —                                    | —  | 55,731   |
| 5,514   | 24,477                               | 1,226  | 7,428   | 63                     | 2,159   | 10,876                              | 16,383  | 9   | —                                    | —  | 16,392   |
| 966   | 63,663                               | 1,937  | 25,831  | —                      | 116   | 27,884                              | 28,756  | 1,371   | —                                    | —  | 30,127   |
| 6,194   | 109,259                              | 752  | 55,982  | 36                     | 1,240   | 58,010                              | 36,189  | 3,983   | —                                    | —  | 40,172   |
| 14,243  | 120,067                              | 1,169  | 30,271  | 1,083                  | 1,062   | 39,805                              | 39,805  | 3,877   | —                                    | —  | 43,857   |
| 409   | 78,868                               | 214  | 44,004  | 19                     | —   | 44,237                              | 24,999  | 12,690  | —                                    | —  | 37,689   |
| 211   | 22,696                               | 695  | 9,264   | —                      | 1,863   | 11,822                              | 10,313  | (596)   | —                                    | —  | 9,717  |
| 191,523   | 951,262                              | 53,602   | 315,210   | 225                    | 1,778   | 370,815                             | 447,801   | 134,419   | —                                    | —  | 582,220  |
| 48,601  | 773,287                              | 26,180   | 296,290   | 374                    | 31,853  | 354,697                             | 377,849   | 17,473  | —                                    | —  | 395,322  |
| 64,148  | 978,344                              | 51,269   | 377,052   | 246                    | 12,505  | 441,072                             | 505,273   | 26,878  | —                                    | —  | 532,151  |
| 1,214   | 22,988                               | 1,406  | 8,529   | 72                     | 1,182   | 11,189                              | 18,795  | (64)  | —                                    | —  | 18,731   |
| 17,936  | 600,763                              | 21,593   | 244,278   | 429                    | 105,636   | 371,936                             | 328,202   | (25,263)  | —                                    | —  | 302,939  |
| 5,711   | 125,801                              | 4,198  | 49,183  | 48                     | 16,988  | 70,417                              | 60,932  | (9,086)   | —                                    | —  | 51,846   |
| 69,181  | 1,757,497                            | 60,347   | 709,054   | 1,026                  | 62,920  | 833,347                             | 924,565   | (64,964)  | —                                    | —  | 859,601  |
| 7,157   | 457,776                              | 18,435   | 182,939   | 446                    | 26,986  | 228,806                             | 260,841   | (17,079)  | —                                    | —  | 243,762  |
| 5,379   | 26,468                               | 984  | 8,489   | 33                     | 8,653   | 18,159                              | 13,669  | (2,522)   | —                                    | —  | 11,147   |
| 13,599  | 1,018,032                            | 36,568   | 410,496   | 547                    | 114,929   | 562,540                             | 527,090   | (48,688)  | —                                    | —  | 478,402  |
| 1,050,934   | 6,468,686                            | 306,064  | 2,221,556   | 2,811                  | 495,135   | 3,025,566                           | 3,142,537   | 673,887   | —                                    | —  | 3,816,424  |
| 3,819   | 117,772                              | 9,915  | 38,578  | 6,043                  | 2,530   | 57,066                              | 37,032  | (459)   | (9,598)                              | —  | 26,975   |
| 5,751   | 43,255                               | 1,520  | 15,234  | 36                     | —   | 16,790                              | 21,538  | 2,688   | —                                    | —  | 24,226   |
| 882   | 81,306                               | 2,485  | 33,135  | —                      | 2,515   | 38,135                              | 36,886  | (1,223)   | —                                    | —  | 35,663   |
| 2,895   | 459,514                              | 15,985   | 186,997   | 185                    | 49,249  | 252,416                             | 231,944   | (25,675)  | —                                    | —  | 206,269  |
| 81,019  | 14,132,581                           | 457,651  | 5,982,404   | 5,279                  | 565,315   | 7,010,649                           | 7,254,470   | (410,807)   | —                                    | —  | 6,843,663  |
| 24,144  | 89,560                               | 3,674  | 25,956  | 163                    | 28,564  | 58,357                              | 49,849  | (2,468)   | —                                    | —  | 47,381   |
| 6,588   | 241,200                              | 7,250  | 96,660  | —                      | 7,867   | 111,777                             | 107,602   | 1,755   | —                                    | —  | 109,357  |
| 177,891   | 30,498,402                           | 4,732,505  | 12,000,780  | 1,284,148              | 15,607  | 18,033,040                          | 5,571,326   | 65,700  | (1,913,932)                          | —  | 3,723,094  |
| 303,040   | 28,789,848                           | 98,047   | 6,677,170   | 411,011                | 384,350   | 7,570,578                           | 10,251,976  | (48,683)  | —                                    | —  | 10,203,293   |
| 527,752   | 60,129,976                           | 1,829,137  | 26,024,408  | 18,705                 | 10,784,557  | 38,656,807                          | 30,113,637  | (5,404,108)   | —                                    | —  | 24,709,529   |
| 663   | 28,121,100                           | 644,056  | 12,897,905  | 32                     | 1,640,437   | 15,182,430                          | 12,571,953  | (646,557)   | —                                    | —  | 11,925,396   |
| 291   | 51,219                               | 1,574  | 20,983  | —                      | 867   | 23,424                              | 23,358  | (242)   | —                                    | —  | 23,116   |
| 142,314   | 1,007,757                            | 31,321   | 353,805   | 453                    | 16,628  | 402,207                             | 451,914   | 39,387  | —                                    | —  | 491,301  |
| 1,504   | 78,888                               | 2,687  | 31,705  | 29                     | 22,559  | 56,980                              | 39,039  | (11,692)  | —                                    | —  | 27,347   |
| 81,300  | 591,311                              | 16,536   | 215,296   | 144                    | 8,202   | 240,178                             | 259,192   | 35,871  | —                                    | —  | 295,063  |
| 15,415  | 275,736                              | 8,974  | 106,693   | 92                     | 53,696  | 169,455                             | 130,556   | (9,781)   | —                                    | —  | 120,775  |
| 115,904   | 813,545                              | 23,071   | 294,209   | 241                    | —   | 317,521                             | 359,900   | 53,899  | —                                    | —  | 413,799  |
| 4,712   | 489,567                              | 15,687   | 209,731   | 308                    | 27,608  | 253,334                             | 246,480   | (42,029)  | —                                    | —  | 204,451  |
| 372,936   | 1,721,232                            | 42,259   | 570,119   | 236                    | —   | 612,614                             | 667,925   | 262,833   | —                                    | —  | 930,758  |
| 9,127   | 194,021                              | 5,966  | 76,023  | 25                     | 6,106   | 88,120                              | 87,847  | (87)  | —                                    | —  | 87,760   |
| 588,755   | 31,434,831                           | 505,418  | 9,733,021   | 253,922                | 502,826   | 10,995,187                          | 12,961,701  | (44,852)  | —                                    | —  | 12,916,849   |
| 5,392   | 95,442                               | 2,763  | 38,115  | 10                     | 211,267   | 252,155                             | 43,905  | (80,480)  | —                                    | —  | (36,575)   |
| 3,029   | 782,259                              | 24,818   | 329,236   | 175                    | 61,853  | 416,082                             | 390,708   | (34,432)  | —                                    | —  | 356,276  |
| 184,512   | 4,771,509                            | 101,246  | 2,184,261   | 1,313                  | —   | 2,286,820                           | 2,138,643   | 284,510   | —                                    | —  | 2,423,153  |
| 1,941   | 8,569                                | 205  | 2,731   | —                      | 6,625   | 9,561                               | 3,040   | (7,534)   | —                                    | —  | (4,494)  |
| 651   | 782,198                              | 391  | 440,283   | 34                     | 143   | 440,851                             | 229,514   | 148,286   | —                                    | —  | 377,800  |
| 9,639   | 625,419                              | 21,309   | 252,328   | 226                    | 29,769  | 303,632                             | 309,823   | (19,371)  | —                                    | —  | 290,452  |
| 866,445   | 16,053,569                           | 491,043  | 6,411,989   | 4,139                  | 233,328   | 7,140,499                           | 7,701,967   | 394,589   | —                                    | —  | 8,096,556  |
| 20,381  | 231,934                              | 7,565  | 88,846  | 129                    | 26,206  | 122,746                             | 115,884   | 10,832  | —                                    | —  | 126,716  |
| 122,941   | 575,437                              | 15,144   | 190,709   | 174                    | 4,065   | 210,092                             | 235,568   | 59,540  | —                                    | —  | 295,108  |
| 7,381   | 210,428                              | 6,488  | 85,776  | 48                     | 25,197  | 117,509                             | 102,049   | (28,353)  | —                                    | —  | 73,696   |
| 12,144  | 284,211                              | 8,812  | 114,857   | 76                     | 21,237  | 144,982                             | 138,153   | (449)   | —                                    | —  | 137,704  |
| 148,362   | 24,492,822                           | 742,036  | 10,475,899  | 4,853                  | 1,894,963   | 13,117,751                          | 12,037,160  | (708,401)   | —                                    | —  | 11,328,759   |
| 32,268  | 784,226                              | 27,405   | 307,295   | 412                    | 26,071  | 361,183                             | 394,953   | (13,240)  | —                                    | —  | 381,713  |
| 202,711   | 14,525,361                           | 420,445  | 6,249,767   | 3,493                  | 1,062,775   | 7,736,480                           | 7,056,575   | (268,876)   | —                                    | —  | 6,787,699  |
| 40,585  | 2,040,618                            | 76,548   | 815,135   | 1,457                  | 93,959  | 987,099                             | 1,094,376   | (19,164)  | —                                    | —  | 1,075,212  |

**Aggregation of Funds with a Net Pension Liability**

(Employer's Collective Net Pension Liability for All Participating Retirement Systems)

**Schedule of Employer Allocations and Pension Amounts** (Concluded)

at December 31, 2018

| Participating Employer  | Employer Allocation Percentage | Net Pension Liability/(Asset) (6.95% Discount) | Net Pension Liability/(Asset) 1.00% Decrease (5.95%) | Net Pension Liability/(Asset) 1.00% Increase (7.95%) | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions |
|---|--------------------------------|--|--|--|--|---|------------------------|
| UTOPIA  | N/A                            | \$ 2,007,704                                   | 4,216,689  | 177,757  | 25,518   | 921,822   | 275,036                |
| Valley Emergency Comm Ctr   | N/A                            | 3,271,948                                      | 6,890,250  | 276,147  | 41,531   | 1,503,146   | 449,318                |
| Vernal City   | N/A                            | 3,595,791                                      | 7,284,551  | 559,281  | 20,404   | 1,617,756   | 405,877                |
| Vineyard Town   | N/A                            | 637,261  | 1,351,697  | 46,602   | 8,060  | 293,215   | 88,091                 |
| Wasatch County  | N/A                            | 9,742,820                                      | 19,880,403   | 1,401,589  | 79,833   | 4,175,449   | 1,252,344              |
| Wasatch County Fire District  | N/A                            | 464,960  | 1,702,510  | (535,646)  | 92,598   | 501,561   | 235,487                |
| Wasatch Front Regional Council  | N/A                            | 1,438,001                                      | 2,985,515  | 152,926  | 18,380   | 658,626   | 194,926                |
| Wasatch Front Waste/Recycling   | N/A                            | 2,176,152                                      | 4,574,871  | 189,422  | 27,645   | 999,369   | 298,374                |
| Wasatch Integrated Waste Mgmt   | N/A                            | 1,246,015                                      | 2,587,492  | 132,087  | 15,924   | 570,721   | 168,935                |
| Wasatch Mental Health SSD   | N/A                            | 10,354,768                                     | 21,500,472   | 1,099,463  | 132,344  | 4,742,751   | 1,403,764              |
| Wasatch School District   | N/A                            | 33,395,764                                     | 60,739,630   | 10,582,078   | 178,450  | 12,335,815  | 3,444,805              |
| Wasatch Uniserv   | N/A                            | 152,511  | 274,133  | 50,759   | 812  | 56,069  | 15,512                 |
| Washington City   | N/A                            | 4,819,594                                      | 10,043,978   | 508,246  | 65,446   | 2,174,543   | 664,813                |
| Washington Co Solid Waste   | N/A                            | 445,972  | 925,689  | 47,590   | 5,701  | 204,251   | 60,440                 |
| Washington Co Wat Con Dist  | N/A                            | 1,391,654                                      | 2,892,613  | 145,544  | 17,778   | 637,555   | 188,841                |
| Washington County   | N/A                            | 17,090,899                                     | 34,567,864   | 2,762,258  | 111,653  | 7,120,419   | 2,148,134              |
| Washington School District  | N/A                            | 121,715,390                                    | 221,105,720  | 38,745,948   | 647,376  | 45,133,574  | 12,475,571             |
| Waste Management Serv Dist #5   | N/A                            | 115,061  | 235,813  | 14,507   | 1,480  | 52,556  | 15,414                 |
| Wayne County  | N/A                            | 723,974  | 1,476,958  | 104,282  | 5,909  | 310,477   | 93,015                 |
| Wayne School District   | N/A                            | 2,735,213                                      | 4,952,187  | 883,594  | 14,599   | 1,008,495   | 280,618                |
| Weber Area Dispatch 911   | N/A                            | 2,089,473                                      | 4,365,504  | 201,938  | 26,625   | 958,293   | 284,871                |
| Weber Basin Water Conserv   | N/A                            | 3,956,893                                      | 8,179,423  | 447,192  | 50,683   | 1,810,647   | 534,240                |
| Weber Co Mosquito Abate   | N/A                            | 352,510  | 726,281  | 41,615   | 4,523  | 161,193   | 47,451                 |
| Weber County Corp   | N/A                            | 34,827,320                                     | 70,594,744   | 5,503,862  | 217,942  | 14,592,214  | 4,350,705              |
| Weber County School District  | N/A                            | 141,665,348                                    | 256,490,980  | 45,762,987   | 756,090  | 52,233,242  | 14,534,193             |
| Weber Fire District   | N/A                            | 1,370,108                                      | 6,092,937  | (2,504,317)  | 13,961   | 2,234,598   | 876,375                |
| Weber Human Services  | N/A                            | 7,611,548                                      | 15,886,499   | 747,583  | 97,038   | 3,490,120   | 1,036,764              |
| Weber River Water Users   | N/A                            | 134,343  | 285,188  | 7,363  | —  | 101,243   | —                      |
| Weber State University  | N/A                            | 20,865,946                                     | 38,207,897   | 6,352,630  | 103,402  | 8,308,727   | 1,987,871              |
| Wellington City   | N/A                            | 159,924  | 328,825  | 21,430   | 1,268  | 68,037  | 20,670                 |
| Wellsville City Corp  | N/A                            | 258,523  | 535,823  | 28,168   | 3,307  | 118,365   | 34,989                 |
| West Bountiful City   | N/A                            | 1,123,739                                      | 2,295,062  | 165,045  | 8,556  | 470,376   | 143,921                |
| West Kane County SSD #1   | N/A                            | 148,724  | 315,366  | 10,944   | 1,881  | 68,426  | 20,553                 |
| West Point City   | N/A                            | 523,345  | 1,100,281  | 45,504   | 6,648  | 240,342   | 71,760                 |
| West Valley City  | N/A                            | 26,353,503                                     | 61,450,834   | (2,519,652)  | 4,060,060  | 14,972,700  | 5,802,352              |
| White City Water Imp Dist   | N/A                            | 343,962  | 709,304  | 40,138   | 4,411  | 157,315   | 46,338                 |
| Willard City Corp   | N/A                            | 369,629  | 744,426  | 61,581   | 2,355  | 154,937   | 46,192                 |
| Woodland Peaks Uniserv  | N/A                            | 177,856  | 319,689  | 59,195   | 947  | 65,387  | 18,090                 |
| Woods Cross City  | N/A                            | 1,740,641                                      | 3,600,705  | 205,607  | 285,313  | 808,888   | 265,329                |
| Workers Compensation Fund   | N/A                            | 37,945,530                                     | 69,493,135   | 11,580,028   | 192,461  | 14,801,830  | 3,712,503              |
| <b>Grand Total</b>  | <b>N/A</b>                     | <b>\$ 5,448,658,651</b>                        | <b>10,264,965,606</b>                                | <b>1,444,729,138</b>                                 | <b>73,065,621</b>                                  | <b>2,155,931,106</b>  | <b>603,777,984</b>     |
| <b>Units without a proportionate share for 2018 but had a proportionate share in a prior year</b> |                                |  |  |  |  |   |                        |
| Canyonlands Health Care   | N/A                            | \$ —   | —  | —  | —  | —   | —                      |
| Garden City Fire District   | N/A                            | —  | —  | —  | —  | —   | —                      |
| Leeds Area Special Service District   | N/A                            | —  | —  | —  | —  | —   | —                      |
| Liberty Academy Charter School  | N/A                            | —  | —  | —  | —  | —   | —                      |
| Valley Mental Health  | N/A                            | —  | —  | —  | —  | —   | —                      |
| Six County Infrastructure Coal  | N/A                            | —  | —  | —  | —  | —   | —                      |
| Summit Mosquito Abatement Dist  | N/A                            | —  | —  | —  | —  | —   | —                      |
| Sunnyside City  | N/A                            | —  | —  | —  | —  | —   | —                      |
| <b>Grand Total</b>  | <b>N/A</b>                     | <b>\$ 5,448,658,651</b>                        | <b>10,264,965,606</b>                                | <b>1,444,729,138</b>                                 | <b>73,065,621</b>                                  | <b>2,155,931,106</b>  | <b>603,777,984</b>     |

Columns may not add to total due to rounding.



Utah Retirement Systems

| Deferred Outflows of Resources  |                                      | Deferred Inflows of Resources                      |   |                        |   |                                     | Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |   |  |  |
|---|--------------------------------------|--|---|------------------------|---|-------------------------------------|---|---|--|--|
| Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions | Total Deferred Inflows of Resources | Proportionate Share of Allocable Plan Gross Pension Expense                       | Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions |  | Total Employer Net Pension Expense Excluding That Attributable to Employer-Paid Member Contributions |
|   |                                      |  |   |                        |   |                                     |   | Proportionate Share of Nonemployer Contributions  | Proportionate Share of Nonemployer Contributions |  |
| 151,965   | 1,374,341                            | 47,246   | 497,914   | 936                    | 14,835  | 560,931                             | 674,395   | 37,961  | —  | 712,356  |
| 80,977  | 2,074,972                            | 78,756   | 811,205   | 1,694                  | 90,313  | 981,968                             | 1,120,370   | (42,775)  | —  | 1,077,595  |
| 7,643   | 2,051,680                            | 113,692  | 886,016   | 374                    | 152,620   | 1,152,702                           | 1,083,073   | (92,540)  | —  | 990,533  |
| 141,310   | 530,676                              | 16,272   | 157,865   | 419                    | —   | 174,556                             | 229,509   | 75,980  | —  | 305,489  |
| 170,537   | 5,678,163                            | 312,081  | 2,267,640   | 2,213                  | 19,429  | 2,601,363                           | 3,117,712   | 93,776  | —  | 3,211,488  |
| 5,831   | 835,477                              | 76,532   | 269,663   | 48,962                 | 38,184  | 433,341                             | 292,774   | (7,361)   | (77,323)   | 208,090  |
| 40,623  | 912,555                              | 30,509   | 357,088   | 352                    | —   | 387,949                             | 442,729   | 21,404  | —  | 464,133  |
| 21,984  | 1,347,372                            | 51,632   | 539,631   | 1,055                  | 67,178  | 659,496                             | 736,089   | (30,084)  | —  | 706,005  |
| 5,809   | 761,389                              | 26,491   | 309,406   | 311                    | 529,851   | 866,059                             | 384,285   | (243,034)   | —  | 141,251  |
| 213,637   | 6,492,496                            | 219,917  | 2,571,292   | 2,560                  | 129,268   | 2,923,037                           | 3,190,734   | 45,574  | —  | 3,236,308  |
| 1,478,802   | 17,437,872                           | 530,685  | 6,728,340   | 5,792                  | 31,935  | 7,296,752                           | 8,267,724   | 685,690   | —  | 8,953,414  |
| 37,326  | 109,719                              | 2,140  | 30,695  | —                      | 245   | 33,080                              | 34,331  | 16,134  | —  | 50,465   |
| 198,491   | 3,103,293                            | 138,679  | 1,178,912   | 8,161                  | 25,290  | 1,351,042                           | 1,563,931   | 56,582  | (10,886)   | 1,609,627  |
| 6,495   | 276,887                              | 9,440  | 110,748   | 107                    | 7,473   | 127,768                             | 137,049   | (2,055)   | —  | 134,994  |
| 252,622   | 1,096,796                            | 29,845   | 345,535   | 372                    | 26,935  | 402,687                             | 432,321   | 182,936   | —  | 615,257  |
| 62,998  | 9,443,204                            | 613,065  | 3,872,495   | 3,118                  | 456,736   | 4,945,414                           | 5,478,782   | (233,167)   | —  | 5,245,615  |
| 1,647,885   | 59,904,406                           | 1,890,586  | 24,644,211  | 17,706                 | —   | 26,552,503                          | 29,717,528  | 836,167   | —  | 30,553,695   |
| 2,410   | 71,860                               | 2,146  | 28,613  | —                      | 22  | 30,781                              | 31,852  | 1,140   | —  | 32,992   |
| 14,437  | 423,838                              | 23,096   | 168,634   | 160                    | 29,014  | 220,904                             | 230,871   | (9,116)   | —  | 221,755  |
| 40,933  | 1,344,645                            | 41,496   | 550,853   | 291                    | 102,806   | 695,446                             | 653,369   | (55,158)  | —  | 598,211  |
| 22,737  | 1,292,526                            | 46,967   | 518,498   | 764                    | 77,189  | 643,418                             | 675,201   | (18,213)  | —  | 656,988  |
| 79,745  | 2,475,315                            | 80,520   | 983,061   | 642                    | 60,938  | 1,125,161                           | 1,176,714   | 33,984  | —  | 1,210,698  |
| 2,119   | 215,286                              | 6,942  | 87,610  | 35                     | 34,517  | 129,104                             | 102,036   | (17,364)  | —  | 84,672   |
| 1,072,705   | 20,233,566                           | 1,258,699  | 7,933,788   | 7,665                  | 1,893,650   | 11,093,802                          | 11,285,735  | (429,856)   | —  | 10,855,879   |
| 980,627   | 68,504,152                           | 2,149,347  | 28,530,434  | 15,073                 | 337,490   | 31,032,344                          | 33,841,647  | 77,199  | —  | 33,918,846   |
| 37,910  | 3,162,844                            | 491,213  | 1,221,770   | 135,441                | 18,014  | 1,866,438                           | 661,843   | 11,329  | (200,628)  | 472,544  |
| 103,636   | 4,727,558                            | 169,535  | 1,889,005   | 2,635                  | 112,182   | 2,173,357                           | 2,440,805   | (1,371)   | —  | 2,439,434  |
| —   | 101,243                              | —  | 57,092  | —                      | —   | 57,092                              | 29,163  | 4,029   | —  | 33,192   |
| 73,570  | 10,473,570                           | 294,258  | 4,574,900   | 2,092                  | 666,495   | 5,537,745                           | 5,043,590   | (264,314)   | —  | 4,779,276  |
| 9,631   | 99,606                               | 5,624  | 36,837  | 65                     | 18,383  | 60,909                              | 55,271  | (11,714)  | —  | 43,557   |
| 8,718   | 165,379                              | 5,398  | 64,209  | 55                     | 6,455   | 76,117                              | 78,533  | 1,906   | —  | 80,439   |
| 107,454   | 730,307                              | 40,963   | 255,061   | 372                    | 3,887   | 300,283                             | 383,801   | 90,426  | —  | 474,228  |
| 5,237   | 96,097                               | 3,789  | 36,844  | 97                     | 484   | 41,214                              | 53,457  | 1,435   | —  | 54,892   |
| 4,238   | 322,988                              | 12,424   | 129,775   | 254                    | 27,471  | 169,924                             | 177,101   | (11,464)  | —  | 165,637  |
| 165,144   | 25,000,256                           | 1,326,387  | 8,086,013   | 459,995                | 456,384   | 10,328,779                          | 8,887,608   | (350,561)   | (434,429)  | 8,102,618  |
| 6,499   | 214,563                              | 6,835  | 85,478  | 40                     | 781   | 93,134                              | 100,298   | 2,312   | —  | 102,610  |
| 14,421  | 217,905                              | 12,600   | 84,408  | 32                     | 7,829   | 104,869                             | 112,690   | 5,534   | —  | 118,224  |
| 6,454   | 90,878                               | 2,496  | 35,796  | —                      | 1   | 38,293                              | 40,036  | 3,201   | —  | 43,237   |
| 89,704  | 1,449,234                            | 15,517   | 437,689   | 11,758                 | 14,867  | 479,831                             | 535,949   | 40,997  | —  | 576,946  |
| 661,952   | 19,368,746                           | 567,848  | 8,123,618   | 5,816                  | 220,071   | 8,917,353                           | 9,392,422   | 369,297   | —  | 9,761,719  |
| 80,166,464  | 2,912,941,175                        | 112,999,991  | 1,176,841,880   | 7,832,438              | 78,714,364  | 1,376,388,673                       | 1,428,295,787   | (5,288,794)   | (10,266,130)                                     | 1,412,740,863  |
| —   | —                                    | —  | —   | —                      | 12,205  | 12,205                              | —   | (19,172)  | —  | (19,172)   |
| 1,072   | 1,072                                | —  | —   | —                      | —   | —                                   | —   | 74  | —  | 74   |
| 5,032   | 5,032                                | —  | —   | —                      | —   | —                                   | —   | 1,291   | —  | 1,291  |
| 17,166  | 17,166                               | —  | —   | —                      | 277,291   | 277,291                             | —   | (120,668)   | —  | (120,668)  |
| 6,149   | 6,149                                | —  | —   | —                      | 1,931,205   | 1,931,205                           | —   | (2,068,019)   | —  | (2,068,019)  |
| 14,305  | 14,305                               | —  | —   | —                      | 46,244  | 46,244                              | —   | (3,663)   | —  | (3,663)  |
| —   | —                                    | —  | —   | —                      | 7,331   | 7,331                               | —   | (6,438)   | —  | (6,438)  |
| —   | —                                    | —  | —   | —                      | 570   | 570                                 | —   | (928)   | —  | (928)  |
| 80,210,188  | 2,912,984,899                        | 112,999,991  | 1,176,841,880   | 7,832,438              | 80,989,209  | 1,378,663,518                       | 1,428,295,787   | (7,506,316)   | (10,266,130)                                     | 1,410,523,341  |

# Systems and Plans Statistical Highlights

Year Ended December 31, 2018

## Defined Benefit Systems

|   | Noncontributory | Contributory | Public Safety | Firefighters | Judges  | Governors and Legislators | Tier 2 Public Employees | Tier 2 Public Safety and Firefighter | Tier 2 Defined Contribution Only | Averages and Totals All Systems |
|---|-----------------|--------------|---------------|--------------|---------|---------------------------|-------------------------|--------------------------------------|----------------------------------|---------------------------------|
| <b>Membership Information</b>   |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| <b>Total Membership</b>   | 159,459         | 5,622        | 16,193        | 3,444        | 279     | 387                       | 32,326                  | 3,431                                | 7,066                            | 228,207                         |
| Active  | 56,299          | 519          | 5,305         | 1,540        | 116     | 52                        | 30,291                  | 3,301                                | 6,397                            | 103,820                         |
| Terminated vested   | 46,756          | 1,186        | 4,921         | 440          | 8       | 85                        | 1,971                   | 130                                  | 669                              | 56,166                          |
| Retired   | 56,404          | 3,917        | 5,967         | 1,464        | 155     | 250                       | 64                      | —                                    | —                                | 68,221                          |
| <b>Total 2018 Active Members</b>  | 56,299          | 519          | 5,305         | 1,540        | 116     | 52                        | 30,291                  | 3,301                                | 6,397                            | 103,820                         |
| Average age   | 49.1            | 57.1         | 42.8          | 43.2         | 53.8    | 57.0                      | 36.0                    | 29.5                                 | 36.7                             | 43.5                            |
| Average years of service  | 16.6            | 30.2         | 16.4          | 16.4         | 14.5    | 13.6                      | 2.9                     | 3.0                                  | 3.7                              | 11.5                            |
| Average annual salary   | \$ 57,971       | 64,824       | 62,721        | 71,914       | 166,280 | N/A                       | 41,840                  | 44,030                               | 48,230                           | 52,803                          |
| <b>2018 Retirees</b>  |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| Number  | 3,445           | 110          | 372           | 61           | 10      | 7                         | 38                      | —                                    | N/A                              | 4,043                           |
| Average age   | 64.4            | 62.4         | 52.2          | 53.6         | 66.3    | 68.6                      | 67.6                    | —                                    | N/A                              | 63.1                            |
| Average years of service  | 20.8            | 31.8         | 22.4          | 23.2         | 34.0    | 10.8                      | 5.4                     | —                                    | N/A                              | 21.2                            |
| Final average annual salary   | \$ 50,763       | 55,750       | 65,895        | 77,913       | 159,652 | N/A                       | 33,954                  | —                                    | N/A                              | 52,723                          |
| Average annual benefit  | \$ 21,618       | 32,915       | 35,358        | 43,976       | 128,017 | 4,048                     | 2,875                   | —                                    | N/A                              | 23,581                          |
| Average annual benefit —all retirees  | \$ 22,921       | 21,028       | 30,193        | 37,777       | 92,753  | 3,860                     | 2,505                   | —                                    | N/A                              | 23,822                          |
| <b>Financial Information</b>  |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| <b>Changes in Fiduciary Net Position Restricted for Pensions</b>              |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| <i>(in thousands)</i>   |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| Contributions   | \$ 873,046      | 8,482        | 147,996       | 34,073       | 9,609   | 392                       | 97,680                  | 14,350                               | N/A                              | 1,185,628                       |
| Investment income (loss)  | (92,207)        | (4,513)      | (13,134)      | (4,509)      | (730)   | (41)                      | (1,454)                 | (180)                                | N/A                              | (116,768)                       |
| Pension benefits  | 1,320,214       | 86,795       | 188,414       | 57,440       | 16,111  | 978                       | 692                     | —                                    | N/A                              | 1,670,644                       |
| Net assets at fair value  | \$ 24,666,059   | 1,172,429    | 3,528,069     | 1,207,889    | 195,570 | 10,537                    | 424,633                 | 54,336                               | N/A                              | 31,259,522                      |
| <b>Actuarial Information (GASB 67)</b>  |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| <b>Employers' Net Pension Liability/(Asset) <i>(dollars in thousands)</i></b> |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| Total pension liability   | \$ 29,122,948   | 1,284,009    | 4,258,247     | 1,261,289    | 244,209 | 13,177                    | 467,461                 | 56,841                               | N/A                              | 36,708,181                      |
| Plan fiduciary net position (fair value)                                      | \$ 24,666,059   | 1,172,429    | 3,528,069     | 1,207,889    | 195,570 | 10,537                    | 424,633                 | 54,336                               | N/A                              | 31,259,522                      |
| Employers net pension liability/(asset)                                       | \$ 4,456,889    | 111,580      | 730,178       | 53,400       | 48,639  | 2,640                     | 42,828                  | 2,505                                | N/A                              | 5,448,659                       |
| Percentage of the total pension liability                                     | 84.7%           | 91.3%        | 82.9%         | 95.8%        | 80.1%   | 80.0%                     | 90.8%                   | 95.6%                                | N/A                              | 85.2%                           |
| <b>Actuarial Information (Funding)</b>  |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| <b>Funding Progress <i>(dollars in thousands)</i></b>                         |                 |              |               |              |         |                           |                         |                                      |                                  |                                 |
| Actuarial value of assets   | \$ 25,423,551   | 1,209,260    | 3,635,825     | 1,244,696    | 201,325 | 10,852                    | 438,366                 | 56,073                               | N/A                              | 32,219,948                      |
| Actuarial accrued liability   | \$ 29,122,948   | 1,284,009    | 4,258,247     | 1,261,289    | 244,209 | 13,177                    | 467,461                 | 56,841                               | N/A                              | 36,708,181                      |
| Unfunded actuarial accrued liability  | \$ 3,699,397    | 74,749       | 622,422       | 16,593       | 42,884  | 2,325                     | 29,095                  | 768                                  | N/A                              | 4,488,233                       |
| Funded ratios   | 87.3%           | 94.2%        | 85.4%         | 98.7%        | 82.4%   | 82.4%                     | 93.8%                   | 98.7%                                | N/A                              | 87.8%                           |

Systems and Plans Statistical Highlights *(Continued)*

Year Ended December 31, 2018

## Defined Contribution Plans

|   | 401(k)                | 457      | Roth IRA | Traditional<br>IRA |              |
|---|-----------------------|----------|----------|--------------------|--------------|
| <b>Membership Information</b>                                 |                       |          |          |                    |              |
| <b>Number of Active Employees Eligible to Participate</b>     | 107,226               | 103,336  | 228,207  | 228,207            |              |
| Employee contributions<br>(excluding employer contributions): |                       |          |          |                    |              |
| Number of employees contributing                              | 40,083                | 8,475    | 8,775    | 614                |              |
| Percent of eligible employees contributing                    | 37.4%                 | 8.2%     | 3.8%     | 0.3%               |              |
| Average percent of salary deferred by employees               | 5.6%                  | 6.2%     | N/A      | N/A                |              |
| Total participants  | 178,010               | 18,336   | 12,232   | 2,383              |              |
| Average participant account balance                           | \$ 27,156             | 29,677   | 10,774   | 50,317             |              |
| <b>Financial Information</b>                                  |                       |          |          |                    |              |
| <b>Changes in Fiduciary Net Position</b>                      |                       |          |          |                    |              |
|   | <i>(in thousands)</i> |          |          |                    | <b>Total</b> |
| Contributions   | \$ 317,548            | 32,589   | 25,280   | 30,108             | 405,525      |
| Net investment income (loss)                                  | (202,398)             | (24,212) | (7,353)  | (2,287)            | (236,250)    |
| Refunds   | 276,023               | 32,709   | 5,227    | 10,156             | 324,115      |
| Plan net position   | \$ 4,834,083          | 544,157  | 131,791  | 119,905            | 5,629,936    |



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