

**Utah Retirement System**

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**ACTUARIAL VALUATION**  
**January 1, 2002**



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August 8, 2002

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, 2002**

This report describes the current actuarial condition of the Utah Retirement Systems (URS), determines the recommended employer contribution rates, and analyzes changes in these contribution rates. Valuations are prepared annually, as of January 1, the first day of the URS plan year.

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. Contribution rates determined by a given actuarial valuation become effective eighteen months after the valuation date. I.e., the rates determined by this January 1, 2002 actuarial valuation will be used by the Board when certifying the employer contribution rates for the year beginning July 1, 2003 and ending June 30, 2004. If new legislation is enacted between the valuation date and the date the contribution rates become effective, the Board may adjust the recommended rates before certifying them, in order 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 have been:

- To set rates so that the unfunded actuarial accrued liability (UAAL) will be amortized over a 20-year period from the current valuation date
- To set rates so that they remain relatively level over time.

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 twenty years in installments which increase at the assumed rate of growth in payroll for URS. The current -- assumed rate of growth in payroll for URS is 4.00%, increased from 3.00% last year.

The Board uses an open 20-year amortization period. In other words, a 20-year amortization period is used in each valuation, rather than having the period decrease to 19, 18, etc.

Under this policy, the objectives of maintaining relatively level contribution rates over time are achieved.

### **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 100%. Because of the investment losses recognized in the actuarial value of assets, the funded ratio for almost all of the funds in URS decreased since the last valuation. The exceptions were two of the smaller public safety funds—Provo and Bountiful—and the fund for the 3% substantial substitute.

For all systems combined, the funded ratio decreased from 104.7% to 102.7%. Most of the individual funds have ratios over 100%, and only the 3% Substantial Substitute Fund and the Salt Lake City Noncontributory Public Safety Fund have funded ratios less than 90%. Since the funded ratio for all systems combined was 76.9% in 1990, significant progress has been made over the last twelve years, even though a number of benefit increases have been granted during that time, and even though the 3% substantial substitute was added as a URS liability. However, if market value had been used in the calculation instead of actuarial value, the aggregate funded ratio for all funds combined would have been 91.8%.

### **Benefit provisions**

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2002, or which were adopted by the end of the 2002 legislative session and are effective on or before July 1, 2002.

None of the new legislation adopted since the preceding valuation had a measurable impact on our results.

### **Assumptions and methods**

The Board, in consultation with the actuary, sets the actuarial assumptions and methods used in the valuation. In connection with the valuations in even-numbered years, the actuary conducts a thorough review of plan experience for the preceding five years, and then makes recommendations to the Board.

An experience analysis was carried out in connection with this valuation, and as a result, we are recommending a number of changes in the actuarial assumptions. Our recommendations include:

- Changes to the post-retirement mortality assumptions for most groups
- Changes to the service-related salary increase rates for members of the public safety systems
- Decreases in the disability incidence rates for most groups
- An increase in the payroll growth assumption from 3.00% to 4.00%

We have recommended that the assumed inflation rate remain at 3.00% and that the assumed nominal investment return rate remain at 8.00%. We have not recommended any changes in the actuarial cost method (entry age normal) or in the method for determining the actuarial value of assets (five-year smoothing).

It is our opinion that the recommended assumptions are internally consistent and are reasonably based on past and anticipated future experience of the System.

#### **Data**

Member data for retired, active and inactive members was supplied as of December 31, 2001 by the URS staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. The staff also supplied asset information as of December 31, 2001.

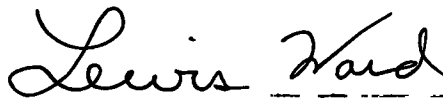
#### **Certification**

We certify that the information presented herein is accurate and fairly portrays the actuarial position of URS as of January 1, 2002.

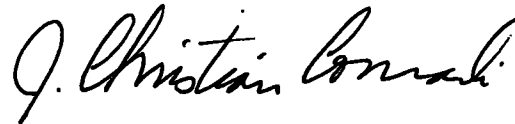
All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Utah state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. Mr. Carter and Mr. Conradi are Enrolled Actuaries and Members of the American Academy of Actuaries, and all three are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Company



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**Appendix 1 — Statement of Actuarial Assumptions and Methods**

**Appendix 2 — Summary of Principal Plan Provisions**

Public Employees Retirement Systems (Contributory and Noncontributory)

Public Safety Retirement Systems (Contributory and Noncontributory)

Firefighters Retirement System

Judges Retirement System

Governors and Legislative Pension Plan



### Executive Summary and Contribution Requirements

- Exhibit 1(a) shows the new, recommended contribution rates
    - Rates include funding for 3% substantial substitute
    - Rates do not include 1.50% 401(k) contribution
    - Offsets for Firefighters System and Judges System are shown
  - Rates shown on Exhibit 1(a), column 6 are recommended rates for the twelve-month period beginning July 1, 2003, based on current board policy
    - Rates may need to be adjusted for the effect of 2003 legislation, if material
  - Exhibit 4 reconciles the recommended FY 2003 and FY 2004 rates
  - There were no material changes to benefit provisions
  - Recommend adoption of new assumptions
    - Modified post-retirement mortality rates for most groups
    - Decreases in disability rates for most groups
    - Increase in service-related salary increase assumption for public safety
    - Adoption of a 4.00% (increased from 3.00%) payroll growth assumption
    - Impact is shown on Exhibit 4, column 6
  - Amortization payments based on:
    - 20-year funding period
    - Contributions increase as level percentage of pay
    - Total payroll increases 4.00% per year
- No future growth in the number of active members is taken into account

- Plan experienced an asset loss which decreased funded ratios for almost all funds and would have served to increase contribution rates in the absence of other changes
  - Impact on contribution rates shown on Exhibit 4, column 4
  - Although investments are commingled, the impact of the gain on each fund's contribution rate depends on ratio of the amount of assets to compensation
  - Because the actuarial asset method smoothes gains and losses over five years, only 20% of the 2001 investment loss is reflected in these results.
  - The remainder of the actuarial investment losses for 2000 and 2001 will be recognized in future years and will tend to increase future contribution rates significantly. Additional information on the impact of the deferred asset losses is being provided to the Board separately.
- The impact of the asset loss and the assumption change caused some contribution rates to decrease, others to increase.
- The one-year term cost for the 75% group life insurance benefit in the Public Employees Systems has been increased from 0.09% to 0.10%. This rate has been set lower than the actual one-year term cost in order to offset excessive reserves accrued as of the latest year at PEHP. Because of sharp decreases in these reserves, we are moving the rate up this year.
- The rate shown for the Judges System is for the noncontributory system. The employer contribution rate for the contributory system is 8.00 percentage points less.
- As for the past several years, no contribution is recommended for the Governors and Legislative Pension Plan.

### Calculation of Contribution Rates

The URS retirement systems, except for the Governors' and Legislators' Retirement Plan, are funded by employer contributions which are determined as a percent of pay, and in some cases by member contributions. The Firefighters System and the Judges System receive additional funding from outside sources. As shown in Exhibit 2(a), the employer contribution rate can have as many as four components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)
- The contribution required to fund the 3% substantial substitute benefit (3%SS)
- The offset for fire insurance premium taxes and court fees which reduce the employer contribution rates in the Firefighters System and the Judges System, respectively

The NC% is the theoretical amount which would be required to pay the members' benefits, based on the current plan provisions, if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. This is the amount it should cost to provide the benefits for an average new member. The NC% for each fund is shown in Exhibit 6(a).

Some of the funds require active member contributions, and for these, only the excess of the NC% over the member contribution rate is included in the employer contribution rate, as shown in Exhibit 6(b) and in column 2 of Exhibit 2(a). The NC% for the Public Employees' Systems also includes a small component (0.10% of pay) that is used to pay the cost of a group insurance benefit that is administered by the Public Employees Health Plan, not by URS.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current members of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including: actuarial gains and losses which are caused by differences between actual experience and the plan's assumptions, changes to the plan's actuarial assumptions, and amendments to the benefit provisions.

The UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. The Board has specified that this amortization should be over a period of 20 years. Column 3 of Exhibit 2(a) shows the UAAL% for each fund.

The 3% Substantial Substitute component of the employer contribution rate is only required for funds whose members are employees of the state (or who are paid by state funding). This piece is the amount necessary to fund the 3% Substantial Substitute. It is shown in column 4 of Exhibit 2(a), and is described more fully later.

The last piece of the contribution rate is the offset. The Firefighters System receives a portion of the fire insurance premium taxes collected by the state, and the Judges System receives a portion of court fees collected by the judiciary. The calculation of the offsets is shown in Exhibit 2(b), and the impact of the offset on the employer contribution rates is shown in column 6 of Exhibit 2(a).

Exhibit 1(a) shows that the gross employer rate for the Firefighter's System before any reduction for the offset is 2.63% for Division A and zero for Division B. The offset is first used to reduce the employer contribution rate and then any remaining offset is used to reduce the member contribution rates.

These calculated rates are used in determining the contribution rates that will become effective for the twelve-month period beginning July 1, 2003.

The Governors' and Legislators' Retirement Plan, unlike the other systems, is funded by direct legislative appropriations. However, the actuarial value of assets exceeds the actuarial present value of future benefits for this fund, and therefore no contribution is required this year.

## Financial Data and Experience

As of December 31, 2001, the retirement systems that are part of URS have a total market value of about \$12.6 billion. This excludes assets of the 401(k) and 457 plans which are also administered by URS. Assets of the various funds and systems are commingled for investment purposes. Financial information was gathered from the 2001 URS Comprehensive Annual Financial Report, with additional information provided by the URS staff.

This report includes a number of exhibits related to plan assets. Exhibit 11(a) shows how the total market value is distributed among the various classes of investments. Currently, 60% of invested assets are held in equities and alternative investments, compared with 62% last year and compared with a 63% investment policy target.

Exhibit 11(b) shows a reconciliation of the market values between the beginning and end of 2001. The contributions shown in column 3 of Exhibit 11(b) include employer and member contributions, as well as court fees and fire insurance premium tax receipts. The 3% substantial substitute fund is shown as a separate item.

During 2001, the total investment return on market values was -5.3%, as shown on Exhibit 12(a).

In determining the contribution rates and funded status of the funds, an actuarial value of assets (AVA) is used, rather than the market value of assets. The method used to compute the AVA takes the difference between actual earnings and expected earnings (based on the assumed 8% investment return rate) each year, and recognizes the difference over five years, at 20% per year. This is intended to reduce the volatility of the contribution rates from year to year.

The development of the AVA is shown on Exhibits 13 and 14. The AVA is \$14.1 billion for all systems combined. This work was performed by the URS staff, but has been reviewed and approved by GRS.

Some funds in the Contributory Public Employees System and the Contributory Public Safety System are paired with funds in the Public Employees and Public Safety noncontributory systems. For example, Fund 23, Other Division A, in the Public Safety Contributory System is paired with Fund 43, Other Division A, in the Public Safety Noncontributory System. In these cases, URS has established a policy of maintaining either the same difference between contribution rates for pairs of funds, or it maintains equal amortization percentages. To accomplish this, an amount of assets is transferred each year between fund pairs, as necessary. Exhibit 14, column 6 shows the change that must occur to the AVA in order to accomplish this. Exhibit 14, column 3 shows how much must be transferred between systems to accomplish this in terms of market value.

In addition to the market return, Exhibit 12(a) also shows the return on the actuarial value for URS. For 2001, this return was 6.8%. Because this is less than the assumed 8% investment return, the plan funded status decreased for almost all funds, and the calculated contribution rates for many of the funds increased. Exhibit 12(b) shows a summary of market and actuarial return rates in recent years.

### Member Data

Member data was supplied by URS staff on a CD as of December 31, 2001. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Exhibit 8 shows the number of members by category (active, inactive, retired, etc.) and by fund. Exhibit 9 shows active member statistics by fund, and Exhibit 10 shows retiree statistics by fund. Exhibits 16(a)-16(g) show summaries of certain historical data, including membership statistics, for each system.

For all funds combined, the number of active members increased from 94,068 to 96,012, a 2.1% increase. Last year, total membership grew 1.4%, and over the last five years, membership growth has averaged 2.4% per year.

Total active member payroll grew 7.0% last year for all funds combined, compared with a 5.1% increase last year.

### **Benefit Provisions**

Appendix 2 includes a summary of the benefit provisions for each of the retirement systems in URS. The valuation reflects benefit changes enacted by the 2002 legislature. Although not effective on the valuation date, they will be effective on or before the contribution rates actually go into effect at July 1, 2003.

However, there were no changes made since the previous valuation that had a measurable effect on the valuations.

This valuation reflects all benefits promised to URS members, either by the statutes, or in the case of the special supplement for the Governors' and Legislators' Retirement Plan and the ROPP payments (discussed later), by the Board. There are no ancillary benefits that might be deemed a URS liability if continued beyond the availability of funding by the current funding source.



## Actuarial Methods and Assumptions

Appendix 1 includes a summary of the actuarial assumptions and methods used in this valuation. Costs are determined using the Entry Age actuarial cost method. The assumed investment return rate is 8.00%. We are recommending the Board adopt new actuarial assumptions in connection with the 2002 experience investigation.

### *2002 Experience Investigation*

As a result of our analysis of the five-years' experience data, we are recommending new actuarial assumptions for the Board's approval. The changes being recommended result in lower contribution rates except for the Public Safety System where the impact was mixed. This is mainly due to the modifications made to post-retirement mortality rates, because it appeared that the changes made in 2001 lowered mortality rates too much.

Other changes included:

- Decreases to the disability incidence rates for most groups
- An increase to the service-related salary rates for public safety members
- An increase in the assumed future payroll growth rate from 3.00% to 4.00%

We also modified our programming to reflect service that had been earned by members in other funds.

The following is a description of the main findings and recommendations of our study:

- ***Recommend no change to 3.00% inflation assumption or the cost-of-living increase assumptions***
  - Inflation is a component of investment return rate, salary increase rates, cost-of-living increases and payroll growth rate
  - Higher than actual inflation over the last five or ten years (2.2% and 2.5% respectively), but lower than inflation over longer period (3.2% for last fifteen and last twenty years, 3.3% since 1914).
  - Since cost-of-living increases are based on price inflation, the assumed future cost-of-living increases—2.5% simple for public safety, 3% compound for judges, and 3% simple for all other groups—were left unchanged

- ***Recommend no change in investment return assumption of 8.00%***
  - Most common rate for large funds
  - Rate is net of all investment and administrative expenses
  - Given the 3.00% inflation assumption, this implies that the assumed real return on assets is 5.00%
  - Net of investment and administrative expenses, the average return for URS for the last five years is 7.3%, while it is 9.1% over the last ten years. However, these figures do not provide meaningful guidance to future returns.
  - Over the last two years, many of the investment consulting firms have decreased the equity-return assumption in their set of capital market assumptions. Some sets of capital market assumptions would, when applied to the URS asset allocation targets, produce real returns above 5.00%, but others would not. Therefore the decision between leaving the investment return at 8.00% or decreasing it to 7.75% was a close one.
- ***Recommend increasing payroll growth assumption from 3.00% to 4.00%***
  - No membership growth assumed
  - The assumed payroll growth rate is not the same as the salary increase assumptions, because of the effect of higher-paid employees leaving and being replaced by lower-paid employees.
  - In line with actual payroll growth for last ten years, when membership growth is factored out.
  - In line with growth in starting pays
  - Reflects inflation plus an allowance for some additional wage inflation due to productivity improvement
- ***Recommend almost no changes to the salary increase rates***
  - Three components analyzed: inflation, promotional/longevity increases, and general productivity
  - Used for projecting salary and benefits for individual members

- Teachers, public employees, local government employees, judges, police and firefighters analyzed separately
- Current rates consist of a 3.00% inflation assumption, a 1.75% productivity component, and service-related rates that provide for larger increases for shorter-service members. The service-related rates differ by group.
- The actual average increase over the last five years was about 6.0% on an all-members-combined basis. The expected increase was about 6.4%, and the difference almost entirely is due to the difference between actual and expected inflation.
- As already noted, the inflation component is being left unchanged. There was a reasonable match between the assumed productivity component (1.75%) and the average increases for members with at least 15 years of service. (Actual increases ranged from 1.44% to 1.83%, depending on group)
- Generally, the match between the assumed and actual service-related increases was very good. We are, however, recommending an increase in the service-related increases for public safety.
- ***Recommend modifying the post-retirement mortality rates***
  - Experience was analyzed separately for (i) disabled retirees, (ii) teachers, (iii) police and firefighters, and (iv) all others including beneficiaries.
  - Rates were modified last year, but it appeared that rates were lowered too much. The new rates still leave a margin for future mortality improvement.
  - Actual-to-expected ratios now range from 106% to 116% for all healthy-life tables, other than female public safety retirees, which is too small of a group to provide meaningful information.
  - The new rates for healthy lives are all based on the UP-1994 mortality tables for males and females. To produce a better fit between experience and the table, we used a setback for some groups.
- ***Recommend no changes in mortality rates for active members***
  - Number of deaths among active members (534) is 97% of expected number
  - This is a relatively unimportant assumption

- ***Recommend new disability rates***
  - Even though rates were just reset in the last experience study in 2000, we saw further declines in the number of new disabilities in almost all groups. The actual-to-expected ratio has fallen to 80%, with 745 disabilities during the study period vs. an expected number of 936.
  - Recommend new disability rates to more closely match incidence of disabilities by age
- ***Recommend no changes in retirement rates***
  - Although there were more actual retirements than expected in almost all groups, the difference was relatively small, and we believe that this was due to the new service-purchase provisions enacted in 1999.
  - Excluding members over 70 (65 for public safety and firefighters), actual retirements were 105% of expected.
  - The average age for actual new retirees was 60.7 vs. an expected age of 60.9
- ***Recommend no changes in termination rates***
  - Termination rates cover all kinds of terminations from service, other than death, disability, and retirement.
  - Termination rates apply to both vested and nonvested members, they apply whether a member takes a refund or a deferred benefit, and they are intended to cover terminations for both voluntary and involuntary causes.
  - The ratios of actual-to-expected terminations ranged averaged over 100% for all groups combined, and ranged between 94% (public safety) and 121% (teachers)
- ***Recommend no changes in percentage of employees electing refunds***
  - Current probabilities of refunds adequately model actual experience
- ***Recommend no changes to any liability or asset valuation methods***

## **GASB 25 and Funding Progress**

Governmental Accounting Standards Board Statement No. 25 (GASB 25) contains certain accounting requirements for URS. In particular, it requires the inclusion of two special schedules in the URS annual report:

1. Schedule of Funding Progress
2. Schedule of Employer Contributions

Information needed to prepare the Schedule of Funding Progress is included in Exhibit 3(a). This shows that all but two of the funds have a funded ratio (ratio of actuarial assets to accrued liabilities) of at least 90%, and most are over 100%. The only funds with funded ratios below 90% are Salt Lake City in the Public Safety Noncontributory Retirement System and the 3% Substantial Substitute fund. The latter has only been a liability of URS since 1994. See Exhibit 3(a), column 5. However, funded ratios have declined for almost all funds since last year, mainly because of the investment losses.

GASB 25 also requires that plans calculate an Annual Required Contribution (ARC), and, if actual contributions received are less than the ARC, this must be disclosed. For this disclosure, URS treats the Board-established employer contribution rate as the ARC, as long as this produces a funding period of less than 30 years.

Under GASB 25, the ARC must be calculated in accordance with certain parameters. In particular, it must include a payment to amortize the UAAL. This amortization payment eventually will have to be computed using a funding period no greater than 30 years, but a 40-year maximum amortization period may be used during a ten-year transition period. Further, the amortization payment included in the ARC may be computed as a level amount, or it may be computed as an amount which increases with payroll. However, if payments are computed on a level-percent-of-payroll approach, the payroll growth assumption may not anticipate future membership growth.

Since the recommended employer contribution rate is computed as a level percentage of payroll using a 20-year amortization period, the recommended rate meets the definition of an acceptable ARC.

### **Firefighters and Judges Offsets**

A portion of the fire insurance premium taxes collected by the State of Utah is contributed to the Firefighters System, and a portion of the court fees collected by the state judiciary is contributed to the Judges System. To account for this prospectively, the recommended contribution rates for the funds in these systems are reduced.

In order to dampen year-to-year fluctuations in the offsets, we are using a rolling three-year average in computing the offsets. First, we calculate a percentage of pay offset for each year, equal to receipts divided by payroll. (For the Firefighters, all calculations are done on a combined basis for Divisions A and B.) Then the offset percentages for the just completed year and the two prior years are averaged. This average is then used as the current year's offset. The calculation of the offsets is shown on Exhibit 2(b).

The offset for the Firefighter System increased significantly, from 8.88% to 10.35%, and the offset for the Judges System decreased slightly from 18.40% to 18.06%. The increase in the Firefighter System was caused by the fact that the fire insurance premiums have increased dramatically in both 2000 and 2001. The ratio of fire insurance premiums to payroll for 2001 was 12.49%, well above prior levels.

It should be noted that the employer contribution rates for both divisions of the Firefighter's System are less than the offset for the fire insurance premium. Based on Board policy, we first applied the offset to reduce the employer contribution rates to zero, and then we used the remaining offset to reduce the member contribution rates.

### **3% Substantial Substitute**

Due to the removal of the state income tax exemption for benefits paid by URS, legislation was passed to provide a 3% retirement benefit increase for URS retirees who were members of URS prior to January 1, 1989. All future retirees who were members of the URS prior to January 1, 1989 will be eligible for this benefit as well, as will beneficiaries of eligible members.

The 3% increase applies to all benefits paid to eligible members, including benefits earned after January 1, 1989 and including future cost-of-living increases. However, the 3% increase does not apply to (i) refunds of employee contributions (with interest if applicable) or (ii) the group insurance benefits for members of the Public Employees Systems.

Due to legislation passed in 1994, this benefit is now pre-funded. The obligation for payment of this benefit belongs to the state, however, not to the employer. Therefore the contribution needed to fund the benefit is determined as an addition to the employer contribution rates required for the State and School Funds in the Public Employees Contributory and Noncontributory Systems, the State of Utah funds in the Public Safety Contributory and Noncontributory Systems, and the Judges System.

The contribution required to pay for this benefit is 0.83%, 0.13% less than last year. This large decrease was principally due to the change in the assumed payroll growth rate. Details of the calculation are shown in Exhibit 15(a), while Exhibit 15(b) shows a distribution of the liabilities associated with this benefit.

### **Restoration of Purchasing Power (ROPP)**

URS provides a special benefit to a closed group of retired members. This benefit was granted by the Board of Trustees, not by the legislature, and hence it does not appear in the statutes governing URS. The Board provided this benefit, called the Restoration of Purchasing Power benefit or ROPP benefit, to retired members several years ago, in order to counteract some of the impact of inflation.

The ROPP benefit is a fixed amount that does not increase and is not adjusted for changes in the cost of living. It is provided only to the closed group of members who were retired at the time of the Board's action. Therefore, since the group is closed and since the benefit amount cannot increase, this liability decreases from year to year as the retiree group receiving the ROPP grows older and decreases in size due to mortality.

Exhibit 5(e) shows the liabilities for the ROPP benefits in column 5.



Comparison of Recommended Contribution Rates

Fund/Division (1)	2001 Valuation Results			2002 Valuation Results 2003-2004 Proposed Rates		
	Member	Employer	Total	Member	Employer	Total
	(2)	(3)	(4)	(5)	(6)	(7)
I. Public Employees Contributory						
A. Local Government	6.00%	4.68%	10.68%	6.00%	4.54%	10.54%
B. State and School	6.00%	5.75%	11.75%	6.00%	5.82%	11.82%
II. Public Employees Noncontributory						
A. Local Government	0.00%	8.69%	8.69%	0.00%	8.55%	8.55%
B. State and School	0.00%	10.24%	10.24%	0.00%	10.31%	10.31%
III. Public Safety Contributory						
A. State	12.29%	8.05%	20.34%	12.29%	8.41%	20.70%
B. Other Division A	12.29%	2.17%	14.46%	12.29%	3.77%	16.06%
C. Salt Lake City	13.74%	15.50%	29.24%	13.74%	15.14%	28.88%
D. Provo	13.54%	9.47%	23.01%	13.54%	8.77%	22.31%
E. Logan	11.13%	3.66%	14.79%	11.13%	4.47%	15.60%
F. Other Division B	10.50%	7.34%	17.84%	10.50%	9.43%	19.93%
IV. Public Safety Noncontributory						
A. State	0.00%	18.94%	18.94%	0.00%	19.77%	19.77%
B. Other Division A	0.00%	13.89%	13.89%	0.00%	15.49%	15.49%
C. Salt Lake City	0.00%	28.27%	28.27%	0.00%	27.25%	27.25%
D. Ogden	0.00%	17.98%	17.98%	0.00%	18.30%	18.30%
E. Bountiful	0.00%	17.41%	17.41%	0.00%	15.25%	15.25%
F. Other Division B	0.00%	17.66%	17.66%	0.00%	19.01%	19.01%
V. Firefighters						
A. Division A						
1. Gross Rate	15.05%	1.65%	16.70%	15.05%	2.63%	17.68%
2. Less Estimated Offset	<u>-7.23%</u>	<u>-1.65%</u>	<u>-8.88%</u>	<u>-7.72%</u>	<u>-2.63%</u>	<u>-10.35%</u>
3. Net Rate	7.82%	0.00%	7.82%	7.33%	0.00%	7.33%
B. Division B						
1. Gross Rate	16.71%	0.00%	16.71%	16.71%	0.00%	16.71%
2. Less Estimated Offset	<u>-8.88%</u>	<u>0.00%</u>	<u>-8.88%</u>	<u>-10.35%</u>	<u>0.00%</u>	<u>-10.35%</u>
3. Net Rate	7.83%	0.00%	7.83%	6.36%	0.00%	6.36%
VI. Judges						
A. Gross Rate	0.00%	23.32%	23.32%	0.00%	21.61%	21.61%
B. Less Estimated Offset	<u>0.00%</u>	<u>-18.40%</u>	<u>-18.40%</u>	<u>-0.00%</u>	<u>-18.06%</u>	<u>-18.06%</u>
C. Net Rate	0.00%	4.92%	4.92%	0.00%	3.55%	3.55%
VII. Governors and Legislative	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Comparison of Recommended Rates and Adopted Rates

Fund/Division (1)	2001 Valuation Results		2002 Valuation
	Recommended (2)	Rates Set by Board (3)	Recommended (4)
I. Public Employees Contributory			
A. Local Government	4.68%	4.68%	4.54%
B. State and School	5.75%	5.91%	5.82%
II. Public Employees Noncontributory			
A. Local Government	8.69%	8.69%	8.55%
B. State and School	10.24%	10.40%	10.31%
III. Public Safety Contributory			
A. State	8.05%	8.05%	8.41%
B. Other Division A	2.17%	2.17%	3.77%
C. Salt Lake City	15.50%	15.50%	15.14%
D. Provo	9.47%	9.47%	8.77%
E. Logan	3.66%	3.66%	4.47%
F. Other Division B	7.34%	7.34%	9.43%
IV. Public Safety Noncontributory			
A. State	18.94%	18.94%	19.77%
B. Other Division A	13.89%	13.89%	15.49%
C. Salt Lake City	28.27%	28.27%	27.25%
D. Ogden	17.98%	17.98%	18.30%
E. Bountiful	17.41%	17.41%	15.25%
F. Other Division B	17.66%	17.66%	19.01%
V. Firefighters			
A. Division A	0.00%	0.00%	0.00%
B. Division B	0.00%	0.00%	0.00%
VI. Judges	4.92%	4.92%	3.55%
VII. Governors and Legislative	0.00%	0.00%	0.00%

Note: Rates shown for Firefighters and Judges are net of offsets.

Components of Recommended Rates

Fund/Division (1)	Net Normal Cost (2)	Amortization of UAAL (3)	3% Substantial Substitute (4)	Gross Employer Rate (2 + 3 + 4) (5)	Offset (6)	Net Employer Rate (5 - 6) (7)
<b>I. Public Employees Contributory</b>						
A. Local Government	3.81%	0.73%	0.00%	4.54%	0.00%	4.54%
B. State and School	3.68%	1.31%	0.83%	5.82%	0.00%	5.82%
<b>II. Public Employees Noncontributory</b>						
A. Local Government	10.01%	-1.46%	0.00%	8.55%	0.00%	8.55%
B. State and School	10.93%	-1.45%	0.83%	10.31%	0.00%	10.31%
<b>III. Public Safety Contributory</b>						
A. State	7.03%	0.55%	0.83%	8.41%	0.00%	8.41%
B. Other Division A	6.56%	-2.79%	0.00%	3.77%	0.00%	3.77%
C. Salt Lake City	6.32%	8.82%	0.00%	15.14%	0.00%	15.14%
D. Provo	6.16%	2.61%	0.00%	8.77%	0.00%	8.77%
E. Logan	7.50%	-3.03%	0.00%	4.47%	0.00%	4.47%
F. Other Division B	8.07%	1.36%	0.00%	9.43%	0.00%	9.43%
<b>IV. Public Safety Noncontributory</b>						
A. State	18.39%	0.55%	0.83%	19.77%	0.00%	19.77%
B. Other Division A	18.28%	-2.79%	0.00%	15.49%	0.00%	15.49%
C. Salt Lake City	18.43%	8.82%	0.00%	27.25%	0.00%	27.25%
D. Ogden	18.56%	-0.26%	0.00%	18.30%	0.00%	18.30%
E. Bountiful	18.29%	-3.04%	0.00%	15.25%	0.00%	15.25%
F. Other Division B	17.65%	1.36%	0.00%	19.01%	0.00%	19.01%
<b>V. Firefighters</b>						
A. Division A	7.23%	-4.60%	0.00%	2.63%	2.63%	0.00%
B. Division B	6.21%	-8.81%	0.00%	-2.60%	0.00%	0.00%
<b>VI. Judges</b>	25.04%	-4.26%	0.83%	21.61%	18.06%	3.55%
<b>VII. Governors and Legislative</b>	N/A	N/A	N/A	N/A	N/A	N/A

**Determination of Contribution Rate Offsets for Firefighters and Judges**

**A. Firefighter's Offset**

1. Calendar Year	<u>1999</u>	<u>2000</u>	<u>2001</u>
2. Fire insurance premium receipts	4,516,000	6,615,000	8,354,000
3. Combined payroll for both funds*	57,663,557	61,593,417	66,870,915
4. Premiums as percentage of payroll	7.83%	10.74%	12.49%
5. Offset: 3-year arithmetic average of percent of payroll			10.35%

**B. Judge's Offset**

1. Calendar Year	<u>1999</u>	<u>2000</u>	<u>2001</u>
2. Court fees	1,681,000	1,946,000	2,046,000
3. Payroll*	10,149,546	10,317,660	10,910,099
4. Premiums as percentage of payroll	16.56%	18.86%	18.75%
5. Offset: 3-year arithmetic average of percent of payroll			18.06%

\* Reported payroll for members active at end of year

Schedule of Funding Progress

Fund/Division (1)	Actuarial Value of Assets (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded AAL (UAAL) (3 - 2) (4)	Funded Ratio (2 / 3) (5)	Covered Payroll (6)	UAAL as a Percentage of Covered Payroll (4 / 6) (7)
<b>I. Public Employees Contributory</b>						
A. Local Government	260,569	266,365	5,796	97.8%	54,885	10.6%
B. State and School	666,954	682,547	15,593	97.7%	82,836	18.8%
C. Subtotal	927,523	948,912	21,389	97.7%	137,721	15.5%
<b>II. Public Employees Noncontributory</b>						
A. Local Government	1,790,398	1,667,820	(122,578)	107.3%	581,831	-21.1%
B. State and School	9,231,430	8,765,933	(465,497)	105.3%	2,219,733	-21.0%
C. Subtotal	11,021,828	10,433,753	(588,075)	105.6%	2,801,564	-21.0%
<b>III. Public Safety Contributory</b>						
A. State	63,957	64,044	87	99.9%	1,108	7.9%
B. Other Division A	156,424	150,037	(6,387)	104.3%	15,882	-40.2%
C. Salt Lake City	42,632	42,750	118	99.7%	93	126.8%
D. Provo	23,568	25,176	1,608	93.6%	4,263	37.7%
E. Logan	13,375	12,422	(953)	107.7%	2,184	-43.7%
F. Other Division B	29,003	30,422	1,419	95.3%	7,253	19.6%
G. Subtotal	328,959	324,851	(4,108)	101.3%	30,783	-13.3%
<b>IV. Public Safety Noncontributory</b>						
A. State	438,014	444,853	6,839	98.5%	86,450	7.9%
B. Other Division A	407,901	368,754	(39,147)	110.6%	97,081	-40.3%
C. Salt Lake City	92,399	115,876	23,477	79.7%	18,456	127.2%
D. Ogden	40,505	40,331	(174)	100.4%	4,699	-3.7%
E. Bountiful	11,148	10,484	(664)	106.3%	1,518	-43.8%
F. Other Division B	57,540	60,985	3,445	94.4%	17,556	19.6%
G. Subtotal	1,047,507	1,041,283	(6,224)	100.6%	225,760	-2.8%
<b>V. Firefighters</b>						
A. Division A	54,345	46,108	(8,237)	117.9%	12,304	-67.0%
B. Division B	514,806	445,166	(69,640)	115.6%	54,567	-127.6%
C. Subtotal	569,151	491,274	(77,877)	115.9%	66,871	-116.5%
<b>VI. Judges</b>	92,649	85,987	(6,662)	107.7%	10,910	-61.1%
<b>VII. Governors and Legislative</b>	11,710	8,182	(3,528)	143.1%	601	-587.3%
<b>VIII. 3% Substantial Substitute</b>	82,506	372,271	289,765	22.2%	N/A	N/A
<b>IX. Grand Total</b>	14,081,833	13,706,513	(375,320)	102.7%	3,274,210	-11.5%

Note: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

Comparison of Funded Ratios

Fund/Division (1)	Funded Ratios as of January 1		
	2002 (2)	2001 (3)	2000 (4)
<b>I. Public Employees Contributory</b>			
A. Local Government	97.8%	98.8%	98.8%
B. State and School	97.7%	98.8%	97.9%
C. Subtotal	97.7%	98.8%	98.2%
<b>II. Public Employees Noncontributory</b>			
A. Local Government	107.3%	109.6%	109.5%
B. State and School	105.3%	107.0%	105.2%
C. Subtotal	105.6%	107.4%	105.9%
<b>III. Public Safety Contributory</b>			
A. State	99.9%	100.4%	100.1%
B. Other Division A	104.3%	107.7%	106.9%
C. Salt Lake City	99.7%	99.8%	99.5%
D. Provo	93.6%	93.4%	91.3%
E. Logan	107.7%	111.1%	112.0%
F. Other Division B	95.3%	107.8%	110.1%
G. Subtotal	101.3%	104.1%	103.4%
<b>IV. Public Safety Noncontributory</b>			
A. State	98.5%	104.6%	101.1%
B. Other Division A	110.6%	121.0%	118.7%
C. Salt Lake City	79.7%	79.8%	71.9%
D. Ogden	100.4%	101.4%	92.6%
E. Bountiful	106.3%	103.3%	99.2%
F. Other Division B	94.4%	110.6%	113.1%
G. Subtotal	100.6%	107.5%	103.9%
<b>V. Firefighters</b>			
A. Division A	117.9%	127.6%	134.2%
B. Division B	115.6%	116.9%	113.2%
C. Subtotal	115.9%	117.8%	115.3%
<b>VI. Judges</b>	107.7%	117.8%	114.7%
<b>VII. Governors and Legislative</b>	143.1%	146.3%	132.6%
<b>VIII. 3% Substantial Substitute</b>	22.2%	19.1%	15.5%
<b>IX. Grand Total</b>	102.7%	104.7%	102.9%

Analysis of Changes in Target Rates

Fund/Division (1)	Rate From Jan. 1, 2001 Valuation (2)	Changes Due To								Recommended Rate (11)
		Payroll Growth (3)	Investment Return (4)	Liabilities (5)	Actuarial Assumptions (6)	Legislation (7)	Asset Transfers (8)	3% Substantial Substitute (9)	Act. vs Exp. Contributions (10)	
I. Public Employees Contributory										
A. Local Government	4.68%	0.00%	0.31%	0.09%	-1.05%	0.00%	0.55%	0.00%	-0.04%	4.54%
B. State and School	5.75%	0.01%	0.40%	0.22%	-1.45%	0.00%	1.16%	-0.13%	-0.14%	5.82%
II. Public Employees Noncontributory										
A. Local Government	8.69%	0.04%	0.27%	0.27%	-0.58%	0.00%	-0.06%	0.00%	-0.08%	8.55%
B. State and School	10.24%	0.08%	0.36%	0.57%	-0.55%	0.00%	-0.04%	-0.13%	-0.22%	10.31%
III. Public Safety Contributory										
A. State	8.05%	-0.18%	1.57%	-2.76%	-13.66%	0.00%	16.14%	-0.13%	-0.62%	8.41%
B. Other Division A	2.17%	-0.06%	0.55%	1.03%	-0.82%	0.00%	1.05%	0.00%	-0.15%	3.77%
C. Salt Lake City	15.50%	0.14%	13.15%	-15.75%	-97.91%	0.00%	100.41%	0.00%	-0.40%	15.14%
D. Provo	9.47%	0.06%	0.48%	-1.02%	-0.17%	0.00%	0.00%	0.00%	-0.05%	8.77%
E. Logan	3.66%	-0.06%	0.53%	0.50%	-0.10%	0.00%	0.00%	0.00%	-0.06%	4.47%
F. Other Division B	7.34%	0.06%	0.24%	0.81%	0.53%	0.00%	0.51%	0.00%	-0.06%	9.43%
IV. Public Safety Noncontributory										
A. State	18.94%	0.01%	0.48%	1.42%	-0.51%	0.00%	-0.20%	-0.13%	-0.24%	19.77%
B. Other Division A	13.89%	0.11%	0.42%	1.32%	0.10%	0.00%	-0.17%	0.00%	-0.18%	15.49%
C. Salt Lake City	28.27%	-0.28%	0.53%	0.69%	-1.09%	0.00%	-0.50%	0.00%	-0.37%	27.25%
D. Ogden	17.98%	0.01%	0.66%	1.16%	-1.08%	0.00%	0.00%	0.00%	-0.43%	18.30%
E. Bountiful	17.41%	0.09%	0.61%	-1.97%	-0.60%	0.00%	0.00%	0.00%	-0.29%	15.25%
F. Other Division B	17.66%	0.00%	0.42%	0.79%	0.37%	0.00%	-0.21%	0.00%	-0.02%	19.01%
V. Firefighters										
A. Division A	1.65%	0.80%	0.42%	0.61%	-0.30%	0.00%	0.00%	0.00%	-0.55%	2.63%
B. Division B	-3.11%	0.38%	0.76%	0.86%	-0.87%	0.00%	0.00%	0.00%	-0.62%	-2.60%
VI. Judges	23.32%	0.22%	0.75%	2.28%	-4.36%	0.00%	0.00%	-0.13%	-0.47%	21.61%
VII. Governors and Legislative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: Rates shown as of Jan. 1, 2001 do not include adjustments for 2001 legislation  
Rates shown include contribution for 3% Substantial Substitute, if applicable  
Rates shown do not include the offsets for court fees or for fire insurance premium taxes

**Actuarial Present Value of Future Benefits  
by Fund and Status**

Fund/Division (1)	Retirees and Beneficiaries (2)	Inactive Members (3)	Active Members (4)	Total (5)
<b>I. Public Employees Contributory</b>				
A. Local Government	91,349	24,296	194,292	309,936
B. State and School	334,607	45,880	362,225	742,712
C. Subtotal	425,956	70,176	556,517	1,052,648
<b>II. Public Employees Noncontributory</b>				
A. Local Government	521,279	92,836	1,597,447	2,211,562
B. State and School	3,230,307	295,983	7,450,687	10,976,977
C. Subtotal	3,751,586	388,819	9,048,134	13,188,539
<b>III. Public Safety Contributory</b>				
A. State	57,821	1,460	6,128	65,410
B. Other Division A	94,315	6,114	78,369	178,798
C. Salt Lake City	42,305	86	529	42,920
D. Provo	11,217	1,218	21,370	33,806
E. Logan	4,484	75	11,740	16,299
F. Other Division B	9,512	957	33,857	44,326
G. Subtotal	219,654	9,910	151,993	381,559
<b>IV. Public Safety Noncontributory</b>				
A. State	172,765	9,901	415,698	598,365
B. Other Division A	124,805	9,610	428,835	563,250
C. Salt Lake City	50,568	1,572	96,758	148,899
D. Ogden	23,779	601	24,608	48,988
E. Bountiful	3,786	23	8,918	12,728
F. Other Division B	14,915	1,855	77,392	94,163
G. Subtotal	390,618	23,562	1,052,209	1,466,393
<b>V. Firefighters</b>				
A. Division A	15,505	405	69,111	85,020
B. Division B	241,796	1,607	348,516	591,919
C. Subtotal	257,301	2,012	417,627	676,939
<b>VI. Judges</b>	40,022	948	70,207	111,176
<b>VII. Governors and Legislative</b>	5,079	1,689	2,087	8,855
<b>VIII. Grand Total</b>	5,090,216	497,116	11,298,774	16,886,109

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding



**Actuarial Present Value of Future Benefits  
Details for Retirees and Beneficiaries, by Status**

Fund/Division (1)	Retired Members (2)	Disabled Members (3)	Beneficiaries (4)	Total (5)
<b>I. Public Employees Contributory</b>				
A. Local Government	71,905	3,282	16,162	91,349
B. State and School	275,528	9,238	49,841	334,607
C. Subtotal	347,433	12,520	66,003	425,956
<b>II. Public Employees Noncontributory</b>				
A. Local Government	479,748	10,802	30,729	521,279
B. State and School	3,035,933	40,089	154,285	3,230,307
C. Subtotal	3,515,681	50,891	185,014	3,751,586
<b>III. Public Safety Contributory</b>				
A. State	45,810	1,761	10,250	57,821
B. Other Division A	81,035	1,461	11,818	94,315
C. Salt Lake City	35,860	1,208	5,236	42,305
D. Provo	9,771	0	1,447	11,217
E. Logan	4,228	98	159	4,484
F. Other Division B	8,530	658	325	9,512
G. Subtotal	185,234	5,186	29,235	219,654
<b>IV. Public Safety Noncontributory</b>				
A. State	166,207	1,358	5,201	172,765
B. Other Division A	120,960	951	2,894	124,805
C. Salt Lake City	48,881	628	1,059	50,568
D. Ogden	21,988	210	1,581	23,779
E. Bountiful	3,755	13	18	3,786
F. Other Division B	14,116	342	458	14,915
G. Subtotal	375,907	3,502	11,211	390,618
<b>V. Firefighters</b>				
A. Division A	12,095	2,262	1,148	15,505
B. Division B	211,560	12,084	18,153	241,796
C. Subtotal	223,655	14,346	19,301	257,301
<b>VI. Judges</b>	34,047	0	5,975	40,022
<b>VII. Governors and Legislative</b>	4,376	0	703	5,079
<b>VIII. Grand Total</b>	4,686,333	86,445	317,442	5,090,216

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Actuarial Present Value of Future Benefits  
Details for Inactive Members, by Status**

Fund/Division (1)	Disabled (2)	Other Vested (3)	Nonvested (4)	Total (5)
<b>I. Public Employees Contributory</b>				
A. Local Government	3,733	19,689	874	24,296
B. State and School	6,066	39,791	23	45,880
C. Subtotal	9,799	59,480	897	70,176
<b>II. Public Employees Noncontributory</b>				
A. Local Government	11,427	80,470	939	92,836
B. State and School	49,112	242,456	4,415	295,983
C. Subtotal	60,539	322,926	5,354	388,819
<b>III. Public Safety Contributory</b>				
A. State	196	1,252	12	1,460
B. Other Division A	617	5,152	345	6,114
C. Salt Lake City	0	86	1	86
D. Provo	0	1,189	29	1,218
E. Logan	0	68	7	75
F. Other Division B	0	903	54	957
G. Subtotal	813	8,650	448	9,910
<b>IV. Public Safety Noncontributory</b>				
A. State	2,374	7,523	4	9,901
B. Other Division A	1,513	8,079	17	9,610
C. Salt Lake City	464	1,108	0	1,572
D. Ogden	308	293	0	601
E. Bountiful	0	23	0	23
F. Other Division B	275	1,577	2	1,855
G. Subtotal	4,934	18,603	23	23,562
<b>V. Firefighters</b>				
A. Division A	0	306	98	405
B. Division B	0	1,350	257	1,607
C. Subtotal	0	1,656	355	2,012
<b>VI. Judges</b>	0	948	0	948
<b>VII. Governors and Legislative</b>	0	1,682	7	1,689
<b>VIII. Grand Total</b>	76,085	413,945	7,084	497,116

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Actuarial Present Value of Future Benefits  
Details for Active Members, by Benefit**

Fund/Division (1)	Retirement (2)	Deferred Termination (3)	Disability (4)	Refunds (5)	Death (6)	Total (7)
<b>I. Public Employees Contributory</b>						
A. Local Government	166,693	16,804	2,377	2,894	5,524	194,292
B. State and School	322,654	24,253	4,498	1,816	9,005	362,225
C. Subtotal	489,347	41,057	6,875	4,710	14,529	556,517
<b>II. Public Employees Noncontributory</b>						
A. Local Government	1,392,189	141,611	24,742	55	38,850	1,597,447
B. State and School	6,771,921	438,827	98,575	5	141,359	7,450,687
C. Subtotal	8,164,110	580,438	123,317	60	180,209	9,048,134
<b>III. Public Safety Contributory</b>						
A. State	5,837	72	129	22	70	6,128
B. Other Division A	73,776	995	1,645	1,037	916	78,369
C. Salt Lake City	500	7	11	4	7	529
D. Provo	19,872	298	491	333	376	21,370
E. Logan	11,115	123	214	134	155	11,740
F. Other Division B	31,581	483	730	493	570	33,857
G. Subtotal	142,681	1,978	3,220	2,023	2,094	151,993
<b>IV. Public Safety Noncontributory</b>						
A. State	391,297	9,405	9,356	0	5,641	415,698
B. Other Division A	402,218	10,969	9,690	0	5,957	428,835
C. Salt Lake City	91,753	1,750	1,902	0	1,353	96,758
D. Ogden	23,356	421	481	0	349	24,608
E. Bountiful	8,549	103	167	0	99	8,918
F. Other Division B	72,506	1,789	1,708	0	1,389	77,392
G. Subtotal	989,679	24,437	23,304	0	14,788	1,052,209
<b>V. Firefighters</b>						
A. Division A	65,937	317	1,237	469	1,151	69,111
B. Division B	335,476	1,282	3,742	1,827	6,187	348,516
C. Subtotal	401,413	1,599	4,979	2,296	7,338	417,627
<b>VI. Judges</b>	68,062	0	0	0	2,145	70,207
<b>VII. Governors and Legislative</b>	1,178	827	0	0	81	2,087
<b>VIII. Grand Total</b>	10,256,470	650,336	161,695	9,089	221,184	11,298,774

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Actuarial Present Value of Future Benefits  
Details for Members Receiving Benefits, by Benefit**

Fund/Division (1)	Basic Benefit (2)	COLA (3)	Subtotal (2) + (3) (4)	ROPP (5)	Total (4) + (5) (6)
<b>I. Public Employees Contributory</b>					
A. Local Government	55,507	34,669	90,176	1,173	91,349
B. State and School	190,024	137,254	327,278	7,330	334,607
C. Subtotal	245,531	171,923	417,454	8,503	425,956
<b>II. Public Employees Noncontributory</b>					
A. Local Government	371,766	149,513	521,279	0	521,279
B. State and School	2,271,234	959,073	3,230,307	0	3,230,307
C. Subtotal	2,643,000	1,108,586	3,751,586	0	3,751,586
<b>III. Public Safety Contributory</b>					
A. State	35,674	20,185	55,859	1,962	57,821
B. Other Division A	64,353	28,769	93,122	1,192	94,315
C. Salt Lake City	26,389	15,364	41,753	552	42,305
D. Provo	7,623	3,510	11,133	84	11,217
E. Logan	3,174	1,297	4,471	13	4,484
F. Other Division B	7,085	2,424	9,509	3	9,512
G. Subtotal	144,298	71,549	215,847	3,806	219,654
<b>IV. Public Safety Noncontributory</b>					
A. State	128,600	44,165	172,765	0	172,765
B. Other Division A	95,671	29,134	124,805	0	124,805
C. Salt Lake City	37,328	13,240	50,568	0	50,568
D. Ogden	17,021	6,632	23,653	126	23,779
E. Bountiful	2,646	1,111	3,757	29	3,786
F. Other Division B	11,543	3,372	14,915	0	14,915
G. Subtotal	292,809	97,654	390,463	155	390,618
<b>V. Firefighters</b>					
A. Division A	10,534	4,691	15,225	280	15,505
B. Division B	159,815	77,998	237,813	3,983	241,796
C. Subtotal	170,349	82,689	253,038	4,263	257,301
<b>VI. Judges</b>	25,893	14,129	40,022	0	40,022
<b>VII. Governors and Legislative</b>	3,391	1,688	5,079	0	5,079
<b>VIII. Grand Total</b>	3,525,271	1,548,218	5,073,489	16,727	5,090,216

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

Normal Cost

Fund/Division (1)	Retirement (2)	Deferred Termination (3)	Disability (4)	Refunds (5)	Group Insurance (6)	Other Death (7)	Total (8)
I. Public Employees Contributory							
A. Local Government	6.72%	1.14%	0.21%	1.38%	0.10%	0.36%	9.81%
B. State and School	6.58%	0.92%	0.22%	1.65%	0.10%	0.31%	9.68%
II. Public Employees Noncontributory							
A. Local Government	7.93%	1.56%	0.25%	0.00%	0.10%	0.27%	10.01%
B. State and School	9.10%	1.33%	0.25%	0.00%	0.10%	0.25%	10.93%
III. Public Safety Contributory							
A. State	16.72%	0.53%	0.72%	0.90%	0.00%	0.45%	19.32%
B. Other Division A	16.47%	0.43%	0.55%	1.05%	0.00%	0.35%	18.85%
C. Salt Lake City	17.50%	0.44%	0.50%	1.14%	0.00%	0.48%	20.06%
D. Provo	16.99%	0.44%	0.58%	1.11%	0.00%	0.58%	19.70%
E. Logan	16.28%	0.39%	0.45%	1.04%	0.00%	0.47%	18.63%
F. Other Division B	16.17%	0.38%	0.51%	0.99%	0.00%	0.52%	18.57%
IV. Public Safety Noncontributory							
A. State	16.64%	0.79%	0.59%	0.00%	0.00%	0.37%	18.39%
B. Other Division A	16.65%	0.75%	0.54%	0.00%	0.00%	0.34%	18.28%
C. Salt Lake City	16.72%	0.72%	0.50%	0.00%	0.00%	0.49%	18.43%
D. Ogden	16.83%	0.74%	0.49%	0.00%	0.00%	0.50%	18.56%
E. Bountiful	16.68%	0.73%	0.54%	0.00%	0.00%	0.34%	18.29%
F. Other Division B	15.96%	0.66%	0.51%	0.00%	0.00%	0.52%	17.65%
V. Firefighters							
A. Division A	20.50%	0.16%	0.65%	0.49%	0.00%	0.48%	22.28%
B. Division B	21.01%	0.18%	0.54%	0.53%	0.00%	0.66%	22.92%
VI. Judges	24.02%	0.00%	0.00%	0.00%	0.00%	1.02%	25.04%
VII. Governors and Legislative	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: Columns may not add to total due to rounding

**Net Employer Normal Cost**

Fund/Division (1)	Total Normal Cost (2)	Member Rate (3)	Net Employer Normal Cost (2) - (3) (4)
<b>I. Public Employees Contributory</b>			
A. Local Government	9.81%	6.00%	3.81%
B. State and School	9.68%	6.00%	3.68%
<b>II. Public Employees Noncontributory</b>			
A. Local Government	10.01%	0.00%	10.01%
B. State and School	10.93%	0.00%	10.93%
<b>III. Public Safety Contributory</b>			
A. State	19.32%	12.29%	7.03%
B. Other Division A	18.85%	12.29%	6.56%
C. Salt Lake City	20.06%	13.74%	6.32%
D. Provo	19.70%	13.54%	6.16%
E. Logan	18.63%	11.13%	7.50%
F. Other Division B	18.57%	10.50%	8.07%
<b>IV. Public Safety Noncontributory</b>			
A. State	18.39%	0.00%	18.39%
B. Other Division A	18.28%	0.00%	18.28%
C. Salt Lake City	18.43%	0.00%	18.43%
D. Ogden	18.56%	0.00%	18.56%
E. Bountiful	18.29%	0.00%	18.29%
F. Other Division B	17.65%	0.00%	17.65%
<b>V. Firefighters</b>			
A. Division A	22.28%	15.05%	7.23%
B. Division B	22.92%	16.71%	6.21%
<b>VI. Judges</b>	25.04%	0.00%	25.04%
<b>VII. Governors and Legislative</b>	N/A	N/A	N/A

Note: The total normal cost column includes the cost of the group insurance benefit

**Determination of Actuarial Accrued Liability**

Fund/Division (1)	Actuarial	Actuarial Present Value of Future Normal Costs			Actuarial
	Present Value of Future Benefits (2)	Members (3)	Employers (4)	Total (5)	Accrued Liability (2) - (5) (6)
<b>I. Public Employees Contributory</b>					
A. Local Government	309,936	26,924	16,648	43,572	266,365
B. State and School	742,712	37,682	22,483	60,165	682,547
C. Subtotal	<u>1,052,648</u>	<u>64,606</u>	<u>39,131</u>	<u>103,737</u>	<u>948,912</u>
<b>II. Public Employees Noncontributory</b>					
A. Local Government	2,211,562	0	543,742	543,742	1,667,820
B. State and School	10,976,977	0	2,211,044	2,211,044	8,765,933
C. Subtotal	<u>13,188,539</u>	<u>0</u>	<u>2,754,786</u>	<u>2,754,786</u>	<u>10,433,753</u>
<b>III. Public Safety Contributory</b>					
A. State	65,410	869	496	1,365	64,044
B. Other Division A	178,798	18,751	10,009	28,760	150,037
C. Salt Lake City	42,920	116	54	170	42,750
D. Provo	33,806	5,931	2,698	8,629	25,176
E. Logan	16,299	2,316	1,561	3,877	12,422
F. Other Division B	44,326	7,862	6,042	13,904	30,422
G. Subtotal	<u>381,559</u>	<u>35,845</u>	<u>20,860</u>	<u>56,705</u>	<u>324,851</u>
<b>IV. Public Safety Noncontributory</b>					
A. State	598,365	0	153,511	153,511	444,853
B. Other Division A	563,250	0	194,495	194,495	368,754
C. Salt Lake City	148,899	0	33,022	33,022	115,876
D. Ogden	48,988	0	8,657	8,657	40,331
E. Bountiful	12,728	0	2,244	2,244	10,484
F. Other Division B	94,163	0	33,177	33,177	60,985
G. Subtotal	<u>1,466,393</u>	<u>0</u>	<u>425,106</u>	<u>425,106</u>	<u>1,041,283</u>
<b>V. Firefighters</b>					
A. Division A	85,020	26,285	12,628	38,913	46,108
B. Division B	591,919	106,992	39,761	146,753	445,166
C. Subtotal	<u>676,939</u>	<u>133,277</u>	<u>52,389</u>	<u>185,666</u>	<u>491,274</u>
<b>VI. Judges</b>	111,176	0	25,189	25,189	85,987
<b>VII. Governors and Legislative</b>	8,855	0	673	673	8,182
<b>VIII. Grand Total</b>	<b>16,886,109</b>	<b>233,728</b>	<b>3,318,134</b>	<b>3,551,862</b>	<b>13,334,242</b>

Notes: Amounts shown are in \$ thousands  
 Columns may not add to total due to rounding

**Actuarial Accrued Liability  
Details of Member and Employer Financing**

Fund/Division (1)	Inactive Members			Active Members		
	Accumulated Member Contributions (2)	Employer Financed (3)	Total (4)	Accumulated Member Contributions (5)	Employer Financed (6)	Total (7)
<b>I. Public Employees Contributory</b>						
A. Local Government	20,749	3,547	24,296	71,409	79,311	150,720
B. State and School	39,267	6,613	45,880	136,538	165,522	302,060
C. Subtotal	<u>60,016</u>	<u>10,160</u>	<u>70,176</u>	<u>207,947</u>	<u>244,833</u>	<u>452,780</u>
<b>II. Public Employees Noncontributory</b>						
A. Local Government	37,050	55,786	92,836	148,925	904,780	1,053,705
B. State and School	103,498	192,485	295,983	682,023	4,557,620	5,239,643
C. Subtotal	<u>140,548</u>	<u>248,271</u>	<u>388,819</u>	<u>830,948</u>	<u>5,462,400</u>	<u>6,293,348</u>
<b>III. Public Safety Contributory</b>						
A. State	888	572	1,460	1,909	2,854	4,763
B. Other Division A	4,473	1,641	6,114	20,073	29,536	49,609
C. Salt Lake City	86	0	86	184	175	359
D. Provo	725	493	1,218	5,844	6,897	12,741
E. Logan	75	0	75	2,832	5,031	7,863
F. Other Division B	816	141	957	6,987	12,966	19,953
G. Subtotal	<u>7,063</u>	<u>2,847</u>	<u>9,910</u>	<u>37,829</u>	<u>57,459</u>	<u>95,288</u>
<b>IV. Public Safety Noncontributory</b>						
A. State	1,424	8,477	9,901	11,533	250,654	262,187
B. Other Division A	2,764	6,846	9,610	13,385	220,955	234,340
C. Salt Lake City	250	1,322	1,572	3,389	60,347	63,736
D. Ogden	306	295	601	2,029	13,922	15,951
E. Bountiful	2	21	23	382	6,292	6,674
F. Other Division B	773	1,082	1,855	3,977	40,238	44,215
G. Subtotal	<u>5,519</u>	<u>18,043</u>	<u>23,562</u>	<u>34,695</u>	<u>592,408</u>	<u>627,103</u>
<b>V. Firefighters</b>						
A. Division A	372	33	405	8,465	21,733	30,198
B. Division B	1,551	56	1,607	66,122	135,641	201,763
C. Subtotal	<u>1,923</u>	<u>89</u>	<u>2,012</u>	<u>74,587</u>	<u>157,374</u>	<u>231,961</u>
<b>VI. Judges</b>	516	432	948	7,839	37,179	45,018
<b>VII. Governors and Legislative</b>	191	1,498	1,689	12	1,402	1,414
<b>VIII. Grand Total</b>	<b>215,776</b>	<b>281,340</b>	<b>497,116</b>	<b>1,193,857</b>	<b>6,553,055</b>	<b>7,746,912</b>

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding



Number of Members

Fund/Division (1)	Active (2)	Inactive Members			Members Receiving Benefits			Total (9)
		Disabled (3)	Vested (4)	Nonvested (5)	Regular Retirees (6)	Disabled Retirees (7)	Beneficiaries (8)	
<b>I. Public Employees Contributory</b>								
A. Local Government	1,498	37	735	445	1,368	72	365	4,520
B. State and School	2,205	63	968	14	4,883	208	926	9,267
C. Subtotal	3,703	100	1,703	459	6,251	280	1,291	13,787
<b>II. Public Employees Noncontributory</b>								
A. Local Government	16,979	142	6,675	560	2,910	81	215	27,562
B. State and School	66,711	551	17,853	1,604	14,719	361	859	102,658
C. Subtotal	83,690	693	24,528	2,164	17,629	442	1,074	130,220
<b>III. Public Safety Contributory</b>								
A. State	28	1	43	20	239	16	129	476
B. Other Division A	433	3	252	84	392	12	130	1,306
C. Salt Lake City	2	0	9	1	150	17	53	232
D. Provo	96	0	20	6	35	0	15	172
E. Logan	56	0	6	1	15	1	3	82
F. Other Division B	180	0	41	16	43	4	3	287
G. Subtotal	795	4	371	128	874	50	333	2,555
<b>IV. Public Safety Noncontributory</b>								
A. State	2,332	18	617	2	536	7	32	3,544
B. Other Division A	2,771	12	624	4	392	5	14	3,822
C. Salt Lake City	404	2	49	0	128	2	11	596
D. Ogden	123	1	24	0	90	2	27	267
E. Bountiful	33	0	7	0	18	1	1	60
F. Other Division B	457	1	101	2	57	1	2	621
G. Subtotal	6,120	34	1,422	8	1,221	18	87	8,910
<b>V. Firefighters</b>								
A. Division A	313	0	51	25	47	11	11	458
B. Division B	1,191	0	55	48	583	57	157	2,091
C. Subtotal	1,504	0	106	73	630	68	168	2,549
<b>VI. Judges</b>	106	0	4	0	50	0	28	188
<b>VII. Governors and Legislative</b>	94	0	97	10	176	0	52	429
<b>VIII. Grand Total</b>	96,012	831	28,231	2,842	26,831	858	3,033	158,638

Active Membership Statistics

Fund/Division (1)	Number (2)	Total Compensation \$ Thousands (3)	Average Compensation (\$'s) (4)	Accumulated Member Contributions With Interest \$ Thousands (5)	Average Age (6)	Average Service (7)
I. Public Employees Contributory						
A. Local Government	1,498	54,885	36,639	71,409	46.7	13.9
B. State and School	2,205	82,836	37,567	136,538	50.8	19.8
C. Subtotal	<u>3,703</u>	<u>137,721</u>	<u>37,192</u>	<u>207,947</u>	<u>49.2</u>	<u>17.4</u>
II. Public Employees Noncontributory						
A. Local Government	16,979	581,831	34,268	148,925	43.0	8.1
B. State and School	66,711	2,219,733	33,274	682,023	43.8	9.7
C. Subtotal	<u>83,690</u>	<u>2,801,564</u>	<u>33,475</u>	<u>830,948</u>	<u>43.6</u>	<u>9.4</u>
III. Public Safety Contributory						
A. State	28	1,108	39,585	1,909	49.9	15.5
B. Other Division A	433	15,882	36,680	20,073	39.5	9.6
C. Salt Lake City	2	93	46,593	184	41.0	14.5
D. Provo	96	4,263	44,408	5,844	38.8	9.9
E. Logan	56	2,184	38,995	2,832	38.3	11.7
F. Other Division B	180	7,253	40,294	6,987	36.9	8.6
G. Subtotal	<u>795</u>	<u>30,783</u>	<u>38,721</u>	<u>37,829</u>	<u>39.1</u>	<u>9.8</u>
IV. Public Safety Noncontributory						
A. State	2,332	86,450	37,071	11,533	40.4	9.5
B. Other Division A	2,771	97,081	35,034	13,385	36.5	7.3
C. Salt Lake City	404	18,456	45,683	3,389	38.9	11.5
D. Ogden	123	4,699	38,199	2,029	37.4	10.4
E. Bountiful	33	1,518	46,000	382	42.8	14.2
F. Other Division B	457	17,556	38,415	3,977	36.6	7.0
G. Subtotal	<u>6,120</u>	<u>225,760</u>	<u>36,889</u>	<u>34,695</u>	<u>38.2</u>	<u>8.5</u>
V. Firefighters						
A. Division A	313	12,304	39,308	8,465	37.9	7.0
B. Division B	1,191	54,567	45,816	66,122	39.6	11.3
C. Subtotal	<u>1,504</u>	<u>66,871</u>	<u>44,462</u>	<u>74,587</u>	<u>39.3</u>	<u>10.4</u>
VI. Judges	106	10,910	102,925	7,839	54.3	10.2
VII. Governors and Legislative	94	601	6,391	12	50.5	5.5
VIII. Grand Total	96,012	3,274,210	34,102	1,193,857	43.4	9.6

**Retired Member Statistics  
(Including Disabled Retirees and Beneficiaries)**

Fund/Division (1)	Number (2)	Annual Total Benefits (\$ Thousands) (3)	Average Monthly Benefit (\$'s) (4)
<b>I. Public Employees Contributory</b>			
A. Local Government	1,805	11,325	523
B. State and School	6,017	44,244	613
C. Subtotal	<u>7,822</u>	<u>55,569</u>	<u>592</u>
<b>II. Public Employees Noncontributory</b>			
A. Local Government	3,206	43,688	1,136
B. State and School	15,939	271,133	1,418
C. Subtotal	<u>19,145</u>	<u>314,821</u>	<u>1,370</u>
<b>III. Public Safety Contributory</b>			
A. State	384	5,625	1,221
B. Other Division A	534	7,979	1,245
C. Salt Lake City	220	3,908	1,480
D. Provo	50	939	1,565
E. Logan	19	351	1,537
F. Other Division B	50	678	1,129
G. Subtotal	<u>1,257</u>	<u>19,480</u>	<u>1,291</u>
<b>IV. Public Safety Noncontributory</b>			
A. State	575	12,876	1,866
B. Other Division A	411	9,109	1,847
C. Salt Lake City	141	3,691	2,181
D. Ogden	119	1,907	1,336
E. Bountiful	20	311	1,294
F. Other Division B	60	1,013	1,407
G. Subtotal	<u>1,326</u>	<u>28,907</u>	<u>1,817</u>
<b>V. Firefighters</b>			
A. Division A	69	1,207	1,458
B. Division B	797	18,801	1,966
C. Subtotal	<u>866</u>	<u>20,008</u>	<u>1,925</u>
<b>VI. Judges</b>	78	3,608	3,855
<b>VII. Governors and Legislative</b>	228	562	206
<b>VIII. Grand Total</b>	<b>30,722</b>	<b>442,955</b>	<b>1,202</b>

**Market Value of Assets**  
**(All Retirement Systems Combined)**

Item	December 31, 2001	December 31, 2000
(1)	(2)	(3)
1. Cash	22	22
2. Accrued income receivable from:		
a. Member contributions	850	1,037
b. Employer contributions	23,630	24,079
c. Fire insurance premium tax / court fees	23	60
d. Investments	<u>154,861</u>	<u>471,147</u>
e. Total	179,364	496,323
3. Investments		
a. Short-term securities – domestic	536,442	529,368
b. Short-term securities - international	66,608	65,873
c. Bonds - domestic	2,702,122	2,616,749
d. Bonds - international	760,975	767,420
e. Equities - domestic	5,270,899	5,191,747
f. Equities - international	1,797,266	2,116,439
g. Alternative investments	677,600	1,049,887
h. Real estate	1,076,469	1,133,488
i. Mortgage loans	<u>3,363</u>	<u>3,473</u>
j. Total	12,891,744	13,474,444
4. Other	1,575,472	1,436,071
5. Total assets	14,646,602	15,406,860
6. Liabilities		
a. Securities lending liability	(1,569,960)	(1,430,302)
b. Other accounting liabilities	(446,640)	(618,792)
c. Reserves	<u>(48,542)</u>	<u>(51,246)</u>
d. Total	(2,065,142)	(2,100,340)
7. Net assets	12,581,460	13,306,520

Note: Assets exclude 401(k) and 457 plans  
Amounts shown are in \$ thousands

Reconciliation of Market Value of Assets (MVA)

Fund/Division (1)	MVA as of Dec. 31, 2000 (2)	Contributions (3)	Benefits and Refunds (4)	Earnings, Net of Expenses (5)	Transfers (6)	MVA as of Dec. 31, 2001 (7)
I. Public Employees Contributory						
A. Local Government	260,253	6,370	(13,132)	(13,401)	(3,457)	236,633
B. State and School	686,167	10,714	(49,530)	(35,014)	(4,988)	607,349
C. Subtotal	946,420	17,084	(62,662)	(48,415)	(8,445)	843,982
II. Public Employees Noncontributory						
A. Local Government	1,667,805	56,806	(43,960)	(88,594)	4,056	1,596,113
B. State and School	8,690,169	262,070	(270,335)	(459,222)	13,646	8,236,328
C. Subtotal	10,357,974	318,876	(314,295)	(547,816)	17,702	9,832,441
III. Public Safety Contributory						
A. State	70,431	318	(6,209)	(3,483)	(1,750)	59,307
B. Other Division A	159,291	2,694	(8,556)	(8,080)	(3,531)	141,818
C. Salt Lake City	47,513	32	(4,103)	(2,309)	(1,936)	39,197
D. Provo	22,195	1,076	(1,069)	(1,176)	27	21,053
E. Logan	12,550	354	(337)	(666)	53	11,954
F. Other Division B	27,173	1,326	(683)	(1,453)	46	26,409
G. Subtotal	339,153	5,800	(20,957)	(17,167)	(7,091)	299,738
IV. Public Safety Noncontributory						
A. State	403,102	17,922	(12,658)	(21,541)	2,347	389,172
B. Other Division A	370,814	15,671	(8,639)	(19,962)	4,670	362,554
C. Salt Lake City	81,321	6,040	(3,692)	(4,475)	2,179	81,373
D. Ogden	38,999	1,083	(1,931)	(2,042)	55	36,164
E. Bountiful	10,521	320	(334)	(556)	10	9,961
F. Other Division B	52,168	3,253	(938)	(2,788)	(754)	50,941
G. Subtotal	956,925	44,289	(28,192)	(51,364)	8,507	930,165
V. Firefighters						
A. Division A	65,608	2,672	(1,352)	(2,711)	(15,654)	48,563
B. Division B	475,214	13,231	(19,969)	(25,645)	17,171	460,002
C. Subtotal	540,822	15,903	(21,321)	(28,356)	1,517	508,565
VI. Judges	87,731	3,060	(3,659)	(4,611)	239	82,760
VII. Governors and Legislative	11,724	0	(693)	(601)	18	10,448
VIII. 3% Substantial Substitute	65,771	24,044	(280)	(3,727)	(12,447)	73,361
IX. Grand Total	13,306,520	429,056	(452,059)	(702,057)	0	12,581,460

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Investment Return Rates for Prior Year**

	Basis of Assets	
	Market Value	Actuarial Value
	(1)	(2)
1. Beginning of year assets	13,306,520	13,208,113
2. Contributions to fund during year	429,056	429,056
3. Benefit payments during year (including refunds of contributions)	(452,059)	(452,059)
4. Transfers to and (from) URS	0	0
5. Investment income, net of investment and administrative expenses	(702,057)	896,723
6. End of year assets	12,581,460	14,081,833
7. Investment return rate	-5.3%	6.8%

Note: Amounts shown are in \$ thousands

**Summary of Investment Return Rates**

<u>Year</u>	<u>Return on Market Value</u>	<u>Return on Actuarial Value</u>
(1)	(2)	(3)
1991	21.5%	11.4%
1992	4.3%	10.5%
1993	15.7%	13.8%
1994	0.0%	8.8%
1995	21.4%	11.6%
1996	14.7%	11.7%
1997	15.8%	13.7%
1998	9.4%	12.6%
1999	16.3%	14.7%
2000	1.8%	11.2%
2001	-5.3%	6.8%

**Calculation of Actuarial Value of Assets  
 (All Retirement Systems Combined)**

1. Market value of assets				12,581,460
2. Adjustments to smooth asset values based on excess/shortfall of expected investment income for:				
	<u>Year</u>	<u>Total Excess/(Shortfall)</u>	<u>Weight Subtracted</u>	<u>Weighted Amount</u>
a.	2001	(1,765,658)	80%	(1,412,526)
b.	2000	(814,093)	60%	(488,456)
c.	1999	932,957	40%	373,183
d.	1998	137,130	20%	27,426
e.	1997	675,272	0%	0
f.	Total			<u>(1,500,373)</u>
3. Preliminary actuarial value of assets (1-2f)				14,081,833
4. Corridor Limits				
a.	80% of market value			10,065,168
b.	120% of market value			15,097,752
c.	Actuarial value (Item 3, not more than 4b, not less than 4a)			14,081,833
5. Ratio of actuarial value to market value				111.9%

Note: Amounts shown are in \$ thousands



Transfer Adjustments to Asset Values

Fund/Division (1)	Market Value of Assets (MVA) at January 1, 2002			Actuarial Value of Assets (AVA) at January 1, 2002		
	MVA Before Transfer (2)	Transfer Amount (3)	MVA After Transfer (4)	AVA Before Transfer (5)	Transfer Amount (6)	AVA After Transfer (7)
I. Public Employees Contributory						
A. Local Government	236,633	(3,929)	232,704	264,969	(4,400)	260,569
B. State and School	607,349	(12,312)	595,037	680,754	(13,800)	666,954
C. Subtotal	843,982	(16,241)	827,741	945,723	(18,200)	927,523
II. Public Employees Noncontributory						
A. Local Government	1,596,113	3,929	1,600,042	1,785,998	4,400	1,790,398
B. State and School	8,236,328	12,312	8,248,640	9,217,630	13,800	9,231,430
C. Subtotal	9,832,441	16,241	9,848,682	11,003,628	18,200	11,021,828
III. Public Safety Contributory						
A. State	59,307	(2,290)	57,017	66,526	(2,569)	63,957
B. Other Division A	141,818	(2,156)	139,662	158,839	(2,415)	156,424
C. Salt Lake City	39,197	(1,199)	37,998	43,977	(1,345)	42,632
D. Provo	21,053	0	21,053	23,568	0	23,568
E. Logan	11,954	0	11,954	13,375	0	13,375
F. Other Division B	26,409	(476)	25,933	29,535	(532)	29,003
G. Subtotal	299,738	(6,121)	293,617	335,820	(6,861)	328,959
IV. Public Safety Noncontributory						
A. State	389,172	2,290	391,462	435,445	2,569	438,014
B. Other Division A	362,554	2,156	364,710	405,486	2,415	407,901
C. Salt Lake City	81,373	1,199	82,572	91,054	1,345	92,399
D. Ogden	36,164	0	36,164	40,505	0	40,505
E. Bountiful	9,961	0	9,961	11,148	0	11,148
F. Other Division B	50,941	476	51,417	57,008	532	57,540
G. Subtotal	930,165	6,121	936,286	1,040,646	6,861	1,047,507
V. Firefighters						
A. Division A	48,563	0	48,563	54,345	0	54,345
B. Division B	460,002	0	460,002	514,806	0	514,806
C. Subtotal	508,565	0	508,565	569,151	0	569,151
VI. Judges	82,760	0	82,760	92,649	0	92,649
VII. Governors and Legislative	10,448	0	10,448	11,710	0	11,710
VIII. 3% Substantial Substitute	73,361	0	73,361	82,506	0	82,506
IX. Grand Total	12,581,460	0	12,581,460	14,081,833	0	14,081,833

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Contribution Rate for 3% Substantial Substitute**

1. Actuarial accrued liability, all funds combined	
a. Retirees	150,807
b. Inactives	12,459
c. Actives	<u>209,005</u>
d. Total	372,271
2. Actuarial value of assets	82,506
3. Unfunded actuarial accrued liability	289,765
4. Covered compensation of state funds that will pay for benefit	2,476,175
5. Recommended rate (20-year funding period and 4.00% PGR)	0.83%

Notes: Amounts shown are in \$ thousands

Columns may not add to total due to rounding

**Liabilities for 3% Substantial Substitute**

Fund/Division (1)	Retirees and Beneficiaries (2)	Inactive Members (3)	Active Members (4)	Total (5)
<b>I. Public Employees Contributory</b>				
A. Local Government	2,696	663	4,984	8,343
B. State and School	9,816	1,371	10,737	21,924
C. Subtotal	<u>12,512</u>	<u>2,034</u>	<u>15,721</u>	<u>30,267</u>
<b>II. Public Employees Noncontributory</b>				
A. Local Government	15,287	2,315	25,684	43,286
B. State and School	96,142	7,203	141,320	244,665
C. Subtotal	<u>111,429</u>	<u>9,518</u>	<u>167,004</u>	<u>287,951</u>
<b>III. Public Safety Contributory</b>				
A. State	1,667	41	183	1,891
B. Other Division A	2,764	139	1,465	4,368
C. Salt Lake City	1,253	0	16	1,268
D. Provo	334	32	312	677
E. Logan	134	2	218	354
F. Other Division B	283	21	504	808
G. Subtotal	<u>6,435</u>	<u>235</u>	<u>2,698</u>	<u>9,366</u>
<b>IV. Public Safety Noncontributory</b>				
A. State	5,120	231	6,494	11,845
B. Other Division A	3,706	229	5,078	9,013
C. Salt Lake City	1,508	37	1,641	3,186
D. Ogden	706	12	468	1,186
E. Bountiful	113	0	193	305
F. Other Division B	448	51	1,065	1,564
G. Subtotal	<u>11,601</u>	<u>560</u>	<u>14,939</u>	<u>27,099</u>
<b>V. Firefighters</b>				
A. Division A	439	7	823	1,269
B. Division B	7,064	31	5,940	13,035
C. Subtotal	<u>7,503</u>	<u>38</u>	<u>6,763</u>	<u>14,304</u>
<b>VI. Judges</b>	1,186	28	1,859	3,073
<b>VII. Governors and Legislative</b>	144	45	20	209
<b>VIII. Grand Total</b>	150,810	12,458	209,004	372,269

Notes: Amounts shown are in \$ thousands  
Columns may not add to total due to rounding

**Historical Summary of Statistical Data  
Public Employees Retirement System  
(Contributory)**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay (7)	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit (9)	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active (2)	Inactive (3)	Retired (4)	Total (5)						
1990	20,773	8,984	13,029	42,786	428,720	20,638	55,504	355	Not Available	954,900
1991	15,784	892	12,331	29,007	340,524	21,574	56,673	383	803,332	796,016
1992	12,430	1,629	12,275	26,334	287,907	23,162	57,306	389	867,300	785,115
1993	11,405	1,497	11,858	24,760	283,299	24,840	57,608	405	833,053	800,806
1994	10,826	1,733	11,444	24,003	280,655	25,924	57,861	421	929,993	880,979
1995	10,421	1,805	11,115	23,341	284,657	27,316	58,345	437	922,155	935,845
1996	6,954	2,028	10,645	19,627	195,717	28,145	58,238	456	919,007	852,034
1997	4,673	1,906	10,176	16,755	135,083	28,907	57,770	473	859,304	772,977
1998	4,396	1,975	9,724	16,095	134,341	30,560	57,496	493	916,532	809,388
1999	4,144	2,089	9,208	15,441	133,440	32,201	56,599	512	927,169	840,215
2000	3,967	2,134	8,717	14,818	133,615	33,682	55,716	533	974,834	878,190
2001	3,827	2,149	8,264	14,240	134,816	35,228	56,264	567	936,798	924,573
2002	3,703	2,262	7,822	13,787	137,721	37,192	55,569	592	827,741	927,523

**Historical Summary of Statistical Data  
Public Employees Retirement System  
(Noncontributory)**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active	Inactive	Retired	Total						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990	43,981	9,783	4,421	58,185	940,325	21,380	56,500	1,064	Not Available	2,100,892
1991	50,245	15,373	5,206	70,824	1,061,835	21,133	68,032	1,089	2,618,017	2,594,245
1992	58,836	8,042	6,114	72,992	1,329,925	22,604	76,871	1,048	3,345,871	3,041,640
1993	59,739	7,911	7,023	74,673	1,425,612	23,864	89,557	1,063	3,609,761	3,480,582
1994	63,448	9,507	8,025	80,980	1,536,528	24,217	104,731	1,088	4,258,021	4,039,120
1995	67,698	10,131	9,143	86,972	1,688,967	24,949	121,850	1,111	4,312,948	4,372,190
1996	69,922	12,413	10,458	92,793	1,862,940	26,643	142,838	1,138	5,497,373	5,128,203
1997	73,478	13,965	11,841	99,284	2,048,876	27,884	166,432	1,171	6,547,598	5,954,796
1998	76,728	15,383	13,242	105,353	2,231,957	29,089	192,723	1,213	7,711,808	6,896,740
1999	77,360	17,494	14,645	109,499	2,343,986	30,300	220,230	1,253	8,560,909	7,894,249
2000	80,639	18,630	16,163	115,432	2,486,200	30,831	248,366	1,281	10,112,606	9,186,463
2001	81,850	20,357	17,728	119,935	2,611,413	31,905	280,910	1,320	10,367,596	10,294,444
2002	83,690	27,385	19,145	130,220	2,801,564	33,475	314,821	1,370	9,848,682	11,021,828

**Historical Summary of Statistical Data  
Public Safety Retirement System  
(Contributory)**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay (7)	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit (9)	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active (2)	Inactive (3)	Retired (4)	Total (5)						
1990	2,612	713	1,194	4,519	65,978	25,260	13,139	917	Not Available	330,407
1991	1,641	520	1,190	3,351	42,496	25,896	13,530	948	240,788	241,347
1992	1,644	709	1,237	3,590	44,469	27,049	14,290	963	289,472	263,237
1993	1,591	705	1,251	3,547	44,934	28,244	14,860	990	295,915	285,043
1994	1,601	714	1,273	3,588	46,728	29,187	15,373	1,006	326,536	311,148
1995	1,280	568	1,294	3,142	38,571	30,134	16,087	1,036	284,198	289,572
1996	971	525	1,321	2,817	30,304	31,209	17,323	1,093	310,209	291,478
1997	952	543	1,322	2,817	31,940	33,550	17,735	1,118	335,065	304,699
1998	1,006	531	1,340	2,877	34,262	34,058	18,487	1,150	364,531	324,488
1999	855	498	1,344	2,697	29,704	34,742	19,147	1,187	347,477	316,739
2000	804	486	1,333	2,623	28,957	36,016	19,351	1,210	363,654	327,635
2001	794	479	1,243	2,516	30,021	37,810	18,611	1,248	331,370	326,949
2002	795	503	1,257	2,555	30,783	38,721	19,480	1,291	293,617	328,959

**Historical Summary of Statistical Data  
Public Safety Retirement System  
(Noncontributory)**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active	Inactive	Retired	Total						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990	1,512	32	15	1,559	37,798	24,999	229	917	Not Available	330,407
1991	2,697	154	65	2,916	68,205	25,290	997	1,278	136,287	132,275
1992	3,006	174	120	3,300	76,914	25,587	1,939	1,346	179,950	162,737
1993	3,198	185	175	3,558	85,678	26,791	2,935	1,398	200,668	193,301
1994	3,289	198	238	3,725	89,839	27,315	4,272	1,496	251,536	236,786
1995	3,899	360	304	4,563	111,292	28,544	5,684	1,558	297,278	300,101
1996	4,455	555	395	5,405	130,552	29,305	7,596	1,603	409,217	379,132
1997	4,720	614	492	5,826	149,086	31,586	9,870	1,672	496,197	450,407
1998	5,033	664	592	6,289	161,826	32,153	12,068	1,699	606,326	542,680
1999	5,427	752	747	6,926	180,904	33,334	15,603	1,741	726,304	672,062
2000	5,735	865	882	7,482	196,271	34,223	18,504	1,748	898,266	818,697
2001	5,974	832	1,118	7,924	212,442	35,561	23,428	1,746	964,708	960,047
2002	6,120	1,464	1,326	8,910	225,760	36,889	28,907	1,817	936,286	1,047,507

**Historical Summary of Statistical Data  
Firefighters Retirement System**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay (7)	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit (9)	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active (2)	Inactive (3)	Retired (4)	Total (5)						
1990	993	76	544	1,613	28,661	28,863	6,626	1,015	Not Available	149,672
1991	1,024	66	553	1,643	30,649	29,932	7,134	1,075	163,428	161,945
1992	1,047	82	575	1,704	33,232	31,740	7,672	1,112	202,726	183,352
1993	1,072	89	587	1,748	36,500	34,049	8,209	1,165	211,975	203,985
1994	1,079	100	595	1,774	37,191	34,468	8,678	1,215	247,715	234,501
1995	1,123	103	618	1,844	39,669	35,324	9,811	1,323	249,712	253,304
1996	1,165	116	644	1,925	42,599	36,566	10,397	1,415	315,063	293,816
1997	1,229	123	675	2,027	47,550	38,690	12,049	1,488	362,555	329,475
1998	1,285	130	707	2,122	50,886	39,600	13,747	1,620	421,184	376,178
1999	1,352	156	736	2,244	54,402	40,238	14,940	1,692	460,190	423,405
2000	1,380	160	772	2,312	57,664	41,786	16,112	1,739	532,783	483,373
2001	1,433	173	823	2,429	61,593	42,982	18,163	1,839	540,822	536,503
2002	1,504	179	866	2,549	66,871	44,462	20,008	1,925	508,565	569,151



**Historical Summary of Statistical Data  
Judges Retirement System**

Plan Year Beginning January 1st	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active	Inactive	Retired	Total						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990	90	0	50	140	5,283	58,700	826	1,015	Not Available	19,127
1991	87	0	46	133	5,867	67,438	827	1,499	22,432	22,242
1992	89	0	53	142	6,267	70,416	1,087	1,710	28,765	26,167
1993	80	1	62	143	6,434	80,424	1,597	2,147	31,388	30,254
1994	85	1	68	154	6,897	81,142	1,930	2,365	37,398	35,479
1995	87	0	70	157	7,263	83,488	2,193	2,610	38,220	38,726
1996	98	3	70	171	8,480	86,534	2,309	2,749	47,531	44,304
1997	100	1	69	170	9,202	92,019	2,396	2,894	55,757	50,721
1998	102	1	72	175	9,298	91,158	2,778	3,215	66,299	59,373
1999	103	2	73	178	9,667	93,850	2,970	3,391	73,650	67,998
2000	106	2	73	181	10,150	95,750	3,078	3,514	85,921	78,130
2001	104	4	75	183	10,318	99,208	3,299	3,666	87,731	87,139
2002	106	4	78	188	10,910	102,925	3,608	3,855	82,760	92,649

**Historical Summary of Statistical Data  
 Legislative and Governors Retirement System**

Plan Year Beginning	Participant Counts				Covered Payroll (\$ Thousands)	Average Pay (\$ Thousands)	Retirement Benefits in Force Annual Amount (\$ Thousands)	Average Retiree Monthly Benefit (\$ Thousands)	Market Value of Assets (\$ Thousands)	Actuarial Value of Assets (\$ Thousands)
	Active	Inactive	Retired	Total						
January 1st	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1990	76	133	162	371	288	3,789	329	169	Not Available	6,007
1991	57	118	150	325	238	4,172	295	164	6,427	6,355
1992	87	127	173	387	254	2,925	369	178	7,584	6,790
1993	84	120	180	384	246	2,925	396	183	7,443	7,122
1994	93	126	188	407	427	4,593	385	171	8,089	7,683
1995	89	112	196	397	412	4,628	422	180	7,684	7,804
1996	96	111	201	408	439	4,569	445	184	8,788	8,185
1997	75	115	200	390	367	4,892	457	190	9,561	8,636
1998	90	108	208	406	488	5,419	476	191	10,531	9,318
1999	91	99	211	401	495	5,440	504	199	10,976	9,988
2000	94	101	221	416	511	5,437	531	200	12,159	10,946
2001	86	96	218	400	478	5,557	536	205	11,724	11,569
2002	94	107	228	429	601	6,391	562	206	10,448	11,710

**STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS**

1. *Investment return rate:*

8.00% per annum, compounded annually, composed of a 3.00% inflation rate and a 5.00% real rate of return, net of administrative and investment expenses.

2. *Active member mortality rates:*

Active member mortality rates are a function of the member's sex, occupation, and age. These rates were developed based on plan experience. Rates at selected ages are shown:

Active Male Members			
Age	Local Government and Public Employees	Public Educators	Public Safety and Firefighters <sup>1</sup>
20	.000597	.000187	.000525
25	.000443	.000171	.000499
30	.000536	.000188	.000495
35	.000783	.000242	.000520
40	.001002	.000449	.000721
45	.001229	.000767	.001234
50	.001798	.001481	.002101
55	.003036	.002688	.003228
60	.004958	.004256	.004440
65	.007540	.005426	.005606
70	.010807	.006020	.006713

Active Female Members		
Age	Local Government and Public Employees	Public Educators
20	.000344	.000404
25	.000313	.000164
30	.000331	.000073
35	.000402	.000158
40	.000547	.000379
45	.000802	.000694
50	.001212	.001072
55	.001812	.001478
60	.002614	.002047
65	.003603	.002845
70	.004766	.003903

<sup>1</sup> Males and female combined.

3. *Disability rates:*

Disability rates are a function of the member's sex, occupation, and age. These rates were developed based on plan experience. Rates are applied at all ages. Rates at selected ages are shown:

Active Male Members					
Age	Local Government	Public Employees	Public Educators	Public Safety <sup>1</sup>	Firefighters <sup>1</sup>
20	.000150	.000200	.000070	.000200	.000200
25	.000225	.000300	.000105	.000300	.000300
30	.000450	.000600	.000210	.000600	.000600
35	.000675	.000900	.000315	.000900	.000900
40	.000900	.001200	.000420	.001200	.001200
45	.001500	.002000	.000700	.002000	.002000
50	.001950	.002600	.000910	.002600	.002600
55	.003075	.004100	.001435	.004100	.004100
60	.004200	.005600	.001960	.005600	.005600

Active Female Members			
Age	Local Government	Public Employees	Public Educators
20	.000170	.000200	.000100
25	.000255	.000300	.000150
30	.000510	.000600	.000300
35	.000765	.000900	.000450
40	.001020	.001200	.000600
45	.001700	.002000	.001000
50	.002210	.002600	.001300
55	.003485	.004100	.002050
60	.004760	.005600	.002800

<sup>1</sup> Males and females combined.

4. *Termination rates (for causes other than death, disability or retirement):*

Termination rates are a function of the member's sex, occupation, age and service. These rates were developed based on plan experience. Termination rates are not applied after a member becomes eligible for a reduced or unreduced retirement benefit. Rates at selected ages are shown:

Active Male Members - Local Government						
Years of Service						
Age	0	1	2	3	4	5+
20	0.2262	0.2154	0.1750	0.1174	0.0630	0.0919
25	0.1884	0.1795	0.1470	0.1016	0.0562	0.0815
30	0.1588	0.1514	0.1250	0.0873	0.0498	0.0605
35	0.1373	0.1308	0.1092	0.0793	0.0494	0.0463
40	0.1235	0.1177	0.1004	0.0778	0.0550	0.0381
45	0.1184	0.1128	0.0993	0.0834	0.0675	0.0334
50	0.1228	0.1169	0.1069	0.0972	0.0877	0.0311
55	0.1383	0.1317	0.1243	0.1206	0.1168	0.0336
60	0.1452	0.1383	0.1306	0.1266	0.1227	0.0352
65	0.1525	0.1452	0.1371	0.1329	0.1288	0.0370
70	0.1670	0.1590	0.1500	0.1455	0.1410	0.0405

Active Female Members - Local Government						
Years of Service						
Age	0	1	2	3	4	5+
20	0.2924	0.2525	0.2220	0.1935	0.1770	0.1524
25	0.2766	0.2262	0.1899	0.1672	0.1586	0.1316
30	0.2572	0.2006	0.1613	0.1386	0.1317	0.0895
35	0.2352	0.1764	0.1365	0.1147	0.1094	0.0618
40	0.2125	0.1547	0.1164	0.0963	0.0925	0.0473
45	0.1922	0.1381	0.1027	0.0844	0.0814	0.0422
50	0.1799	0.1293	0.0966	0.0795	0.0768	0.0421
55	0.1825	0.1319	0.0986	0.0816	0.0795	0.0432
60	0.2066	0.1488	0.1093	0.0905	0.0898	0.0443
65	0.2558	0.1816	0.1286	0.1060	0.1080	0.0453
70	0.3311	0.2309	0.1564	0.1278	0.1338	0.0461

4. Termination rates (continued):

Active Male Members - Public Employees						
Years of Service						
Age	0	1	2	3	4	5+
20	0.4502	0.3451	0.2749	0.2250	0.1814	0.1354
25	0.3536	0.2884	0.2342	0.1906	0.1520	0.1185
30	0.2903	0.2412	0.1949	0.1531	0.1154	0.0832
35	0.2525	0.2017	0.1573	0.1210	0.0937	0.0578
40	0.2279	0.1673	0.1224	0.0944	0.0832	0.0410
45	0.2067	0.1376	0.0934	0.0743	0.0791	0.0304
50	0.1841	0.1154	0.0752	0.0630	0.0776	0.0243
55	0.1590	0.1038	0.0724	0.0637	0.0772	0.0242
60	0.1322	0.1060	0.0888	0.0794	0.0778	0.0324
65	0.1388	0.1112	0.0933	0.0833	0.0817	0.0340
70	0.1440	0.1154	0.0968	0.0865	0.0848	0.0354

Active Female Members - Public Employees						
Years of Service						
Age	0	1	2	3	4	5+
20	0.3305	0.3401	0.3253	0.2773	0.2281	0.2212
25	0.3044	0.2875	0.2594	0.2262	0.1946	0.1870
30	0.2740	0.2367	0.2012	0.1706	0.1464	0.1187
35	0.2411	0.1909	0.1527	0.1265	0.1087	0.0756
40	0.2088	0.1552	0.1186	0.0963	0.0836	0.0526
45	0.1808	0.1324	0.1004	0.0815	0.0719	0.0405
50	0.1610	0.1218	0.0956	0.0799	0.0733	0.0343
55	0.1524	0.1218	0.1008	0.0890	0.0870	0.0334
60	0.1579	0.1316	0.1136	0.1065	0.1121	0.0375
65	0.1788	0.1514	0.1332	0.1313	0.1492	0.0465
70	0.2153	0.1815	0.1595	0.1634	0.1975	0.0602

4. Termination rates (continued):

Active Male Members - Public Educators						
Years of Service						
Age	0	1	2	3	4	5+
20	0.1649	0.1585	0.1471	0.0918	0.0448	0.0726
25	0.1498	0.1361	0.1220	0.0871	0.0523	0.0629
30	0.1268	0.1175	0.1025	0.0823	0.0622	0.0430
35	0.1195	0.1027	0.0885	0.0785	0.0685	0.0290
40	0.1130	0.0926	0.0795	0.0756	0.0719	0.0208
45	0.1152	0.0895	0.0744	0.0733	0.0721	0.0162
50	0.1343	0.0958	0.0726	0.0711	0.0696	0.0125
55	0.1764	0.1131	0.0728	0.0685	0.0643	0.0093
60	0.1853	0.1188	0.0765	0.0720	0.0675	0.0098
65	0.1946	0.1248	0.0802	0.0756	0.0709	0.0103
70	0.2131	0.1366	0.0880	0.0828	0.0776	0.0113

Active Female Members - Public Educators						
Years of Service						
Age	0	1	2	3	4	5+
20	0.2727	0.2674	0.2532	0.2263	0.1646	0.1532
25	0.2257	0.1962	0.1877	0.1791	0.1449	0.1604
30	0.1587	0.1442	0.1368	0.1292	0.1140	0.0838
35	0.1228	0.1093	0.0970	0.0895	0.0856	0.0521
40	0.1187	0.0885	0.0693	0.0616	0.0622	0.0347
45	0.1135	0.0786	0.0570	0.0468	0.0467	0.0274
50	0.1024	0.0765	0.0590	0.0470	0.0406	0.0245
55	0.0834	0.0804	0.0740	0.0617	0.0447	0.0243
60	0.0877	0.0845	0.0777	0.0648	0.0470	0.0255
65	0.0920	0.0886	0.0816	0.0679	0.0492	0.0268
70	0.0964	0.0929	0.0856	0.0713	0.0517	0.0281

4. Termination rates (continued):

Active Male and Female Members - Public Safety						
Years of Service						
Age	0	1	2	3	4	5+
20	0.1135	0.0944	0.0694	0.0644	0.0587	0.0710
25	0.0956	0.0771	0.0562	0.0554	0.0524	0.0616
30	0.0912	0.0683	0.0469	0.0452	0.0427	0.0417
35	0.1002	0.0681	0.0410	0.0363	0.0343	0.0274
40	0.1218	0.0757	0.0384	0.0287	0.0271	0.0182
45	0.1542	0.0896	0.0383	0.0227	0.0215	0.0135
50	0.1961	0.1084	0.0404	0.0190	0.0179	0.0115
55	0.2457	0.1308	0.0442	0.0179	0.0169	0.0114
60	0.3022	0.1561	0.0495	0.0198	0.0186	0.0125
65	0.3324	0.1840	0.0565	0.0249	0.0235	0.0145
70	0.3657	0.2146	0.0650	0.0331	0.0313	0.0174

Active Male and Female Members - Firefighters						
Years of Service						
Age	0	1	2	3	4	5+
20	0.1877	0.0838	0.0316	0.0252	0.0202	0.0158
25	0.1243	0.0520	0.0163	0.0155	0.0146	0.0150
30	0.0998	0.0442	0.0168	0.0160	0.0151	0.0140
35	0.0752	0.0364	0.0173	0.0165	0.0156	0.0130
40	0.0521	0.0340	0.0242	0.0230	0.0218	0.0070
45	0.0722	0.0570	0.0468	0.0445	0.0420	0.0049
50	0.1101	0.0914	0.0770	0.0731	0.0691	0.0027
55	0.1684	0.1392	0.1161	0.1103	0.1043	0.0009
60	0.2471	0.2003	0.1643	0.1561	0.1475	0.0013
65	0.3463	0.2748	0.2213	0.2103	0.1987	0.0018
70	0.4660	0.3625	0.2874	0.2730	0.2580	0.0023



5. *Refund rates:*

The percent of vested members electing to receive a refund of contributions on termination of employment. This rate is only applied to members of the contributory systems; vested members in the noncontributory systems are assumed to defer their benefits until retirement, even if they have a contribution account from service prior to the establishment of the noncontributory system. The rate is a function of the member's sex, occupation and service. These rates are based on plan experience.

Males				
Service	Local Government	Public Employees	Public Educators	Public Safety & Firefighters <sup>1</sup>
0-3	100%	100%	100%	100%
4	75%	86%	75%	76%
5	73%	83%	73%	74%
6	70%	80%	70%	71%
7	67%	78%	66%	69%
8	65%	77%	61%	67%
9	62%	75%	57%	65%
10	61%	73%	54%	57%
11	59%	70%	50%	50%
12	58%	68%	47%	42%
13	55%	66%	42%	40%
14	52%	65%	38%	37%
15	49%	63%	33%	35%
16	48%	61%	28%	33%
17	46%	60%	22%	31%
18	45%	58%	17%	29%
19	23%	29%	09%	15%
20 or more	00%	00%	00%	00%

<sup>1</sup> Male and female members combined.

5. *Refund rates (continued):*

Females			
Service	Local Government	Public Employees	Public Educators
0-3	100%	100%	100%
4	77%	80%	65%
5	75%	79%	64%
6	72%	77%	62%
7	69%	74%	61%
8	67%	71%	59%
9	64%	68%	58%
10	61%	64%	53%
11	57%	60%	48%
12	54%	56%	43%
13	49%	55%	39%
14	45%	53%	36%
15	40%	52%	32%
16	35%	49%	27%
17	30%	46%	21%
18	25%	43%	16%
19	13%	22%	08%
20 or more	00%	00%	00%

6. *Retirement rates:*

Retirement rates are a function of the member's age, service, sex and occupation. Rates are based on plan experience. Rates are applied only at ages at which the member is eligible for a reduced or unreduced retirement benefit. Members are assumed to retire no later than age 70 (age 65 for the public safety and firefighter systems). Sample rates are shown below. Retirement rates shown for local government, public employees and public educators below age 60 for 25-29 years of service apply only to noncontributory members.

Local Government - Males							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.005	0.250
55	0.000	0.000	0.000	0.000	0.000	0.010	0.300
60	0.000	0.000	0.000	0.000	0.050	0.050	0.500
62	0.000	0.000	0.300	0.300	0.300	0.300	0.650
65	0.000	0.500	0.800	0.800	0.800	0.800	0.800

Public Employees – Males							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.005	0.150
55	0.000	0.000	0.000	0.000	0.000	0.005	0.200
60	0.000	0.000	0.000	0.000	0.200	0.200	0.500
62	0.000	0.000	0.300	0.300	0.300	0.300	0.600
65	0.000	0.450	0.600	0.600	0.500	0.600	0.700

Public Educators – Males							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.005	0.250
55	0.000	0.000	0.000	0.000	0.000	0.005	0.300
60	0.000	0.000	0.000	0.000	0.100	0.100	0.600
62	0.000	0.000	0.250	0.250	0.250	0.250	0.700
65	0.000	0.400	0.700	0.700	0.700	0.700	0.750

6. Retirement rates (continued):

Local Government – Females							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.030	0.350
55	0.000	0.000	0.000	0.000	0.000	0.030	0.400
60	0.000	0.000	0.000	0.000	0.150	0.150	0.500
62	0.000	0.000	0.300	0.300	0.300	0.300	0.600
65	0.000	0.400	0.600	0.600	0.600	0.700	0.700

Public Employees – Females							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.010	0.250
55	0.000	0.000	0.000	0.000	0.000	0.010	0.300
60	0.000	0.000	0.000	0.000	0.200	0.200	0.600
62	0.000	0.000	0.350	0.350	0.350	0.350	0.600
65	0.000	0.500	0.500	0.500	0.750	0.750	0.750

Public Educators – Females							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
50	0.000	0.000	0.000	0.000	0.000	0.005	0.250
55	0.000	0.000	0.000	0.000	0.000	0.005	0.350
60	0.000	0.000	0.000	0.000	0.250	0.250	0.500
62	0.000	0.000	0.300	0.300	0.300	0.300	0.700
65	0.000	0.400	0.700	0.700	0.750	0.750	0.750

Public Safety - Males and Females							
	Years of Service						
Age	0-3	4-9	10-14	15-19	20-24	25-29	30+
45	0.00	0.00	0.00	0.00	0.14	0.14	0.14
50	0.00	0.00	0.00	0.00	0.14	0.14	0.14
55	0.00	0.00	0.00	0.00	0.20	0.20	0.33
60	0.00	0.00	0.15	0.27	0.33	0.40	0.50
62	0.00	0.00	0.15	0.27	0.33	0.40	0.50

6. Retirement rates (continued):

Firefighters - Males and Females							
Age	Years of Service						
	0-3	4-9	10-14	15-19	20-24	25-29	30+
45	0.00	0.00	0.00	0.00	0.06	0.06	0.06
50	0.00	0.00	0.00	0.00	0.06	0.13	0.35
55	0.00	0.00	0.00	0.00	0.15	0.15	0.75
60	0.00	0.00	0.15	0.15	0.15	0.50	0.75
62	0.00	0.00	0.15	0.15	0.15	0.50	0.75

Judges - Males and Females			
Age	All Service	Age	All Service
60	0.05	65	0.50
62	0.10	70	1.00

7. Salary increase rates:

Salaries for individual members are assumed to increase each year, as a function of the member's occupation and service. Rates are composed of a 3.00% inflation rate, a 1.75% general increase rate that applies to all, and a variable promotional/longevity component that is a function of the member's service.

Active Male and Female Members - Local Government		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.75% General Increase Rate
0	7.00%	11.75%
1	4.50	9.25
2	3.50	8.25
3	2.50	7.25
4	2.25	7.00
5	2.00	6.75
6	2.00	6.75
7	1.75	6.50
8	1.75	6.50
9	1.50	6.25
10	1.25	6.00
11	1.00	5.75
12	0.75	5.50
13	0.50	5.25
14	0.50	5.25
15 or more	0.00	4.75

7. Salary increase rates (continued):

Active Male and Female Members - Public Employees		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.75% General Increase Rate
0	6.00%	10.75%
1	4.50	9.25
2	3.50	8.25
3	3.00	7.75
4	2.50	7.25
5	2.25	7.00
6	1.75	6.50
7	1.50	6.25
8	1.50	6.25
9	1.25	6.00
10	1.25	6.00
11	1.00	5.75
12	0.75	5.50
13	0.75	5.50
14	0.50	5.25
15 or more	0.00	4.75

Active Male and Female Members Public Educators		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.75% General Increase Rate
0	10.25%	15.00%
1	6.00	10.75
2	4.50	9.25
3	4.25	9.00
4	4.00	8.75
5	3.75	8.50
6	3.25	8.00
7	3.00	7.75
8	2.75	7.50
9	2.50	7.25
10	2.00	6.75
11	1.75	6.50
12	1.25	6.00
13	0.75	5.50
14	0.25	5.00
15 or more	0.00	4.75

7. *Salary increase rates (continued):*

Active Male and Female Members Public Safety		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.75% General Increase Rate
0	6.00%	10.75%
1	3.00	7.75
2	2.75	7.50
3	2.50	7.25
4	2.25	7.00
5	2.00	6.75
6	2.00	6.75
7	1.75	6.50
8	1.75	6.50
9	1.50	6.25
10	1.50	6.25
11	1.25	6.00
12	1.00	5.75
13	0.75	5.50
14	0.50	5.25
15 or more	0.00	4.75

Active Male and Female Members Firefighters		
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Inflation Component and 1.75% General Increase Rate
0	7.00%	11.75%
1	5.75	10.50
2	5.00	9.75
3	4.50	9.25
4	4.00	8.75
5	3.75	8.50
6	3.50	8.25
7	3.50	8.25
8	3.25	8.00
9	3.25	8.00
10	3.00	7.75
11	3.00	7.75
12	2.00	6.75
13	1.00	5.75
14	0.50	5.25
15 or more	0.00	4.75

8. *Retiree mortality rates (nondisabled retirees):*

Retired Male Members			
Age	Local Government, Public Employees and All Beneficiaries (UP94 Males, Setback 2 years)	Public Educators (UP94 Males, Setback 4 years)	Public Safety and Firefighters (UP94 Males, Setback 0 Years)
20	.000495	.000421	.000545
25	.000633	.000570	.000711
30	.000811	.000749	.000862
35	.000912	.000883	.000915
40	.001010	.000927	.001153
45	.001454	.001243	.001697
50	.002260	.001852	.002773
55	.003854	.003088	.004758
60	.006774	.005322	.008576
65	.012335	.009663	.015629
70	.021354	.017462	.025516
75	.033549	.027905	.040012
80	.053991	.043933	.066696
85	.088721	.073780	.104559
90	.136537	.113755	.164442
95	.213325	.179849	.251189

Retired Female Members			
Age	Local Government, Public Employees and All Beneficiaries (UP94 Females, Setback 0 Years)	Public Educators (UP94 Females, Setback 2 Years)	Public Safety and Firefighters (UP94 Females, Setback 0 Years)
20	.000305	.000293	.000305
25	.000313	.000313	.000313
30	.000377	.000338	.000377
35	.000514	.000454	.000514
40	.000763	.000643	.000763
45	.001046	.000943	.001046
50	.001536	.001297	.001536
55	.002466	.002051	.002466
60	.004773	.003612	.004773
65	.009286	.007179	.009286
70	.014763	.012648	.014763
75	.024393	.019724	.024393
80	.042361	.034115	.042361
85	.072836	.058986	.072836
90	.125016	.100882	.125016
95	.200229	.167668	.200229



9. *Disabled annuitant mortality rates:*

Disabled Retired Male and Female Members		
Age	Males	Females
20	.00812	.00652
25	.01073	.00856
30	.01346	.01124
35	.01595	.01372
40	.01890	.01665
45	.02241	.01971
50	.02617	.02338
55	.03082	.02733
60	.03548	.03165
65	.04110	.03659
70	.04775	.04187
75	.06828	.05112
80	.10975	.07611
85	.16042	.11927
90	.22472	.17155
95	.31620	.23810
100	.46667	.33809

10. *Actuarial cost method:*

The Entry Age Normal actuarial cost method is used. This method is designed to produce a relatively level funding pattern when expressed as a percent of pay.

First, the actuarial present value of all future expected benefits is determined for each member, including retired members, beneficiaries, inactive members and active members. This takes into account both the probability that a benefit will be paid at a given age and the time value of money. The sum of these amounts--the Present Value of Future Benefits (PVFB)--is then determined.

Next, the Entry Age Normal actuarial cost method is used to allocate the PVFB between the current year (the normal cost), prior years (the Actuarial Accrued Liability), and future years (future normal costs). The current and future normal costs are determined as a level percentage of pay.

A portion of the normal cost may be paid by employee contributions in which case the balance becomes the normal cost portion of the employer contribution rate.

The difference between the Actuarial Accrued Liability (the portion of the total actuarial present value of future benefits allocated to prior years) and the Actuarial Value of Assets is called the Unfunded Actuarial Accrued Liability (UAAL). This is funded over 20 years from the valuation date (open period). The funding period is set by the Board of Trustees.

The cost of the Group Insurance benefit in the Public Employees Systems (contributory and noncontributory) is determined using the one-year term cost approach, and is therefore excluded in the above calculation. The term cost (the expected value of benefits to be paid during the year) is added to the employer normal cost rate determined above.

The total employer cost rate is the sum of (i) the normal cost rate, including the term cost for the Group Insurance benefit and net of employee contributions, and (ii) the level percent-of-pay amortization of the UAAL. For the Judges' System and the Firefighters' System, certain specified revenues (court fees and a tax on insurance premiums, respectively) are used as an offset to the employer contribution rate each year, as described elsewhere in this report.

All contribution rates are based upon monthly payments of contributions.

11. *Actuarial value of assets:*

The actuarial value of assets is equal to the market value, adjusted for a five-year phase in of actual investment return in excess of (or less than) expected investment return. The actual return is calculated net of investment and administrative expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds. The actuarial value of assets is further adjusted, if necessary, so that it is not less than 80% of market value and not more than 120% of market value.

12. *Payroll growth rate:*

In determining the level percent of payroll amortization rate, payroll is assumed to grow annually at 4.00%. No allowance is made for future growth in the number of members.

13. *Marital status:*

All nonretired members are assumed to be married with no children. Female members are assumed to be three years younger than their spouses, while male members are assumed to be three years older than their spouses.

14. *Administrative and investment expenses:*

No special assumption was made regarding administrative and investment expenses. Therefore, the assumed 8% return is net of any such expenses.

15. *Judges System:*

For the Judges System, no disability or withdrawal rates were used. Salaries were assumed to increase at 4.75% per year.

16. *Governors and Legislative Pension Plan:*

A 10% withdrawal rate was assumed regardless of age or service. No disability rates were used. No salary increase rate was used because the benefits do not reflect pay. Members were assumed to retire at the earlier of (i) age 65 with four years of service, or (ii) age 62 with 10 years of service. Normal cost and actuarial accrued liability were based on Level Dollar Entry Age Cost Method (not Level Percent of Pay).

17. *Cost-of-living increases:*

Since a 3.00% inflation rate is assumed (see investment return rate above), retirement benefits for all systems except Public Safety are assumed to increase at 3.00% even though the maximum allowable rate is 4%. Retirement benefits for the Public Safety System are assumed to increase at the maximum allowable rate of 2.50%.

**Summary of Benefit Provisions for  
Public Employee Retirement Systems  
(Contributory and Noncontributory)**

1. *Effective Date:* Contributory System - July 1, 1961.  
Noncontributory System - July 1, 1986.
2. *Plan Year:* Twelve-month period ending December 31st.
3. *Administration:* The Systems are administered by a Board of Trustees (which also administers the other Utah Retirement Systems). The Board of Trustees is responsible for both administration of the Systems and investment of the fund assets.
4. *Type of Plan:* These are qualified governmental defined benefit retirement plans. Under GASB 25, they are considered to be cost-sharing multiple-employer plans.
5. *Eligibility:* These Systems cover eligible employees of the State of Utah, most local government employees, and most public education employees. Generally all employees are covered, except for those covered by another System--public safety employees, firefighters, judges, legislators, and higher education employees covered under TIAA-CREF. Eligible employees become participants immediately when hired, and are required to participate. The employer-selected plan determines whether new employees participate in the Contributory or Noncontributory System. Employees who were members of the Contributory System at the time their employer selected the Noncontributory System had an option to remain in the Contributory System.
6. *Employee Contributions:* Members of the Contributory System contribute 6.00% of salary per year. Employers may "pick-up" employee contributions under Section 414(h) of the Internal Revenue Code. No contributions are made by members of the Noncontributory System.
7. *Employer Contributions:* The current contribution rates differ between the Contributory and Noncontributory Systems, and also differ depending on whether the member is employed by a local government (Level B) or the State of Utah or a public school (Level A). Rates are set by the Board of Trustees, based upon the actuarial valuation report for the preceding year. The Funds participating in these systems are:

Fund 11 - Local Government Contributory  
Fund 12 - State and School Contributory  
Fund 15 - Local Government Noncontributory  
Fund 16 - State and School Noncontributory

8. *Final Average Monthly Salary (FAMS)*: The monthly average of the member's highest salaries preceding retirement. For the Contributory System a five-year average is used, while a three-year average is used for the Noncontributory System.
  
9. *Service Retirement (Unreduced)*:
  - a. Eligibility: A member may retire with an unreduced benefit at age 65 with four years of service or after 30 years of service if earlier.
  - b. Monthly Benefit (Contributory): 2.00% times Final Average Monthly Salary (FAMS) times years of service earned since July 1, 1975, plus 1.25% of FAMS times service earned prior to July 1, 1975.
  - c. Monthly Benefit (Noncontributory): 2.00% of Final Average Monthly Salary times years of service.
  - d. Payment Form: Life annuity.
  
10. *Service Retirement (Reduced)*:
  - a. Eligibility: A member may retire with a reduced benefit upon attaining age 62 with 10 years of service or age 60 with 20 years of service. A member of the Noncontributory System may retire at any age after earning 25 years of service.
  - b. Reduction: 3% per year that retirement is earlier than age 65. For Noncontributory System members retiring prior to age 60, actuarial reduction is applied to the 85% factor at age 60.
  - c. Payment Form: Life annuity.
  
11. *Disability Retirement*:
  - a. Eligibility: Member must be eligible for retirement under the Disability Act and must not be eligible for a 30-year service retirement at time of disability.
  - b. Monthly Benefits Payable Prior to Retirement: A separate fund established under the Disability Act provides benefits from the time of disability until the age specified in 49-21-403. Benefits from this separate fund are not covered by these Systems.
  - c. Monthly Benefits Payable after Retirement: An unreduced service retirement benefit is payable. The member receives service credit for time while disabled (both for computing the benefit amount and for determining whether the member is eligible for an unreduced service retirement benefit). Final Average Monthly Salary is increased by the same factors used for automatic cost-of-living benefit increases. I.e., the FAMS is adjusted by a cost-of-living increase up to 4.0% per year (simple interest).
  - d. Payment Form: Life annuity.

- e. Death while Disabled: A disabled member is treated as an active member for purposes of determining a death benefit for the period prior to retirement.
12. *Vesting and Refunds*:
- a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Members are vested after four years of service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below. (Noncontributory System members hired after July 1, 1986, are ineligible for a refund.)
  - b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund. Interest is credited at 8.0% per year.
13. *Deferred Termination Benefit*:
- a. Eligibility: Member must be vested (4 years of service) and must elect to leave his/her contributions on deposit.
  - b. Monthly Benefit: Same as the unreduced or reduced service retirement benefit, based on service and FAMS at termination, and commencing once the member is eligible.
  - c. Payment Form: Life annuity.
  - d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive a refund benefit. (Inactive members with over 10 years of service as of July 1, 1987, are also entitled to receive the group insurance benefit applicable to active members.)
14. *Death while an Active Member*:
- a. In General: A refund of the member's accumulated contributions (with interest) is paid to the beneficiary of a deceased member. In addition, a group insurance amount equal to 75% of final average salary (annual) is paid.
  - b. Spousal Annuity: If the deceased member was married at the time of death and was either (i) eligible for reduced or unreduced service retirement, or (ii) had 25 years of service (15 years of service in the noncontributory system), the spouse may elect an annuity benefit in lieu of the refund benefit. The annuity is equal to the reduced or unreduced service retirement benefit payable as though Plan 3 (a Joint and 100% Survivor annuity) were elected. If the member had 25 years of service or more, no reduction factor is applied in determining the service retirement benefit. If a member of the noncontributory system is not eligible for a retirement benefit and has less than 25 years of service, then the death benefit is equal to 1/3 of Plan 3 benefit if the member has at least 15 and less than 20 years of service, and 2/3 of the Plan 3 benefit if the member has at least 20 and less than 25 years of service. In addition, a group insurance amount equal to 60% of final average salary (annual) is paid.

15. *Optional Forms of Benefit:* The Systems permit members to elect from six forms of benefit at retirement. In each case the benefit amount is adjusted to be actuarially equivalent to the "Plan 1" form. The six optional forms are:
- Plan 1 - A life annuity with no benefits due following the member's death.
- Plan 2 - Modified Cash Refund Annuity. A reduced annuity payable for the member's lifetime, plus a death benefit equal to the excess of the member's accumulated contributions (determined at retirement) over the sum of the member's annuity payments from retirement. (The annuity payments are that part of the original benefit derived from the member's own accumulated contributions.)
- Plan 3 - Joint and 100% Survivor Annuity. An annuity payable as long as either the member or his/her spouse is living.
- Plan 4 - Joint and 50% Survivor Annuity. An annuity payable during the member's lifetime, and after the member's death if the member's spouse is still living, an annuity to the spouse of 50% of the original benefit.
- Plan 5 - Joint and 100% Pop-up Annuity. Same as Plan 3, except that the benefit amount reverts to the Plan 1 (life annuity) amount if the member's spouse predeceases the member.
- Plan 6 - Joint and 50% Pop-up Annuity. Same as Plan 4, except that the benefit amount reverts to the Plan 1 (life annuity) amount if the member's spouse predeceases the member.
16. *Postretirement Death Benefit:* None, except as elected by the member. See Optional Forms of Benefit above.
17. *Postretirement Benefit Increases:* Benefits are increased annually to take into account changes in the cost of living, with a maximum annual increase of 4% of the original benefit (i.e., a maximum 4% simple interest increase). In years in which the cost of living increases more than 4%, the excess increase is accumulated and used in later years in which the cost-of-living increase is less than 4%. This calculation is made separately for each individual. In addition, a closed group of retirees also receives a second special increase amount paid as a level annuity under whichever form of payment was elected. This is the Restoration of Purchasing Power (ROPP) payment.
18. *3% Substantial Substitute:* All members whose service began before January 1, 1989, receive an additional annual payment equal to 3% of their benefit. These payments are made to offset the taxability of the retirement benefits under the State income tax provisions. Prior to July 1, 1995, this benefit was funded by annual appropriations made by the State on a pay-as-

you go basis. Beginning July 1, 1995, this benefit is funded on an actuarial basis by increasing the employer contribution rate for those Funds which are funded by the State.



**Summary of Benefit Provisions for  
Public Safety Retirement Systems  
(Contributory and Noncontributory)**

1. *Effective Date:* Contributory System - July 1, 1969.  
Noncontributory System - July 1, 1989.
2. *Plan Year:* Twelve-month period ending December 31st.
3. *Administration:* The Systems are administered by a Board of Trustees (which also administers the other Utah Retirement Systems). The Board of Trustees is responsible for both administration of the Systems and investment of the fund assets.
4. *Type of Plan:* These are qualified governmental defined benefit retirement plans. Under GASB 25, they are considered to be a combination of agent and cost-sharing multiple-employer plans.
5. *Eligibility:* These Systems cover eligible public safety employees of the State of Utah and some local governments. Eligible employees become participants immediately when hired, and are required to participate. The employer-selected plan determines whether new employees participate in the Contributory or Noncontributory System. Employees who were members of the Contributory System at the time their employer selected the Noncontributory System had an option to remain in the Contributory System.
6. *Employee Contributions:* Members of the Contributory System contribute a percentage of salary, as shown below . Employers may "pick-up" employee contributions under Section 414(h) of the Internal Revenue Code. No contributions are made by members of the Noncontributory System. Rates in the Contributory System vary by employer as follows:

Fund 22 - State of Utah	12.29%
Fund 23 - Other Division A	12.29%
Fund 24 - Salt Lake City	13.74%
Fund 25 - Ogden	13.18%
Fund 26 - Provo	13.54%
Fund 27 - Logan	11.13%
Fund 28 - Bountiful	11.94%
Fund 29 - Other Division B	10.50%

7. *Employer Contributions:* The current contribution rates differ between the Contributory and Noncontributory Systems, and also differ depending on which fund (employer or group of employers) the member belongs to. Rates are set by the Board of Trustees, based upon the actuarial valuation report for the preceding year. The Funds included in these Systems are:

Contributory System

Fund 22 - State of Utah (Div A)  
Fund 23 - Other Division A  
Fund 24 - Salt Lake City (Div B)  
Fund 26 - Provo (Div B)  
Fund 27 - Logan (Div B)  
Fund 29 - Other Division B

Noncontributory System

Fund 42 - State of Utah (Div A)  
Fund 43 - Other Division A  
Fund 44 - Salt Lake City (Div B)  
Fund 45 - Ogden (Div B)  
Fund 48 - Bountiful (Div A)  
Fund 49 - Other Division B

The division designation (A or B) distinguishes between those employers covered by Social Security (A) and those not covered (B). Some plan provisions differ depending on the member's division.

8. *Final Average Monthly Salary (FAMS):* The monthly average of the member's highest three salaries preceding retirement.
9. *Service Retirement:*
- a. Eligibility: A member may retire with an unreduced benefit at age 65 with four years of service or at age 60 with 10 years of service or at any age with 20 years of service.
  - b. Monthly Benefit: 2.50% of Final Average Monthly Salary (FAMS) times years of service up to 20 years, plus 2.00% of FAMS times years of service in excess of 20. Benefits are limited to 70% of FAMS.
  - c. Payment Form: For married members benefits are paid as an automatic unreduced Joint and 65% Survivor Annuity. A life annuity is payable to unmarried members (although children's benefits may also be due following the member's death).

10. *Disability Retirement:*

- a. Eligibility: Member must be eligible for retirement under the Disability Act (or a substantially equivalent program) and must not be eligible for a 20-year service retirement at time of disability. Note that not all political subdivisions cover their members under a disability program.
- b. Monthly Benefits Payable Prior to Retirement: A separate fund established under the Disability Act (or an equivalent program) provides benefits from the time of disability until the age specified in 49-21-403. Benefits from this separate fund are not covered by these Systems.
- c. Monthly Benefits Payable after Retirement: An unreduced service retirement benefit is payable. The member receives service credit for time while disabled (both for computing the benefit amount and for determining whether the member is eligible for an unreduced service retirement benefit). Final Average Monthly Salary is increased by the same factors used for automatic cost-of-living benefit increases. I.e., the FAMS is adjusted by a cost-of-living increase up to 2.5% per year (simple interest).
- d. Payment Form: Same as for Service Retirement.
- e. Death while Disabled: A disabled member is treated as an active member for purposes of determining a death benefit for the period prior to retirement.

11. *Vesting and Refunds:*

- a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Members are vested after four years of service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below. (Noncontributory System members hired after July 1, 1989, are ineligible for a refund.)
- b. Amount: The refund benefit is the accumulated value of the member's contributions credited by the fund. For members in the Contributory system, interest is credited on the member's contribution account at 8.0% per year, beginning July 1, 1996. Interest is not credited on the member contribution account for members of the Noncontributory System.

12. *Deferred Termination Benefit:*

- a. Eligibility: Member must be vested (4 years of service) and must elect to leave his/her contributions on deposit.

- b. Monthly Benefit: Same as the service retirement benefit, based on service and FAMS at retirement, and commencing once the member is eligible. The FAMS at retirement is computed as though the member remained in service at his last rate of pay until retirement.
  - c. Payment Form: Same as for service retirement.
  - d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive a refund benefit (or \$500 if larger). The spouse of an inactive member with 20 years of service receives a monthly annuity equal to 50% of the service retirement benefit that would have been paid had the member died immediately prior to retirement. (An actuarial reduction factor is applied if the member was under age 50 at death.)
13. *Death while an Active Member (On Duty)*: If death occurs in the line of duty, the lump-sum and annuity benefits described below will be paid to the spouse. (The benefits are not applicable to unmarried members, although children's benefits may be due.)
- a. Lump-sum (Division A members): \$1,000.
  - b. Annuity (Division A members): 30% of member's FAMS.\*
  - c. Lump-sum (Division B members): \$1,500.
  - d. Annuity (Division B members): 37.5% of member's FAMS.\*
14. *Death of an Active Member (Off Duty)*: If death occurs from a cause not related to the member's duties, the lump-sum and annuity benefits described below will be paid to the spouse. (The benefits are not applicable to unmarried members, although children's benefits may be due.)
- a. Lump-sum (Division A members): If the member has less than 10 years of service, the benefit is \$1,000 or a refund benefit, whichever is larger. If the member has 10 or more years of service, the benefit is \$500.
  - b. Annuity (Division A members): If the member has less than 10 years of service, no annuity is due. For members with 10 or more years of service, the benefit is 2% of FAMS per year of service, to a maximum of 30% of FAMS.\*
  - c. Lump-sum (Division B members): If the member does not have two years of service, the benefit is the sum of 50% of the member's salary plus a refund benefit. If the member has two or more years of service, the benefit is \$1,500.
  - d. Annuity (Division B members): If the member has fewer than two years of service, no annuity is due. If the member has two or more years of service, the annuity is 37.5% of the member's FAMS.\*

\*(Not less than the benefit payable to the surviving spouse if the member had retired the day before the member's date of death.)

15. *Optional Forms of Benefit:* None.
16. *Postretirement Death Benefit:* None, except for survivor benefit applicable to married members.
17. *Postretirement Benefit Increases:* Benefits are increased annually to take into account changes in the cost of living, with a maximum annual increase of 2.5% of the original benefit (i.e., a maximum 2.5% simple interest increase). In years in which the cost of living increases more than 2.5%, the excess increase is accumulated and used in later years in which the cost-of-living increase is less than 2.5%. This calculation is made separately for each individual. In addition, a closed group of retirees also receives a second special increase amount paid as a level annuity under whichever form of payment is applicable. This is the Restoration of Purchasing Power (ROPP) payment.
18. *3% Substantial Substitute:* All members whose service began before January 1, 1989, receive an additional annual payment equal to 3% of their benefit. These payments are made to offset the taxability of the retirement benefits under the State income tax provisions. Prior to July 1, 1995, this benefit was funded by annual appropriations made by the State on a pay-as-you go basis. Beginning July 1, 1995, this benefit is funded on an actuarial basis by increasing the employer contribution rate for those Funds which are funded by the State.

### Summary of Benefit Provisions for Firefighters Retirement System

1. *Effective Date:* July 1, 1971.
2. *Plan Year:* Twelve-month period ending December 31st.
3. *Administration:* The System is administered by a Board of Trustees (which also administers the other Utah Retirement Systems). The Board of Trustees is responsible for both administration of the System and investment of the fund assets.
4. *Type of Plan:* This is a qualified governmental defined benefit retirement plan. Under GASB 25, it is considered to be a cost-sharing multiple-employer plan.
5. *Eligibility:* This System covers eligible firefighters employed by participating local governments in Utah. Eligible employees become participants immediately when hired, and are required to participate. Employers are designated as either Division A (employers with Social Security coverage) or Division B (employers without Social Security coverage). Benefit provisions and contribution rates differ for members of different divisions.
6. *Employee Contributions:* Members contribute a percentage of salary, as shown below. Employers may "pick-up" employee contributions under Section 414(h) of the Internal Revenue Code.

Fund 31 - Division A 15.05%  
Fund 32 - Division B 16.71%

Contribution rates shown may be reduced by expected income from a tax on fire insurance premiums.

7. The current employer contribution rates depend on the Fund. Division A covers employers covered by Social Security and Division B covers other employers. The contribution rates are set by the Board of Trustees, based on the actuarial valuation for the preceding year. Contribution rates are reduced by expected income from a tax on fire insurance premiums. The Funds in this System are:

Fund 31 - Division A  
Fund 32 - Division B

8. *Final Average Monthly Salary (FAMS):* The monthly average of the member's highest three salaries preceding retirement.

9. *Service Retirement:*

- a. Eligibility: A member may retire with an unreduced benefit at age 65 with four years of service or at age 60 with 10 years of service or at any age with 20 years of service.
- b. Monthly Benefit: 2.50% of Final Average Monthly Salary (FAMS) times years of service up to 20 years, plus 2.00% of FAMS times years of service in excess of 20. Benefits are limited to 70% of FAMS. There is a minimum benefit of \$500 per month.
- c. Payment Form: For married members benefits are paid as an automatic unreduced Joint and 75% Survivor Annuity. A life annuity is payable to unmarried members (although children's benefits may also be due following the member's death).

10. *Disability Retirement:*

- a. Eligibility: Member must have five or more years of service or the disability must be related to the member's duties. In addition, the member must not be eligible for a 20-year service retirement at time of disability.
- b. Monthly Benefits: 50% of FAMS.
- c. Payment Form: Same as for Service Retirement once member is age 55.
- d. Death while Disabled: A disabled member is treated as an active member for purposes of determining a death benefit for the period prior to retirement (age 55).

11. *Vesting and Refunds:*

- a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Members are vested after four years of service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.
- b. Amount: The refund benefit is the accumulated value of the member's contributions credited by the fund. Interest is not credited on member contributions.

12. *Deferred Termination Benefit:*

- a. Eligibility: Member must be vested (4 years of service) and must elect to leave his/her contributions on deposit.
- b. Monthly Benefit: Same as the service retirement benefit, based on service and FAMS at termination, and commencing once the member is eligible.
- c. Payment Form: Same as for service retirement.

- d. Death Benefit: The beneficiary of an unmarried inactive member who dies with 20 or more years of service prior to retirement is entitled to receive a refund benefit (or \$500 if larger). The spouse of an inactive member with 20 years of service receives a monthly annuity equal to 50% of the service retirement benefit that would have been paid had the member died immediately prior to retirement. (An actuarial reduction factor is applied if the member was under age 50 at death.) If the inactive member had less than 20 years of service, no death benefit is due.
13. *Death while an Active Member (On Duty)*: If death occurs in the line of duty, the lump-sum and annuity benefits described below will be paid to the spouse. (The benefits are not applicable to unmarried members, although children's benefits may be due.)
- a. Lump-sum (Division A members): \$1,500.
- b. Annuity (Division A members): 30% of member's FAMS.
- c. Lump-sum (Division B members): \$1,500.
- d. Annuity (Division B members): 37.5% of member's FAMS. For members with more than 20 years of service, the annuity is 75% of the retirement benefit earned by the member as of his/her date of death. However, benefits may not be less than the benefit that would have been payable to the surviving spouse if the member had retired immediately prior to death.
14. *Death of an Active Member (Off Duty)*: If death occurs from a cause not related to the member's duties, the lump-sum and annuity benefits described below will be paid to the spouse. (The benefits are not applicable to unmarried members, although children's benefits may be due.)
- a. Lump-sum (Division A members): If the member has less than 10 years of service, the benefit is \$1,000 or a refund benefit, whichever is larger. If the member has 10 or more years of service, the benefit is \$500.
- b. Annuity (Division A members): If the member has less than 10 years of service, no annuity is due. For members with 10 or more years of service, the benefit is 2% of FAMS per year of service, to a maximum of 30% of FAMS.
- c. Lump-sum (Division B members): If the member does not have five years of service, the benefit is the sum of 50% of the member's salary plus a refund benefit. If the member has five or more years of service, the benefit is \$1,500.



- d. Annuity (Division B members): If the member has fewer than five years of service, no annuity is due. If the member has five or more years of service, the annuity is 37.5% of the member's FAMS. For members with more than 20 years of service, the annuity is 75% of the retirement benefit earned by the member as of his/her date of death.
15. *Optional Forms of Benefit*: None.
16. *Postretirement Death Benefit*: None, except for survivor benefit applicable to married members.
17. *Postretirement Benefit Increases*: Benefits are increased annually to take into account changes in the cost of living, with a maximum annual increase of 4% of the original benefit (i.e., a maximum 4% simple interest increase). In years in which the cost of living increases more than 4%, the excess increase is accumulated and used in later years in which the cost-of-living increase is less than 4%. This calculation is made separately for each individual. In addition, a closed group of retirees also receives a second special increase amount paid as a level annuity under whichever form of payment is applicable. This is the Restoration of Purchasing Power (ROPP) payment.
18. *3% Substantial Substitute*: All members whose service began before January 1, 1989, receive an additional annual payment equal to 3% of their benefit. These payments are made to offset the taxability of the retirement benefits under the State income tax provisions. Prior to July 1, 1995, this benefit was funded by annual appropriations made by the State on a pay-as-you go basis. Beginning July 1, 1995, this benefit is funded on an actuarial basis by increasing the employer contribution rate for those Funds which are funded by the State.

### Summary of Benefit Provisions for Judges Retirement System

1. *Effective Date:* July 1, 1963.
2. *Plan Year:* Twelve-month period ending December 31st.
3. *Administration:* The System is administered by a Board of Trustees (which also administers the other Utah Retirement Systems). The Board of Trustees is responsible for both administration of the System and investment of the fund assets.
4. *Type of Plan:* This is a qualified governmental defined benefit retirement plan. Under GASB 25, it is considered to be a single-employer plan.
5. *Eligibility:* This System covers judges of the State of Utah, including Supreme Court justices and appellate, district, circuit and juvenile court judges.
6. *Employee Contributions:* Members of the Contributory System contribute 8.00% of salary per year. The state may "pick-up" a portion (although not all) of the employee contributions under Section 414(h) of the Internal Revenue Code. No contributions are made by members of the Noncontributory System.
7. *Employer Contributions:* Fund 37 (Judges) has a contribution rate which is set by the Board of Trustees, based on the actuarial valuation for the preceding year. The rate is reduced by estimated court fees which are earmarked for this fund.
8. *Final Average Monthly Salary (FAMS):* The monthly average of the member's highest two salaries preceding retirement.
9. *Service Retirement (Unreduced):*
  - a. Eligibility: A member may retire with an unreduced benefit at age 70 with six years of service or after age 62 with 10 years of service or after 25 years of service.
  - b. Monthly Benefit: 5.00% times Final Average Monthly Salary (FAMS) times years of service up to 10, plus 2.25% of FAMS times years of service in excess of 10 but less than 20, plus 1.00% times FAMS times years of service in excess of 20. There is a maximum benefit of 75% of FAMS, and a minimum benefit equal to 110% of the formula benefit (but not greater than \$1,000 per month).
  - c. Payment Form: Married members receive an automatic, unreduced Joint and 65% Survivor annuity. Unmarried members receive a life annuity.

10. *Service Retirement (Reduced):*
  - a. Eligibility: A member may retire with a reduced benefit upon attaining age 55 with 20 years of service.
  - b. Reduction: An actuarial reduction from age 65.
  - c. Payment Form: Same as for unreduced service retirement.
11. *Disability Retirement*: This System has no provisions applying to disability retirement.
12. *Vesting and Refunds*:
  - a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Members are vested after six years of service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.
  - b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund. Interest is credited at 8.0% per year.
13. *Deferred Termination Benefit*:
  - a. Eligibility: Member must be vested (6 years of service) and must elect to leave his/her contributions on deposit.
  - b. Monthly Benefit: Same as the unreduced or reduced service retirement benefit, based on service and FAMS at termination, and commencing once the member is eligible.
  - c. Payment Form: Same as for unreduced service retirement.
  - d. Death Benefit: Same as for an active member.
14. *Death while an Active Member*: A refund of the member's accumulated contributions (with interest) is paid to the beneficiary of a deceased member. In addition, 65% the member's FAMS (annualized) is paid to the spouse if the member was married. Alternatively, the spouse may waive these benefits and elect instead an annuity. The annuity is equal to 65% of the benefit determined using the unreduced service retirement formula, and based on current service and FAMS at the time of death.
15. *Optional Forms of Benefit*: The System permits married members to elect a reduced Joint and 75% Survivor annuity in lieu of the automatic Joint and 65% Survivor annuity. No other optional payment forms are available.
16. *Postretirement Death Benefit*: None, except for the Joint and Survivor annuities available to married members.

17. *Postretirement Benefit Increases:* Benefits are increased annually to take into account changes in the cost of living, with a maximum annual increase of 4% of the current benefit (i.e., a maximum 4% compound interest increase). In years in which the cost of living increases more than 4%, the excess increase is accumulated and used in later years in which the cost-of-living increase is less than 4%. This calculation is made separately for each individual. In addition, judges retired prior to July 1, 1983 received an increase of \$120 per month (\$60 for beneficiaries).
  
18. *3% Substantial Substitute:* All members whose service began before January 1, 1989, receive an additional annual payment equal to 3% of their benefit. These payments are made to offset the taxability of the retirement benefits under the State income tax provisions. Prior to July 1, 1995, this benefit was funded by annual appropriations made by the State on a pay-as-you go basis. Beginning July 1, 1995, this benefit is funded on an actuarial basis by increasing the employer contribution rate for those Funds which are funded by the State.

### Summary of Benefit Provisions for the Governors and Legislative Pension Plan

1. *Effective Date:* July 1, 1967.
2. *Plan Year:* Twelve-month period ending December 31st.
3. *Administration:* The System is administered by a Board of Trustees (which also administers the other Utah Retirement Systems). The Board of Trustees is responsible for both administration of the System and investment of the fund assets.
4. *Type of Plan:* This is a qualified governmental defined benefit retirement plan. Under GASB 25, it is considered to be a single-employer plan.
5. *Eligibility:* This System covers state legislators with four or more years of service, and governors of the state.
6. *Employee Contributions:* None.
7. *Employer Contributions:* The state annually appropriates an actuarially determined contribution.
8. *Benefit base:* The benefit base is used to determine the benefits payable at retirement.
  - a. Legislators: The base was \$10.00 per month per year of service as of July 1, 1967. The base is increased 2% each six months after that date. As of January 1, 2002, the benefit base is therefore \$23.80.
  - b. Governors: The base was \$500.00 per month per term as of July 1, 1973. The base is increased 2% each six months after that date. As of January 1, 2002, the benefit base is therefore \$1,070.00.
  - c. Supplemental Benefit: An additional benefit of \$3.50 per month per year of service. This benefit is not indexed nor are COLAs granted on it. This benefit only applies to members of the System on March 1, 2000 and is effective March 1, 2000.
9. *Service Retirement (Unreduced):*
  - a. Eligibility: Age 65.
  - b. Monthly Benefit: Legislators receive the benefit base (currently \$23.80 per month) per year of service, while former governors receive the benefit base (currently \$1,070.00) for each term served (maximum of two terms).

- c. Payment Form: For married members, a Joint and 50% Survivor annuity. For unmarried members, a life annuity.
10. *Service Retirement (Reduced)*:
  - a. Eligibility: A member may retire with a reduced benefit upon attaining age 62 with 10 years of service, if the member also participates in another System.
  - b. Reduction: The reduction factor applied in the other System to which the member belongs.
  - c. Payment Form: Same as for unreduced service retirement.
11. *Disability Retirement*: This System has no provisions applying to disability retirement.
12. *Vesting and Refunds*: A vested member who made contributions in another System and withdraws them forfeits all benefits under this System.
13. *Deferred Termination Benefit*:
  - a. Eligibility: Same as for reduced or unreduced service retirement. The member must not have withdrawn his/her contributions under another System.
  - b. Monthly Benefit: Same as the unreduced or reduced service retirement benefit, based on service at termination, and commencing once the member is eligible.
  - c. Payment Form: Same as for unreduced service retirement.
  - d. Death Benefit: Same as for an active member.
14. *Death while an Active Member*:
  - a. Eligibility: Four years of service as a legislator or governor.
  - b. Monthly Benefit: 50% of the unreduced service retirement benefit that the member would have been entitled to upon reaching age 65 based on the current benefit base. Benefit is paid to surviving spouse only.
15. *Optional Forms of Benefit*: None.
16. *Postretirement Death Benefit*: None, except for the Joint and Survivor annuity available to married members.
17. *Postretirement Benefit Increases*: Benefits are increased annually to take into account changes in the cost of living, with a maximum annual increase of 4% of the original benefit (i.e., a maximum 4% simple interest increase). In years in which the cost of living increases more than 4%, the excess increase is accumulated and used in later years in which the cost-of-living increase is less than 4%. This calculation is made separately for each individual. Note that the supplemental \$3.50 per month per year of service benefit is not eligible for these increases.

18. *3% Substantial Substitute:* All members whose service began before January 1, 1989, receive an additional annual payment equal to 3% of their benefit. These payments are made to offset the taxability of the retirement benefits under the State income tax provisions. Prior to July 1, 1995, this benefit was funded by annual appropriations made by the State on a pay-as-you go basis. Beginning July 1, 1995, this benefit is funded on an actuarial basis by increasing the employer contribution rate for those Funds which are funded by the State.



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August 15, 2002

Mr. Robert V. Newman  
Executive Director  
Utah Retirement Systems  
540 East 200 South  
Salt Lake City, UT 84102-2099

Dear Bob:

**Subject: Recommended Contribution Rates for the 2003-2004 Fiscal Year**

Column 3 of the enclosed Table 1 shows the employer contribution rates we recommend that the Board approve for the 2003-2004 fiscal year. For comparison purposes we have also shown the employer contribution rates being contributed during the current fiscal year in Column 2. Rates shown include the cost for the 3% substantial substitute, and the rates for the Firefighters and Judges retirement systems are net of their respective offsets. Rates shown, however, do not reflect the 401(k) contribution.

As you are aware, the rates shown on the attached table are different than the actuarially determined rates shown in our actuarial valuation report dated August 8, 2002. The rates shown in the valuation report were calculated on a snapshot basis and, due to the smoothing methodology of the asset valuation method, reflect only a portion of the asset losses that occurred during calendar years 2000 and 2001. Of course these calculated rates do not reflect any of the projected shortfalls from calendar year 2002.

As part of our interactive demonstration at the Board meeting on August 8<sup>th</sup> we showed that these deferred asset losses will be recognized in the upcoming valuations and therefore, in the absence of sizeable liability gains, contribution rates for the different systems will increase significantly over the next few years. One of the Board's desired goals in setting contribution rates is to keep rates relatively stable from year to year. To help the Board achieve this goal, we are recommending that the Board set contribution rates that are at the midpoint between the current contribution rates (rates being paid for fiscal year 2003) and the estimated contribution rates for the 2003 valuation (shown to the Board during the Board meeting on August 8<sup>th</sup>) assuming that the System investments yield the same rate of return for the calendar year that existed at the end of July 2002 (-8.0%). The recommended rates are larger than the rates calculated in the actuarial valuation, except for the Firefighters System and the Governors and Legislators Plan, which continue to require no employer contributions.

For the Firefighter System, both Division A and Division B, and the Judges, we determined the recommended gross contribution rates (ignoring the offsets) under the procedures above. We then applied the current year's offsets to these modified gross rates to determine the net rates.



Mr. Robert V. Newman  
August 15, 2002  
Page 2

Because the net employer contribution rates for the Firefighter funds are zero, and because some offset is still unused, we have applied the unused offset to reduce the member contribution rates for these funds. This is done under a Board policy adopted several years ago.

However, these rates may, like the employer contribution rates, increase in the future, since more of the offset from the fire insurance premium taxes will be applied to the employer contribution rates. Therefore, we have not allowed the offset to reduce the recommended member rate below the current member rate. This means some of the offset will not be used for Division B, and will instead have the effect of increasing the fund's assets, which will ultimately slow down the increase in contribution rates. For Division B, of the 10.35% offset that is available, 0.07% is used to offset the employer rate and 8.88% is used to offset the member rate, leaving 1.40% unused this year. The recommended member contribution rates for these two funds are:

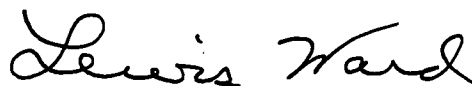
Firefighters Retirement System	Member Contribution Rates	
	Fiscal Year 2003	Fiscal Year 2004
Division A (Fund 31)	7.82%	8.21%
Division B (Fund 32)	7.83%	7.83%

The attached Table 2 shows, for all of the funds, a comparison of the current member and employer contribution rates with the recommended rates for the 2003-2004 fiscal year.

Please note that the estimated contribution rates for the 2003 valuation not only assumed that the investment performance for the remainder of 2002 would remain at the current level, but they also assumed that there would be no other actuarial gains or losses during the 2002 calendar year.

If you have any questions or need additional information please do not hesitate to call.

Sincerely,  
Gabriel, Roeder, Smith & Company



Lewis Ward  
Consultant



J. Christian Conradi  
Senior Consultant

kb

Enclosure

3012/2002/valuation/recommended rates\_revised.doc

## Utah Retirement Systems

**Table 1**

### Comparison of Current and Recommended Employer Contribution Rates

Fund/Division (1)	Current Fiscal Year Contribution Rates (2)	2003-2004 Recommended Contribution Rates (3)
I. Public Employees Contributory		
A. Local Government	4.68%	5.61%
B. State and School	5.91%	7.21%
II. Public Employees Noncontributory		
A. Local Government	8.69%	9.62%
B. State and School	10.40%	11.70%
III. Public Safety Contributory		
A. State	8.05%	10.02%
B. Other Division A	2.17%	4.52%
C. Salt Lake City	15.50%	17.61%
D. Provo	9.47%	10.85%
E. Logan	3.66%	5.97%
F. Other Division B	7.34%	9.47%
IV. Public Safety Noncontributory		
A. State	18.94%	21.15%
B. Other Division A	13.89%	16.24%
C. Salt Lake City	28.27%	30.05%
D. Ogden	17.98%	20.85%
E. Bountiful	17.41%	18.63%
F. Other Division B	17.66%	19.42%
V. Firefighters		
A. Division A	0.00%	0.00%
B. Division B	0.00%	0.00%
VI. Judges	4.92%	7.08%
VII. Governors and Legislative	0.00%	0.00%

Note: Rates shown for Firefighters and Judges are net of offsets.

## Utah Retirement Systems

### Table 2

#### Comparison of Current and Recommended Member and Employer Contribution Rates

Fund/Division (1)	2002-2003 Contribution Rates			2003-2004 Recommended Rates		
	Member	Employer	Total	Member	Employer	Total
	(2)	(3)	(4)	(5)	(6)	(7)
I. Public Employees Contributory						
A. Local Government	6.00%	4.68%	10.68%	6.00%	5.61%	11.61%
B. State and School	6.00%	5.91%	11.91%	6.00%	7.21%	13.21%
II. Public Employees Noncontributory						
A. Local Government	0.00%	8.69%	8.69%	0.00%	9.62%	9.62%
B. State and School	0.00%	10.40%	10.40%	0.00%	11.70%	11.70%
III. Public Safety Contributory						
A. State	12.29%	8.05%	20.34%	12.29%	10.02%	22.31%
B. Other Division A	12.29%	2.17%	14.46%	12.29%	4.52%	16.81%
C. Salt Lake City	13.74%	15.50%	29.24%	13.74%	17.61%	31.35%
D. Provo	13.54%	9.47%	23.01%	13.54%	10.85%	24.39%
E. Logan	11.13%	3.66%	14.79%	11.13%	5.97%	17.10%
F. Other Division B	10.50%	7.34%	17.84%	10.50%	9.47%	19.97%
IV. Public Safety Noncontributory						
A. State	0.00%	18.94%	18.94%	0.00%	21.15%	21.15%
B. Other Division A	0.00%	13.89%	13.89%	0.00%	16.24%	16.24%
C. Salt Lake City	0.00%	28.27%	28.27%	0.00%	30.05%	30.05%
D. Ogden	0.00%	17.98%	17.98%	0.00%	20.85%	20.85%
E. Bountiful	0.00%	17.41%	17.41%	0.00%	18.63%	18.63%
F. Other Division B	0.00%	17.66%	17.66%	0.00%	19.42%	19.42%
V. Firefighters						
A. Division A						
1. Gross Rate	15.05%	1.65%	16.70%	15.05%	3.51%	18.56%
2. Less Estimated Offset	<u>-7.23%</u>	<u>-1.65%</u>	<u>-8.88%</u>	<u>-6.84%</u>	<u>-3.51%</u>	<u>-10.35%</u>
3. Net Rate	7.82%	0.00%	7.82%	8.21%	0.00%	8.21%
B. Division B						
1. Gross Rate	16.71%	0.00%	16.71%	16.71%	0.07%	16.78%
2. Less Estimated Offset	<u>-8.88%</u>	<u>0.00%</u>	<u>-8.88%</u>	<u>-8.88%</u>	<u>-0.07%</u>	<u>-8.95%</u>
3. Net Rate	7.83%	0.00%	7.83%	7.83%	0.00%	7.83%
VI. Judges						
A. Gross Rate	0.00%	23.32%	23.32%	0.00%	25.14%	25.14%
B. Less Estimated Offset	<u>-0.00%</u>	<u>-18.40%</u>	<u>-18.40%</u>	<u>-0.00%</u>	<u>-18.06%</u>	<u>-18.06%</u>
C. Net Rate	0.00%	4.92%	4.92%	0.00%	7.08%	7.08%
VII. Governors and Legislative	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%