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Long-Term Economic Assumptions



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Today's Presentation

- Highlights from Report on Long-Term Economic Assumptions
- LEOFF general salary growth experience
- Recommendation and impacts
- Next steps



Summary Of Report On Long-Term Economic Assumptions

- All current assumptions reasonable, but not representative of my best estimate
- Several changes in long-term economic assumptions recommended
 - Supporting data and analysis in full report
 - Reviewed at last month's meeting with exception of general salary growth for LEOFF
- Adopting recommendation will improve plan health and lessen financial risks
 - Will not increase short-term budget impacts for LEOFF 2
- Phase-in not recommended or required for LEOFF 2



Several Assumption Changes Recommended

| Assumption | Current | Recommended |
|--------------------------|---------|-------------|
| Inflation | 3.50% | 3.00% |
| General salary growth | 4.50%* | 3.75% |
| Annual investment return | 8.00% | 7.50% |

** 4.00% for all other plans.*



Inflation And Investment Return Assumptions

- Reviewed at last month's meeting
- Same recommendations for LEOFF 2
- Supporting information in Appendix
 - Full analysis found in Report on Long-Term Economic Assumptions



General Salary Growth

- Assumption used to project salaries to determine future retirement benefits and contribution rates as a percentage of payroll
- Components of general salary growth assumption
 - Inflation
 - Productivity growth
- Service-based salary increases included in plan-specific demographic assumptions
 - General salary growth and service-based increases model total salary growth
- Recommending a decrease in general salary growth assumption due to recommended reduction in inflation assumption and past experience
- Economic forecasts we reviewed for inflation, and capital market assumptions from WSIB, suggest lower economic growth over next 15-20 years than what occurred in the past



General Salary Growth Experience

| General Salary Growth Experience 1984 - 2010 | | | |
|---|--------------------|-----------------------|-----------------------------|
| | Observed Inflation | Observed Productivity | Total General Salary Growth |
| PERS | 3.04% | 0.82% | 3.86% |
| TRS | 3.04% | 0.83% | 3.87% |
| SERS | 3.04% | 0.37% | 3.41% |
| WSPRS | 3.04% | 0.74% | 3.78% |
| LEOFF | 3.04% | 0.42% | 3.46% |

Note: Supporting analysis for LEOFF found in meeting handout.



Growth In System Membership

- Not applicable to LEOFF Plan 2 funding
- Assumption used in amortization of Plan 1 UAAL in PERS and TRS
- Formerly used in LEOFF Plan 1 funding method
- I don't recommend use of former LEOFF 1 funding method should UAAL re-emerge



No Short-Term Budget Impacts For LEOFF 2

- Current rates adopted by the Board are above underlying valuation rates using both current and recommended assumptions
- No resulting impacts on 2013-15 contribution rates or budgets for LEOFF 2
- Phase-in not recommended or required for LEOFF 2



Refresher On Contribution Rates

- Calculation requires the application of an actuarial cost method
 - Board selected the “Aggregate” method
 - Also referred to as “underlying valuation rate”
- Rate stability and adequacy added by applying minimum contribution rates
 - “Minimum” rates



Minimum Rates

- Based on 90 percent of normal cost under Entry Age Normal cost method
 - Entry Age Normal Cost (EANC)
- EANC represents long-term cost of plan if
 - Benefits don't change
 - All assumptions are realized
- In 2010 Board adopted contribution rates for 2011-17 based on 100 percent of EANC
 - Rates adopted for three biennia
 - Policy decision to provide additional rate stability in light of expected contribution rate increases



Contribution Rate Analysis

| LEOFF 2 | | |
|--------------------|---------------------|-------------------------|
| Member Rates* | Current Assumptions | Recommended Assumptions |
| Aggregate Rate | 5.43% | 6.37% |
| 90% EANC Rate | 7.35% | 7.56% |
| 100% EANC Rate | 8.17% | 8.41% |
| Board Adopted Rate | 8.46% | 8.46% |

**Aggregate and EANC rates based on June 30, 2010, Actuarial Valuation Report. Rates exclude any supplemental rate for HB 2070.*



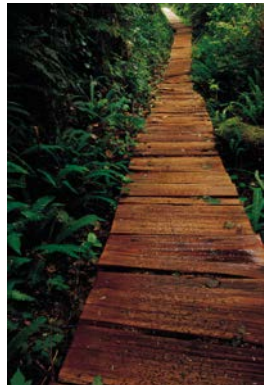
Concluding Remarks On Economic Assumptions

- All current assumptions reasonable, but not representative of my best estimate
- Several changes in long-term economic assumptions recommended
- Adopting recommendation will improve plan health and lessen financial risks
 - Will not increase short-term budget impacts for LEOFF 2
- Phase-in not recommended or required for LEOFF 2



Next Steps

- Pension Funding Council may adopt changes to economic assumptions for other state plans by October 31st
 - Subject to revision by Legislature
- PFC will meet on October 24th
- Board may adopt changes to economic assumptions for LEOFF 2 at any time
- Review projected rates under both current and recommended assumptions?
- Review impacts on 401(h) rates should the Board decide to change assumptions



Questions?





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Appendix

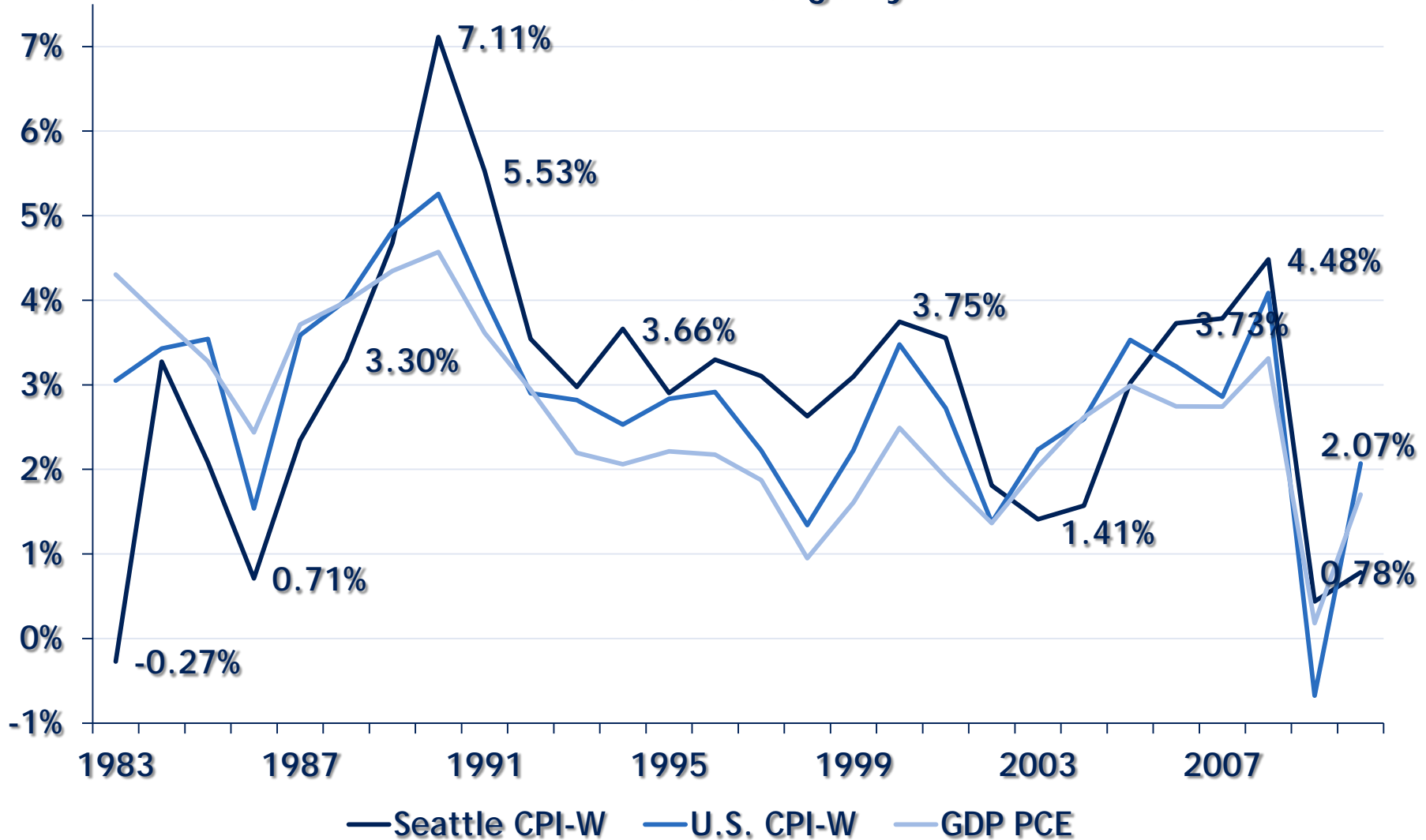
Inflation

- Assumption used to model post-retirement COLAs based on changes in CPI for Seattle, Tacoma, Bremerton
- Also used as a “building block” for general salary growth and nominal rate of return assumption
- Components of total inflation assumption
 - Broad economic inflation
 - Adjustments for national and regional price inflation
- Recommending a decrease in total inflation assumption due to decrease in average total inflation over past 20 years and expectations of lower future inflation

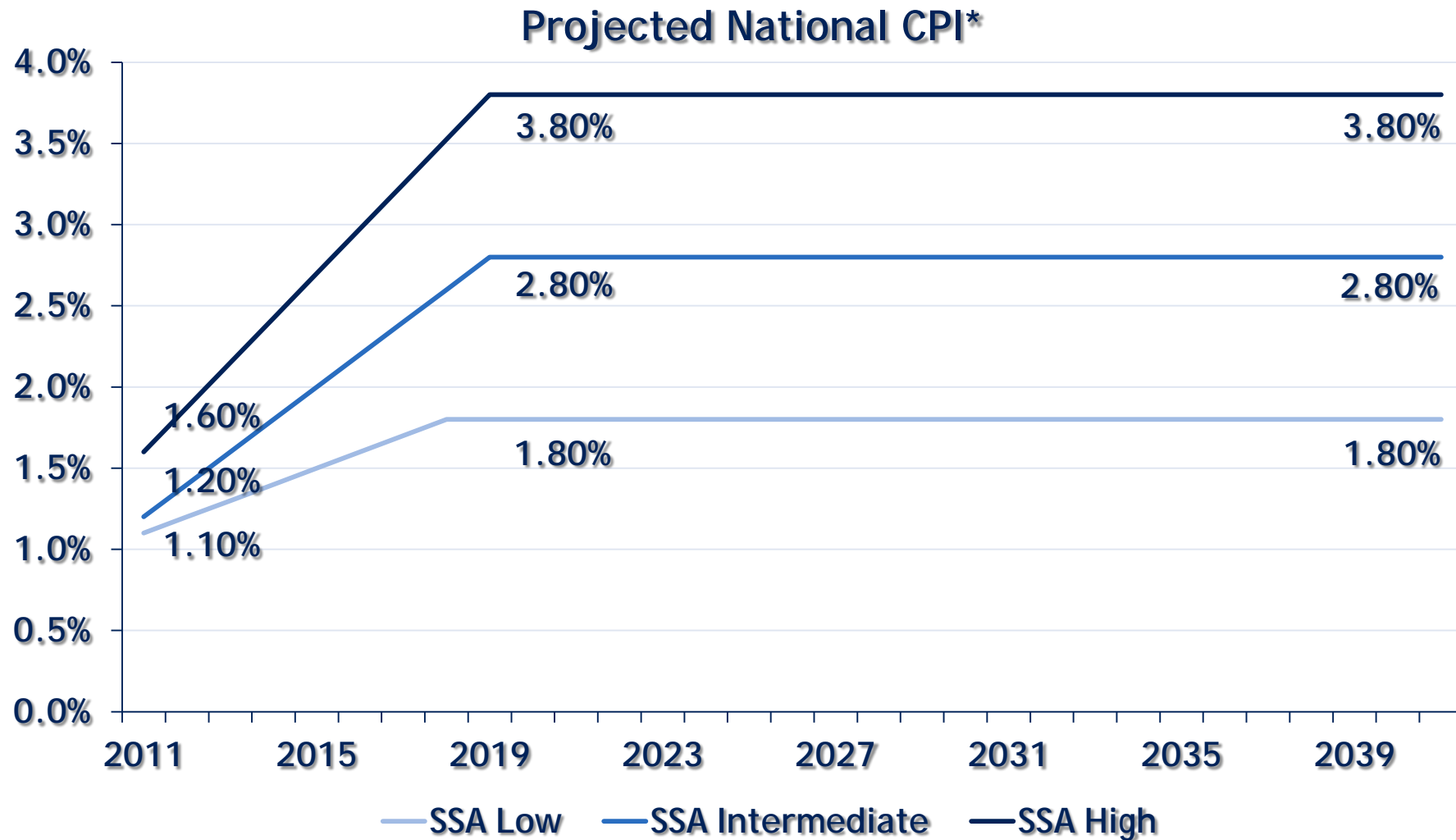


Historical Inflation Data

Annual Percent Change By Year



Social Security Administration's CPI Forecasts



* SSA does not provide a year-by-year projected national CPI forecast. We linearly interpolated the years between 2011 and the ultimate rate year. Please see the full report for more details.

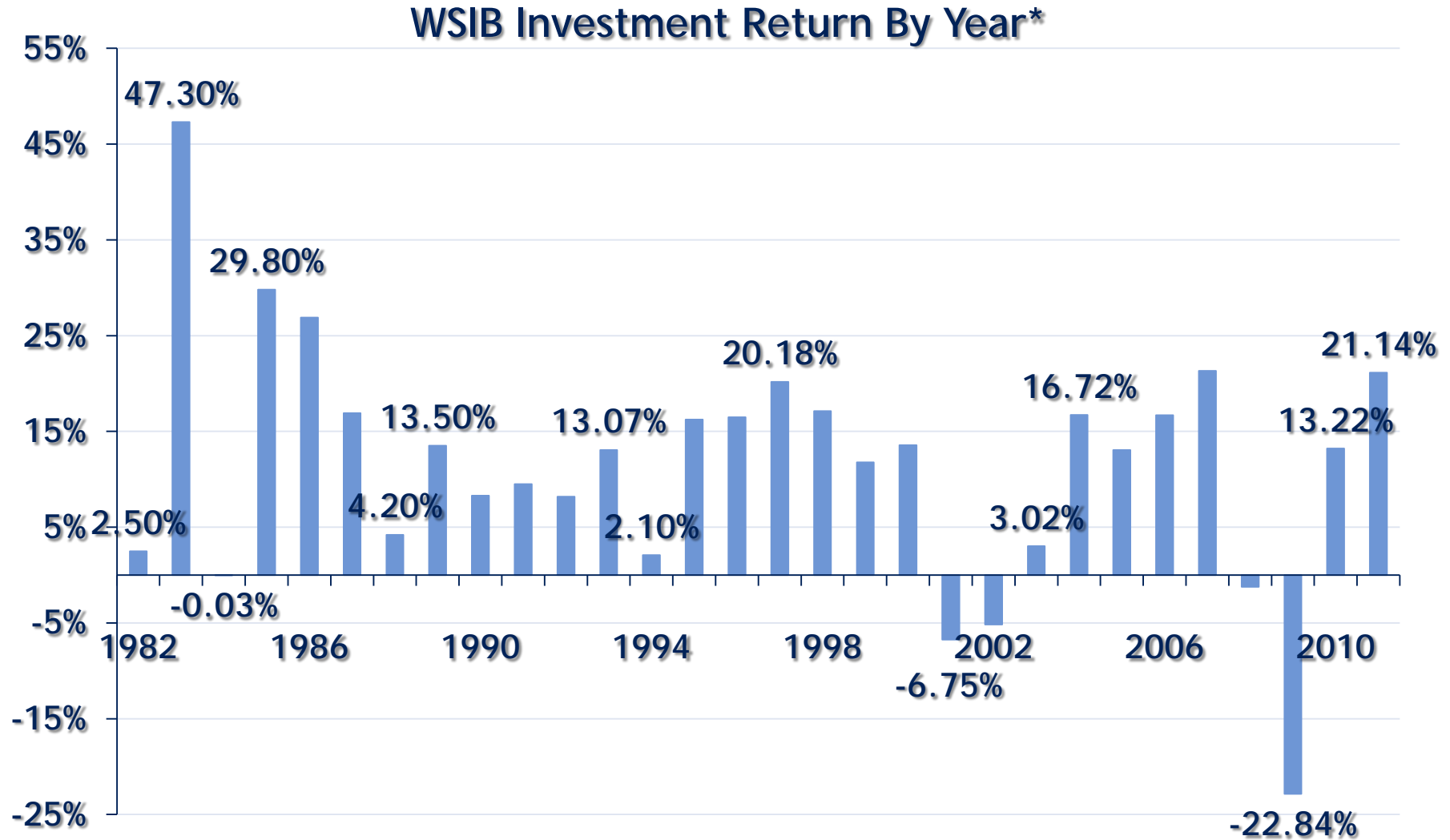


Annual Investment Return

- Assumption used to determine today's value of future benefit payments and salaries
- Key assumption for determining contribution requirements
- Components of annual investment return assumption
 - Inflation
 - Real rate of return
- Recommending a decrease in annual investment return assumption consistent with WSIB's capital market assumptions
- I don't expect historical conditions that produced strong investment markets of the past to repeat for some time



Historical Investment Returns



*Fiscal year ending June 30.



Simulated Future Investment Returns

| Simulated Future Returns* | | |
|---------------------------|----------|----------|
| Measurement Period | | |
| | 15 Years | 50 Years |
| 75th percentile | 10.14% | 8.95% |
| 60th percentile | 8.50% | 8.04% |
| 55th percentile | 8.01% | 7.76% |
| Expected Return | 7.52% | 7.49% |
| 45th percentile | 7.04% | 7.22% |
| 40th percentile | 6.55% | 6.94% |
| 25th percentile | 4.94% | 6.03% |

* Based on WSIB's capital market assumptions.





LEOFF General Salary Growth

October 26, 2011

| Growth in Salaries for Members Active for Three Consecutive Years | | | | | | | |
|---|----------------------------|-----------------------------|-------------------------------|---------------------------------|----------------------------------|------------------------------------|-----------------------------------|
| LEOFF - 1984 to 2010 | | | | | | | |
| Year of Service | Average Increase in Salary | Average Observed Inflation* | Average Observed Productivity | Average Observed Merit Increase | Currently Assumed Merit Increase | Cumulative Observed Merit Increase | Cumulative Assumed Merit Increase |
| 0 | | | | | | | |
| 1 | 14.97% | 3.04% | 0.42% | 11.13% | 11.00% | 111.13% | 111.00% |
| 2 | 11.53% | 3.04% | 0.42% | 7.80% | 7.70% | 119.80% | 119.55% |
| 3 | 9.60% | 3.04% | 0.42% | 5.93% | 6.10% | 126.90% | 126.84% |
| 4 | 7.48% | 3.04% | 0.42% | 3.89% | 4.00% | 131.84% | 131.91% |
| 5 | 6.43% | 3.04% | 0.42% | 2.87% | 2.80% | 135.62% | 135.61% |
| 6 | 5.54% | 3.04% | 0.42% | 2.01% | 2.00% | 138.35% | 138.32% |
| 7 | 4.92% | 3.04% | 0.42% | 1.41% | 1.60% | 140.31% | 140.53% |
| 8 | 4.89% | 3.04% | 0.42% | 1.38% | 1.50% | 142.24% | 142.64% |
| 9 | 4.70% | 3.04% | 0.42% | 1.20% | 1.40% | 143.94% | 144.64% |
| 10 | 5.32% | 3.04% | 0.42% | 1.80% | 1.70% | 146.53% | 147.10% |
| 11 | 4.77% | 3.04% | 0.42% | 1.27% | 1.30% | 148.39% | 149.01% |
| 12 | 4.75% | 3.04% | 0.42% | 1.25% | 1.30% | 150.25% | 150.94% |
| 13 | 4.60% | 3.04% | 0.42% | 1.10% | 1.30% | 151.90% | 152.91% |
| 14 | 4.89% | 3.04% | 0.42% | 1.38% | 1.30% | 154.00% | 154.89% |
| 15 | 4.96% | 3.04% | 0.42% | 1.45% | 1.30% | 156.24% | 156.91% |
| 16 | 4.48% | 3.04% | 0.42% | 0.99% | 1.10% | 157.78% | 158.63% |
| 17 | 4.64% | 3.04% | 0.42% | 1.15% | 1.10% | 159.59% | 160.38% |
| 18 | 4.67% | 3.04% | 0.42% | 1.17% | 1.10% | 161.46% | 162.14% |
| 19 | 4.65% | 3.04% | 0.42% | 1.15% | 1.10% | 163.32% | 163.93% |
| 20 | 4.96% | 3.04% | 0.42% | 1.45% | 1.10% | 165.69% | 165.73% |

* Average change in the CPI-W, Seattle, Tacoma, Bremerton, from 1984 to 2010.

Increase in salary = $(1 + \text{observed inflation} + \text{observed productivity}) * (1 + \text{observed merit}) - 1$