

LEOFF 2 Demographics and Risk Measures

Presentation to:

LEOFF Plan 2 Retirement Board

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Today's Presentation

- LEOFF Plan 2 demographics related to plan maturity
- Mature plans have unique risks
- OSA monitors demographics and risk
- Management strategies for the Board

- Informational — No Board action required today



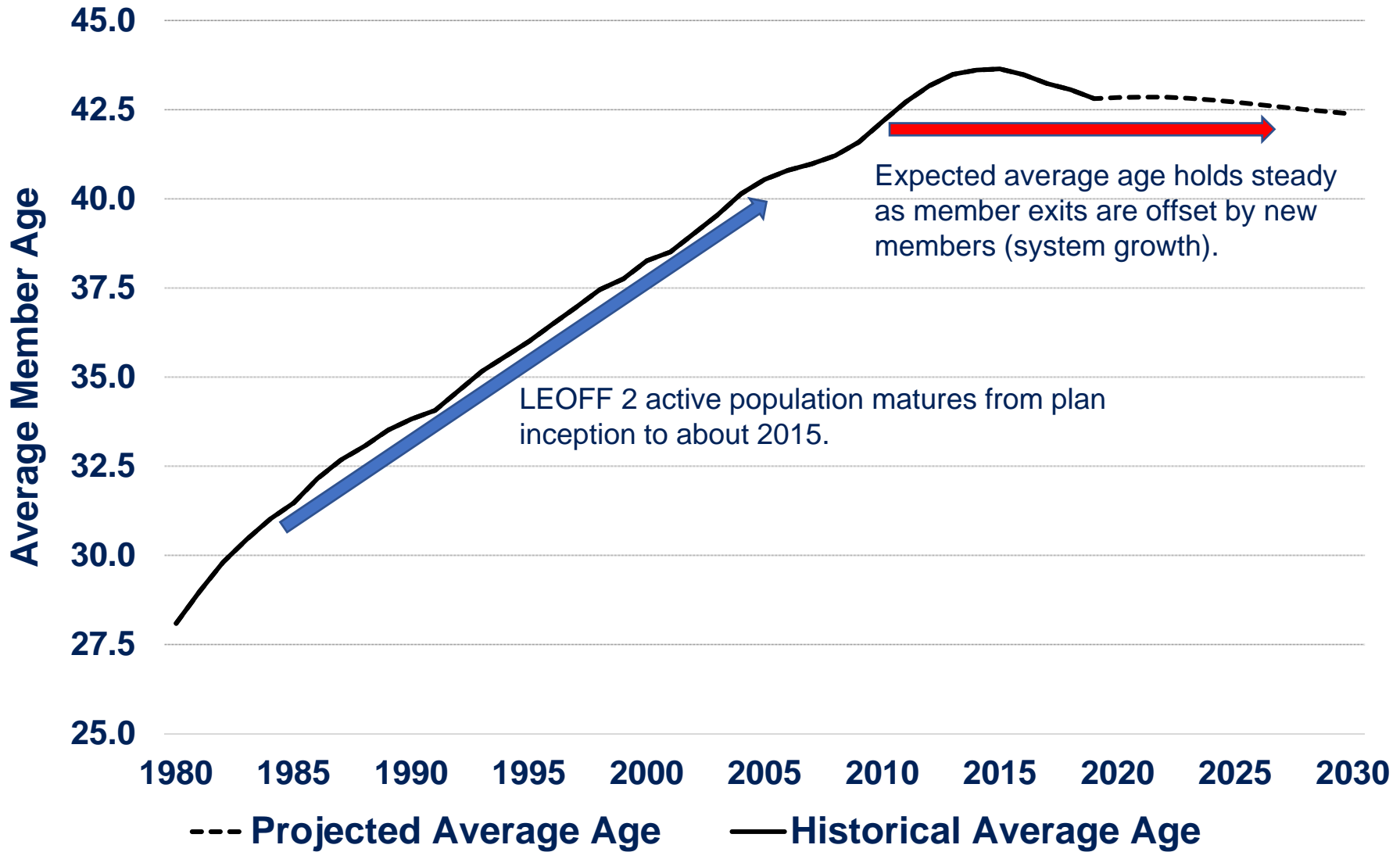
Why are Plan Demographics Important?

- Helps us understand the plan better
 - How plan provisions impact the population
 - How contribution rates react when experience differs from assumptions
 - Where the system is headed and how risks may emerge or change in the future
- Defined by statistics such as average age, benefit, and salary

LEOFF 2 Demographics

LEOFF 2				
	2016	2017	2018	2019
Actives				
Headcount	17,186	17,694	18,130	18,557
Average Annual Salary	\$103,900	\$106,200	\$109,300	\$114,100
Average Age	43.5	43.2	43.1	42.8
Average Service	14.5	14.2	13.9	13.6
Annuitants				
Headcount	4,259	4,851	5,436	6,064
Average Annual Benefit	\$44,700	\$46,700	\$48,800	\$50,900
Actives to Annuitants	4.0	3.6	3.3	3.1

LEOFF 2 Average Active Member Age



Closed Plan Ages Continue to Rise

Average Active Member Ages by Plan System	
PERS 1	66.6
PERS 2/3	46.7
LEOFF 1	67.8
LEOFF 2	42.8

- Closed plans do not have new hires to offset aging population
- Open plans eventually reach stable average member age
 - Estimate average LEOFF 2 new hires enter plan at about age 30

What is Plan Maturity Risk?

- Mature pension plans face specific risks related to aging demographics
- Higher proportion of retired members compared to actives
 - Fewer members to make extra contributions needed if plan experience is worse than expected
 - Possible liquidity risks in negative cash flow situation (benefit payments exceed contributions)
- Ratio of plan assets to active member payroll continues to increase
 - Potential volatility in contribution rates from short-term investment shocks
 - Funding policies such as asset smoothing mitigate risk

LEOFF 2 Maturity Risks

- An open plan like LEOFF 2 faces much lower maturity risk than a closed plan
 - New members slow plan maturity
- The average active LEOFF 2 plan member has matured to about “mid-career”
 - Still provides solid salary base to collect contributions over and weather economic downturns
- OSA tracks and publishes information on risk to our [Commentary on Risk](#) webpage

New Retirements Impact Plan Maturity

Percent of Active Members Eligible to Retire	
System	
LEOFF 2	25%
PERS 2/3	18%
TRS 2/3	19%
SERS 2/3	24%

- Mature retirement systems generally have a higher portion of the active population eligible to retire
- The four largest WA retirement systems all show similar levels of retirement eligible members as of June 30, 2019
- LEOFF 2 members generally work beyond the plans normal retirement age leading to a larger percent eligible for retirement

Retirements Occur Over Several Ages

Retirement Rates*	
Age	Rate
50	3%
51	3%
52	5%
53	9%
54	9%
55	9%
56	9%
57	10%
58	14%
59	15%
60	15%

*Retirement rates continue to 100% retirement at age 70.

- We use our retirement rates assumption to determine the chance or probability members retire
- For example, age 53 retirement eligible member has a 9% chance to retire that year
- Our model projects a member into the future by applying the chance of retirement at each future age
- Our assumption estimates about 2,500 of the 4,700 retirement eligible members retire over the next 5 years.

OSA Monitors Demographics Regularly

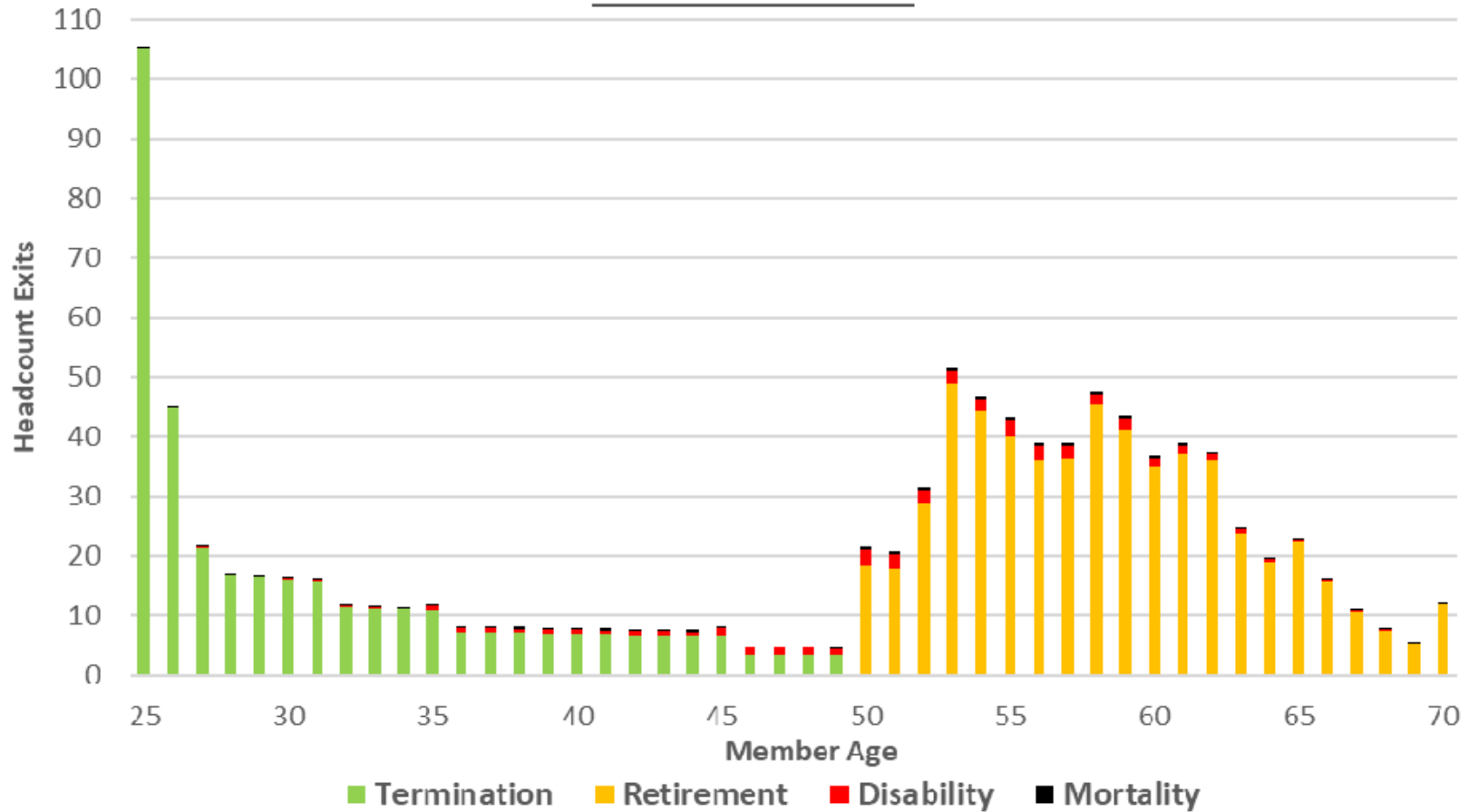
- We review data changes annually as part of the actuarial valuation
- We formally set and update demographic assumptions every 6 years
 - usually involves 20+ years of plan data
- All assumptions are considered for reasonability with each annual valuation

Actual and Expected LEOFF 2 Retirements*			
Plan 2 (Males & Females)			
Age	Actual	Assumption Expected	
		Old	New
50-54	1,284	1,583	1,433
55-59	1,500	1,707	1,606
60-64	760	805	805
65-69	179	138	166
70+	10	27	27
Total	3,733	4,260	4,037

*Retirement data studied in the [2013-18 Demographic Experience Study](#). Please see full report for details on study methods.

Modeling 1,000 Age 25 New Hires

Under New Rates



Exits	Terminations	Retirements	Disabilities	Deaths
Old Rates	370	550	50	30
New Rates	360	580	40	20

How Could the Future Look Different?

- What if the plan experienced a large and unexpected shift in demographics such as an increase in terminations or retirements?
 - Experience included in the next actuarial valuation
 - May impact the calculated contribution rates
 - OSA would consider if changes to long-term assumptions are necessary
- Minimum contribution rates under current funding policy offer resilience to unexpected demographic changes
 - Contribution rates under the Aggregate cost method more volatile

Impacts of Demographic Changes

Impact on Contribution Rates and Funded Status			
	2019 AVR	700 Terminations	90 Terminations, 90 Retirements
Total Employer Contribution Rates			
Aggregate Rate	5.81%	(0.25%)	0.01%
100% Minimum Rate*	8.53%	(0.01%)	0.00%
Impact on Funded Status			
Funded Status	111%	0.3%	(0.20%)

Please see our full letter to the LEOFF 2 Board provided in the [September 2020 meeting materials](#).

*Calculated from Normal Cost of Entry Age Normal Cost Method.

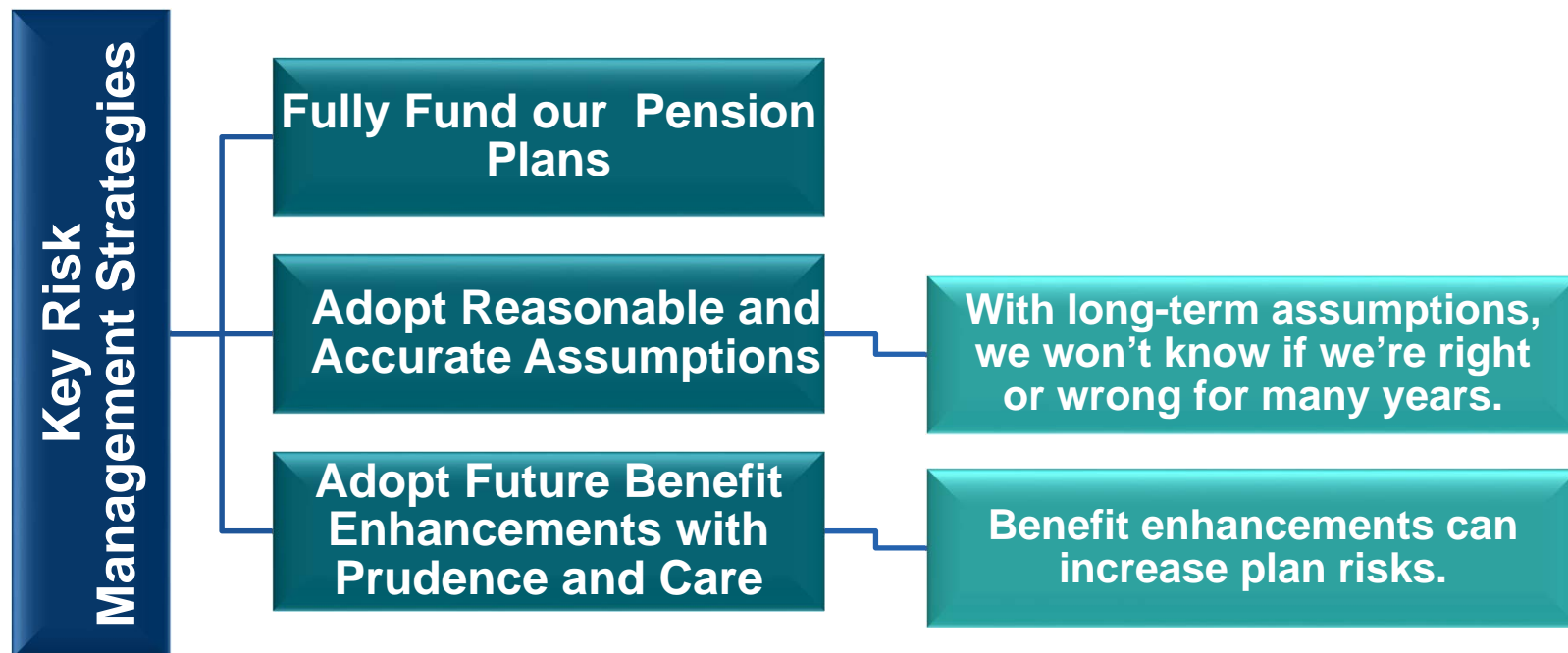
- Scenario analysis for reducing Seattle PD membership
- The 100% minimum rate shows significantly less volatility than the Aggregate rate

OSA Risk Measures/Reporting

- We update select risk measures annually
- Every 5-6 years, we perform a risk assessment assumptions study
- Commentary on risk webpage consolidates and explains plan risk measures
 - Updated in September to include plan-specific and combined risk measurements

Some Risk Management Strategies

- OSA's risk assessment work and the addition of ASOP 51 will help keep these risks in front of us
 - "What gets measured, gets managed"



*Questions? Please Contact:
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Thank You



Sources and Disclosures

- We prepared this presentation to assist the LEOFF 2 Board in understanding certain demographic aspects of the LEOFF 2 system at their October 21 meeting
 - Please do not rely on this analysis beyond this meeting or for other purposes
- We relied on the [2019 Actuarial Valuation and Projection Methods](#) to produce this analysis
 - Please see our website for more information
- Lisa Won, ASA, FCA, MAA, served as the reviewing and certifying actuary of this work product