

Independent Actuarial Analysis and Recommendations

Preliminary Recommendations
Based on 2022 Actuarial Valuation

November 9, 2023

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Agenda



Background

Benefit and Contribution Considerations

Preliminary Recommended Alternatives

Questions

Independent Actuarial Analysis

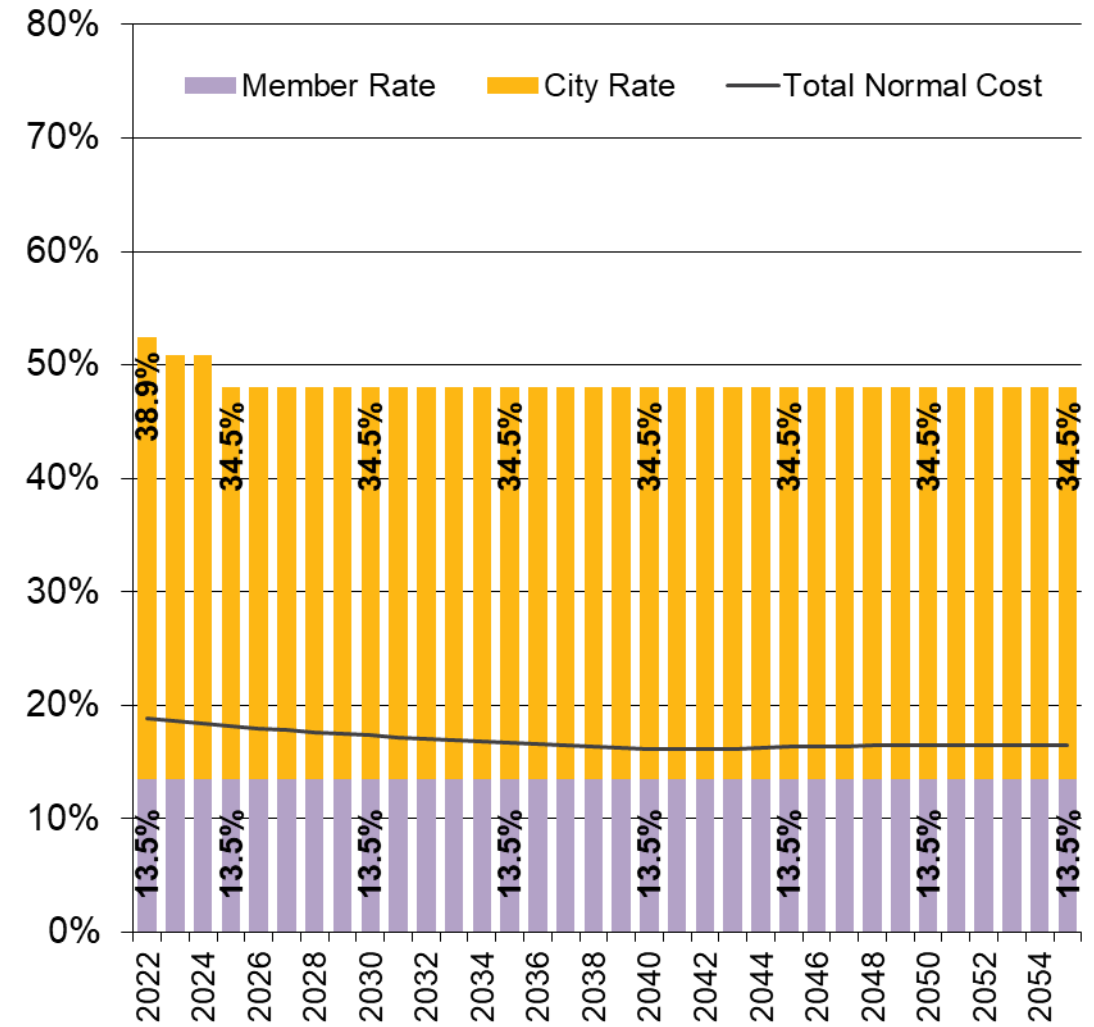
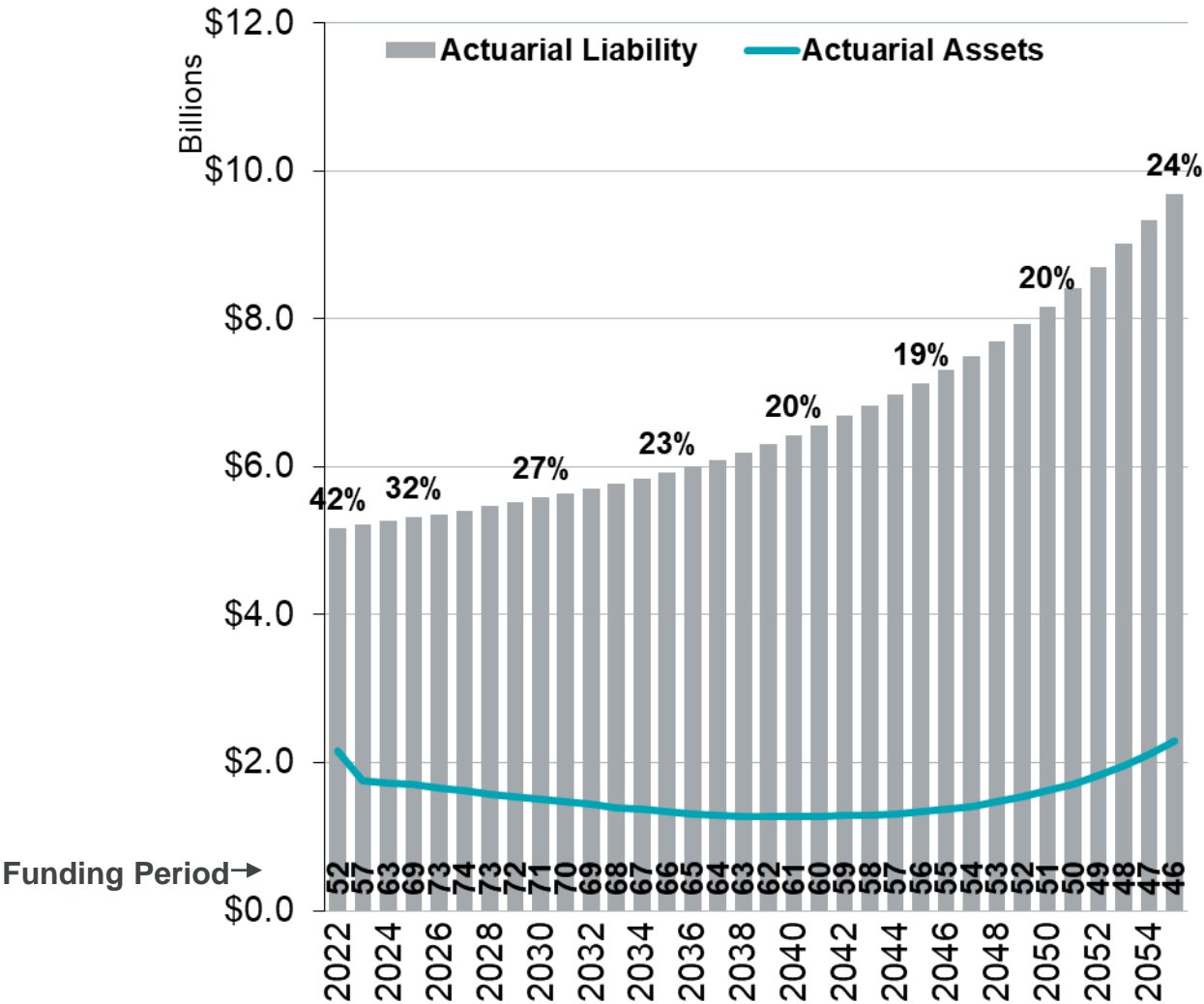


- Pension Review Board selected Cheiron as the Independent Actuary
- Analysis required
 - Does system meet funding guidelines of Chapter 802 of Texas Government Code?
 - Funding period achieved and maintained ≤ 30 years
 - Make recommendations regarding:
 - Changes to benefits
 - Changes to member contributions
 - Changes to City contributions
- Board action by 11/1/2024
 - Complying with funding requirements of Chapter 802
 - Taking into consideration recommendations of Independent Actuary

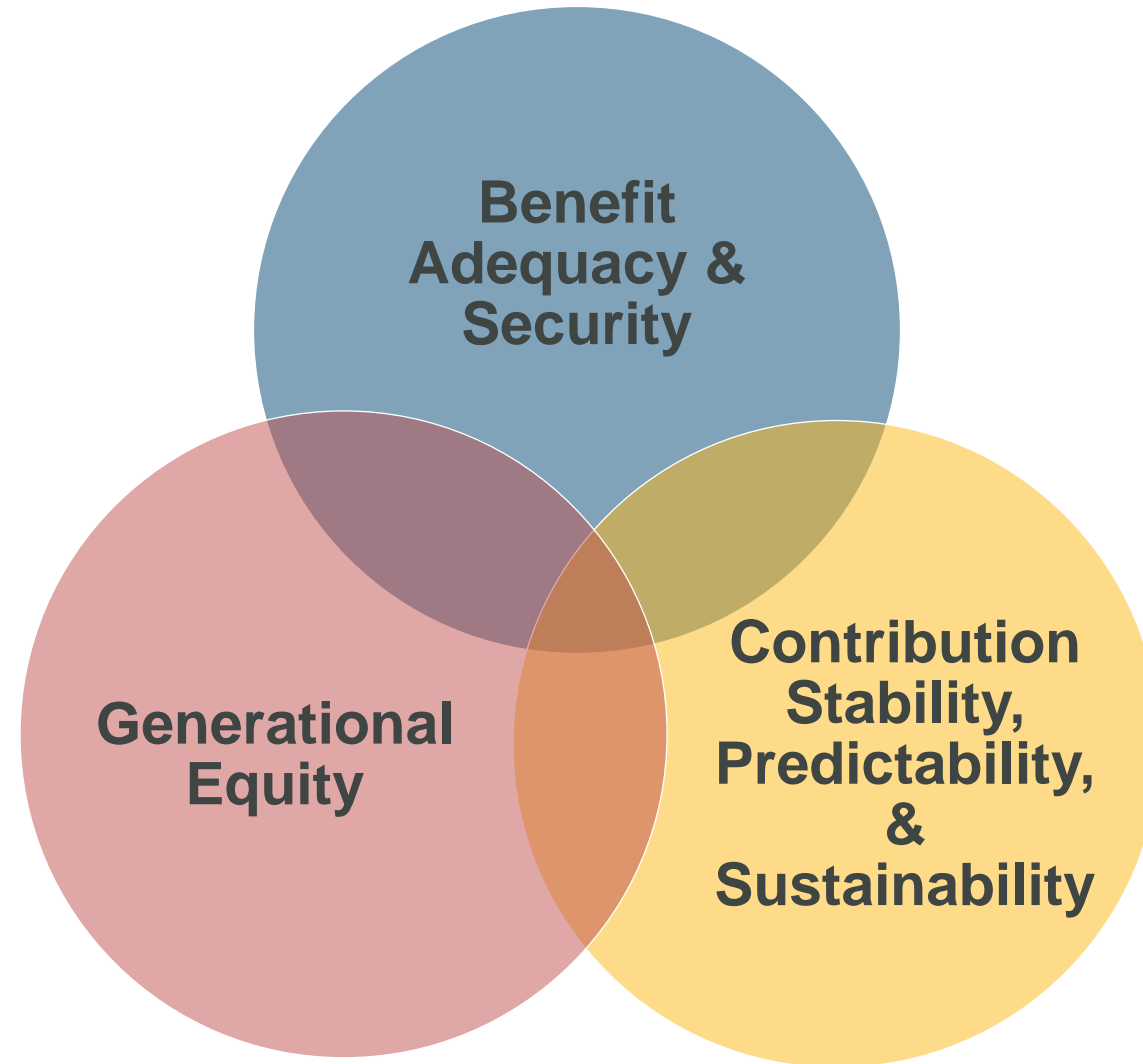


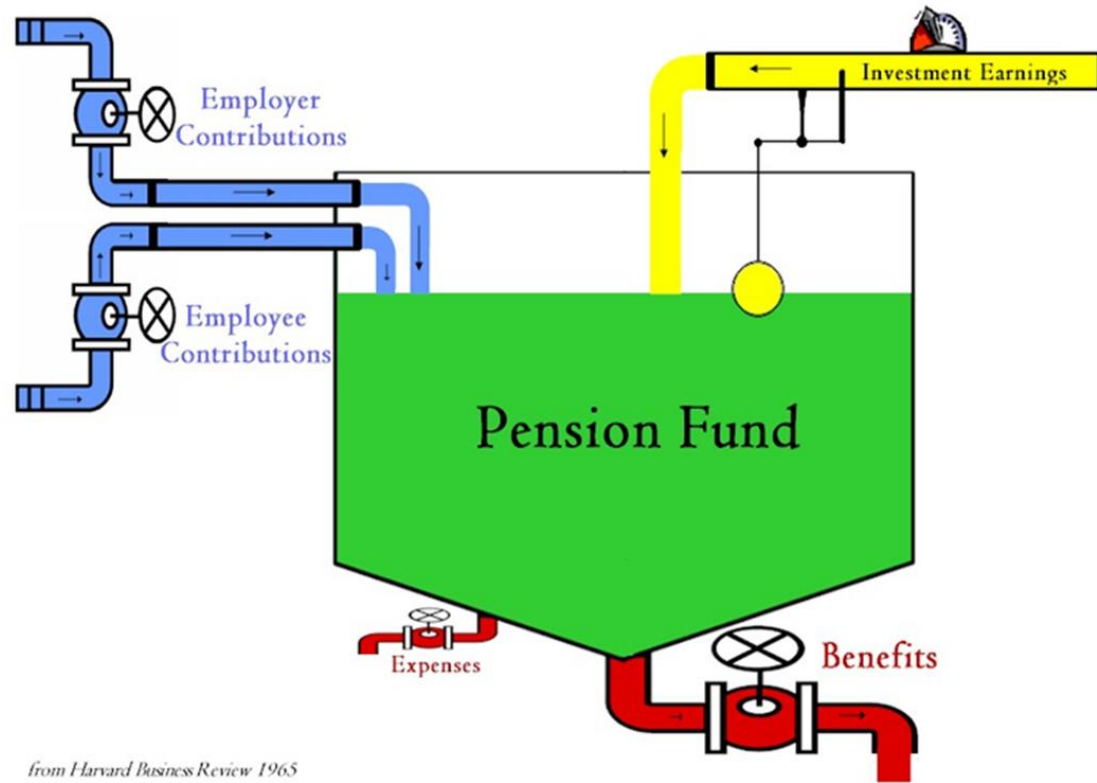
- ✓ Replicate 2022 Valuation Performed by Segal
- ✓ Build Interactive Models
- ✓ Develop Alternative Contribution/Benefit Scenarios (At least 3)
- Draft Report and Presentation Based on 2022 Actuarial Valuation
 - Feedback from Board
 - Refinement of Options
- Replicate 2023 Valuation Performed by Segal
- Preliminary Report and Presentation
- Final Report
 - Texas Pension Review Board
 - Dallas Police & Fire Pension System Board
 - City of Dallas

Current Situation – 2022 Valuation Projections



Any Solution Must Balance Competing Objectives





$$\begin{aligned} & \text{Contributions} \\ & + \\ & \text{Investment Returns} \\ & = \\ & \text{Benefits} \\ & + \\ & \text{Expenses} \end{aligned}$$



- City's fixed rate contribution needs to move to an Actuarially Determined Contribution (ADC)
- Member contribution rate shouldn't increase any further and may need to decrease over time
- Member benefits
 - No change recommended to the benefit multiplier (2.5%) or retirement age (58)
 - Consider granting some COLAs sooner to protect the adequacy of retirees' lifetime income and to be competitive with other public safety plans

Key Considerations for Alternative Scenarios



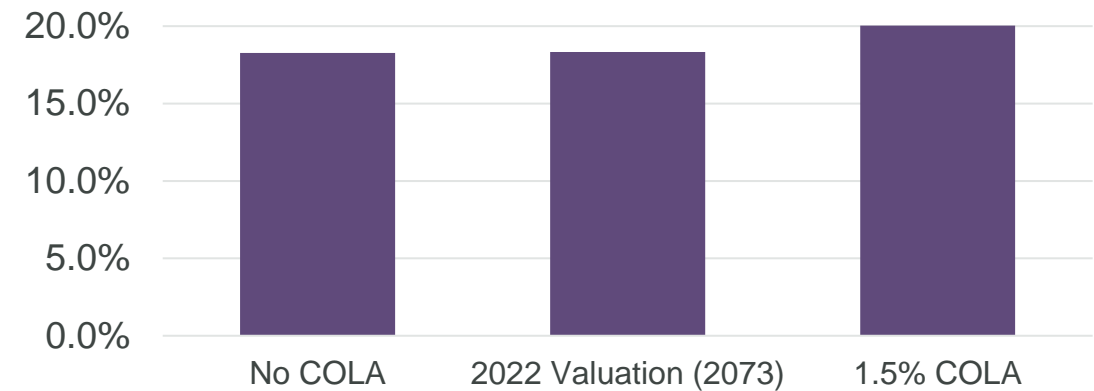
- Benefits need to be competitive
 - Not too high
 - Not too low
- Contributions need to be sufficient to meet funding guidelines
- Automatic adjustment mechanisms
 - Meeting funding guidelines now doesn't guarantee meeting them in the future
 - Current COLA provides some adjustment, but expected to be 0% for decades
 - Member and City contributions need to adjust to circumstances
- Any significant contribution adjustments should be in steps to allow time to adjust budgets

Meeting Funding Requirements Increases COLA Liability

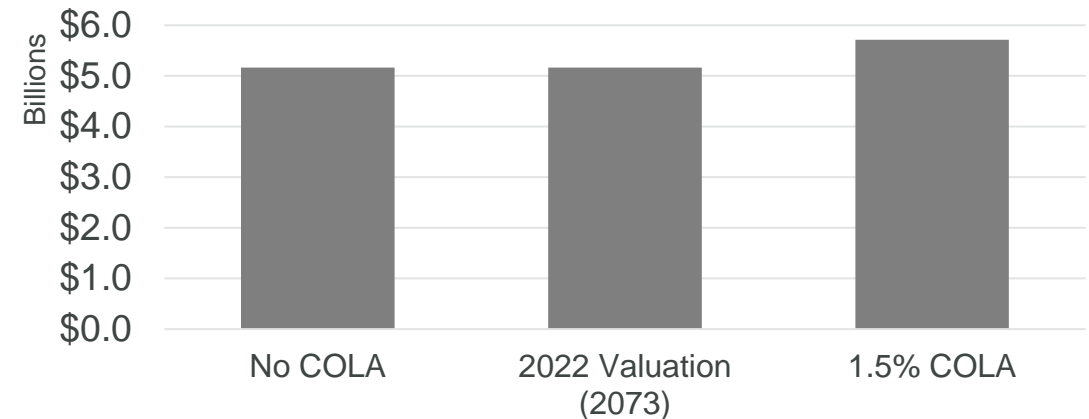


- Current COLA
 - Must be 70% funded
- 2022 Valuation COLA assumption
 - No COLA until 2073
 - Average COLA after 2073 = 1.5%
- Meeting funding requirements (30 years) necessitates exceeding 70% funded much earlier than 2073
 - COLA will be payable sooner
 - Liability & normal cost will thus increase

Normal Cost



Actuarial Liability



City Contribution Considerations



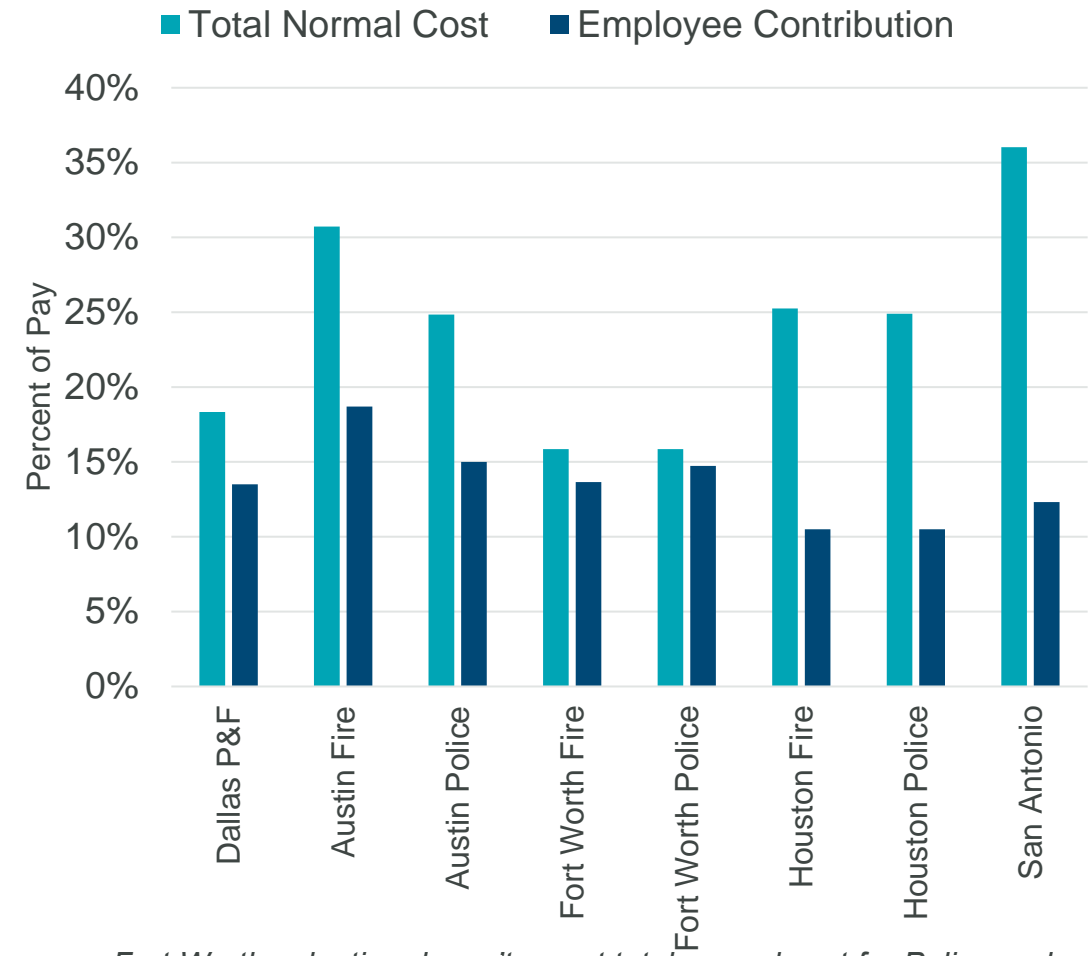
- City contributions will need to increase and remain higher for some time
- Structural Options Considered
 - Increase fixed rate
 - Fixed rates do not automatically adjust to meet the needs of the system
 - May be too high or too low depending on the system's experience
 - Rates can be adjusted by the legislature, but the process is cumbersome
 - Not recommended
 - Recommend Change to Actuarially Determined Contributions (ADC)
 - Adjust annually for actual experience
 - Eliminates risk of not meeting funding requirements in Chapter 802
 - One-time cash infusion would reduce future contribution requirements
 - Not part of our recommendation, but does not conflict with our recommendation

Employee Contribution Rates (Most Recent Tiers)



- Current DPFPP employee contribution rate is over 70% of the total normal cost
 - Even higher percentage for new employees
 - Highest portion of normal cost in comparison group except for Fort Worth
 - Average of group is about 60%
 - Reflecting current temporary increases due to funded status for some Systems
- Hard to reduce employee contributions until better funded
 - DPFPP employee rate reduces to 50% of total normal cost once 100%+ funded
- Consider setting the employee contribution rate equal to 50% of total normal cost plus an additional amount based on funded ratio
 - Current rate remains the same
 - As funding improves, employee contribution rate would gradually decline

Employee Contributions vs Normal Cost



Fort Worth valuation doesn't report total normal cost for Police and Fire separate from general employees, but benefits are similar.

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Benefit Change Considerations

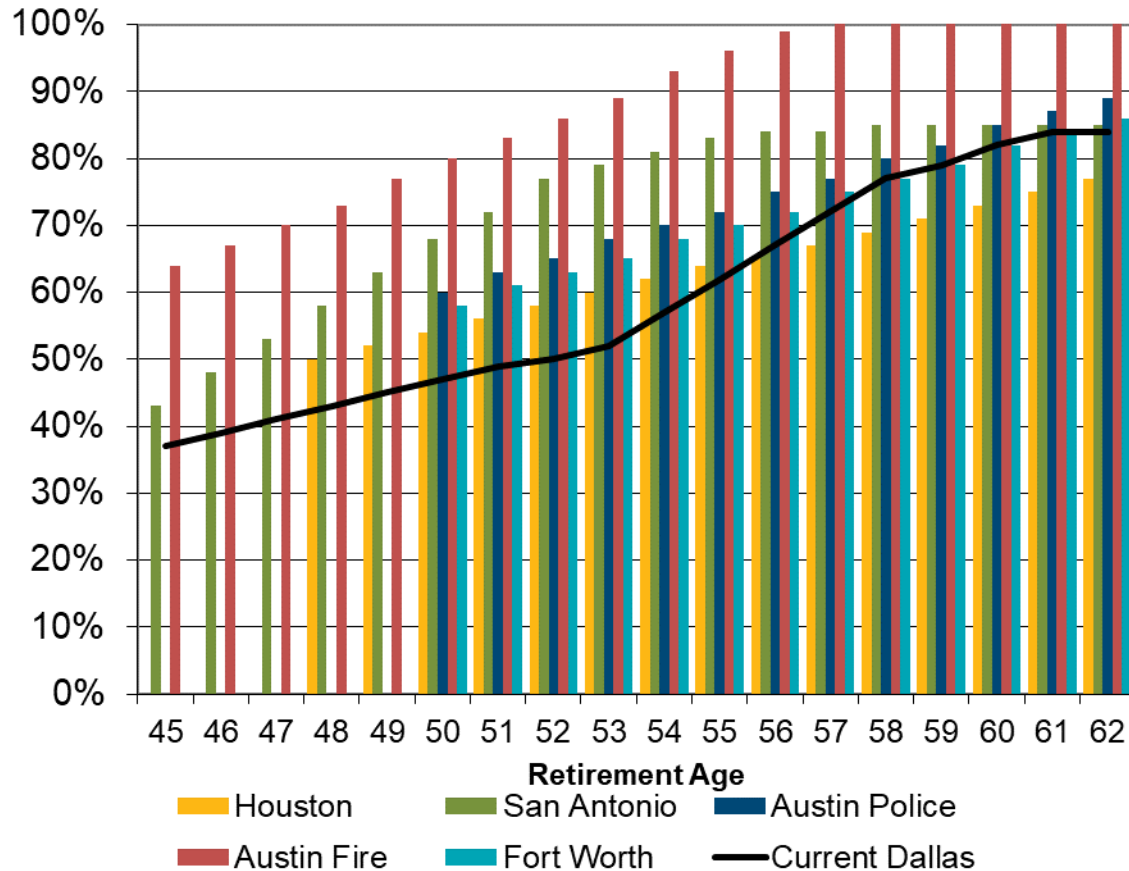


- Benefits have already been reduced
 - 2011 reductions – members hired after March 1, 2011
 - 2017 reductions
 - Benefit multiplier reduced and retirement age increased (service after September 1, 2017)
 - Supplemental benefit eliminated
 - COLA eliminated until 70% funded
- Key benefit changes considered
 - Multiplier
 - Currently maximum of 2.50%
 - Could further reduce (e.g., to 2.25%) for future service, but not recommended
 - No increase considered
 - Retirement age
 - Full benefits currently available at age 58
 - Could extend (e.g., to age 60) for future service, but not recommended
 - No earlier normal retirement age considered
 - COLA – currently projected to remain 0% until 2073
 - No further reductions considered
 - May consider providing some COLA earlier

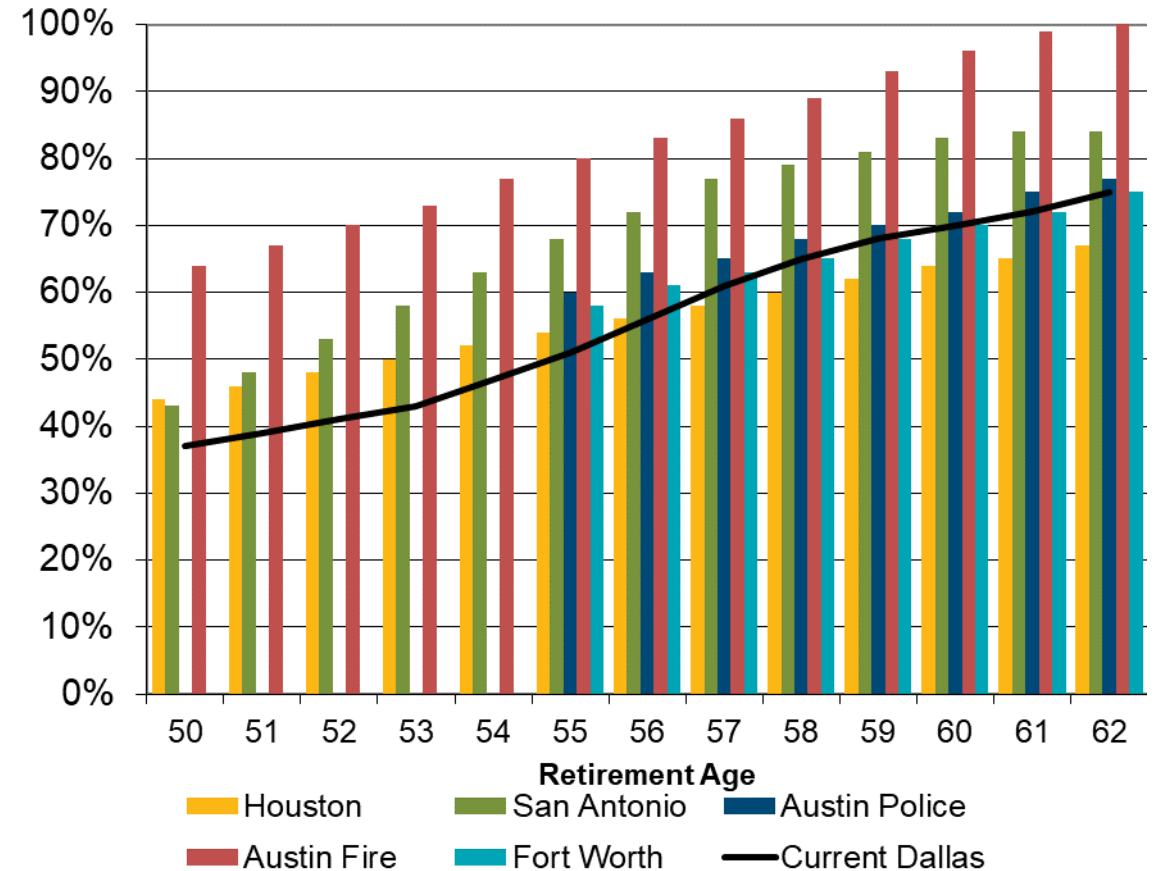
Income Replacement Ratios* – Most Recent Safety Tiers



Hired at Age 25



Hired at Age 30



Fort Worth Police can retire after 25 years of service, but Fire must satisfy the Rule of 80

*Income replacement ratios are at retirement and do not reflect COLAs after retirement



- DPFPP members are not covered by Social Security
 - Social Security would provide a base level of benefit that is fully indexed to inflation
 - DPFPP benefits are generally higher than Social Security at retirement, but DPFPP benefits currently have no adjustment for inflation expected for 20+ years
- Lack of COLA may be an issue in attraction and retention of employees
- Current funding situation makes it difficult to provide a full COLA immediately
 - Consider an option to make some COLA available earlier

Other System COLAs – Most Recent Tier



- Austin
 - Police – no COLAs permissible unless statutes amended by Legislature
 - Fire – ad hoc COLAs based on affordability under Board's COLA policy
- Ft. Worth – no COLA permissible without Legislative action
- Houston
 - Five-year average return minus 4.75%/5.00% (Fire/Police)
 - Minimum = 0.0%
 - Maximum = 4.0%
 - No funded ratio requirement
- San Antonio Fire & Police
 - 75% of CPI
 - Possible additional payments
 - 13th check if five-year average return exceeds assumption by at least 100 basis points
 - 14th check if five-year average return exceeds assumption by at least 300 basis points

Overview of Recommended Alternative Scenarios



Scenario	1	2	3
	Graded ADC	Graded ADC Adjustable EE Rate	Graded ADC Adjustable EE Rate Partial COLA
City Contribution	Actuarially Determined Contribution Layered amortization grading up over a short period and back down at the end of 30 years		
Employee Contribution	13.5%	50% of normal cost + additional contribution depending on funded ratio	
COLA	Five-year return minus 5% If 70% funded Not more than 4%		Five-year return minus 5% times funded ratio Not more than 4%
Benefit Multiplier (2.5%)	No Changes Recommended		
Retirement Age (58)	No Changes Recommended		

Actuarially Determined Contribution (ADC)



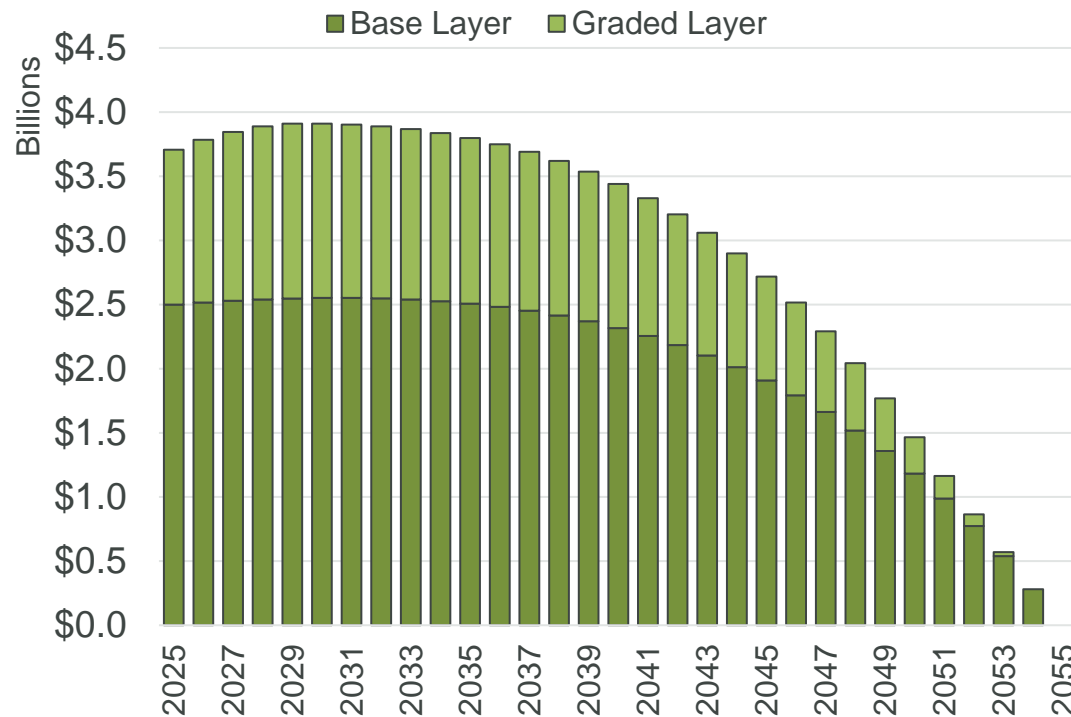
- Current fixed rate implicitly pays:
 - City's normal cost rate
 - City's expected cost of benefits attributable to the current year of service
 - An amount towards the Unfunded Actuarial Liability (UAL)
 - UAL payment is thus the excess of fixed rate over the City's normal cost rate
 - UAL payment is independent of actual UAL
- An ADC consists of the City's normal cost contribution plus an explicitly calculated payment on the UAL
 - Set City's normal cost as a percentage of pay
 - Designed to be a percentage of pay
 - Set City UAL payment as a dollar amount based on the amortization schedule
 - Designed to pay off UAL over a specified period
 - Independent of actual payroll

UAL Amortization Schedule

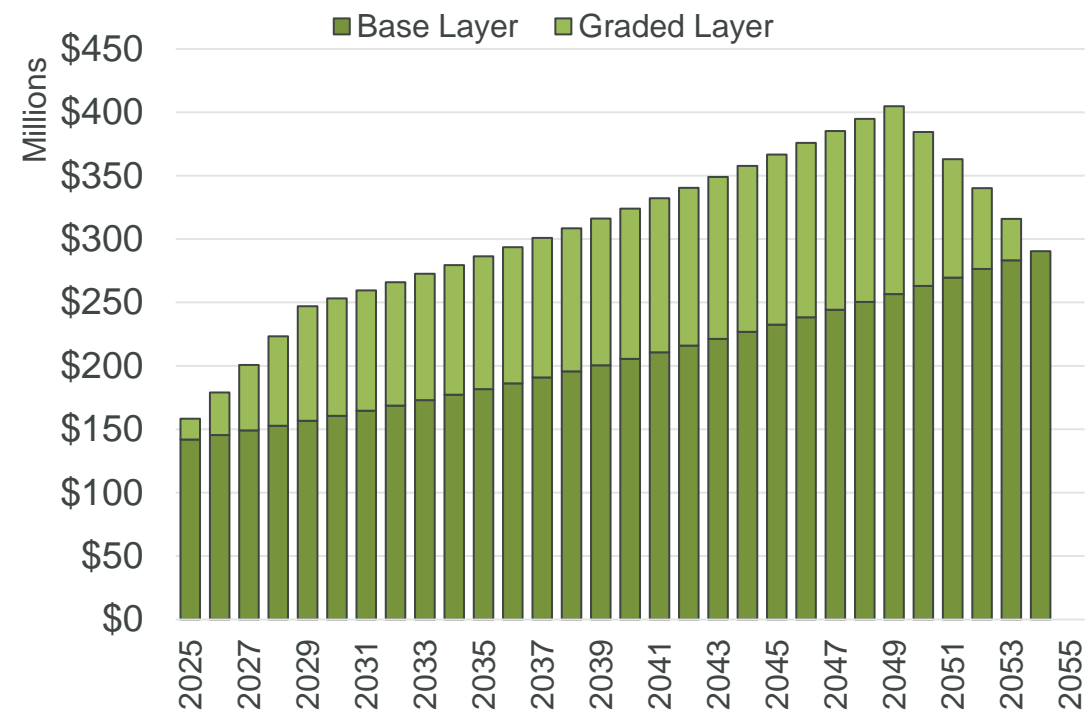


- Recommend amortizing the current UAL in two layers
 - 30-year layer approximating current fixed rate contributions
 - Graded layer that steps into the full contribution over as short a period as financially possible and grades down at the end of the period. We modeled a five-year grading period
 - See appendix for description of schedule for future layers

Remaining UAL Balance



UAL Amortization Payments

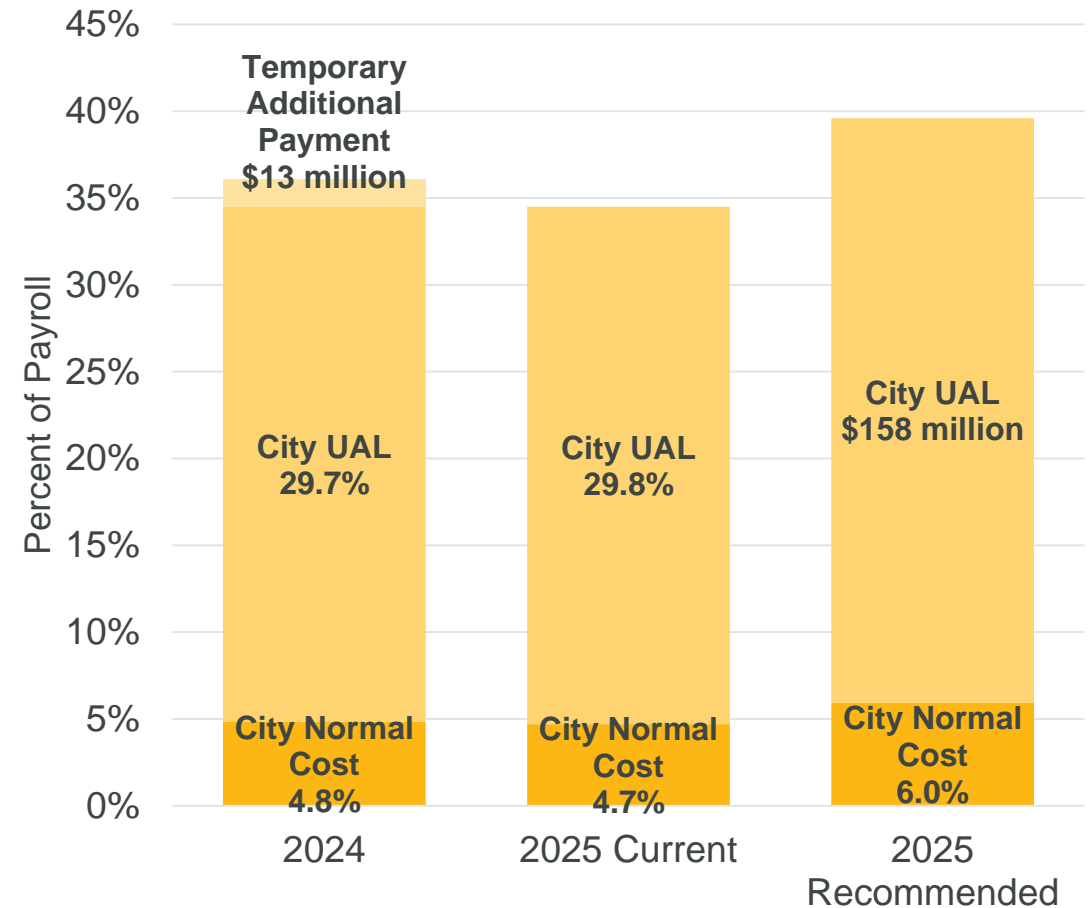


Projected 2025 City Contribution

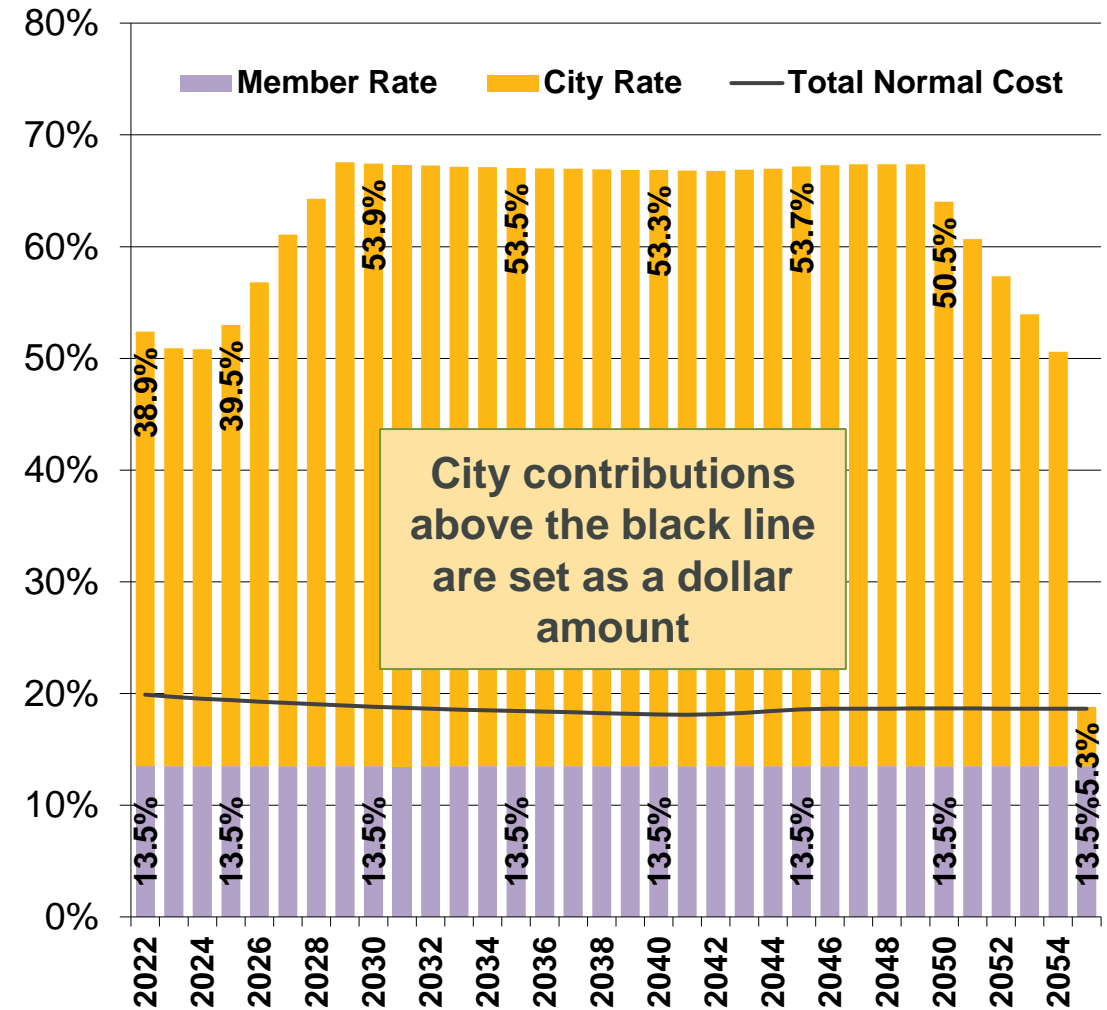
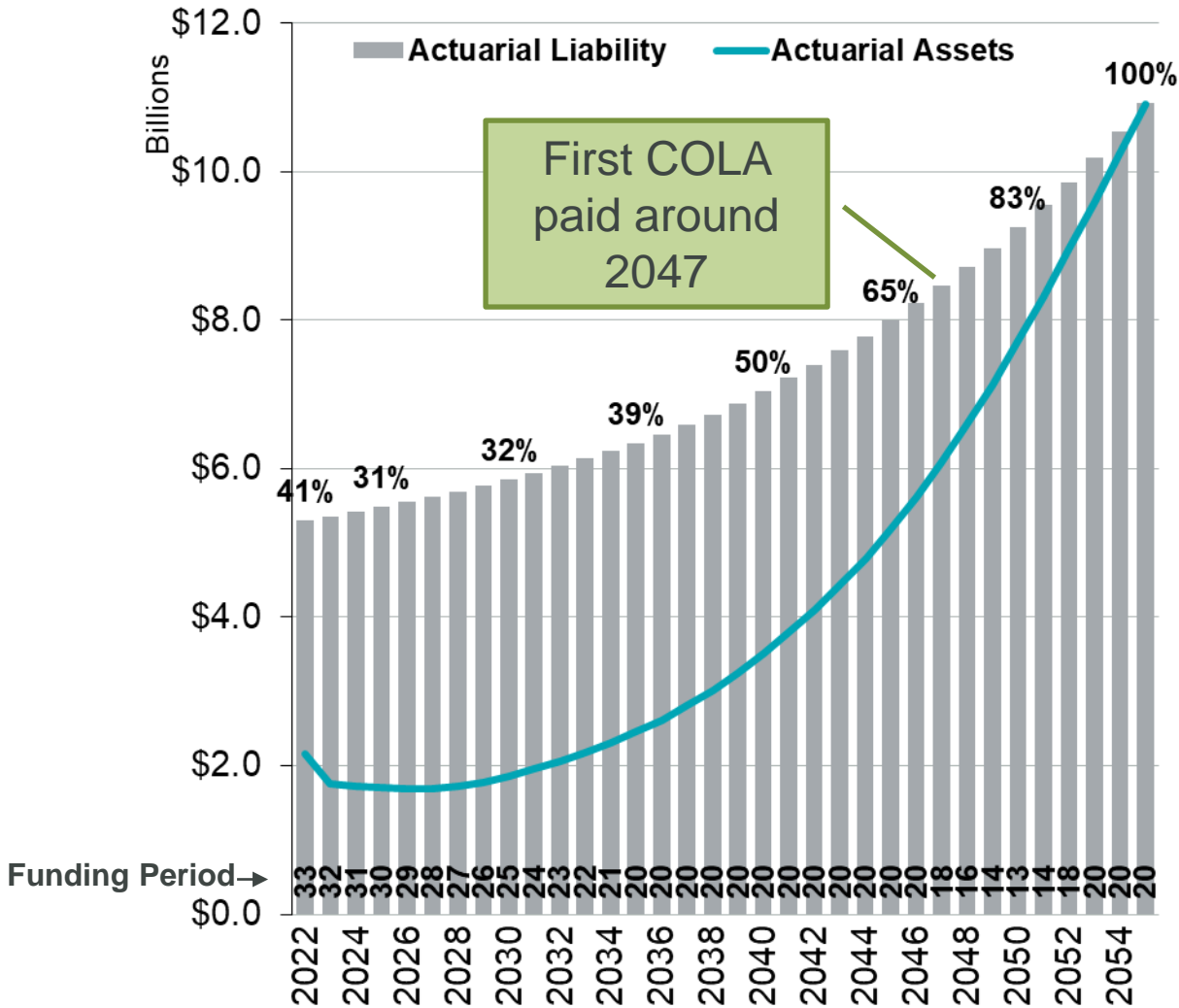


- 2024 City Contribution
 - Last year of current additional \$13 million payments
 - City normal cost reflects expectation of no COLAs until 2073
- 2025 Recommended City Contribution (Scenario 1)
 - Step increase from 2024 contribution
 - Normal cost increases reflecting expectation of COLA paid earlier
 - City's normal cost contribution is a percent of pay, but the UAL contribution is a dollar amount independent of actual payroll

Projected 2025 City Contribution
Current vs. Recommended Scenario 1



Scenario 1 – Graded ADC

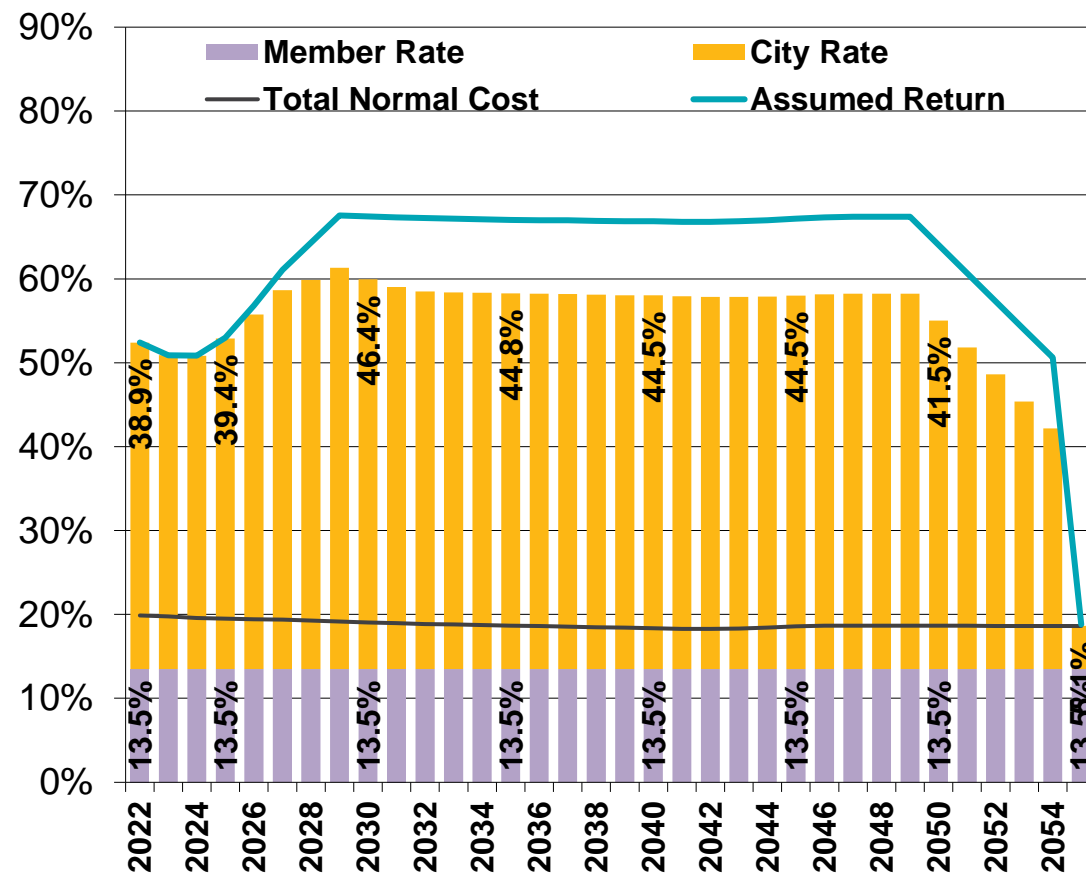
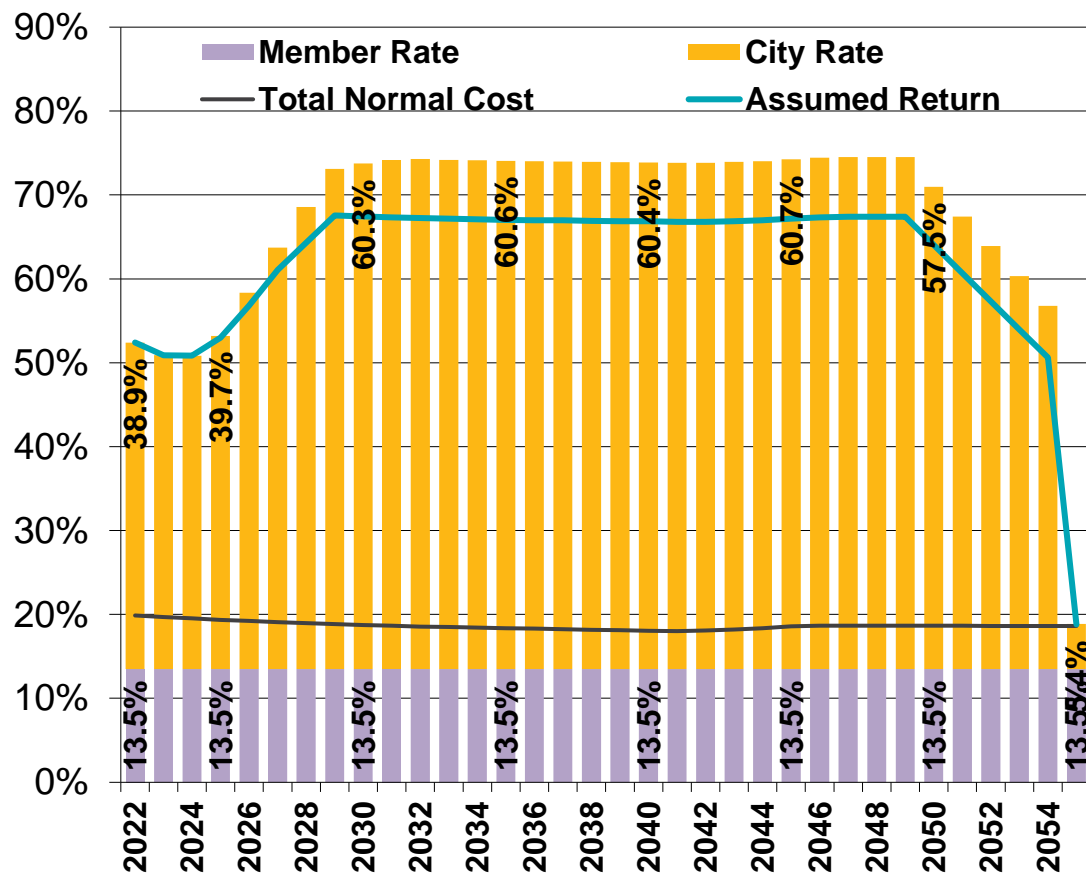


Scenario 1 – Contribution Sensitivity to Investment Returns



Very Poor Returns
2023 through 2027 = **-1.0%**

Very Good Returns
2023 through 2027 = **14.0%**



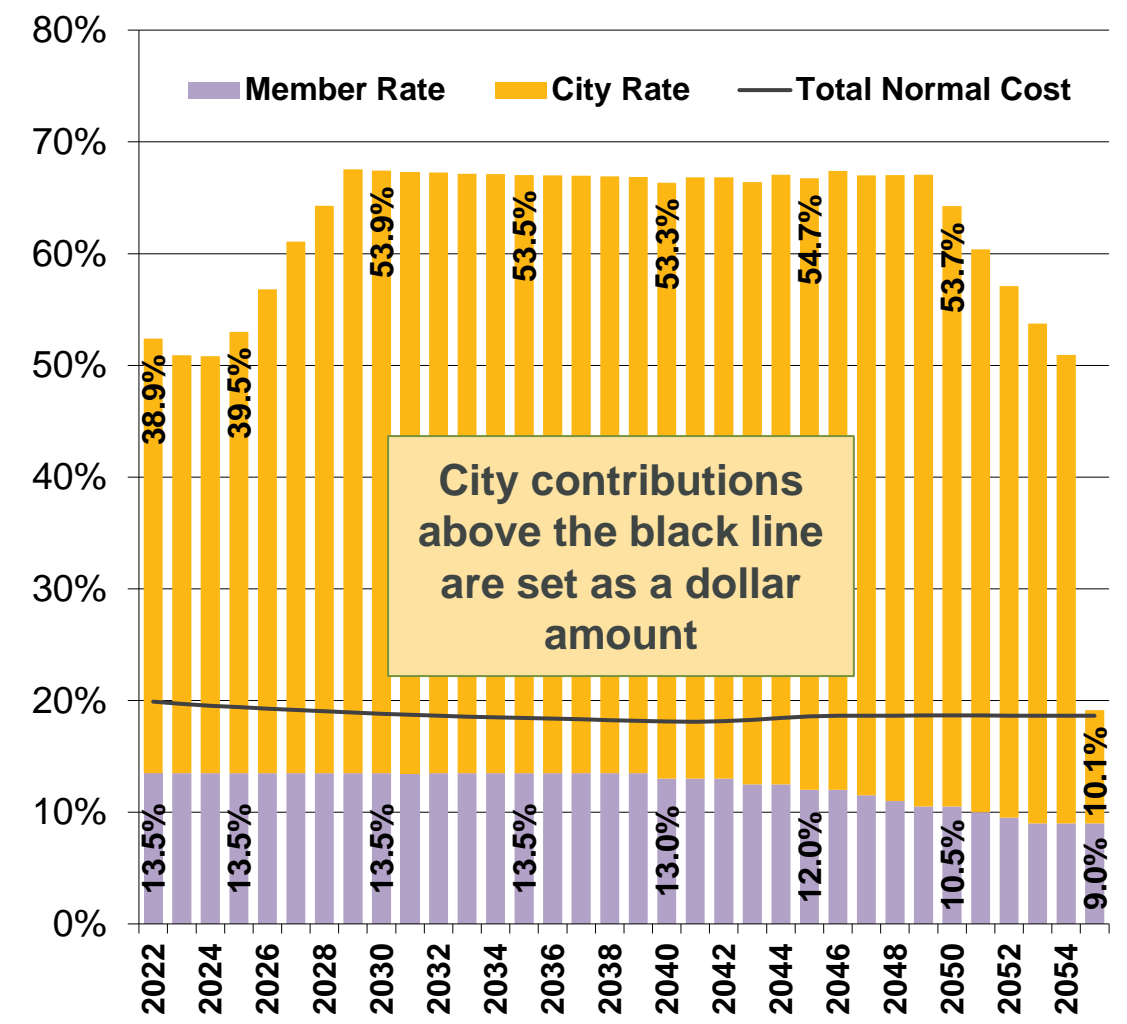
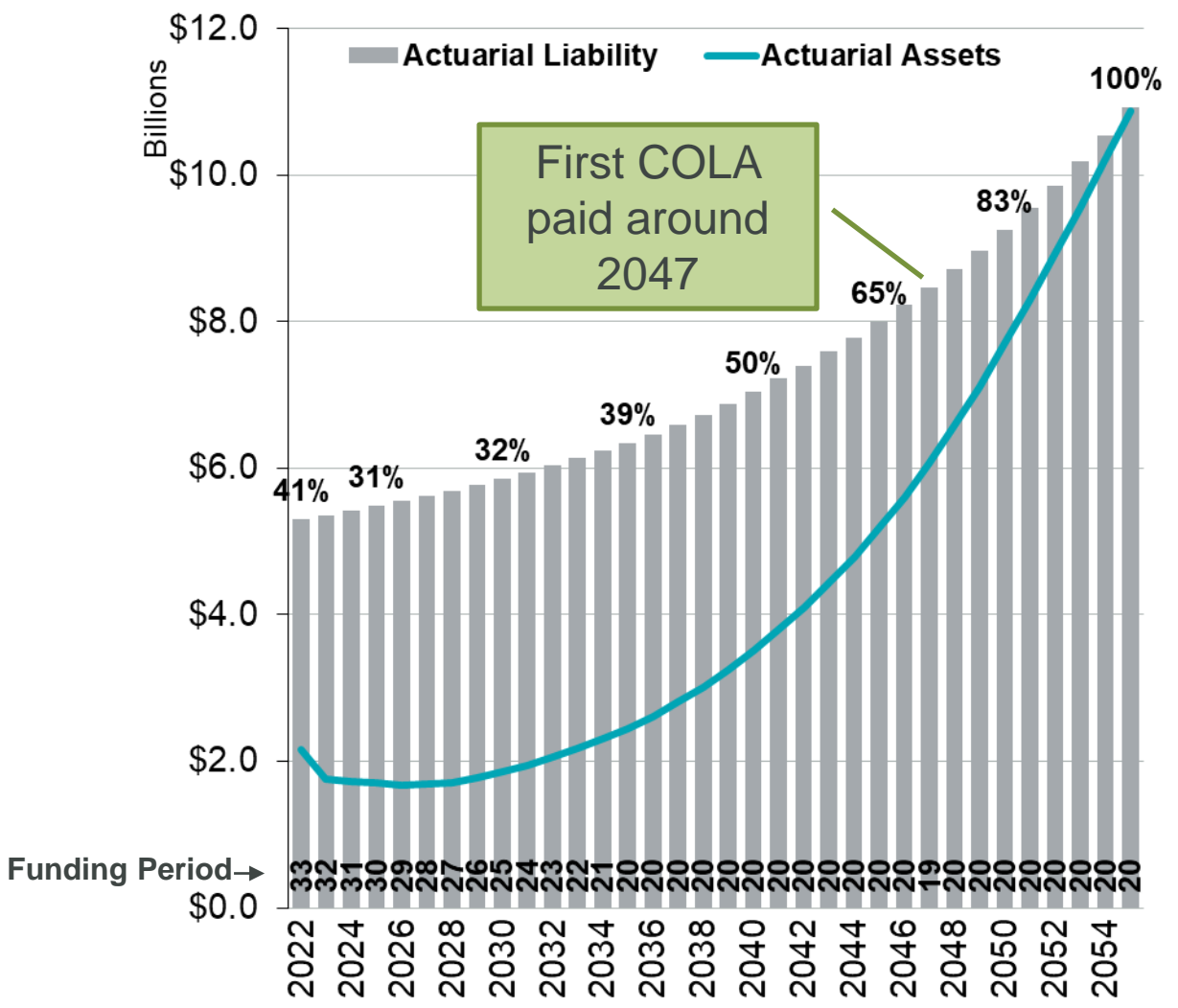
Scenario 2 – Adjustable Employee Contribution Rate



- Set base employee contribution rate to 50% of the normal cost rate applicable for members hired on/after March 1, 2011
 - Similar to current law once System is fully funded
 - Round to nearest 0.5%
 - 8.5% for this scenario
- Add adjustment designed to maintain current 13.5% contribution rate initially, with rate decreases as the System becomes better funded
- Adjustments proposed for this scenario shown in the table below:

Funded Ratio	<45%	45-49%	50-54%	55-59%	60-64%	65-69%	70-74%	75-79%	80-84%	85-89%	90%+
EE Rate Adjustment	5.0%	4.5%	4.0%	3.5%	3.0%	2.5%	2.0%	1.5%	1.0%	0.5%	0%

Scenario 2 – Graded ADC / Adjustable EE Rate



Scenario 3 – Partial COLA

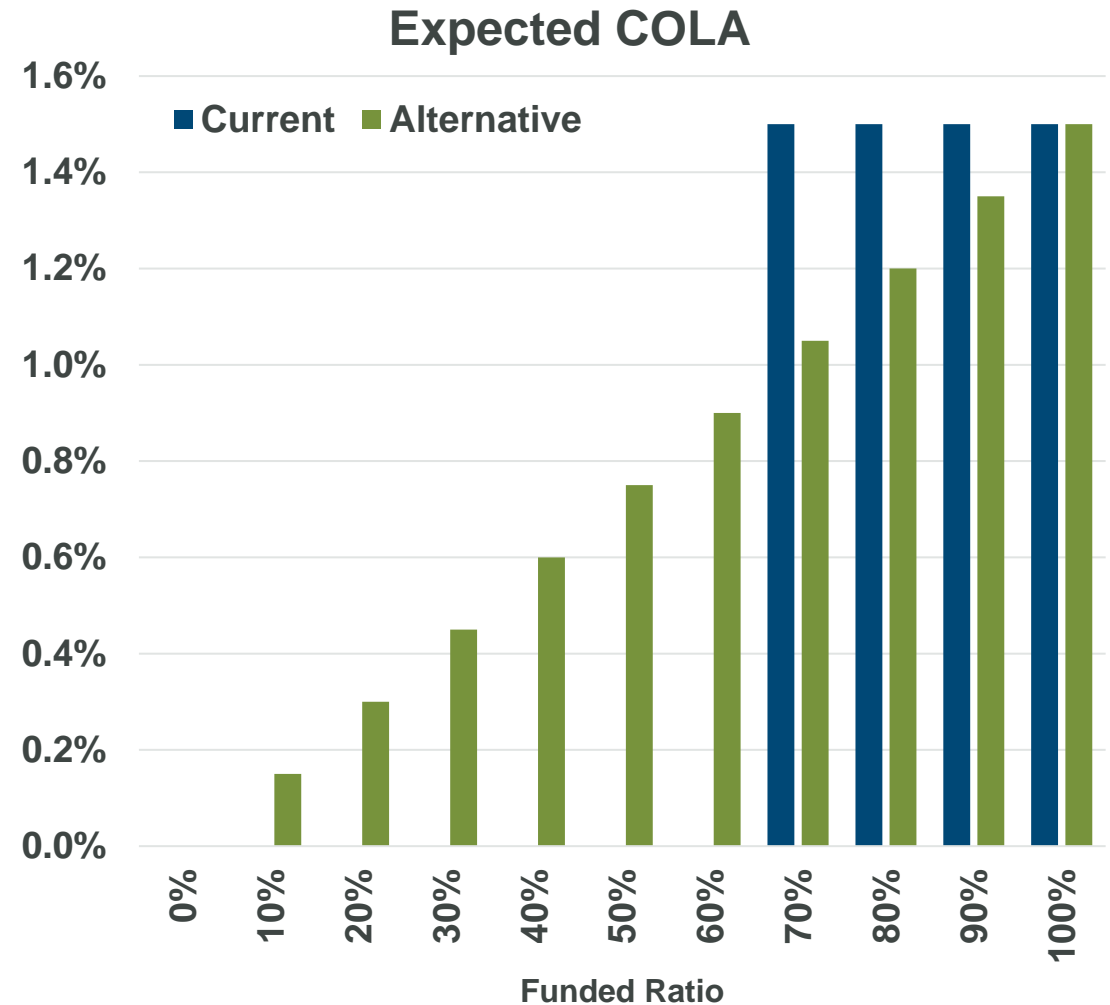


- Current COLA is not payable until System reaches 70% funded ratio
 - Projected to be in 2040s even with recommended additional City contributions
- Consider a partial COLA option
 - Eliminate funded ratio threshold
 - Multiply COLA by funded ratio ($[5\text{-yr return} - 5.0\%] \times \text{funded ratio}$ up to 100%)
 - Keep maximum COLA of 4.0%
- Observations
 - Partial COLA available immediately
 - Only paid when investment returns support it, and Board approves
 - Lower COLA than current COLA provisions when between 70% and 100% funded

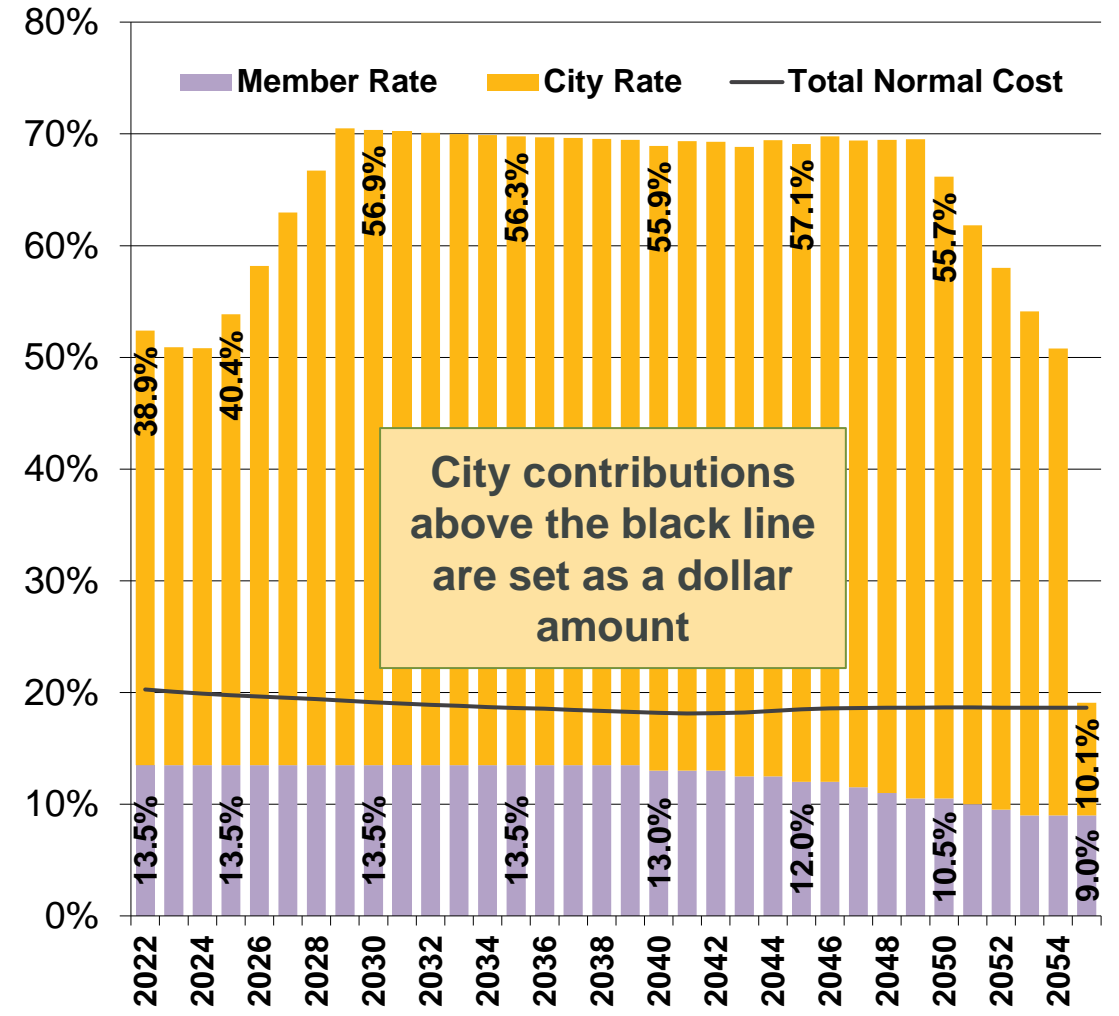
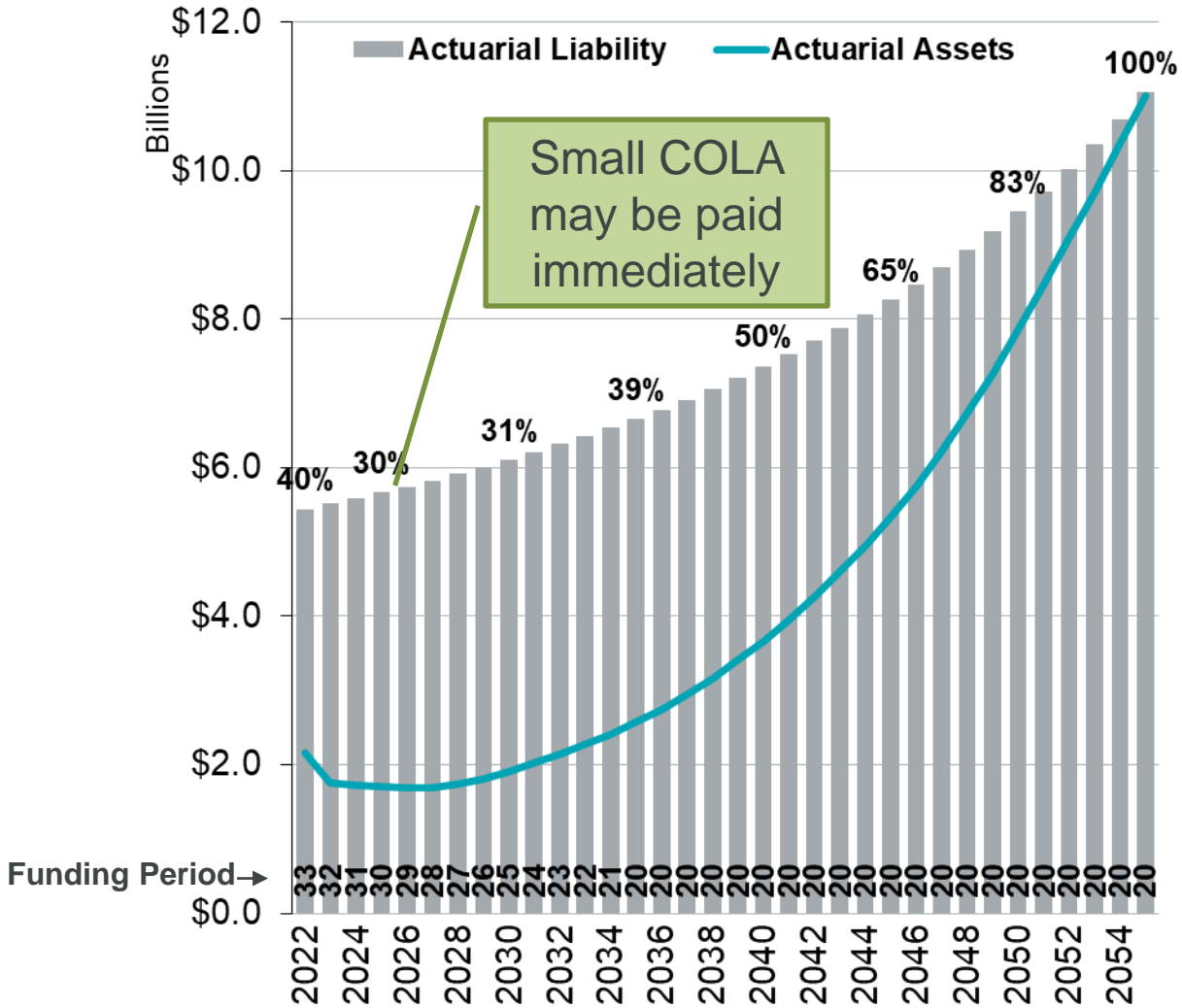
COLA Option Comparison



- When current COLA is available (>70% funded), it is expected to be 1.5%
 - 6.5% expected return minus 5.0%
- Alternative COLA is always available, but the expected 1.5% COLA is multiplied by the funded ratio (up to 100%)
 - Higher than current COLA when less than 70% funded
 - Lower than current COLA when 70% to 100% funded
- Both COLA options
 - Based on 5-year average returns
 - Minimum = 0.0%
 - Maximum = 4.0%



Scenario 3 – Graded ADC / Adjustable EE Rate / Partial COLA



Summary of Recommended Alternative Scenarios



Scenario	1	2	3
	Graded ADC	Graded ADC Adjustable EE Rate	Graded ADC Adjustable EE Rate Partial COLA
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COLA	Five-year return minus 5% If 70% funded Not more than 4%		Five-year return minus 5% times funded ratio Not more than 4%
Benefit Multiplier (2.5%)	No Changes Recommended		
Retirement Age (58)	No Changes Recommended		





- The purpose of this presentation is to present the initial independent actuarial analysis providing alternative benefit and contribution scenarios that comply with the requirements of Texas Government Code Section 802 to the Dallas Police and Fire Pension System Board. The initial analysis is based on our replication of the 2022 actuarial valuation performed by Segal.
- In preparing our presentation, we relied on information, some oral and some written, supplied by the Dallas Police and Fire Pension System. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. A summary of the data, assumptions, methods, and plan provisions used to prepare our analysis can be found in Segal's 2022 actuarial valuation report supplemented by additional information in the appendix of this presentation.
- Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and, changes in plan provisions or applicable law.
- This presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.
- This presentation was prepared exclusively for the Dallas Police and Fire Pension System Board for the purpose described herein. This presentation is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

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Appendix – Basis for Analysis



- The preliminary analysis shown in this presentation is based on the data, assumptions, methods, and plan provisions as summarized in Segal's January 1, 2022 actuarial valuation
- In addition, the following assumptions were used, unless otherwise noted:
 - Investment return for 2022: -13.0%
 - Investment return for 2023 and thereafter: 6.5%
 - Payroll growth of 2.5% per year
- The final analysis will be based on Segal's January 1, 2023 actuarial valuation, which will differ due to:
 - Asset and liability experience during 2022
 - Any assumption or plan changes that differ from those used for the 2022 valuation
- As a result, cost estimates and projections in the final analysis are likely to differ from those presented in this preliminary analysis
- This analysis would be materially changed if the System receives an adverse result in pending litigation on annual benefit adjustments



- Cheiron utilizes ProVal actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this valuation.
- Deterministic projections in this report were developed using *P-Scan*, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the System.
- *P-Scan* uses standard roll-forward techniques that implicitly assume a stable active population. Because *P-Scan* does not automatically capture how changes in one variable affect all other variables, some scenarios may not be consistent.

Appendix – 2022 Valuation Replication



Present Value of Benefits

	Segal	Cheiron	Percent Difference
Actives			
Hired Before 3/1/2011	\$ 1,807	\$ 1,818	0.6%
Hired On/After 3/1/2011	486	490	0.8%
Retirees & Beneficiaries	3,554	3,551	-0.1%
Inactive Members	<u>27</u>	<u>26</u>	-2.5%
Total	\$ 5,875	\$ 5,885	0.2%

Actuarial Liability

Actives			
Hired Before 3/1/2011	\$ 1,434	\$ 1,441	0.5%
Hired On/After 3/1/2011	143	147	2.6%
Retirees & Beneficiaries	3,554	3,551	-0.1%
Inactive Members	<u>27</u>	<u>26</u>	-2.5%
Total	\$ 5,159	\$ 5,165	0.1%

Amounts in Millions

Normal Cost

	Segal	Cheiron	Percent Difference
Hired Before 3/1/2011	\$ 47.4	\$ 47.5	0.2%
Hired On/After 3/1/2011	<u>27.2</u>	<u>26.3</u>	-3.4%
Total Normal Cost	\$ 74.7	\$ 73.8	-1.1%
Total Normal Cost with interest to reflect mid-year contribution timing	\$ 77.0	\$ 76.2	-1.1%
Payroll	\$ 437.0	\$ 437.3	0.1%
Normal Cost Rate			
Hired Before 3/1/2011	18.7%	18.7%	0.0%
Hired On/After 3/1/2011	16.0%	15.5%	-0.5%
Total Normal Cost Rate	17.6%	17.4%	-0.2%

Amounts in Millions

November 9, 2023



Structure and Initial Layers

- Layered amortizations with 2.5% rate of annual payment increases
 - Separate amortization layer for each year of experience, assumption changes, and plan changes
- Start with two initial layers that add up to the full UAL
 - 30-year base layer approximating the current UAL payment
 - Graded layer that steps into the full contribution over as short of a period as financially possible and grades back down at the end of 30 years

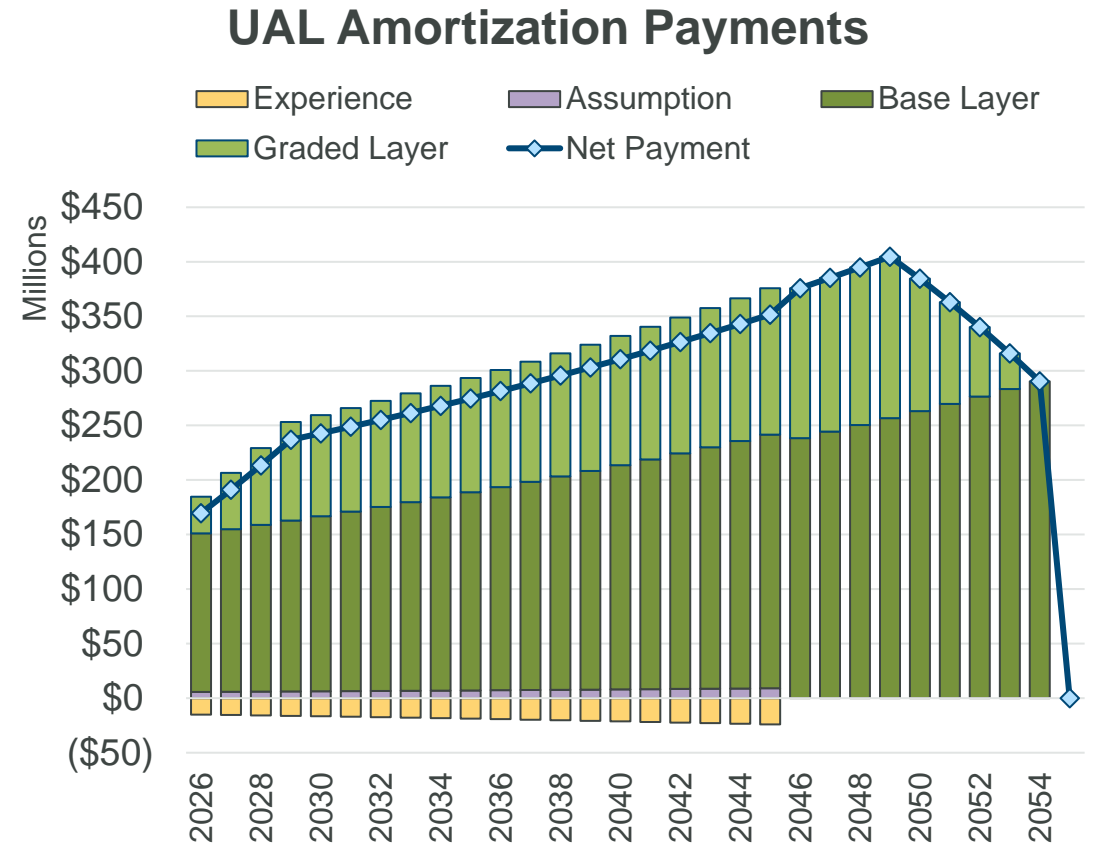
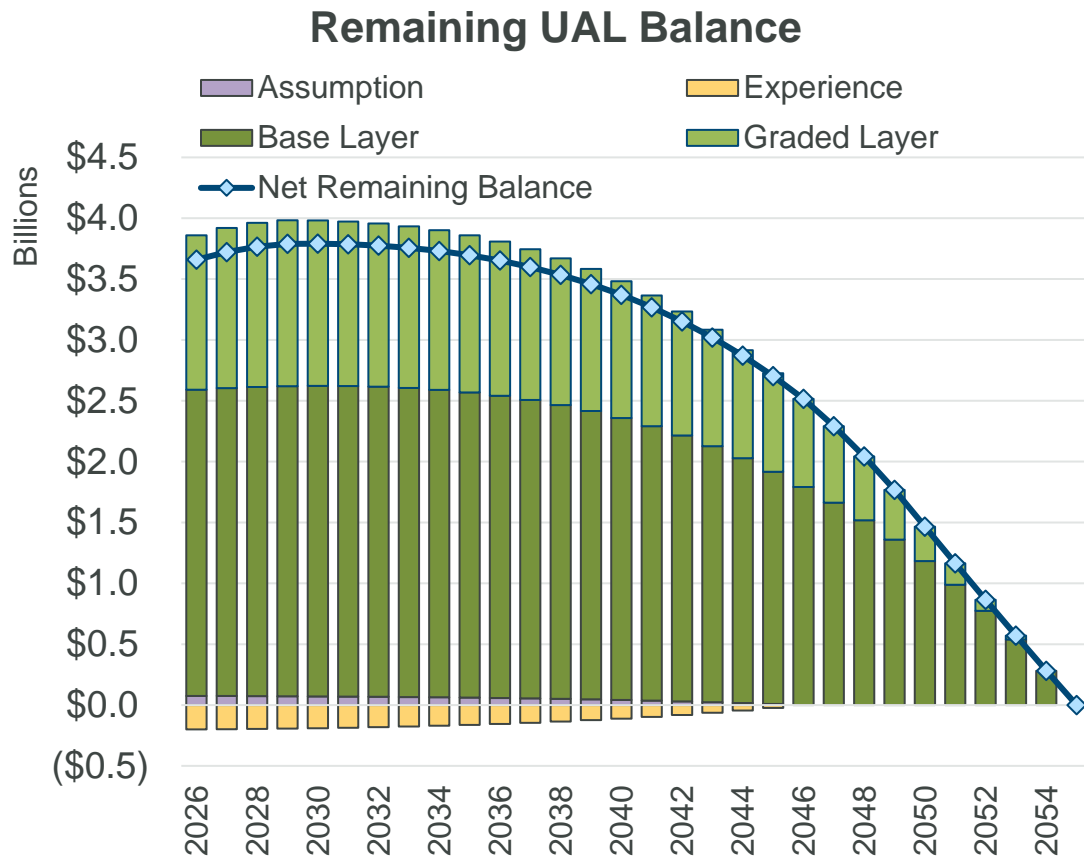
Future Amortization Layers

- Experience and assumption changes = Maximum of 20 years or remaining period on base layer
 - Prevents any gains from being amortized faster than the base layer
- Plan changes
 - Active employees = Average future service of those affected by change or 15 years
 - Retirees = Average remaining lifetime of those affected by change or 10 years
- Lump sum contributions
 - In first four years, first reduce or eliminate any remaining graded increases
 - After four years or after future graded increases have been eliminated, reduce the base layer

Appendix – Layered Amortization Illustration – 2nd Year



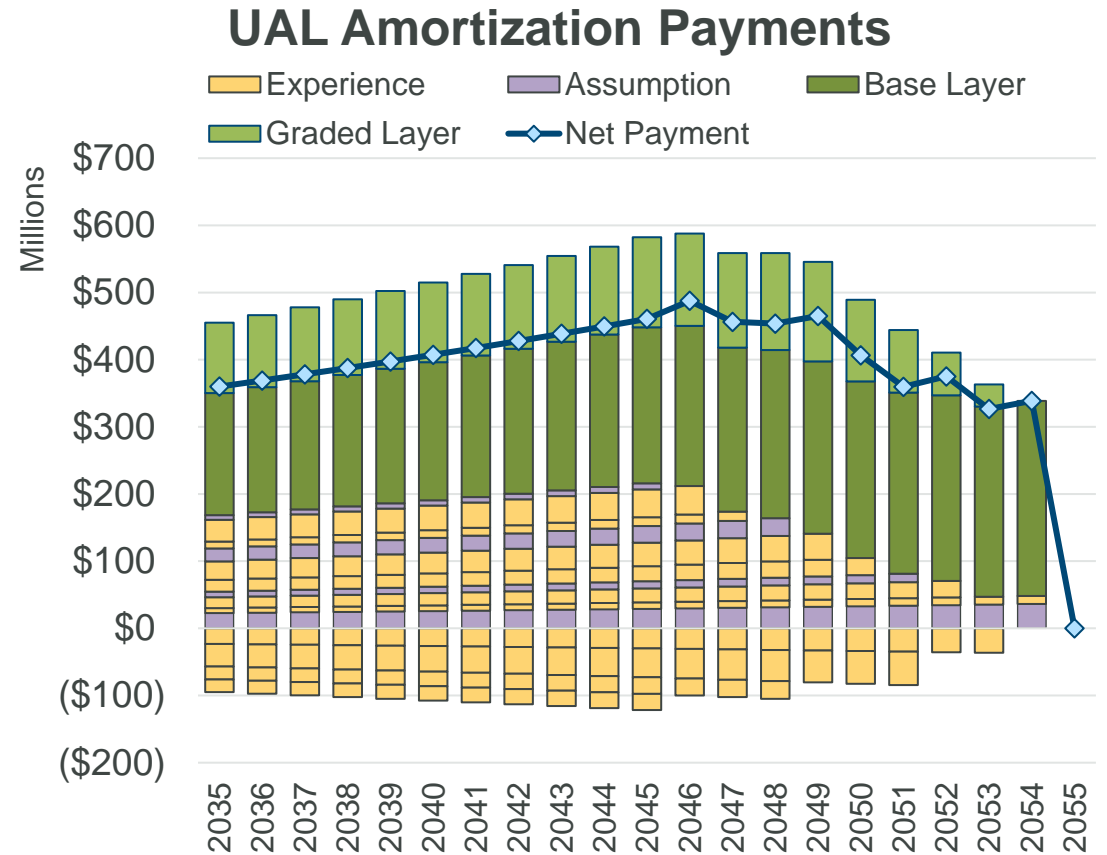
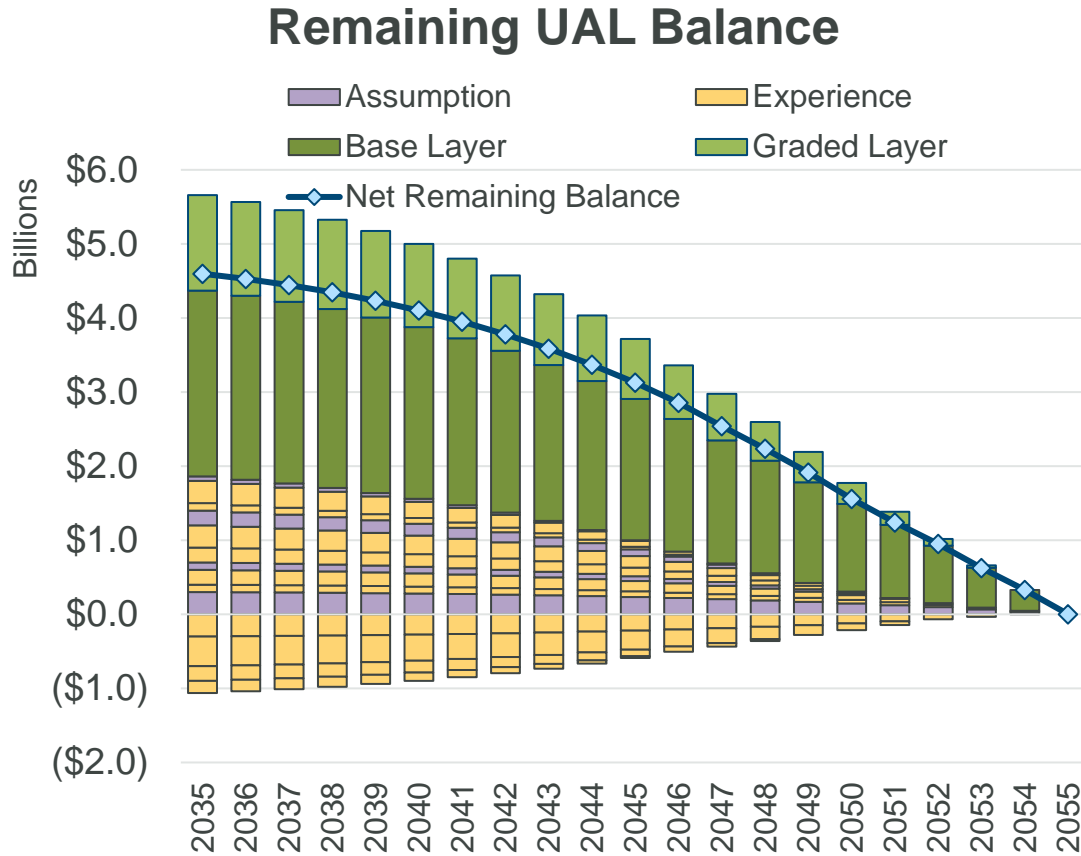
Make first year's payment. Add a new closed layer amortizing any new gains or losses and another layer for any assumption changes.



Hypothetical experience and assumption layer for illustrative purposes



Repeat process. The different layers tell the history of the system.

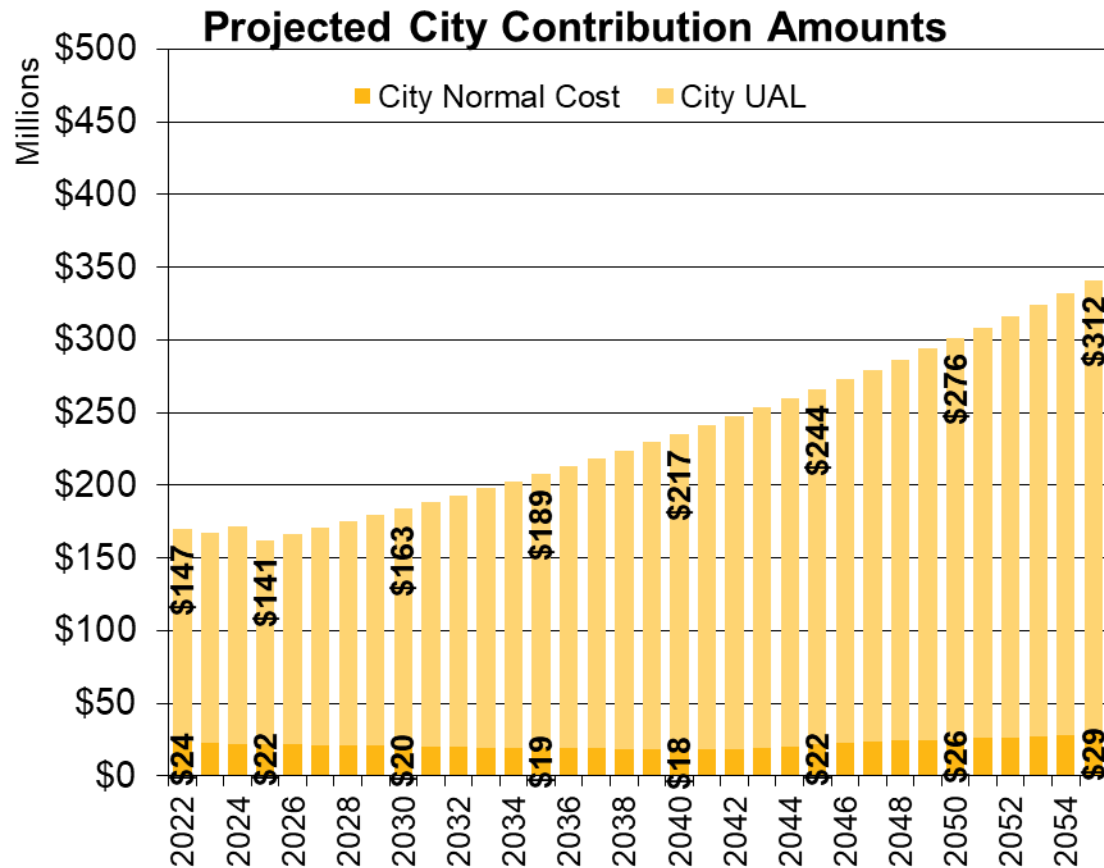


Hypothetical experience and assumption layers for illustrative purposes

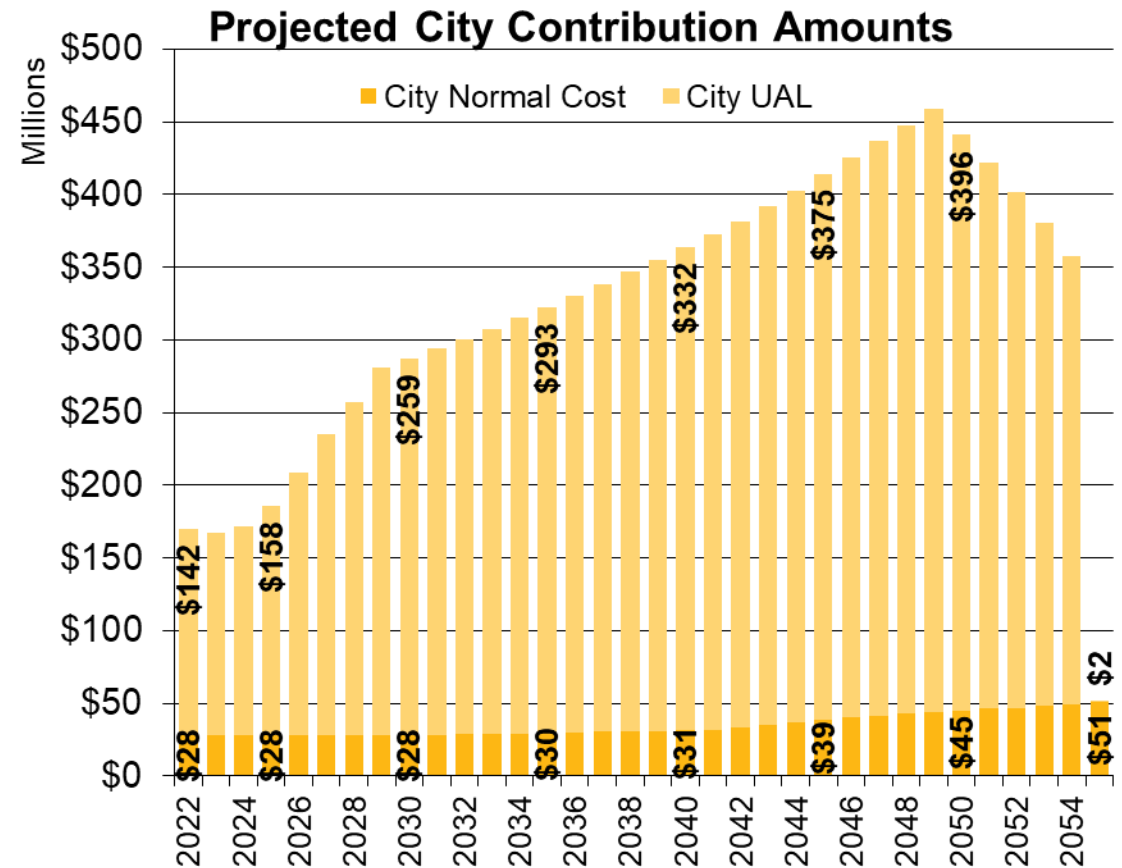
Projected City Contribution Amounts



2022 Actuarial Valuation



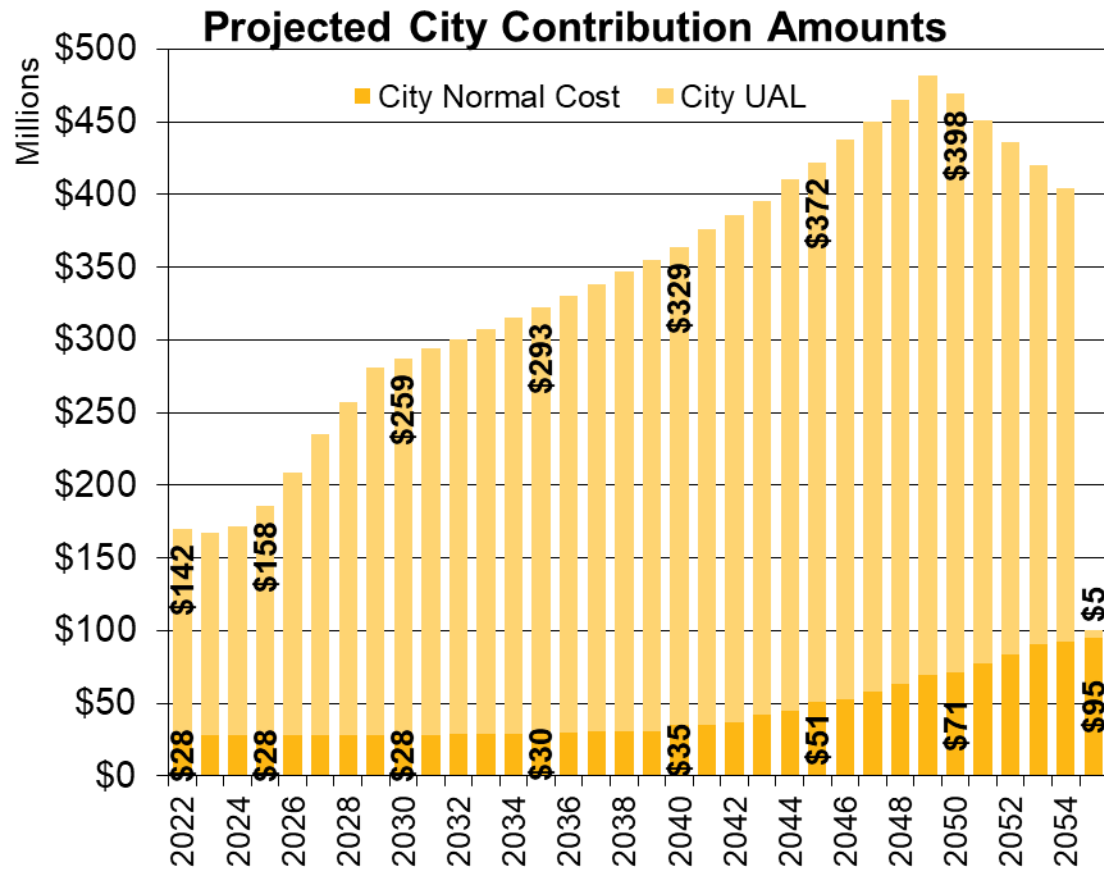
Scenario 1: Graded ADC



Projected City Contribution Amounts



Scenario 2 – Graded ADC Adjustable EE Rate



Scenario 3 – Graded ADC Adjustable EE Rate / Partial COLA

