

City of San José

Pension Obligation Financing Options

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BACKGROUND

As part of the Fiscal Year 2019-20 March Budget Message for the City of San José (“the City”), Mayor Liccardo noted the deterioration of the funding levels for the City’s Federated City Employees’ Retirement System (“Federated Plan”) and Police and Fire Department Retirement Plan (“Police & Fire Plan”) (collectively, “Retirement Plans”) over the past 15 years, despite voter approval of two pension reform initiatives. The Mayor called for the convening of the Retirement Stakeholder Solutions Working Group (“RSSWG”) in a series of meetings to explore options that not only protect employee retirement benefits but also preserve the City’s ability to continue providing essential services through recessionary times.

The RSSWG met nine times between November 2019 and February 2021 to explore various options to reduce the City’s Unfunded Actuarial Liabilities (“UAL”) and received a briefing on Pension Obligation Bonds (“POBs”) in October 2020. In its Final Report¹, issued on April 2, 2021, the RSSWG ruled out several options for addressing the City’s UAL that it deemed infeasible, including reduction of retirement benefits, bridge loans to increase liquidity, securitizing public assets, establishing a stabilization fund, and others. The RSSWG focused on evaluating the feasibility, cost, risk, difficulty, and impact on the UAL of six options: 1) Investment fees; 2) Investment asset allocation; 3) Pension plan amortization schedules; 4) Lump sum buyout; 5) Pension Obligation Bonds; and 6) Dedicated revenue stream.

While adjusting investment fees is achievable, the RSSWG determined that this option would not have a significant impact on the UAL. Changing the investment asset allocation and pension plan amortization schedules could have significant impacts on the UAL, and the Retirement Boards of the two independent retirement systems have the fiduciary duty to administer the Retirement Plans, which includes making ongoing decisions on asset allocation and approving the assumptions for the annual actuarial valuations. The feasibility of a lump sum buyout and dedicated revenue stream were determined to be “unlikely.”

At the December 1, 2020 City Council Meeting, POBs were discussed and evaluated. The Council voted to accept the recommendation of the Rules and Open Government Committee to “(1) Initiate the process for possible issuance of pension bond obligation to fund unfunded actuarial liability of the Federated and Police and Fire Retirement Plans” and “(2) Conduct other preparatory work that will enable the Council in 2021 to make a fully informed decision about the merits and risks of this option as a means of reducing our multi-billion-dollar unfunded actuarial liability with an arbitrage strategy in a very low interest rate environment.”²

As part of initiating this process, it was recommended that the City secure needed advisory and legal services. Stradling Yocca Carlson & Rauth (“Stradling”) was selected through a competitive process as bond counsel to prepare required documents for City Council to consider proceeding with validation and authorizing issuance of POBs, if directed by the City Council. Urban Futures, Inc. (“UFI”) was selected through a competitive process to advise the City on options for addressing and actively managing the City’s UAL, including assessing the benefits and risks associated with POBs. The following is an Executive Summary of the major sections in this report.

¹ Information Memorandum to the City of San José City Council: Final Report of the RSSWG Final Report, April 2, 2021 - <https://www.sanjoseca.gov/home/showpublisheddocument?id=71005>

² Memorandum to the City of San José City Council: Pension Obligation Bonds, December 1, 2020 – <https://sanjose.legistar.com/View.ashx?M=F&ID=8924997&GUID=A785FFDE-6763-4AE2-819E-557D991223B1>

EXECUTIVE SUMMARY

The report was written to provide detailed background and analysis on the issuance of POBs. We have evaluated alternative funding strategies, addressed the Government Finance Officers Association (“GFOA”) Advisory on POBs, provided case studies of prior generation POB issues, presented structuring considerations, conducted Monte Carlo risk analysis, explained key market dynamics, and provided considerations for the timing, structure, and pricing of POBs, if issued. This report is divided into eight sections, and the executive summary that follows provides a summary of the points discussed.

SECTION 1 SUMMARY – UAL BACKGROUND

The City has separate Retirement Plans with a total funding shortfall of nearly \$3.5 billion. This funding shortfall, or UAL, represents the difference between the City’s accrued pension liability (the present value of projected benefits earned by current employees and retirees to date) and the actuarial value of assets.

UAL - As of the most recent actuarial reports dated June 30, 2020, the Federated Plan is 52.3% funded and has a UAL of \$2.1 billion and the Police & Fire Plan is 73.6% funded and has a UAL of \$1.4 billion.

We should note that the Federated Plan’s funding level is a point for concern and warrants priority in any funding plan that the City develops.

Amortization Bases - The City’s \$3.5 billion UAL can be viewed as a debt portfolio comprised of a series of amortization bases, or individual loans, with specific repayment terms and corresponding repayment schedules, at an interest rate of 6.625%.

The Federated Plan has a \$2.1 billion UAL for FY 2021-22, comprised of 42 amortization bases, with final maturities ranging from 7 to 27 years:

- Federated Plan Tier 1: 25 Amortization Bases - \$1,942,421,000
- Federated Plan Tier 2: 17 Amortization Bases - \$10,850,000
- July 1, 2020 Payment of \$144,535,000

The Police & Fire Plan has a \$1.4 billion UAL for FY 2021-22, comprised of 64 amortization bases, with final maturities ranging from 2 to 20 years:

- Fire Plan: 32 Amortization Bases - \$577,248,369
- Police Plan: 32 Amortization Bases - \$671,120,631
- July 1, 2020 Payment of \$136,661,000

Adding the FY 2021-22 annual payments for all the individual bases aggregates into a total Tier 1 and Tier 2 UAL payment of \$304.2 million for the upcoming fiscal year. These UAL payments will continue to increase until they peak in eight years in 2029 at \$342.9 million. The increasing costs will impact the City’s ability to continue funding its operating budget and provide current level of services unless the City is able to identify viable funding strategies to address them.

SECTION 2 SUMMARY – FUNDING STRATEGIES

Base Selection Strategies - The decision to implement a funding strategy must be accompanied with a decision to which amortization base the monies should be applied. Our analysis is predicated on a Base Selection Strategy that targets specific amortization bases to meet the City’s financial objectives and

funding strategy. Additional Discretionary Payments (“ADPs”) will have a different financial impact depending on which base is selected for prepayment.

Applying payments toward a long amortization base, which has lower annual payments but more total payments, will result in greater total savings.

Applying payments toward a shorter amortization base, which has fewer total payments but higher annual payments, will provide greater budget/cash flow relief.

Fund Selection - Nearly 100% of the Police & Fire Plan’s costs are borne by the General Fund. However, Enterprise Funds and Special Revenue Funds share 55% of the Federated Plan’s UAL, leaving 45% of the UAL costs to the General Fund. Therefore, the General Fund impact of any ADPs will depend on which Retirement Plan these payments are directed. Similarly, the Retirement Funds each have two Tiers. Tier 1 is largely paid by the City, but Tier 2 costs are shared between the City and the employee. Refunding Tier 1 obligations makes great economic sense for the City but doing so with Tier 2 is problematic and increases the City’s exposure.

Evaluation of Funding Strategies – During weekly meetings with Finance, Budget, City Attorney’s Office, and Office of Employee Relations staff, UFI assisted the City in evaluating and determining the viability of implementing various funding strategies to address its rising pension costs. Our recommended course of action is typically to develop a long-term, comprehensive plan that contemplates multiple strategies over time. For most cities, this strategy includes the issuance of POBs.

During this initial evaluation process, we examined four funding strategies with the City, in order of cost-effectiveness:

1. *Use of Reserves, Surplus and One-time Monies* - The use of cash is the most cost-effective funding strategy since it does not have any financing or interest costs. However, given the impact of the pandemic, the City was not able to identify any excess reserves or surplus one-time monies available to make ADPs.
2. *Leveraged Refunding* – This strategy structures a bond refunding with “upfront” savings in the first few years, then applies these savings to pay for a portion of the City’s UAL. The saving from the bond refunding can be leveraged 2.0 to 2.5 times when applied toward a long-term base. Currently, there are no viable refunding candidates to consider.
3. *Tax-exempt Exchange* – Tax-Exempt exchange is a hybrid concept that involves budgeting and financing. The concept involves a 4-step process:
 1. Identify capital projects to be funded with accumulated cash balances (“pay go”)
 2. Issue tax-exempt bonds to finance these projects instead of on a pay go basis
 3. Use pay go cash earmarked for the capital projects to make ADPs
 4. Reallocate budgeted UAL payments to pay the debt service on the tax-exempt bonds

Given the long-term nature of capital budgeting decisions, there are currently no feasible cash-funded capital projects that can be considered for implementation of a tax-exempt exchange concept.

4. *Pension Obligation Bonds* – POBs effectively refinance the City’s UAL payments, based on a 6.625% interest rate, at a lower interest rate. POBs are taxable bonds and therefore require a

higher interest rate than a traditional City financing that is issued with tax-exempt interest rates. Once issued, POB proceeds are then deposited with and invested by the Retirement Plans. Like all investment decision, POBs are subject to market timing risk.

Unless POBs are issued purely for short-term budgetary relief, they are generally considered credit neutral since the rating agencies have already factored in the pension liability when assessing the issuer's total debt burden.

To minimize the cost of capital, the City should consider the application of monies to pay off UAL bases in the following order:

1. Reserves, Surplus & One-Time Monies
2. Leveraged Refunding & Tax-Exempt Exchange
3. Pension Obligation Bonds

Additionally, the City can apply the savings achieved from these funding strategies toward an outstanding base or deposit into a 115 Trust/Pension Stabilization Fund to offset future cost increases ("Recycling Savings"). Recycling Savings provides maximum flexibility since it can be done annually and on a case-by-case basis.

SECTION 3 SUMMARY – GFOA ADVISORY

In February 2021, the GFOA affirmed that their guidance on issuing POBs remains current regardless of economic cycles. The Advisory notes five key issues or concerns that we address below.

GFOA Advisory on Pension Obligation Bonds	
GFOA Commentary	Response
POBs are complex structures that may utilize Guaranteed Investment Contracts, CABs, and swaps/derivatives.	POBs should only be issued as plain, vanilla fixed-rate bonds.
POBs increase debt burden and potentially use up debt capacity.	The UAL is considered "debt" under GASB 68 and by rating agencies and already uses up debt capacity from a debt affordability perspective – POBs refinance UAL at a lower cost.
POBs are frequently structured in a manner that defers or extends repayment.	POBs should NOT finance normal costs or extend payments.
Rating agencies may not view POBs as credit positive, particularly if not part of a comprehensive plan.	Rating agencies generally view POBs as credit neutral if they are issued as part of a long-term comprehensive plan and not to compensate for financial distress.
Invested POB proceeds might fail to earn more than the interest rate on the bonds, leading to an increased UAL.	Primary risk of POBs is market timing risk – the risk that the market drops soon after the retirement system invests the POB proceeds in the market. <u>This risk should be thoroughly analyzed and understood by issuers.</u> Market timing risk is inherent to every investment decision made, regardless of the funding source (i.e., POBs or cash) or type of investment. Risk can be mitigated by dollar cost averaging, multiple funding strategies, and hedges or downside protection in the investment portfolio.

SECTION 4 SUMMARY – PENSION OBLIGATION BONDS 2.0

There have been a number of changes in the last decade, including pension reform in retirement systems across the United States, changes in accounting standards related to pension liabilities, and an evolution of the POB market since 2017, which have resulted in “POBs 2.0”. In contrast to prior generation POBs that may have utilized Capital Appreciation Bonds (“CABs”), variable rate structures, swaps, or non-callable bonds, or issued in a higher interest rate environment, POBs 2.0 have strictly issued plain, vanilla fixed-rate Current Interest Bonds (“CIBS”) with standard 10-year par call options in a historically low interest rate environment. Moreover, pension reforms and new accounting regulations (GASB 68) that require government agencies to place pension liabilities directly on their balance sheets have resulted in increased transparency, focus, and strategies for ensuring that retirement plans accumulate the funds they need to pay future benefits that have been promised to employees. As a result, government agencies are now making concerted efforts to understand and address their pension liabilities, and there is a much higher level of attention and analysis involved.

When advising our clients, UFI includes the development of customized pension models, evaluation of multiple pension obligation funding strategies, performance of scenario and risk analyses (including Monte Carlo Simulation), and participation in City Council and stakeholder workshops geared towards development and formal adoption of a comprehensive Pension Obligation Funding Plan.

SECTION 5 SUMMARY – CASE STUDIES

As part of our report, we examine the performance of three prior generation POB issuances (all CalPERS agencies) to identify the factors contributing to their likelihood of success or worse-than-expected results. We evaluate the year-to-date results since the final outcome has yet to be determined until the bonds mature. We review two POB issuances from 2004 (California Statewide Communities Development Authority (“CSCDA”) and Burbank) and a POB issued in 2012 (Oakland). The 2004 CSCDA POB issuance is expected to approximately breakeven, and the 2004 Burbank POBs issuance is expected to end with a positive portfolio balance, but well below initial expectations. The 2004 issues faced a market downturn during the Great Recession, combined with high borrowing rates (~6.0%); and the non-callable structures and inability to refinance the POBs have driven the worse-than-expected outcomes. By contrast, the Oakland POBs were issued in 2012 as fixed-rate Current Interest Bonds after the Great Recession in a more favorable borrowing rate environment (~4.3%). Additionally, the Oakland POBs benefitted from the market rebound and good investment returns in the initial two years after issuance.

Finally, we include the City of Glendora POBs as an early example of a POBs 2.0 case study. Glendora (also a CalPERS agency) issued plain, vanilla fixed-rate bonds, with a 10-year par call and 24-year final maturity. The \$64 million POBs were issued at a True Interest Cost of 2.81%. It is too early to tell if the POBs will present net economic benefit. CalPERS’ return for the first year since the POBs were issued was 4.70%, and CalPERS’ current YTD return (through March 2021) is approximately 13.75%.

SECTION 6 SUMMARY – POBs 2.0 STRUCTURING CONSIDERATIONS

Total POB Savings – Total POB savings can be broken down into two components: Budgetary Savings (cash flow savings achieved with lower annual POB debt service payments compared to the current annual UAL payment) and UAL Avoidance Costs (savings based on avoidance of projected future increases in UAL payments). With a focus on Budgetary Savings, we present in our report three POB scenarios: two (2) “book-ends” and a mid-point strategy. It is important to note, no decision has been made on bond sizing;

these scenarios are designed to assist in understanding the orders of magnitude and potential impact of issuing POBs on the City's UAL.

We present three POB scenarios in this report: Two "book-ends" and a mid-point strategy:

Par Value	Scenario	UAL Amount / Base	Annual Budgetary Savings
\$780 Million	Minimum	Federated Base #2	\$9.3 Million
\$1.4 Billion	Mid-Point	Longest Base 18-Years+	\$30.5 Million
\$3.3 Billion	Maximum	100% UAL	\$71.6 Million

Barbell Strategy - We also discuss a \$1.4 billion barbell structure that targets both long-term and short-term bases in the Retirement Plans. The barbell strategy provides a lower amount of annual savings than the \$1.4 billion POB scenario that targets the longest bases in the Retirement Plans: \$29.6 million versus \$30.5 million. Since the General Fund share of the Federated Plan's UAL payments is only 45%, while 100% of the UAL in the Police & Fire Plan is allocated to the General Fund, the barbell strategy provides a greater amount of savings to the General Fund.

Sensitivity Analysis – Our POB scenarios incorporate a 0.50% cushion above today's rates. We also ran two scenarios that illustrate the impact of rising interest rates on savings based on an additional 0.50% as well as an additional 1.00%. Savings declined by nearly 50% (from \$29 million to \$16 million per year) with a 1.00% additional increase in borrowing rates.

SECTION 7 SUMMARY – POB RISK ANALYSIS

The primary risk involved with the issuance of POBs is market timing risk. POBs borrow money to invest into the City's Retirement Plans. Depositing additional money to the Retirement Plans "leverages" the dollar impact of investment returns, equally for both positive and negative performance.

Many use an axiom that the investment return on invested POB proceeds must exceed the borrowing rate on the POBs. This axiom does not take into consideration the most important factor – investment returns during the initial years or the timing of returns. In our report, we compare the Ending Portfolio Value Differential (i.e., the increased portfolio value attributable to the issuance of POBs) for two \$524 million 11-year POB issuances with a 6.5% overall portfolio return but different returns during the initial years. Under one scenario, the portfolio realizes early losses, resulting in a \$20 million Ending Portfolio Value Differential; and, in the other scenario, the portfolio realizes strong returns in the initial 3 years, resulting in a \$108 million Ending Portfolio Value Differential.

In order to incorporate this market timing element to the probability of success of POBs, we run a Monte Carlo Simulation that generates random interest rate returns for each year the POBs are outstanding and then compares the ending portfolio balance between current UAL payments and POBs. Scenarios are run 10,000 times to determine the projected outcome (i.e., probability of success).

The results of a Monte Carlo Simulation do not ensure a positive outcome. However, a POB that generates an 80% probability of success is more compelling than a POB that generates a 50% probability of success. Monte Carlo Simulations should be used as a tool to help understand the key factors that drive the success of POBs—namely, the cushion between borrowing rates and the discount rate as well as volatility of the market—but should not be used to predict a final outcome. While the bond costs will be fixed when the bonds are issued, the success of a 20- or 30-year POB will be determined by investment decisions and changes in the market over the life of the bonds.

To address market timing risk, the City could pursue two strategies in cooperation with the Boards of the Retirement Plans:

Dollar Cost Averaging – Selection of a strategy that makes periodic investments over time (i.e., issue multiple series, or tranches, of POBs or implement multiple pension obligation funding strategies over time).

Hedge – Implementation of an investment strategy or product by the Boards of the Retirement Plans that is designed to provide downside protection.

SECTION 8 SUMMARY – FINAL CONSIDERATIONS

UFI strongly recommends developing a comprehensive Pension Obligation Funding Plan that includes: 1) A full description of the City’s Retirement Plans and liabilities; 2) Reserve and funding target levels; 3) How one-time monies and reserves will be applied; 4) Allocation of additional resources; 5) Minimum savings levels; and 6) POB structuring guidelines. The City should anticipate that its UAL will change over time and investment results will vary. Therefore, it should expect to “actively manage” this liability and make adjustments to the Funding Plan as the landscape changes.

We anticipate that the City will pay down a portion of its UAL (or new bases that are added in the future) from available reserves, operating surplus, and one-time monies. The City should continue monitoring for opportunities such as Leveraged Refunding and Tax-Exempt Exchange to reduce its UAL. Additionally, the City should consider Recycling Savings by applying savings generated by these strategies toward an additional payment on its UAL or depositing into a Section 115 Trust to offset future pension costs.

To the extent possible, the City should seek to address the Federated plan first. The disparity in the funding levels between the two Retirement Plans is significant. Any attempts to prepay or fund a portion of the UAL should be biased toward the Federated Plan until the funding status reaches a higher Funding Ratio.

Finally, if the City Council decides to proceed with the validation process, which can take four to seven months but does not obligate the City to issue POBs, we strongly recommend that the City request authority to issue POBs at the full amount of the UAL for both plans in order to give the City maximum flexibility for any upcoming and future POB issuances.

SECTION 1 – UAL BACKGROUND

UAL FUNDING RATIO

The City has a UAL equal to \$3.5 billion, as reflected in the most recent Actuarial Valuation Reports³ as of June 30, 2020. The Federated Plan is 52.29% funded and the Police & Fire Plan is 73.58% funded as shown in Exhibit 1.

Exhibit 1

Unfunded Actuarial Liability as of June 30, 2020			
	<u>FEDERATED</u>	<u>SAFETY</u>	<u>COMBINED</u>
Tier 1	4,287,182,000	5,187,934,000	9,636,417,000
Tier 2	113,901,000	47,400,000	161,301,000
Accrued Liability (AL)	\$ 4,401,083,000	\$ 5,235,334,000	\$ 9,636,417,000
Actuarial Value Assets (AVA)	2,301,470,000	3,851,948,000	6,153,418,000
UAL = AL-AVA	\$ 2,099,613,000	\$ 1,383,386,000	\$ 3,482,999,000
	52.29%	73.58%	63.86%

Comparison to Other Agencies and Averages

- National Conference on Public Employee Retirement Systems (NCPERS) – 74.5% (June 2020 Survey)
- California Public Employees' Retirement System (CalPERS) – 70% (June 30, 2019 valuation)
- Los Angeles City Employees' Retirement System (LACERS) – 66.3% (June 30, 2020 valuation)
- San Francisco Employees' Retirement System (SFERS) — 90.6% (June 30, 2019 valuation)

The ultimate goal of any pension plan is to be 100% funded. In practice, however, the funding level can fluctuate +/- 10% from this level: 90-110%. Any funding plan the City develops should target a 100% funding level, but this target may take several years to reach. The Federated Plan is near a 50% funding level, which is a point of concern; and any pension funding strategies and policies should seek to bolster its funding level first.

Tipping Point for the Federated Plan

The Federated Plan's current funding level places it in a precarious position. Tier 1 has a funding ratio of 51.3% and Tier 2 (with employees sharing in the funding of the UAL) has a funding ratio of 89.7%, for a combined funding ratio of 52.3%.

³ June 30, 2020 Actuarial Valuation Reports:

Federated Report for June 30, 2020 –

<https://www.sjretirement.com/Uploads/Fed/Actuarial%20Valuation%20for%20period%20ending%20June%2030th,%202020.pdf>

Police and Fire Report for June 30, 2020 –

<https://www.sjretirement.com/Uploads/PF/Actuarial%20Valuation%20for%20period%20ending%20June%2030th,%202020.pdf>

A Joint Congressional Committee Hearing on the Funding Status of the Pension Benefit Guaranty Corporation was held in April 2018. A statement made by Thomas A. Barthold⁴, Chief of Staff of the Joint Committee on Taxation, during this hearing described three critical junctions in the pension funding cycle: critical, critical and declining, and insolvent.

Critical “is when a plan is currently underfunded, and it also appears that the deficit is likely to increase.”

Critical and Declining is when the actuary determines that in “the next 14 years the plan will become insolvent.”

Insolvent “is when, in the current year, the resources of the plan are insufficient to pay plan benefits...in short, there is not enough money to meet current need under the plan.”

During the same Congressional Hearing, Ted Goldman, Senior Pension Fellow of the American Academy of Actuaries, stated that “severely distressed plans that were unable to recover... were characterized by high maturity levels. In other words, the number of active participants in the plan is dwarfed by the number of inactive and retired participants in those plans.”

The Federated Plan is a maturing plan – it has **3,742 active and 6,055 inactive and retired** participants. Although the Federated Plan is not in immediate danger of reaching insolvency or a tipping point, it is perched near the precipice.

Don Boyd from the Rockefeller Institute of Government states that a funding ratio lower than 40% could be considered a good indicator of a deeply troubled U.S. pension fund. “Once a plan falls below this level, the ability to recover decreases dramatically and is unlikely to succeed without significant contribution”.⁵ Unlike the City that has a 20-year fixed amortization schedule, the 40% threshold was based on pension plans with 30-year rolling amortization levels. However, an article in Pension & Investments discussed a threshold as high as 60% leading to financial difficulty.⁶

AMORTIZATION BASES

The City’s \$3.5 billion UAL can be viewed as a debt portfolio comprised of a series of amortization bases, or individual loans, at an interest rate of 6.625%, prepayable without penalty on any date. Each amortization base has specific repayment terms and corresponding repayment schedules.

The actuary adjusts the UAL each year due to a combination of factors, including investment performance, actual retirement/mortality patterns, and changes in assumptions and methods. Therefore, the UAL is a dynamic liability and should be actively managed. Even if the City pays off its UAL in full today, the City should anticipate that new bases (liabilities) will be added in the future.

In some years, the City can earn “credits” against the UAL, most typically for positive investment performance above the Discount Rate (currently, 6.625%). The actuary adjusts for investment performance using a 5-year rolling average to minimize the annual change in the contribution requirements.

⁴ The History and Structure of the Multiemployer Pension System, Hearing before the Joint Select Committee on Solvency of Multiemployer Pension Plans, United States Congress, One Hundred Fifteenth Congress, Second Session, April 18, 2018.

⁵ Analyzing the Interplay Between Public Pension Finances and Governmental Finances: Lessons from Linking an Economic Model to a Pension Fund Model

⁶ Pension & Investments (online) – Mauritis van Joolinger, Ortec Finance, Rotterdam, Netherlands

The June 30, 2020 Actuarial Reports, produced in December 2020, establish the required pension contributions (Normal Costs & UAL payments) for the upcoming fiscal year (FY 2021-22).

The Federated Plan has a \$2.1 billion UAL entering into FY 2021-22, comprised of 42 amortization bases:

- Federated Plan Tier 1: 25 Amortization Bases - \$1,942,421,000
- Federated Plan Tier 2: 17 Amortization Bases - \$10,850,000

In addition, the City had an annual UAL payment on July 1, 2020 equal to \$144,535,000⁷. This amount represents a portion of the total required annual pension contribution and does not include the normal costs. Exhibit 2 illustrates the Federated Plan's UAL, broken down into its current amortization bases.

Exhibit 2

FEDERATED											
Tier 1					Tier 2						
	Reason	Balance	Term	Payment		Reason	Balance	Term	Payment		
1	Golden Handshake	\$ 20,977,000	19	\$ 1,609,000	1	2013 (Gain) or Loss	\$ 39,000	7	\$ 8,000		
2	2009 UAL	752,667,000	19	57,747,000	2	2013 Assumption Changes	-	7	-		
3	2010 (Gain) or Loss	40,945,000	10	5,128,000	3	2014 (Gain) or Loss	(492,000)	7	(84,000)		
4	2010 Assumption Change	(51,562,000)	15	(4,689,000)	4	2014 Assumption Changes	90,000	7	15,000		
5	2011 (Gain) or Loss	(2,507,000)	11	(290,000)	5	2015 (Gain) or Loss	710,000	7	120,000		
6	2011 Assumption Changes	167,596,000	16	14,530,000	6	2015 Assumption Changes	344,000	7	58,000		
7	2012 (Gain) or Loss	101,611,000	12	10,978,000	7	2016 (Gain) or Loss	(464,000)	7	(79,000)		
8	SRBR Elimination	(37,341,000)	12	(4,034,000)	8	2016 Assumption Changes	378,000	7	64,000		
9	2013 (Gain) or Loss	65,626,000	13	6,657,000	9	2017 (Gain) or Loss	(609,000)	7	(103,000)		
10	2013 Assumption Changes	59,828,000	18	4,766,000	10	Measure F	4,647,000	7	789,000		
11	2014 (Gain) or Loss	(23,391,000)	14	(2,241,000)	11	2017 Assumption Changes	1,368,000	7	232,000		
12	2014 Assumption Changes	99,403,000	19	7,626,000	12	2018 (Gain) or Loss	(2,047,000)	8	(309,000)		
13	2015 (Gain) or Loss	45,851,000	15	4,170,000	13	2018 Assumption Changes	1,254,000	8	190,000		
14	2015 Assumption Changes	201,965,000	20	14,962,000	14	2019 (Gain) or Loss	914,000	9	125,000		
15	2016 (Gain) or Loss	107,447,000	16	9,316,000	15	2019 Assumption Changes	(1,168,000)	9	(160,000)		
16	2016 Assumption Changes	59,414,000	21	4,260,000	16	2020 (G)/L	3,370,000	10	422,000		
17	2017 (Gain) or Loss	57,643,000	17	4,782,000	17	2020 Assumption Change	2,516,000	10	315,000		
18	Measure F	6,883,000	17	571,000							
19	2017 Assumption Changes	(17,386,000)	22	(1,209,000)							
20	2018 (Gain) or Loss	47,739,000	18	3,803,000		7/1/2020 Payment - Tier 1	\$ 143,689,000				
21	2018 Assumption Change	53,227,000	23	3,598,000		7/1/2020 Payment - Tier 2	\$ 846,000				
22	2019 (Gain) or Loss	55,649,000	19	4,269,000			\$ 144,535,000				
23	2019 Assumption Change	(1,699,000)	24	(112,000)							
24	2020 (Gain) or Loss	97,371,000	20	7,213,000		Federated Plans	\$ 2,097,806,000				
25	2020 Assumption Change	34,465,000	25	2,212,000							
	FY 21-22	\$ 1,942,421,000		\$ 155,622,000							

Source: Federated City Employees' Retirement System June 30, 2020 Actuarial Valuation Report, Table VI-2, Page 34

The City has a separate plan for sworn police officers and firefighters. The total UAL for the Police & Fire Plan is \$1.4 billion entering into FY 2021-22, comprised of 64 amortization bases (see Exhibit 3):

- Fire Plan: 32 Amortization Bases - \$577,248,369
- Police Plan: 32 Amortization Bases - \$671,120,631

⁷ This number does not reflect an annual prefunding

In addition, the City had an annual UAL payment on July 1, 2020 equal to \$136,661,000⁸. This amount represents a portion of the total required annual pension contribution and does not include the normal costs. Exhibit 3 illustrates the Police & Fire Plan's UAL, broken down into its current amortization bases.

Exhibit 3

POLICE & FIRE					
		BALANCE		PAYMENT	
Reason		FIRE	POLICE	Term	
1 2005 Experience Loss		2,978,191	3,501,809	2	1,621,000 \$ 1,906,000
2 2005 Benefit Improvement		-	5,308,000	2	- 2,889,000
3 2007 Benefit Improvement		12,490,000	-	3	4,626,000 -
4 2007 Experience Gain		(27,374,865)	(32,176,135)	6	(5,388,000) (6,333,000)
5 2007 Assumption Change		6,496,076	7,634,924	7	1,118,000 1,314,000
6 2009 Loss		62,628,386	73,612,614	6	12,327,000 14,489,000
7 2009 Assumption Change		39,234,977	46,114,023	9	5,464,000 6,422,000
8 2010 Experience Loss		45,048,902	52,949,098	6	8,867,000 10,422,000
9 2010 Assumption Change		31,270,295	36,746,705	10	3,997,000 4,697,000
10 2011 Experience Gain		(76,209,892)	(89,577,108)	6	(15,000,000) (17,631,000)
11 2011 Assumption Change		21,734,177	25,540,823	11	2,575,000 3,026,000
12 2012 Experience Loss		45,061,034	52,963,966	8	6,922,000 8,136,000
13 2012 SRBR Elimination		(10,989,468)	(12,916,532)	8	(1,688,000) (1,984,000)
14 2012 Assumption Change		43,551,546	51,183,454	12	4,822,000 5,667,000
15 2013 Experience Loss		29,396,262	34,551,738	9	4,094,000 4,812,000
16 2013 Assumption Change		11,748,653	13,812,347	13	1,224,000 1,439,000
17 2014 Experience Gain		(24,519,211)	(28,823,789)	11	(2,905,000) (3,415,000)
18 2014 Assumption Change		23,777,878	27,947,122	14	2,344,000 2,755,000
19 2015 Experience Gain		(4,059,328)	(4,776,672)	11	(481,000) (566,000)
20 2015 Assumption Change		39,165,548	46,034,452	15	3,672,000 4,316,000
21 2016 Experience Gain		65,617,028	77,129,972	11	7,774,000 9,138,000
22 2016 Assumption Change		32,098,497	37,725,503	16	2,875,000 3,379,000
23 2016 Measure F (Rehires)		379,490	2,421,510	12	42,000 268,000
24 2017 Experience Loss		45,438,043	53,412,957	12	5,031,000 5,914,000
25 2017 Assumption Change		(58,784,537)	(69,090,463)	17	(5,048,000) (5,933,000)
26 2018 Measure F (Classic/Fed)		9,000	81,000	13	1,000 9,000
27 2018 Experience Loss		18,198,198	21,384,802	13	1,896,000 2,228,000
28 2018 Assumption Change		34,320,647	40,337,353	18	2,835,000 3,332,000
29 2019 Experience Loss		64,368,870	75,648,130	14	6,346,000 7,458,000
30 2019 Assumption Change		36,938,374	43,412,626	19	2,944,000 3,460,000
31 2020 Experience		33,551,357	39,427,643	15	3,146,000 3,697,000
32 2020 Assumption Change		33,684,239	39,598,761	20	2,597,000 3,053,000
FY 20-21		\$ 577,248,369	\$ 671,120,631		\$ 68,650,000 \$ 78,364,000
7/1/2020 Payment		\$ 136,661,000			
		\$ 1,385,030,000			

Source: City of San José Police and Fire Department Retirement Plan June 30, 2020
Actuarial Valuation Report, Table VI-3, Page 33

⁸ This number does not reflect an annual prefunding

Tier 2

The City began its pension reform efforts in 2012, by adopting a second tier of retiree benefits (Tier 2) for employees hired after the following dates:

- Police – August 4, 2013
- Fire – January 2, 2015
- Federated - September 30, 2012

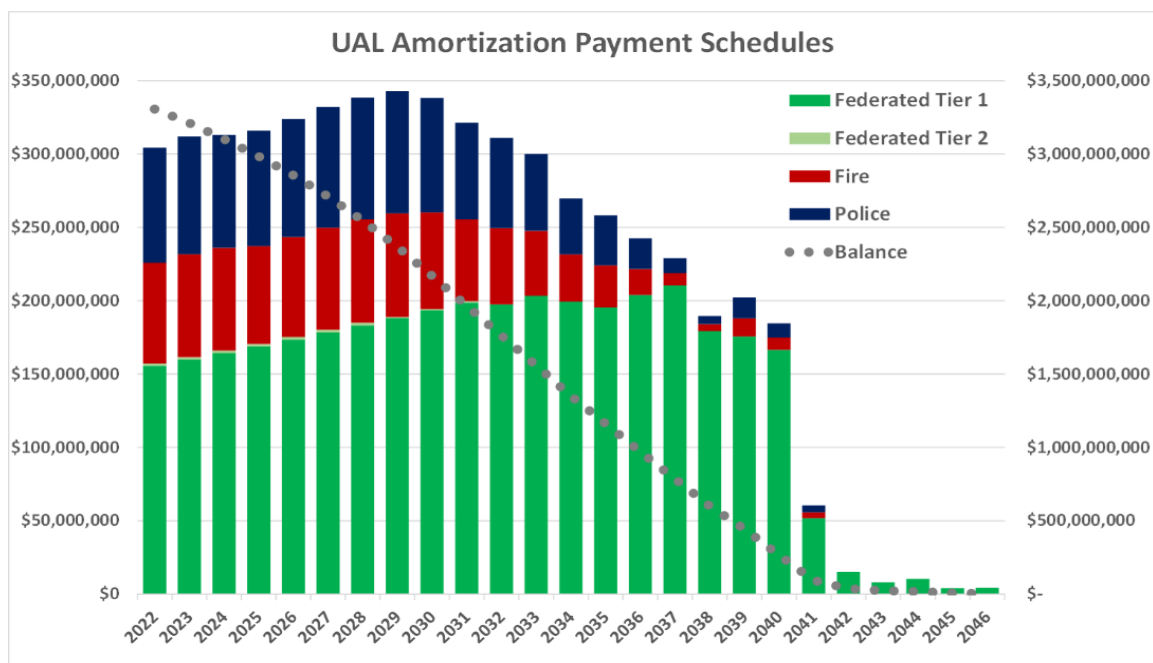
Tier 2 employees have significantly reduced benefits compared to Tier 1 employees and share in 50% of normal and UAL costs. As a result, and the fact that these are new employees to the Retirement Plans, the UAL for Tier 2 employees is nominal. In the most recent actuarial report for the Federated Plan, dated June 30, 2020, the UAL is broken down into Tier 1 and Tier 2 components. The Tier 2 UAL (\$11.7 million) is 0.56% of the total combined UAL of \$2.1 billion.

The actuarial report for the Police & Fire Plan, dated June 30, 2020, does not break out the UAL between Tier 1 and Tier 2 employees, but the City intends to work with the actuary to provide this information. Due to the limited scale of the UAL and cost sharing requirement for Tier 2 employees, strategies presented in this report to address the City's UAL focus on the Tier 1 UAL component.

UAL PAYMENTS

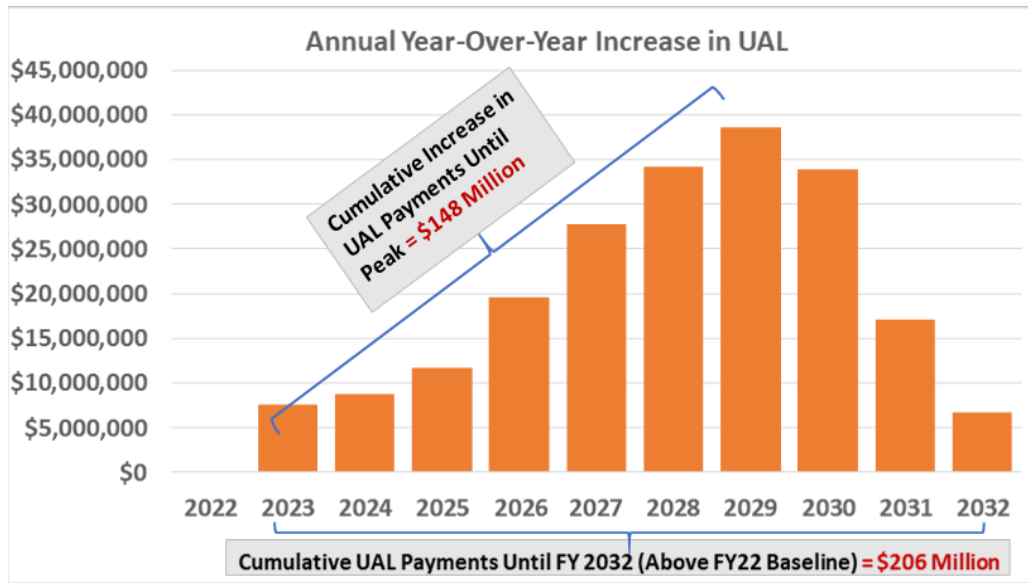
Adding the payment schedules of all 106 amortization bases together produces a projection of the full impact of UAL payments, including the timing and magnitude of increased annual payments as shown in Exhibit 4.

Exhibit 4



For the City, UAL payments are scheduled to increase from \$304.2 million in FY 2021-22 to a peak of \$342.9 million in FY 2028-29. Over this same period, the City's UAL has a cumulative increase in payments of \$148 million as shown in Exhibit 5.

Exhibit 5



SECTION 2 – FUNDING STRATEGIES

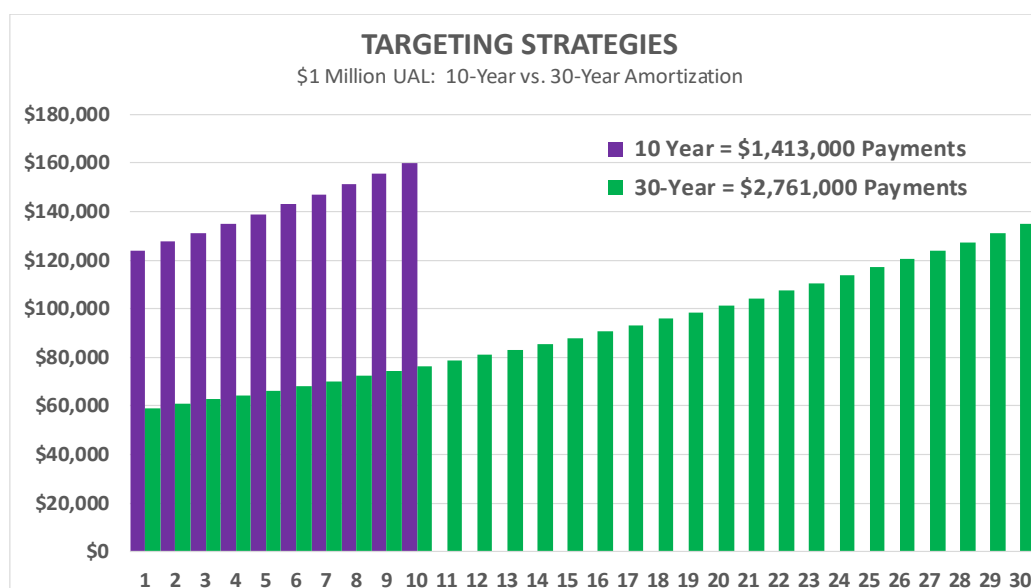
BASE SELECTION STRATEGIES

When CalPERS agencies make an additional payment to pay down their UAL, they are required to identify to which base the payments should be applied. Although the City does not have a formal policy regarding base selection or “targeting” strategy, our analysis assumes the Retirement Plans will embrace this practice. Each of the City’s (106) amortization bases has a different repayment term and corresponding payment schedule. Therefore, a “pre-payment” will have a different financial impact depending on which base is selected.

The decision to apply additional monies toward a long amortization base or a short amortization base depends on the City’s financial objectives and funding strategy.

Base Selection Strategies follow a simple axiom: prepaying long bases generates higher total savings, while prepaying short bases provides a greater budget/cash flow impact (as illustrated in Exhibit 6).

Exhibit 6



The City may achieve both budgetary relief and maximized savings through a “barbell” strategy by targeting both long and short bases. In this case, it is prudent to target shorter bases with taxable pension obligation bonds (“POBs”), thereby amortizing more expensive debt upfront, and longer bases with cash or refunding savings. However, the City is likely to utilize multiple strategies over time and may decide to target a specific amortization base dependent upon the available funding opportunity.

For example, the City may choose to issue POBs in multiple tranches (or series). Under this scenario we may recommend that the first series of POBs pay off long bases (to lock-in savings under the current low interest rate environment). Subsequent POB issues would pay off shorter bases (if interest rates increase over time, the subsequent borrowings will have shorter average lives). Moreover, the City may decide to “recycle” Budgetary Savings from the POBs and apply them toward the shortest bases to realize budgetary relief. In short, implementing targeting strategies can allow the City to make more surgical decisions and develop a long-term plan to address multiple funding objectives.

ALTERNATIVE FUNDING STRATEGIES

Devising a targeting or prepayment strategy is one part of the equation and coming up with the funds to make a prepayment is the other critical part of the equation. The City should evaluate and determine the viability of implementing alternative funding strategies to address its rising pension costs. Our recommended course of action is typically to develop a long-term, comprehensive Pension Obligation Funding Plan that contemplates multiple strategies over time. For most cities, this strategy includes the issuance of POBs. Below, we discuss various funding strategies.

Pension Stabilization Fund (Section 115 Trust)

Similar to the irrevocable IRS Code Section 115 Trusts that have been set up for the City's Other Post-Employment Benefits (OPEB) liabilities, the City can set up 115 Trusts for its pension obligations and deposit one-time monies or refunding savings into these trusts to soften the budgetary impacts of future rising pension costs. In other words, the 115 Trust can serve as a pension stabilization fund that can provide more budgetary relief than making Additional Discretionary Payments ("ADPs") since assets in the 115 Trust can be used toward current UAL payments versus ADPs, the savings of which are spread out over the amortization period.

Any assets deposited into these 115 Trusts may only be used for the designated purpose of paying pension obligations, and these assets offset the unfunded pension liabilities on the City's financial statements from a GASB 68 perspective. 115 Trusts also allow the City to have direct control of investment selection/responsibility for portfolio performance with greater flexibility (i.e., funds can be invested in equities) and risk diversification than is permitted under the California Investment Code for general fund investments. Having a pension 115 Trust also allows the City to time its ADPs.

A common question is whether POB proceeds can be deposited into a pension 115 Trust. As discussed in further detail below under "Validation Proceedings," POBs are issued under the provisions of the Refunding Bond Law. Part of the legal underpinnings of the Refunding Bond Law is that the City is issuing the POBs to refinance and pay off existing obligations or bonds. The obligation of the City to pay the UAL will be validated by the Courts as an obligation of the City which is imposed by law under the City's Charter and thus suitable to be refunded under the Refunding Bond Law. Accordingly, in order to comply with the Refunding Bond Law, the proceeds from POBs must be used to extinguish all or a portion of its prior pension debt or obligations. Although the assets in a pension 115 Trust offset pension liabilities from a GASB 68 perspective, deposits to a 115 Trust do not legally extinguish any of the obligation of the City to make the UAL payments and would therefore not satisfy the requirements of the Refunding Bond Law.

Use of Reserves & One Time Monies

The City's UAL is comprised of individual loans at an interest rate of 6.625%; therefore, the City should consider the "opportunity cost" of its financial/investment decisions in the context of this ever-growing pension liability. Evaluating the opportunity cost requires the City to decide whether to continue to fund/increase reserves or to pay down the UAL. Currently, the City's pension liability is accruing at a 6.625% rate, while the City's investment portfolio earned 1.74% for the quarter ended December 31, 2020. Under these investment parameters, the City may consider making a prepayment towards its UAL when excess reserves or one-time monies become available from its General Fund or various Enterprise Funds.

Federated Base #21 has an outstanding balance of \$53.2 million and a repayment term of 23 years, totaling \$113.3 million in payments. By making a prepayment or ADP from reserves and selecting

Federated Base #21, the City would eliminate \$2.13 million in total UAL payments for each \$1.0 million paid (or 213% ratio). Conversely, the City could target a shorter-term base such as Federated Base #3 if the City wanted greater cash flow impact, but the ratio would drop to 142% (see Exhibit 7).

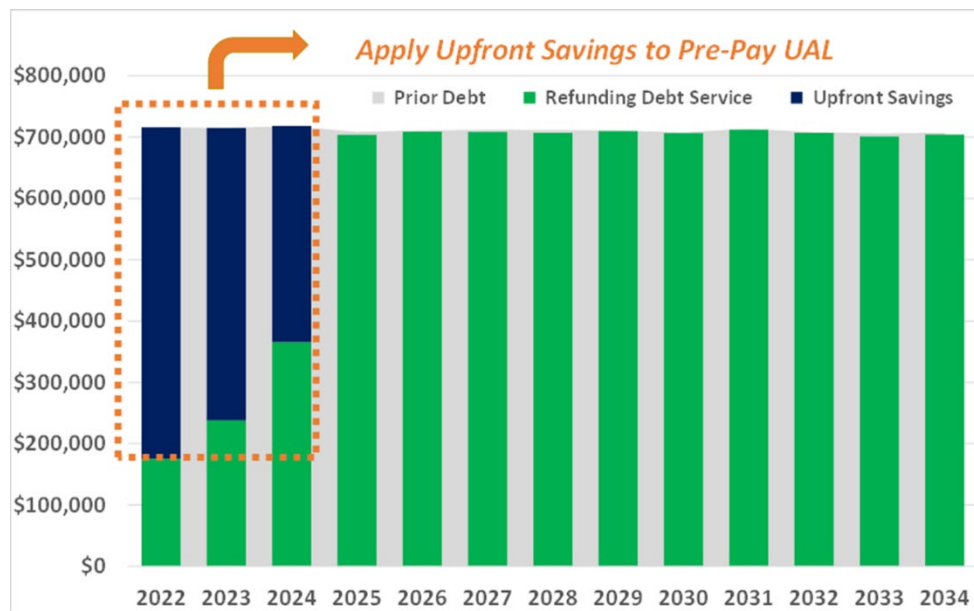
Exhibit 7

CITY OF SAN JOSE- BASE SELECTION SELECTION								
Plan	#	Year	Term	Outstanding UAL Balance	Total UAL Payments	Avg. Annual Payment	Interest Costs	Ratio
SHORT FED	3	2010	10	\$ 40,945,000	58,114,418	5,811,442	\$ 17,169,418	142%
LONG FED	21	2018	23	\$ 53,227,000	113,343,905	4,927,996	\$ 60,116,905	213%

Leveraged Refunding

The City manages a debt portfolio across its General Fund and Enterprise Funds and will have refunding opportunities for its outstanding bonds. In such instances, the City should strongly consider a Leveraged Refunding, which structures the refunding bonds with “upfront” savings in the first few years, and then applies these savings to pay for a portion of the City’s UAL. As illustrated in Exhibit 8, when additional monies are applied to a long-term base, the savings from the bond refunding can be leveraged 2.0 to 2.5 times greater after taking into consideration the UAL cost savings. This strategy can only be implemented when refunding candidates in the City’s debt portfolio are available, and there are currently no viable refunding candidates to consider. The City has recently refunded many of its bonds for operational savings, and while there are some further limited bond refunding opportunities, they do not free up savings sufficient to provide a meaningful impact in the funds from which UAL is paid.

Exhibit 8

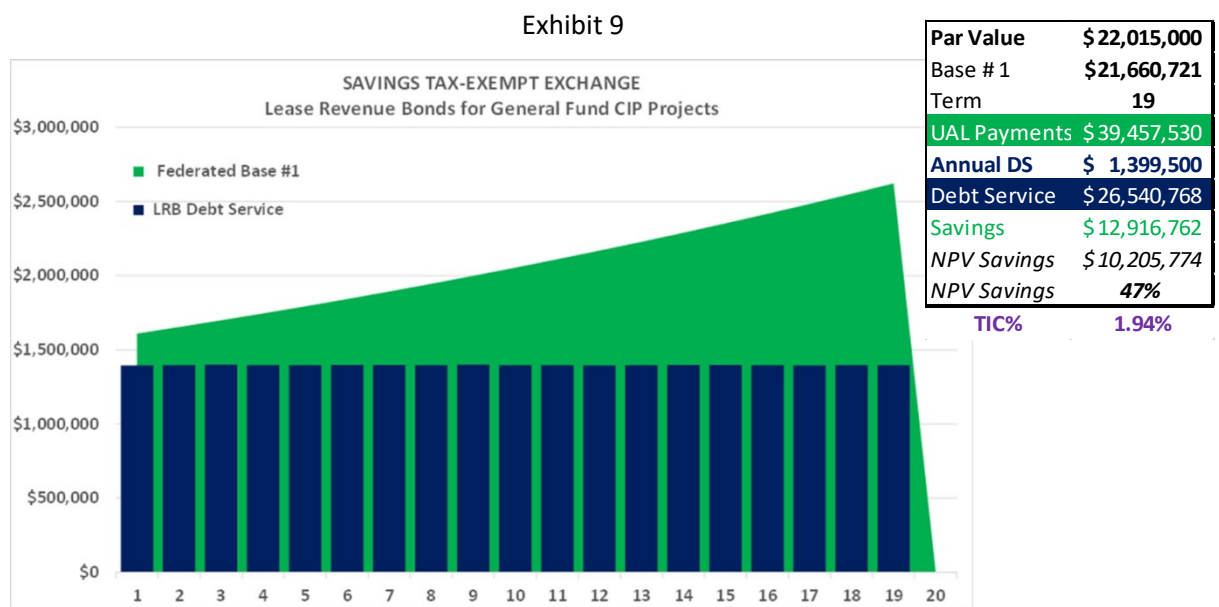


Tax-Exempt Exchange

Tax-Exempt Exchange is a hybrid concept that involves budgeting and financing. The concept involves a 4-step process:

1. Identify capital projects to be funded with accumulated cash balances (“pay go”)
2. Issue tax-exempt bonds to finance these projects instead of pay go
3. Use pay go cash earmarked for the capital projects to pay-off UAL
4. Reallocate budgeted UAL payments to pay the debt service on the tax-exempt bonds

Exhibit 9 reflects an example of the Tax-Exempt Exchange strategy. The City could finance \$21.6 million in capital improvement projects that would otherwise be paid from General Fund or Enterprise Fund monies.



As noted in Exhibit 8, the green shaded area is a representation of the UAL payments for Federated Base #1, which is equal to approximately \$21.6 million. The blue bars represent new annual debt service payments for the \$22 million in tax-exempt bonds that would be issued under a Tax-Exempt Exchange strategy. The total savings equal \$10.2 million over 19 years, or 47% of the amount financed on a present value basis. Tax-Exempt Exchange can be viewed as a complement to POBs or an alternative to ADPs from reserves and is best suited as a strategy to manage future pension liabilities.

Implementation of Alternative Funding Strategies

Although the majority of pension costs and liabilities are allocated to the General Fund, approximately 11% of the City’s UAL (or \$375 million) is allocated to the City’s Enterprise Funds (Airport, Wastewater, Water, Parking, Clean Energy) (See Exhibits 10 and 11).

Exhibit 10
Allocation of UAL to Enterprise Funds

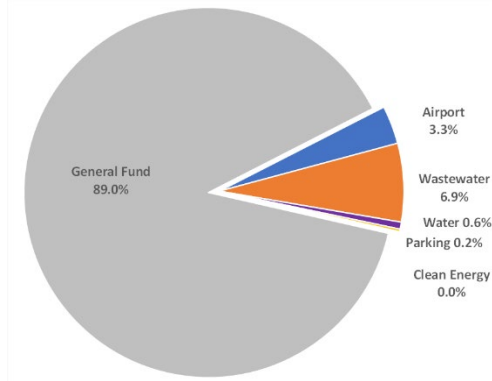


Exhibit 11
Enterprise Fund Financial Data
(Dollars in thousands)

	Cash	Debt	Pension	OPEB	Net Position
Airport	\$ 155,829	\$ 1,157,993	\$ 112,615	\$ 19,983	\$ 28,238
Wastewater	500,778	-	232,042	56,733	189,077
Water	31,835	-	20,460	5,572	14,501
Parking	47,122	-	8,424	1,250	39,814
Clean Energy	28,802	-	1,156	-	18,960
	\$ 764,366	\$ 1,157,993	\$ 374,697	\$83,538	\$ 290,590

Source: City of San José FY 2019-20 CAFR

The City can use excess reserves, Leveraged Refunding, or Tax-Exempt Exchange within the Enterprise Funds to prepay their allocated shares of UAL. UFI has evaluated and discussed these options with City staff. While there are no viable opportunities at this time, we recommend the City incorporate these strategies as part of its ongoing management of its UAL and include them in a Pension Obligation Funding Plan.

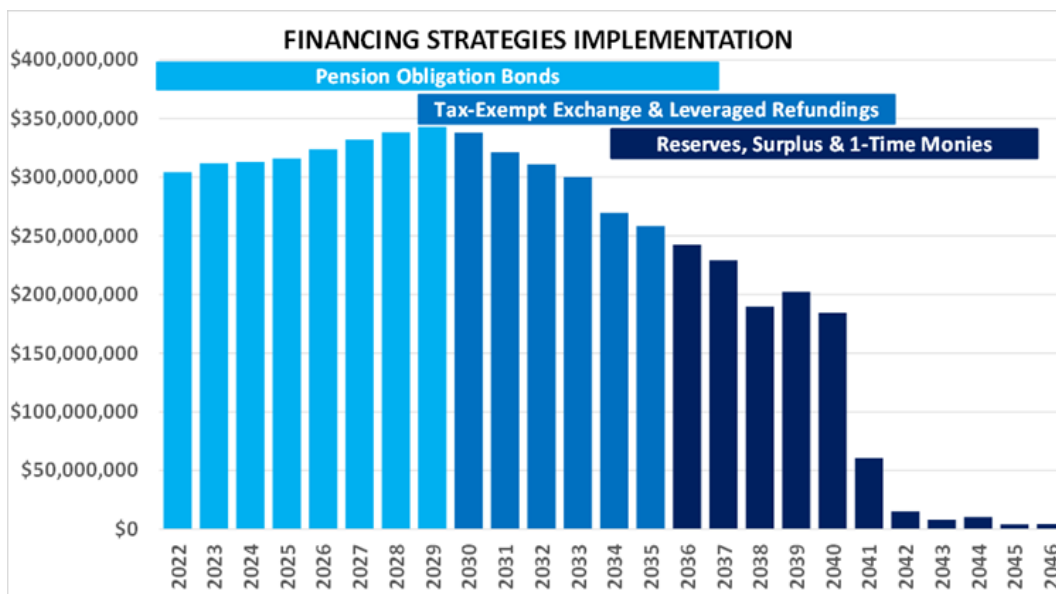
The City should anticipate that its UAL will change over time and investment results will vary. Therefore, it should expect to “actively manage” this liability and make adjustments to its Pension Obligation Funding Plan as the landscape changes.

We have listed the alternative funding strategies in order of economic efficiency (lowest cost of capital to highest borrowing costs). Base Selection or targeting strategies are critical when developing a comprehensive plan with multiple funding strategies. The most cost-efficient funding strategy would be to implement a plan that seeks to minimize the cost of capital. Since there is no borrowing cost associated with using cash, the City should apply reserves or one-time monies toward the longest bases in order to maximize total savings. Monies derived from Tax-Exempt Exchange or Leveraged Refunding should be applied to the next longest bases, since tax-exempt interest costs are lower than taxable interest costs. Finally, since POBs are issued on a taxable basis, the proceeds generated from POBs should target the shortest bases to minimize taxable interest costs.

Therefore, if seeking to minimize the cost of capital, the City should apply monies to pay off UAL bases in the following order:

1. Reserves, Surplus & One-Time Monies
2. Leveraged Refunding & Tax-Exempt Exchange
3. Pension Obligation Bonds (POBs)

Exhibit 12



The City will be limited by practical constraints, such as project budgets, available funding, and timing, which will impact the ability to implement strategies according to this guideline. Nonetheless, the City can seek to apply monies when available according to this simple axiom: lowest interest costs applied to longest bases.

As we illustrate later in this report, savings may be impacted by the retirement plan to which savings are allocated. According to the Budget Office, 55% of the Federated Plan's pension costs are shared by the Enterprise Funds and Special Revenue Funds, while the Police & Fire Plan's pension costs are essentially 100% covered by the General Fund. Therefore, payment into the Police & Fire Plan will have the most direct impact on the General Fund. There is a significant disparity in the funding levels between the two plans: Federated is 52% funded while Police & Fire is 74% funded. We recommend directing additional monies into the Federated Plan until the funding status reaches a higher level (i.e., minimum 65% -70%) or closer to the Police & Fire Plan.

Ultimately, these alternative funding tools are most impactful when utilized for addressing future bases or when concurrently implemented with the issuance of POBs. Other than pension reform initiatives, which the City has already implemented within the last decade, the issuance of POBs is the only currently available tool that can effectuate significant progress toward improving the funding levels of the Federated and Police & Fire Plans and impact the City's required UAL schedule. The remainder of this report focuses on POBs.

PENSION OBLIGATION BONDS

Pension Obligations Bonds were first issued in 1985 as tax-exempt securities, but the Tax Reform Act of 1986 eliminated the ability to issue POBs on a tax-exempt basis. The 1990's saw a re-emergence of POBs as taxable securities, and issuances continued into the 21st Century. However, the bankruptcy filings of Detroit, Stockton, and San Bernardino (all of which had POBs outstanding) in the 2010's understandably turned investors away from POBs. The City also considered the issuance of POBs in 2010 but decided that the market risk was too great at the time. Most recently, widespread pension reform and opportune market dynamics have brought pension obligation bonds back into discussion, study, and prominence in the California bond market.

Since 2017, there have been 111 POBs totaling \$10.8 billion issued throughout the United States with 45 POBs (**41%**) issued in California. California not only has the highest number of POBs issued in the US, but it also the total amount of bonds issue (51%). Of the 45 POBs issued in California, 29 POBs have an issuance size exceeding \$50 million with an average issuance size of \$180 million (see Exhibit 13). Given the size of the City's UAL, any POB that provides a meaningful level of savings will require a significant sized issue compared to many that have come to market to date.

Exhibit 13

CA Pension Obligation Bonds: 2017-2021				
Agency	Date	Par Value	Underwriter	Municipal Advisor
1 Huntington Beach	3/17/2021	363,645,000	Stifel/BAML	KNN
2 Orange	3/3/2021	285,770,000	Stifel	UFI
3 Chula Vista	2/11/20/21	350,025,000	Stifel	NHA Advisors
4 Downey	2/9/2021	113,585,000	BAML	Fieldman Rolapp
5 Monterey Park	2/2/2021	106,335,000	Ramirez/Stifel	UFI
6 El Cajon	1/13/2021	147,210,000	BAML	UFI
7 Ukiah	12/17/2020	49,875,000	Piper	NHA Advisors
8 Coachella	12/8/2020	17,590,000	Ramirez	UFI
9 Gardena	11/24/2020	101,490,000	BAML/Stifel	NHA Advisors
10 Placentia	11/12/2020	52,950,000	Stifel	Harrell & Co
11 Arcadia	10/27/2020	90,000,000	Stifel	UFI
12 Torrance	10/12/2020	349,515,000	Morgan Stanley	NHA Advisors
13 Azusa	9/30/2020	70,075,000	BAML	UFI
14 Pomona	8/20/2020	219,890,000	RBC	UFI
15 West Covina	7/30/2020	204,095,000	Hilltop	NHA Advisors
16 San Bernardino	7/23/2020	5,945,000	Hilltop	Columbia Capital
17 San Bernardino	7/23/2020	13,905,000	Hilltop	Columbia Capital
18 El Monte	6/30/2020	21,000,000	Ramirez	NHA Advisors
19 Carson	6/18/2020	108,020,000	Cabrera	Harrell & Co
20 El Monte	6/18/2020	118,725,000	Ramirez	NHA Advisors
21 North Co FD	6/18/2020	20,305,000	Brandis Tallman	NHA Advisors
22 Inglewood	6/17/2020	101,620,000	Cabrera	UFI
23 Riverside	6/11/2020	432,165,000	BAML	NHA Advisors
24 Montebello	6/10/2020	153,425,000	Cabrera	Hilltop
25 Fort Ord	6/10/2020	30,405,000	Stifel/Citi	NHA Advisors
26 Ontario	5/21/2020	236,585,000	Hilltop	Harrell & Co
27 Larkspur	5/14/2020	18,295,000	DA Davidson	Wulff Hansen
28 County of Riverside	5/6/2020	719,995,000	Raymond James	Columbia Capital
29 Pasadena	2/26/2020	131,805,000	Stifel/BAML	UFI
30 Orange USD	12/19/2019	33,595,000	JP Morgan	Fieldman Rolapp
31 Monterey Co Reg FD	12/5/2019	20,250,000	Stinson	-
32 Pacifica	10/23/2019	9,685,000	US Bancorp	Backstrom
33 Hawthorne	10/8/2019	121,865,000	Ramirez	RDP
34 Marysville	9/24/2019	15,000,000	Hilltop	Wulff Hansen
35 Glendora	9/5/2019	64,420,000	Stifel	UFI
36 Chowchilla	3/21/2019	10,500,000	Brandis Tallman	Wulff Hansen
37 Baldwin Park	3/6/2019	54,085,000	Ramirez	Harrell & Co
38 Ridgecrest	12/18/2018	19,955,000	Hilltop	Wulff Hansen
39 La Verne	8/15/2018	54,265,000	Hilltop	Harrell & Co
40 County of Tulare	6/25/2018	251,220,000	Raymond James	KNN
41 Monrovia	12/13/2017	111,545,000	Hilltop	UFI
42 Inglewood	11/14/2017	52,795,000	Cabrera	UFI
43 Brawley	7/20/2017	16,310,000	Ramirez	Bartle Wells
44 Pomona	6/29/2017	50,475,000	RBC	UFI
45 Riverside	5/31/2017	31,960,000	BAML	UFI
Total		\$ 5,552,170,000		

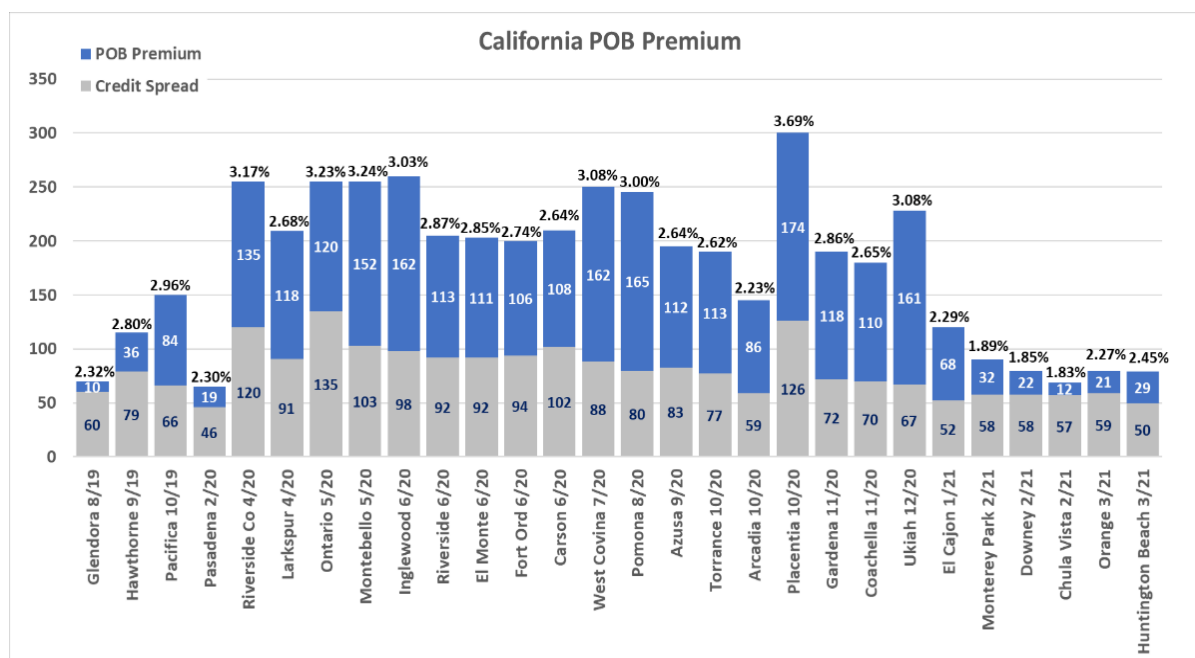
In addition to POB's issued to date, eleven California agencies have initiated the process to issue bonds. The total projected par amount for these anticipated POBs is \$1.8 billion (see Exhibit 14).

Exhibit 14

Pension Obligation Bonds Forward Calendar						
	Issuer	State	Pricing Date	Par Amount	Underwriter	Financial Advisor
1	San Fernando	CA	April 2021	45,000,000	Ramirez	UFI
2	Manhattan Beach	CA	5/19/2021	92,500,000	BAML & Stifel	KNN
3	Corona	CA	Q2 2021	272,000,000	Stifel	CSG
4	Covina	CA	TBD	72,000,000		UFI
5	Commerce	CA	TBD	31,000,000	RBC	UFI
6	Santa Ana	CA	TBD	626,400,000		UFI
7	Whittier	CA	TBD	143,000,000		UFI
8	El Segundo	CA	TBD	150,000,000		KNN
9	Pico Rivera	CA	TBD	41,000,000		UFI
10	South San Francisco	CA	TBD	200,000,000		
11	Upland	CA	TBD	120,000,000		
TOTAL				\$ 1,792,900,000		

In the last couple of years, municipal bond investors have become more comfortable purchasing POBs, and the "POB Premium" (the additional spread required from investors for this class of securities over a more typical credit spread) have compressed and reached a plateau. Of the most recent California POB issuances, the City of Glendora had the lowest POB premium of 10 basis points while POB premiums have averaged between 20 to 30 basis points. Exhibit 15 illustrates the POB Premium for all California POB issuances since August 2019.

Exhibit 15



Credit Impact of POBs

The City's General Obligation Bonds are currently rated Aa1 by Moody's, AA+ by S&P, and AA+ by Fitch, and we do not believe that the issuance of POBs would impact the City's very strong ratings given that the issuance of POBs would be part of a comprehensive and thoughtful pension management strategy that further enhances the City's strong credit fundamentals. Unless POBs are issued purely for short-term budgetary relief or to address financial distress, they are generally considered credit neutral since the rating agencies are already factoring in the issuer's pension obligations when evaluating their debt burden. Indeed, all of the rating agencies view the City's wealth factors, budget flexibility, and liquidity as very strong; but they all mention the City's pension and OPEB liabilities contributing to elevated fixed costs. Below, we describe how the rating agencies view pension liabilities.

Pensions are given a 10% weight on the rating scorecard by **Moody's**. Moody's incorporates an Adjusted Net Pension Liability (ANPL) calculation, which standardizes the calculation of pension liabilities nationally and across sectors. Adjusted Pension Liability adjusts each issuer's stated pension plan liabilities using a common discount rate in order to provide greater transparency and comparability of pension liability measures for use in the credit rating process. The market value of the plan is then subtracted from the Adjusted Pension Liability in order to determine ANPL. Finally, a three-year average of the ANPL is compared as a percentage of both Full Value and Operating Revenues and given a 10% weight in the rating scorecard. Moody's has also implemented a "Tread Water" indicator in order to measure the strength or weakness of pension contributions relative to reported plan funding needs. It is an estimate of the annual pension contribution necessary to prevent growth in unfunded liabilities.

S&P prescribes a funding goal of 100%, a discount rate of 6.0% and actual contributions to match the minimum needed to keep the plan fully funded moving forward. A funded ratio of less than 80% warrants further scrutiny, particularly when annual pension and OPEB payments are more than 10% of total governmental fund expenditures. The worst rated S&P states all have pension plans that are less than 50% funded. Although the UAL is not part of net direct debt, pension and OPEB carrying charges (annualized debt service divided by total governmental fund expenditures) are added to bonded debt carrying charges to arrive at an overall carrying charge when evaluating an issuer's debt and contingent liabilities. If carrying charges are elevated (i.e., 10% for pension and OPEB), this could indicate a worsening credit profile. POBs are generally neutral to the debt and contingent liability score since the bonded debt carrying charge is offset by a credit to pension obligations.

When evaluating net pension liability, as with debt, **Fitch** considers not only the current liability but also the expected trajectory. Fitch's analysis of pension obligations takes into consideration whether there has been stabilization or progress in the ratio of assets to liabilities over time and a commitment to contributing at actuarially calculated levels. The analysis also factors in actuarial and other assumptions influencing the burden, including the investment return assumption used to calculate the present value of liabilities. To improve comparability among plans, Fitch calculates a standardized investment return scenario, estimating the net pension liability with a 6% investment return assumption adjustment for pension liabilities calculated with a discount rate at a higher level. In cases where the net pension liability is sizable, actions or plans to reduce it over time can be a mitigating factor. Fitch then looks at the combined burden of debt and unfunded pension liabilities in relation to personal income, with a combined debt and pension burden above 40% falling in the high category.

SECTION 3 – GFOA ADVISORY

On February 24, 2021, the GFOA affirmed that their guidance on issuing POBs remains current regardless of economic cycles. The Advisory notes five key issues or concerns.

It is important to note that there are several issues that the GFOA points to which all agencies should adhere to when issuing POBs (**namely, #1 - #4 below**). However, because of pension reforms and policy changes in recent years, as well as adaptation in the POB market, we believe that these concerns are being addressed (see responses in italics below), and POBs warrant reconsideration in California and in San José.

1. POBs are complex instruments that carry considerable risk. POB structures may incorporate the use of guaranteed investment contracts, swaps, or derivatives.

POBs should only be issued as plain, vanilla fixed-rate Current Interest Bonds with a 10-year par call.

2. Issuing taxable debt to fund the pension liability increases the jurisdiction's bonded debt burden and potentially uses up debt capacity that could be used for other purposes.

An agency's UAL is considered "debt" under GASB 68 and by the rating agencies and already uses up debt capacity from a debt affordability perspective. Moreover, UAL payments are fixed dollar payments, like a traditional loan, that is financed at a discount rate of 6.625%. POBs "refinance" this obligation at a lower rate.

3. POBs are frequently structured in a manner that defers the principal payments or extends repayment over a period longer than the actuarial amortization period, thereby increasing the sponsor's overall costs.

POBs should not include normal costs (except for annual pre-payment amount), nor should they be structured with an extended repayment schedule/final maturity. More recently, POBs have been issued with a level debt service structure rather than escalating debt structure.

4. Rating agencies may not view the proposed issuance of POBs as credit positive, particularly if the issuance is not part of a more comprehensive plan to address pension funding shortfalls.

POBs should be issued as part of a comprehensive plan to address pension funding shortfalls. Recent POB issuances have been viewed as credit neutral as pension liabilities are already factored into the issuer's debt burden.

5. The invested POB proceeds might fail to earn more than the interest rate over the term of the bonds, leading to increased overall liabilities for the government.

The financial impact of POBs is dependent upon two variables: 1) Borrowing rate on the bonds and 2) Investment performance. The GFOA rubric only compares the costs of borrowing on the POBs to the return on the portfolio. In other words, the portfolio return must exceed the rate on the bonds.

This axiom, however, oversimplifies the elements at play. In practice, the timing of when one receives returns is as equally important as the return over time. Two portfolios with the same compound annual growth rate (CAGR) can have drastically different ending portfolio values, due to the timing of market returns. Therefore, we cannot determine the full financial impact of POBs until investment returns are known (i.e., the bonds have matured).

It should be noted that market timing risk is not unique to POBs. Any deposit, regardless of the source of funding, increases the leverage AND is subject to market timing risk. This risk should be thoroughly analyzed and understood.

Making a significant (one-time) deposit can amplify or “leverage” the results of investment gains and losses, taking advantage of the power of compounding or losing a larger portion of investment balance. As illustrated in Exhibit 16, leverage has an equal impact on both investment gains and losses: a 50% deposit has a 50% greater gain and loss.

Exhibit 16

	10,000	15,000	
10%	11,000	16,500	} 50% Increase
-10%	9,900	14,850	
	+/-1,000	+/- 1,500	

A significant loss during the initial years can have a considerable impact on savings/benefit of POBs.

The most basic method for addressing these market timing risks is to implement multiple strategies over time and/or issue multiple tranches of POBs. These risks can be addressed on the investment side as well (i.e., dollar-cost-averaging or implementing interest rate hedging mechanisms).

Invested POB proceeds may lose value if the market declines soon after issuance but issuing at low borrowing rates provides a greater cushion for success.

In addition, stress testing and Monte Carlo Simulation can be performed on selected scenarios to provide a framework for evaluating the risks associated with POBs.

SECTION 4 – PENSION OBLIGATION BONDS 2.0

There have been a number of changes in the last decade, including pension reform in retirement systems across the United States, changes in accounting standards related to pension liabilities (GASB 68), and an evolution of the POB market, which have resulted in “POBs 2.0”. These changes have resulted in increased transparency, focus, and strategies for ensuring that retirement plans accumulate the funds they need to pay future benefits that have been promised to employees.

GASB 68

The adoption of new accounting guidelines (GASB 68) required government agencies to move their pension liabilities from a narrative discussion in the Notes section of the financial statements to placement directly on their balance sheets. This accounting change increased the transparency and focus on unfunded pension liabilities. This accounting change became effective for governmental financial statements for fiscal years beginning after June 15, 2014 and was implemented in FY 2014-15 for the City.

Addressing GFOA Advisory

Previously, most POBs were sold as non-callable bonds, following the traditional corporate bond structure. Since 2017, however, only one POB in California has been publicly sold with a non-callable structure. The market for POBs has now adopted the standard 10-year par call option utilized in the tax-exempt municipal bond market.

The GFOA Advisory specifically addresses complex POB structures that utilize derivatives (swaps), Guaranteed Investment Contracts (“GICs”) and non-callable structures. Clearly this warning has been noted – only plain, vanilla fixed-rate Current Interest Bonds with 10-year par call options are being utilized in the current POBs 2.0 market.

In-Depth Analysis and Comprehensive Plan

The most noticeable change under POBs 2.0 is that agencies are making concerted efforts to understand and address their liabilities. There is a much higher level of attention and analysis now being performed in advance of decisions to issue POBs.

UFI’s pension advisory clients undertake an extensive process: developing customized pension models, evaluating multiple funding strategies, performing scenario and risk analyses (including Monte Carlo Simulation), and conducting City Council and stakeholder workshops in order to develop and formally adopt a comprehensive Pension Obligation Funding Plan.

SECTION 5 – CASE STUDIES

Lessons Learned on POB's: Case Studies

Some organizations and agencies have dismissed the strategy of issuing POBs because they have heard POBs are risky, which is amplified by the GFOA Advisory on POBs. The GFOA's Advisory is based on past outcomes – many of which were the result of poor financial management practices and/or poor market conditions. Below, we provide three prior generation POB case studies to evaluate how past experience can provide “lessons learned” as well as an early example of a POB 2.0 case study to demonstrate how the POB market has evolved. All case studies involve CalPERS agencies.

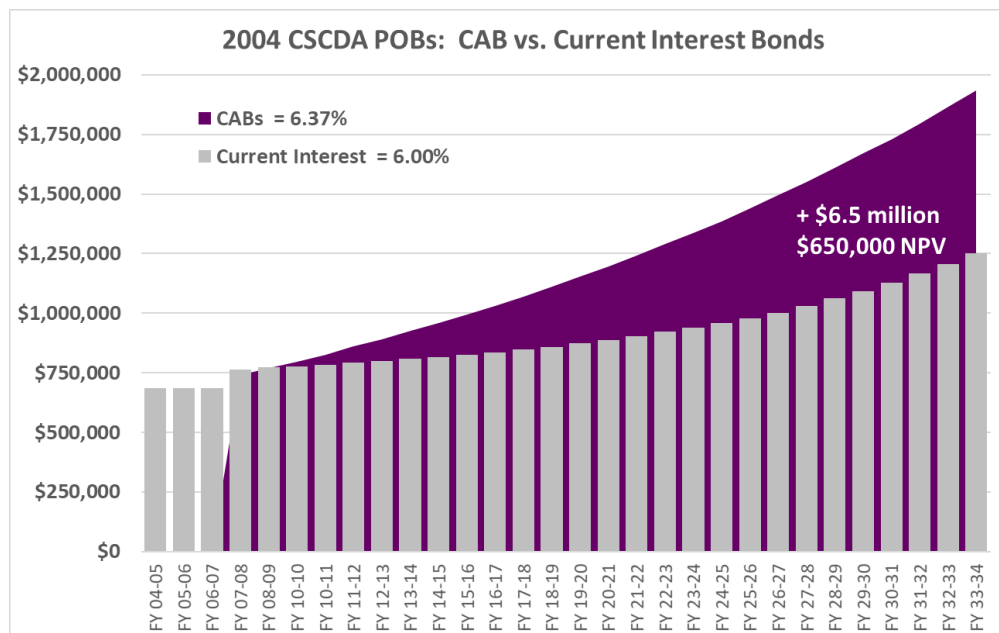
CSCDA Capital Appreciation Bonds—The California Statewide Communities Development Authority (“CSCDA”) issued five pooled POBs from 2005 to 2010 for 21 cities totaling over \$384 million. One of the cities that participated in the 2004 bond issue utilized a Capital Appreciation Bond (“CAB”) structure (zero coupon bonds that pay interest and principal at maturity). These \$11.5 million POBs were structured to provide \$2.0 million in budgetary relief during the first three years. In order to achieve these savings, the POBs were structured with CABs that did not commence payments until Year 4.

This transaction was structured with deferred payments and a non-callable structure, and were issued prior to the Great Recession, resulting in a worse-than-expected outcome.

Expected Savings – The POBs were issued with a 6.37% interest rate. CalPERS' Discount Rate at the time of issuance was 7.75%. Based on a 30-year financing term, the POBs were structured with \$2.0 million in cash flow savings in the first three years and negative cash flow savings in the later years, resulting in \$1.0 million of total UAL savings.

Impact of CAB Structure - Because of their deferred payment structure, CABs require a significant premium. We calculate the CAB premium on the 2004 CSCDA Bonds to be equal to 0.37%, compared to Current Interest Bonds (“CIBs”) that pay principal and interest on a semi-annual basis (6.37% versus 6.00%). The CAB structure and deferral of payments for three years resulted in \$6.5 million in additional interest payments over time: \$650,000 on a Net Present Value basis, taking into account the \$2.0 million in upfront savings (see Exhibit 17).

Exhibit 17



Evaluating POB Savings Results - In order to determine if the POBs generated value for the City, we calculate the “Ending Portfolio Value Differential”, which is equal to the difference in the ending portfolio balance between 1) upfront deposit from POB proceeds and 2) regular annual pension payments, using actual CalPERS returns.

We calculate the theoretical savings if the portfolio had earned the CalPERS Discount Rate – 7.75% until maturity (2034). Under these assumptions the POBs were expected to generate a **\$14 million** larger ending portfolio balance (see Exhibits 18 and 19).

Exhibit 18

Ending Portfolio Value (2034)

POBs 122,371,905

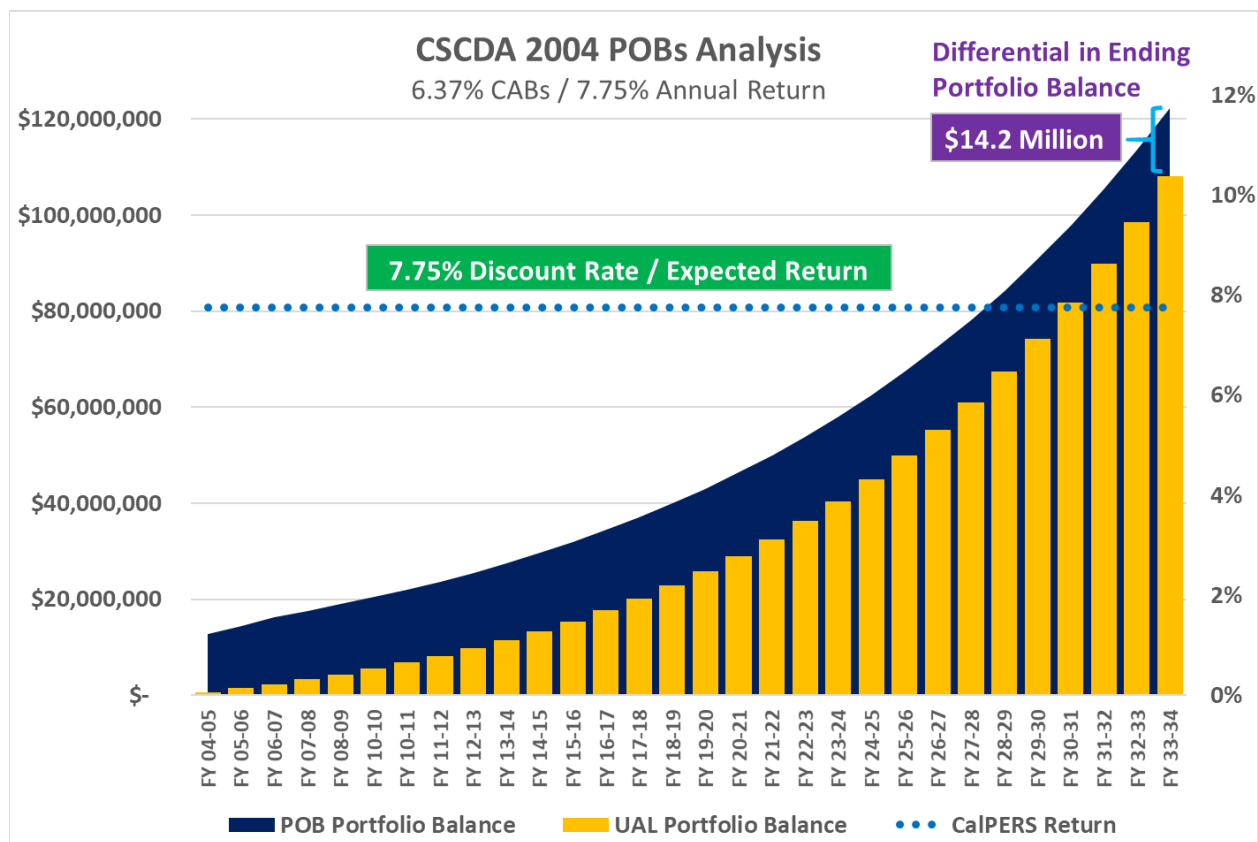
UAL Payments 108,151,432

Differential 14,220,474

NPV \$ 2,230,177

% PV Impact 19%

Exhibit 19



This transaction had a few factors working against it, including the 1.38% (slim) rate differential: The CABs carried an interest rate of 6.37%, while CalPERS’ Discount Rate in 2004 was 7.75%. Second, the CABs were non-callable, so the City could not take advantage of subsequent lower borrowing rates in the market.

POB Outcome Based on Actual CalPERS Investment Performance - Since 2004, CalPERS’ compound average growth rate (CAGR) has been 5.81%, compared to the 6.37% borrowing rate on the bonds (see Exhibit 20).

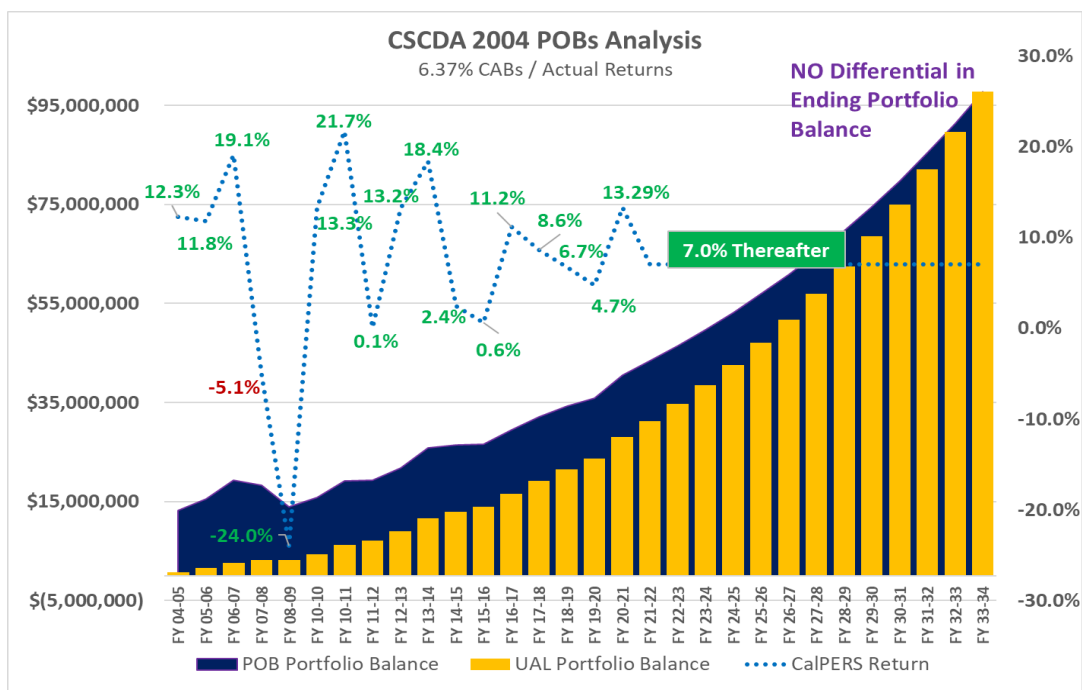
If using the basic rubric comparing the average return on the bonds to the average portfolio return, this transaction would be expected to provide negative results. However, the POBs benefitted from strong investment returns in the first three years, and then an unprecedented market loss (Great Recession) thereafter.

Exhibit 20

	CalPERS Return
FY 04-05	12.3%
FY 05-06	11.8%
FY 06-07	19.1%
FY 07-08	-5.1%
FY 08-09	-24.0%
FY 10-10	13.3%
FY 10-11	21.7%
FY 11-12	0.1%
FY 12-13	13.2%
FY 13-14	18.4%
FY 14-15	2.4%
FY 15-16	0.6%
FY 16-17	11.2%
FY 17-18	8.6%
FY 18-19	6.7%
FY 19-20	4.7%
	5.81%

If CalPERS earns a 13.3% rate of return this fiscal year (YTD through March 2021 returns are 13.75%) and 7.0% thereafter, then the ending portfolio balance is expected to be near breakeven (see Exhibit 21). The Great Recession eroded \$4.0 million of the POBs' advantage. The POBs will not generate the expected \$14 million in ending portfolio balance savings that were projected at the outset, but it did provide the City with \$2.0 million in Budgetary Savings when first issued.

Exhibit 21



As noted earlier, these bonds were issued in a high interest rate environment with a slim rate differential. Nonetheless, the ending portfolio balance is expected to be near breakeven. If the POBs had been issued as traditional Current Interest Bonds, the results would have been more favorable.

City of Burbank 2004 Synthetic Fixed Rate Swap—The City of Burbank issued \$25.1 million in POBs during the same year. The Burbank POBs are structured with a synthetic fixed-rate swap, resulting in a 5.83% borrowing rate. The borrowing rate on these POBs was lower than the CSCDA CABs (5.83% versus 6.37%), but the term was only 20 years (2024).

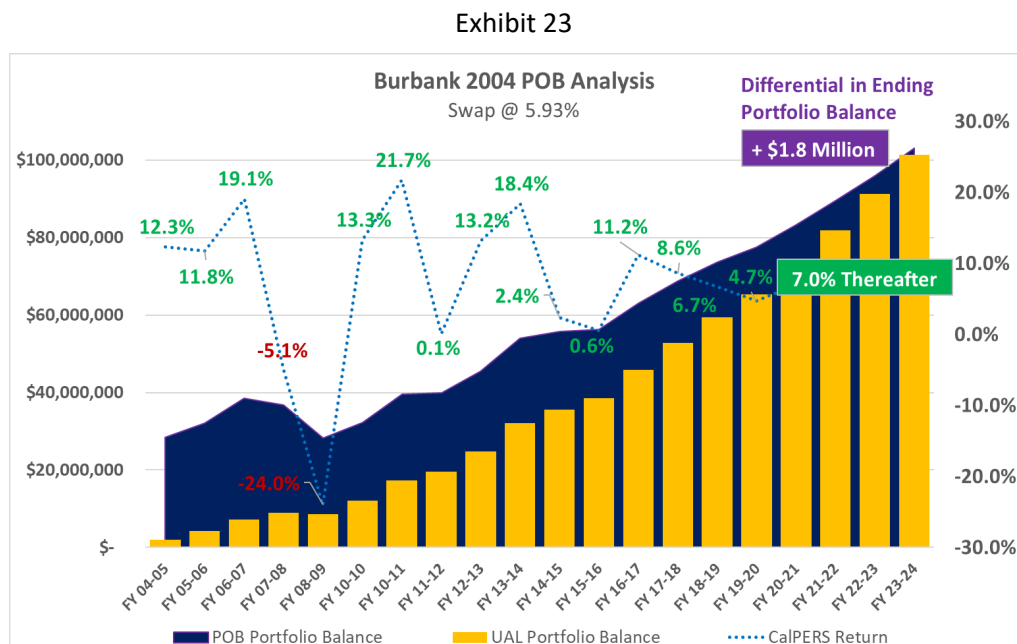
These POBs were also issued in 2004, albeit at a lower borrowing rate than the 2004 CSCDA CAB issue, but with a complex swap/derivative structure that is non-callable, resulting in a worse-than-projected level of savings.

Expected POB Savings – The POBs were expected to save the City \$5.9 million in UAL payments over a 20-year period. If the portfolio earned the then current discount rate of 7.75%, these savings would have been leveraged into a \$21.5 million Ending Portfolio Balance Differential (\$9.0 million in NPV savings) in 2034 (see Exhibit 22).

Exhibit 22

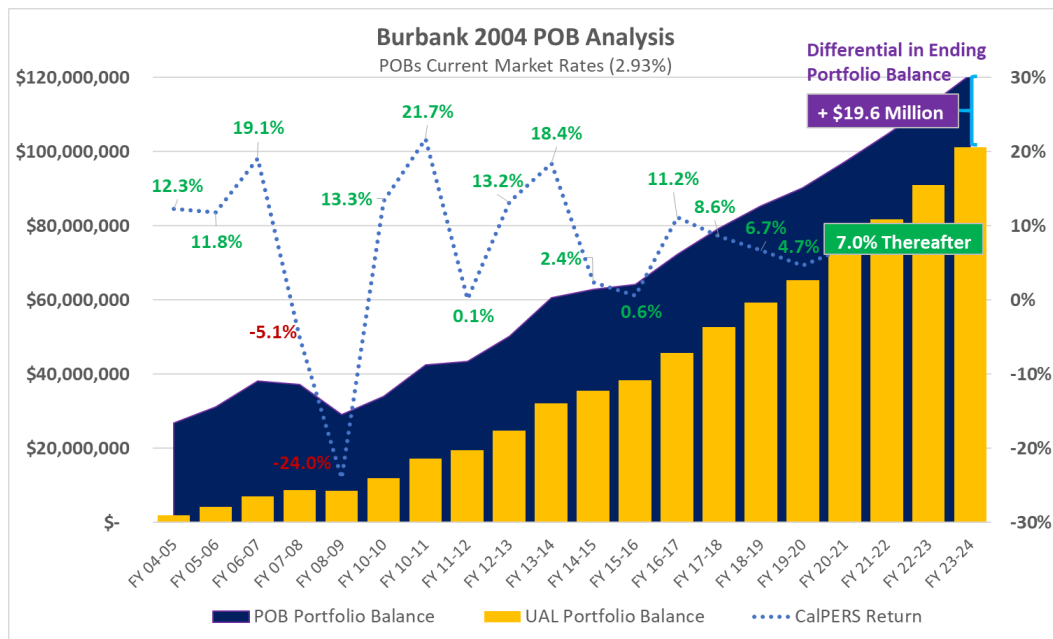
<u>Ending Portfolio Value (2024)</u>	
POBs	124,885,443
UAL Payments	111,780,285
Differential	21,501,968
NPV	\$ 9,061,365
% PV Impact	10%

Actual CalPERS Returns – CalPERS’ investment return from 2004 to 2020 averaged 5.81%. As a result, the expected Ending Portfolio Value Differential of \$1.8 million is lower than the projected amount at issuance (\$21.5 million). Since the Burbank POBs only have three years remaining, there is limited room for improvement, but the City is essentially guaranteed to have a positive end result (see Exhibit 23).



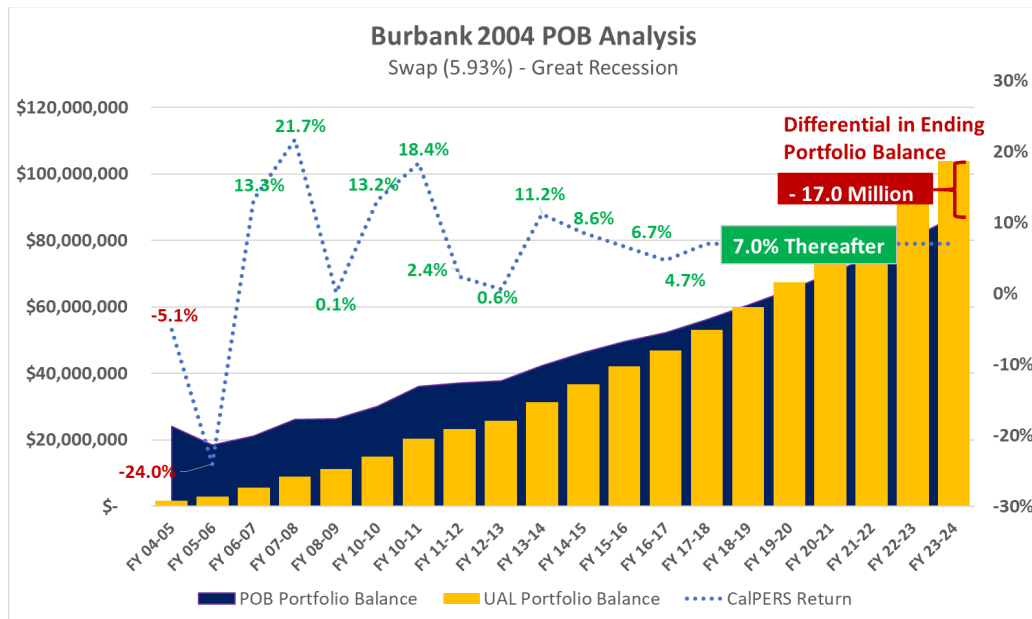
Projected Savings Based on Current Market Interest Rates – For the sake of analysis, we ran a simulation of the estimated savings/ending portfolio balance for the City of Burbank POBs using current market interest rates. If the City had issued POBs under the current interest rate environment, the POBs would carry a 2.93% interest rate, resulting in \$16.8 million in UAL savings (as opposed to \$5.9 million in savings under the 5.93% synthetic fixed-rate structure) (see Exhibit 24).

Exhibit 24



Impact of Market Timing - We ran another simulation to illustrate the impact of market timing. Although an additional deposit amplifies both investment gains and losses equally, of utmost concern is the impact of a significant loss during the initial years. We therefore ran a scenario with a market loss (Great Recession) during the first two years. A 30% loss during the first two years effectively eliminates the savings from the POBs. The average portfolio return is expected to be 5.61%, resulting in a \$17 million differential (loss) in the ending portfolio balance (see Exhibit 25), compared to the actual performance which has earned 5.81% and has a projected Ending Portfolio Value Differential of \$1.8 million.

Exhibit 25



City of Oakland—Oakland issued \$212.540 million POBs in 2012, after the Great Recession, in a stable interest rate environment and during a period of increasing investment gains. The 2012 POBs were not necessarily issued at the ideal time, but they were issued under favorable conditions, nonetheless (see Exhibit 26).

These POBs were issued at a much lower borrowing rate (4.24%), but with a non-callable structure. Since these bonds were issued after the Great Recession, they benefitted from a strong market rebound and as a result provide much greater-than-anticipated savings.

Exhibit 26

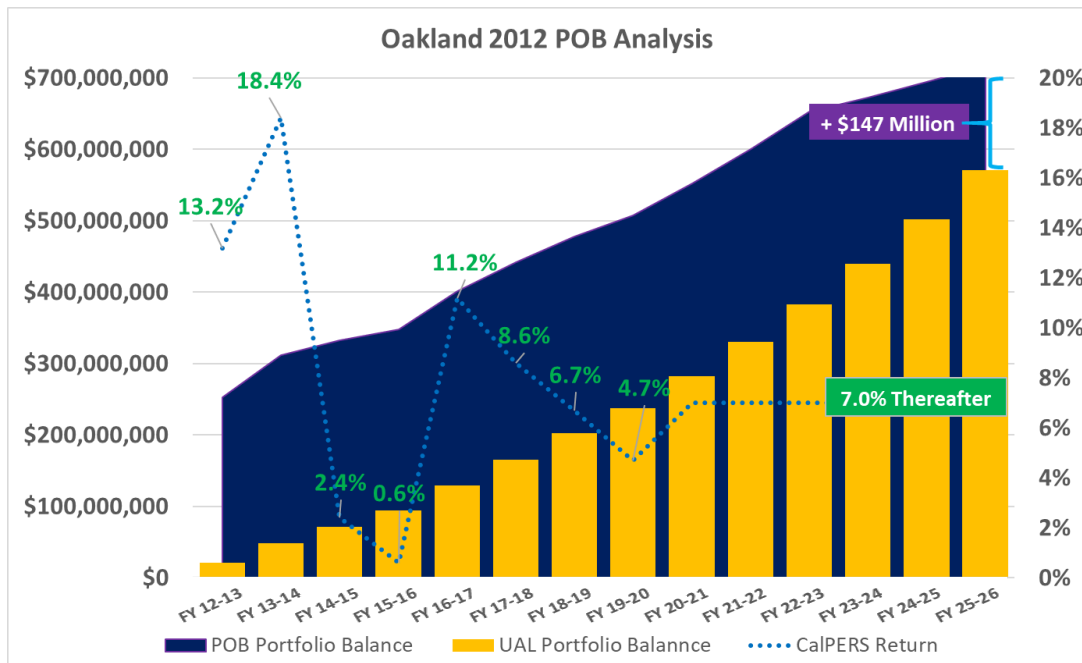


Exhibit 27 illustrates that the projected ending portfolio balance is **\$247 million** greater as a result of issuing POBs. The City of Oakland benefitted from issuing their POBs under a lower interest rate environment (4.32% True Interest Cost) and upward trending equities market environment.

Exhibit 27

2012 Oakland POBs							Annual CalPERS Payments			
	Discount Rate	CalPERS Return	Investment Balance POB	Interest Earnings POB	Savings	Ending Balance	Annual UAL Payments	% Earnings Annual Payments	Contribution =POB D/S	Ending Balance
1 FY 12-13	7.50%	13.2%	212,540,000	29,085,280	16,105,108	257,730,388	-	1,292,099	20,203,288	21,495,387
2 FY 13-14	7.50%	18.4%	257,730,388	48,903,845	16,812,223	323,446,456	21,495,387	5,797,727	20,910,403	48,203,516
3 FY 14-15	7.50%	2.4%	323,446,456	7,971,996	17,544,087	348,962,539	48,203,516	1,415,052	21,642,267	71,260,835
4 FY 15-16	7.50%	0.6%	348,962,539	2,148,598	18,301,566	369,412,703	71,260,835	494,664	22,399,746	94,155,245
5 FY 16-17	7.38%	11.2%	369,412,703	42,414,655	19,085,558	430,912,916	94,155,245	11,809,228	23,183,738	129,148,211
6 FY 17-18	7.25%	8.6%	430,912,916	37,489,413	10,231,988	478,634,317	129,148,211	12,117,260	23,995,168	165,260,640
7 FY 18-19	7.00%	6.7%	478,634,317	32,435,846	11,146,266	522,216,429	165,260,640	11,890,948	24,834,999	201,986,587
8 FY 19-20	7.00%	4.7%	522,216,429	24,824,726	12,077,121	559,118,276	201,986,587	10,090,483	25,704,224	237,781,295
9 FY 20-21	7.00%	7.0%	559,118,276	39,586,947	13,039,612	611,744,835	237,781,295	17,560,078	26,603,872	281,945,244
10 FY 21-22	7.00%	7.0%	611,744,835	43,305,797	14,056,548	669,107,179	281,945,244	20,683,593	27,535,008	330,163,845
11 FY 22-23	7.00%	7.0%	669,107,179	47,362,311	15,252,503	731,721,993	330,163,845	24,092,055	28,498,733	382,754,632
12 FY 23-24	7.00%	7.0%	731,721,993	50,453,195	(22,301,312)	759,873,877	382,754,632	27,807,730	29,496,188	440,058,551
13 FY 24-25	7.00%	7.0%	759,873,877	52,340,278	(24,729,485)	787,484,670	440,058,551	31,854,526	30,528,555	502,441,633
14 FY 25-26	7.00%	7.0%	787,484,670	54,280,430	(24,514,515)	817,250,585	502,441,633	36,258,107	31,597,055	570,296,795
			\$458,322,886	\$116,621,783	\$246,953,790					
							\$ 213,163,550	\$ 357,133,244		

City of Glendora (POBs 2.0) – The City of Glendora issued \$64.2 million POBs in August of 2020 to fully fund its UAL. Glendora received an upgraded AAA rating, in part, due to the pension modeling/risk analysis and adoption of a pension funding policy. The City issued plain, vanilla fixed-rate bonds, with a 10-year par call and 24-year final maturity. The City engaged UFI to perform sensitivity analysis and run recessionary scenarios, as well as participate in City Council workshops to study POBs and address the key points on the GFOA's Advisory.

These AAA-rated POBs were issued with a 10-year call and an all-in borrowing rate of 2.81%, resulting in \$31 million, or 38% NPV savings. Even if CalPERS underperforms with a 6.50% return, it will still achieve 79% of its projected savings.

It is too early to tell if the POBs will result in net economic benefit – this can only be determined at final maturity. CalPERS' return for the first year since the POBs were issued was 4.70%, and CalPERS' current year-to-date return (through March 2021) is approximately 13.75%.

In Exhibit 28, we project the ending portfolio balance and compare it to the present value savings of the POBs discounted at 7.0% (which equals \$17.1 million) under two scenarios: CalPERS earns the Discount Rate of 7.0% and CalPERS earns 6.5%.

Scenario 1: Under this scenario, we assume that CalPERS earns **7.0%** until maturity, which would result in an ending portfolio balance equal to **109%** of the projected present value savings from the POBs alone.

Scenario 2: Under this scenario, we assume that CalPERS earns **6.50%** until maturity, which would result in an ending portfolio balance equal to **79%** of the projected present value savings from the POBs alone.

It appears that the expected gain during the current fiscal year is going to further enhance the savings of the City's POBs in a positive direction.

Exhibit 28

CITY OF GLENDORA POB ANALYSIS - 7.0%		
	UAL Payments	POBs
UAL Payments	\$ 118,250,375	
POB Debt Service		\$ 86,829,693
POB Savings		<u>31,420,681</u>
		\$ 118,250,375
NPV Savings @ 7.0%		\$ 17,108,909
<u>Portfolio Balance</u>		
Starting Balance	-	\$ 61,810,479
Ending Balance	350,097,817	449,090,046
Additional Bases	<u>(509,808)</u>	<u>(3,109,644)</u>
Net Impact	\$ 350,607,625	\$ 452,199,690
<i>Differential</i>		101,592,065
NPV Savings @ 7.0%	109%	\$ 18,718,254

CITY OF GLENDORA POB ANALYSIS - 6.50%		
	UAL Payments	POBs
UAL Payments	\$ 118,250,375	
POB Debt Service		\$ 86,829,693
POB Savings		<u>31,420,681</u>
		\$ 118,250,375
NPV Savings @ 7.0%		\$ 17,108,909
<u>Portfolio Balance</u>		
Starting Balance	-	\$ 61,810,479
Ending Balance	322,058,689	394,775,564
Additional Bases	<u>(173,756)</u>	<u>(576,788)</u>
Net Impact	\$ 322,232,445	\$ 395,352,352
<i>Differential</i>		73,119,906
NPV Savings @ 7.0%	79%	\$ 13,472,283

SECTION 6 – POB 2.0 STRUCTURING CONSIDERATIONS

As mentioned previously, POBs 2.0 have typically been structured as fixed rate Current Interest Bonds with a 10-year par call. Other considerations (all of which impact savings) include structuring level debt service through the final maturity of the UAL, structuring level debt service on the front end and then matching the descending UAL payments on the back end, structuring for upfront budgetary relief, or shortening the final maturity.

The City may also consider structuring large Term Bonds in order to qualify as Index Eligible Bonds. There are two major Fixed Income Bond indices for which the City's POBs could qualify: InterContinental Exchange (ICE) Taxable Municipal Bond Index, which requires a \$300 million minimum par value per maturity and AA rating or better; and the Bloomberg Barclays Corporate Bond Index, which also requires a \$300 million minimum par value per maturity and AA rating or better. To the extent possible, the POBs should be structured in \$300 million blocks per maturity. Although difficult to quantify the exact value of becoming "Index Eligible," it does expand the universe of potential investors which makes the bonds easier to sell. Underwriters have indicated from anecdotal evidence that Index Eligible Bonds can lower borrowing costs by 10 to 20 basis points or more.

PENSION OBLIGATION BONDS VS. LEASE REVENUE BONDS

An alternative to issuing POBs to pay down the UAL is to issue Lease Revenue Bonds ("LRBs"). The primary advantage of LRBs is that validation is not required, which can reduce the time required to access the market. Given the significant cost of carry of the UAL at 6.625%, the sooner the bonds can be sold (especially while interest rates remain low), the greater the savings that are realized by refinancing to a lower rate. Additionally, taxable LRB proceeds can be deposited into a 115 Trust. The option to place monies in a 115 Trust provides the City control over investment decisions of bond proceeds. However, in addition to the responsibility of the investment of such monies, the City will incur additional investment fees and administrative costs associated with managing the 115 Trust.

The main drawback to LRBs is that they require the City to pledge unencumbered assets with a total fair rental value at least equal to the lease payments (i.e., debt service payments). The City does not have sufficient unencumbered assets to use this structure without adding streets to the leased asset basket. S&P has been rating POBs on the same level as the issuer credit rating ("ICR"), whereas LRBs are typically rated one notch lower than the ICR depending on the underlying leased assets being used. Investors generally view both POBs and LRBs issued to pay down the UAL equally, however, and there does not appear to be a trading differential between the two structures.

This structure is not being considered for further analysis due to the lack of available City assets to pledge. Moreover, potentially enforcing lease default remedies on City streets raises significant public policy and legal concerns (there are differing opinions in the legal community on the validity and legal enforceability of this financing structure for payment of the UAL); and of course, the potential optics or headline risk.

POB SCENARIOS

In this section, we present three POB funding scenarios for discussion: a minimum funding amount, 100% POB (or maximum funding amount), and a mid-point strategy. We present the two "book-ends" and a mid-point strategy for the City to evaluate the level of annual savings generated and impact of various targeting strategies. It is important to note, no decision or recommendation have been made on bond

sizing; these scenarios are designed to assist in understanding the orders of magnitude and potential impact of issuing POBs on the City's UAL.

We have not focused on specific structuring ideas or implementation strategies (i.e., number of tranches, timing of sale, etc.). However, this analysis does assume the City would issue plain, vanilla fixed-rate Current Interest Bonds with a standard 10-year par call option. We used an interest rate scale based on the recent City of Tucson, Arizona, POBs (AA-rated) **plus 0.50%**.

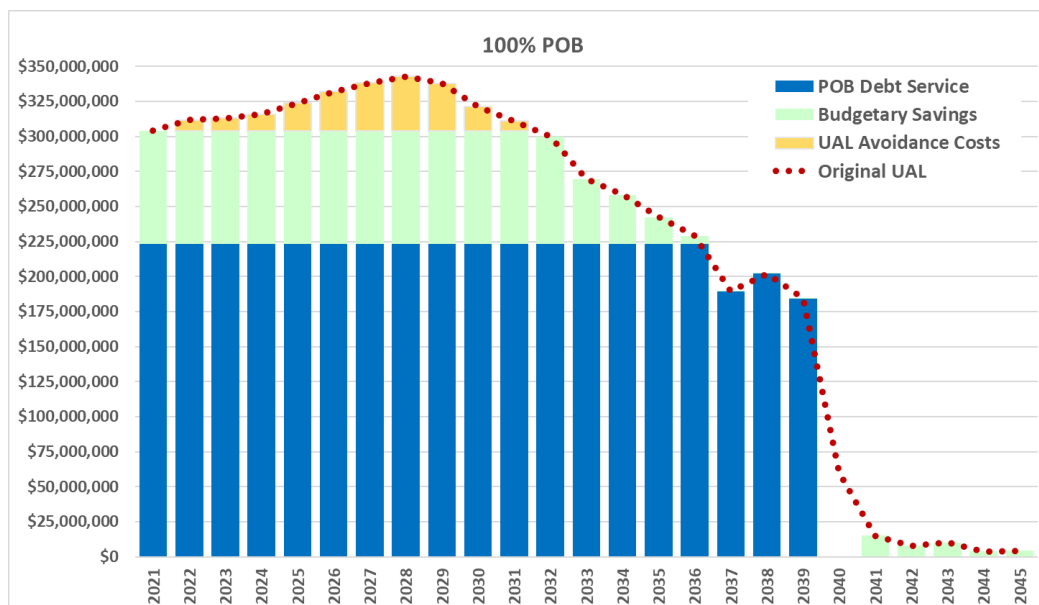
If the City decides to pursue POBs, we anticipate a more in-depth analysis of structuring options and dialogue regarding risk mitigation measures.

Total POB Savings

It is important to highlight the terminology that we will use going forward to describe the savings generated from issuing POBs and other funding strategies. Total POB savings is comprised of two component parts: Budgetary Savings and UAL Avoidance Costs.

- Budgetary Savings – Actual annual cash flow savings resulting from issuing POBs compared to the FY 2020-21 UAL payment of \$304 million (see light green bars in Exhibit 29)
- UAL Avoidance Costs – Represents the differential between POB debt service payments and scheduled UAL payments. This amount represents future savings, based on future scheduled UAL payments (see yellow bars in Exhibit 29)

Exhibit 29



POB savings represent the cash flow differential between the scheduled UAL payments and POB debt service payments. These savings do not take into account the impact of investment performance in the Retirement Plans. In effect, we assume that the Retirement Plans will earn 6.625% throughout the life of the bond issue. As discussed in the case studies, the net savings from a POB cannot be determined until the final maturity of the bonds.

1. Minimum Funding Amount - \$780 million Federated POB

The City's Federated Plan has a 52% Funded Status, which is a point of concern as it is significantly underfunded. Therefore, any funding efforts (whether via POBs or other funding strategies) should seek to shore up the Federated Plan assets first.

The Federated Plan currently has a \$2.1 billion UAL. Financing \$780 million with POBs would increase the Plan's funding level to approximately 69%, which would bring it on par with average California cities. For the sake of simplicity, we selected Base #2, a 19-year base equal to \$752 million (\$777 million in FY 2021-22) and \$1.4 billion in total UAL payments, as illustrated in Exhibit 30.

Exhibit 30

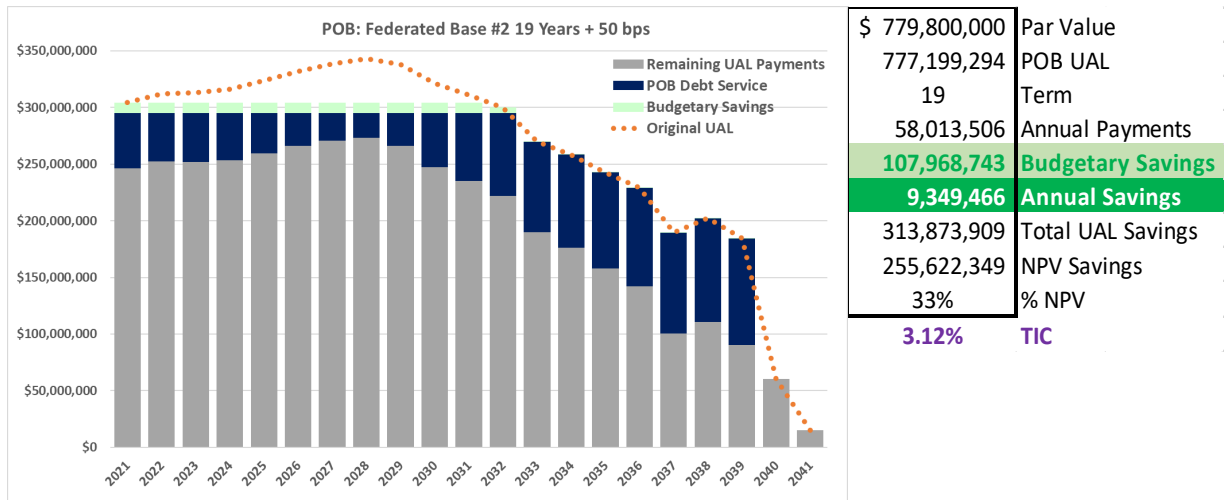
		Federated Base #2	
1	2022	\$	57,747,000
2	2023		59,335,043
3	2024		60,966,756
4	2025		62,643,342
5	2026		64,366,034
6	2027		66,136,100
7	2028		67,954,843
8	2029		69,823,601
9	2030		71,743,750
10	2031		73,716,703
11	2032		75,743,912
12	2033		77,826,870
13	2034		79,967,109
14	2035		82,166,204
15	2036		84,425,775
16	2037		86,747,484
17	2038		89,133,039
18	2039		91,584,198
19	2040		94,102,763
			\$ 1,416,130,524
	UAL	\$	777,199,294

The \$780 million POB is structured to generate \$295 million in aggregate UAL payments, with a matching 19-year final maturity and a True Interest Cost of 3.12%. We also assume that the Federated Plan would earn 6.625% every year through final maturity. Based on these assumptions, the POBs would generate approximately \$108 million in total Budgetary Savings, or \$9.3 million in annual Budgetary Savings over the next 12 years (highlighted in green in Exhibit 31).

Many POBs report the savings based on future UAL payments. We consider the amount under the dotted orange line as UAL Avoidance Costs and instead focus on Budgetary Savings (based on the City's current UAL payment to reflect the true budgetary impact to the City).

Given that the City's Enterprise Funds are responsible for approximately 55% of the Federated Plan's pension liability, the General Fund savings impact of this POB would be approximately \$4.2 million per year.

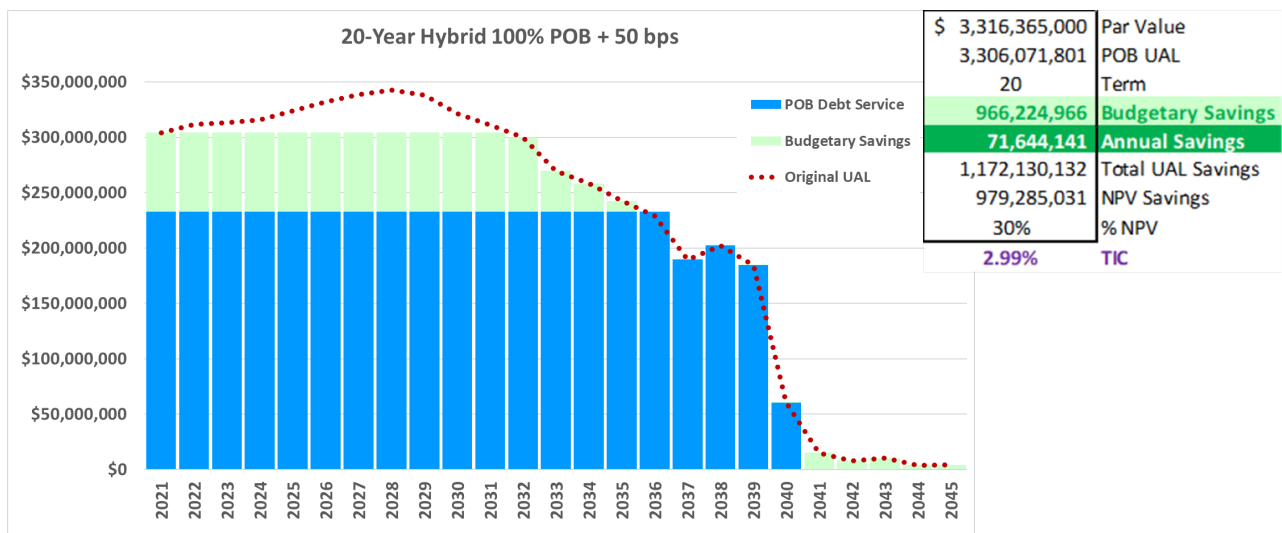
Exhibit 31



2. 100 % POBs – \$3.3 billion

The other “book end” involves refinancing 100% of the UAL of both Retirement Plans, resulting in a POB issuance of \$3.3 billion with a 20-year final maturity and a True Interest Cost of 2.99%. We also assume that the Retirement Plans would earn 6.625% every year through final maturity. Based on these assumptions, the POBs would generate approximately \$966 million in total Budgetary Savings, or \$72 million in annual Budgetary Savings over the next 12 years (see Exhibit 32).

Exhibit 32



The stated UAL as of June 30, 2020 was equal to \$3.48 billion. This amount includes the July 1, 2020 payment of \$304 million that we have netted out to a \$3.3 billion outstanding UAL for FY 2021-22.

General Fund Impact – 100% of the Police & Fire Plan savings would benefit the General Fund. However, not all of the POB savings will be realized by the General Fund, since approximately 55% of the Federated Plan’s pension costs are allocated toward the City’s Enterprise Funds and Special Revenue Funds.

To determine the projected General Fund savings, we match the allocation of POB costs/savings each year based on the underlying UAL cash flows. The General Fund would realize \$791 million in savings, or 68% of the aggregate cash flow savings from this financing, as illustrated in Exhibit 33.

Exhibit 33

									45%
		UAL Payments	Federated UAL	Federated POB	Federated Savings	Safety UAL	Safety POB	Safety Savings	General Fund Impact
1	2021	304,239,000 52%	157,225,000	120,200,712	37,024,288 48%	147,014,000	112,394,260	34,619,740	51,280,670
2	2022	311,870,503 52%	161,548,688	120,481,929	41,066,758 48%	150,321,815	112,109,003	38,212,812	56,692,853
3	2023	312,987,364 53%	165,991,276	123,354,456	42,636,821 47%	146,996,088	109,238,406	37,757,682	56,944,251
4	2024	315,914,203 54%	170,556,037	125,571,615	44,984,421 46%	145,358,166	107,019,722	38,338,444	58,581,433
5	2025	323,875,053 54%	175,246,328	125,854,941	49,391,386 46%	148,628,725	106,739,238	41,889,487	64,115,611
6	2026	332,038,473 54%	180,065,602	126,136,956	53,928,645 46%	151,972,871	106,457,843	45,515,029	69,782,919
7	2027	338,406,294 55%	185,017,406	127,166,921	57,850,485 45%	153,388,888	105,427,878	47,961,010	73,993,728
8	2028	342,870,323 55%	188,872,072	128,126,204	60,745,868 45%	153,998,251	104,468,655	49,529,596	76,865,237
9	2029	338,072,762 57%	194,213,897	133,618,694	60,595,203 43%	143,858,864	98,974,552	44,884,312	72,152,153
10	2030	321,293,252 62%	199,599,459	144,494,540	55,104,918 38%	121,693,794	88,096,876	33,596,918	58,394,131
11	2031	310,966,940 63%	197,395,610	147,646,283	49,749,327 37%	113,571,330	84,948,113	28,623,216	51,010,414
12	2032	299,995,369 68%	203,214,829	157,557,085	45,657,744 32%	96,780,540	75,036,156	21,744,383	42,290,368
13	2033	269,746,649 74%	199,187,298	171,750,572	27,436,726 26%	70,559,351	60,840,269	9,719,081	22,065,608
14	2034	258,262,911 76%	195,192,934	175,792,313	19,400,622 24%	63,069,977	56,801,324	6,268,653	14,998,933
15	2035	242,514,387 84%	203,837,069	195,497,717	8,339,352 16%	38,677,318	37,094,957	1,582,361	5,335,069
16	2036	229,062,644 92%	210,222,230	213,463,751	(3,241,521) 8%	18,840,415	19,130,924	(290,510)	(1,749,194)
17	2037	189,532,794 95%	179,196,815	179,194,710	2,105 5%	10,335,979	10,335,858	121	1,069
18	2038	202,233,081 87%	175,635,105	175,633,723	1,382 13%	26,597,976	26,597,767	209	831
19	2039	184,492,933 90%	166,501,288	166,500,335	952 10%	17,991,646	17,991,543	103	531
20	2040	60,401,479 86%	51,778,617	51,775,204	3,413 14%	8,622,863	8,622,294	568	2,104
21	2041	15,052,028 100%	15,052,028	-	15,052,028	-	-	-	6,773,413
22	2042	7,935,386 100%	7,935,386	-	7,935,386	-	-	-	3,570,924
23	2043	10,349,580 100%	10,349,580	-	10,349,580	-	-	-	4,657,311
24	2044	3,919,236 100%	3,919,236	-	3,919,236	-	-	-	1,763,656
25	2045	4,241,789 100%	4,241,789	-	4,241,789	-	-	-	1,908,805
		\$ 5,530,274,433	\$ 3,601,995,577	\$ 2,909,818,662	\$ 692,176,916	\$ 1,928,278,855	\$ 1,448,325,639	\$ 479,953,216	\$ 791,432,828
		\$ 3,306,071,801	\$ 2,016,942,131			\$ 1,289,129,670			68%

3. Mid-Point Strategy - \$1.4 Billion POB + “Barbell”

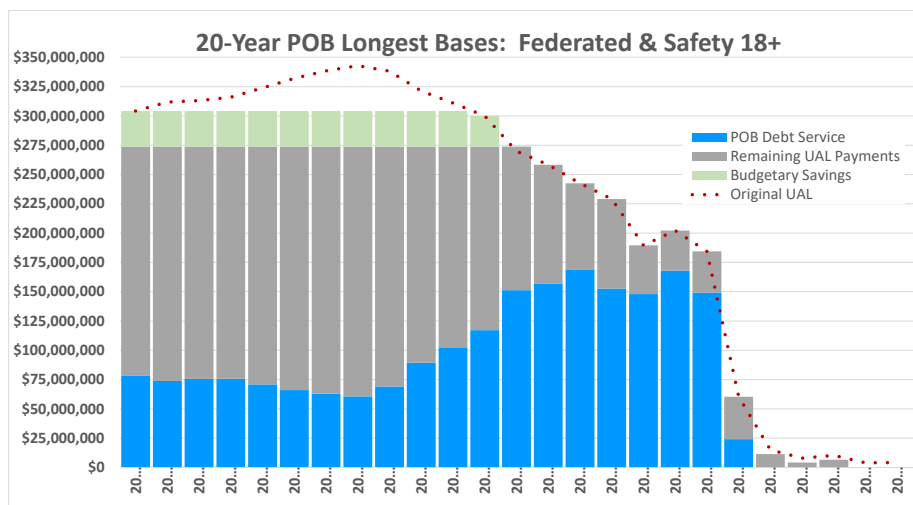
With this mid-point strategy, we selected the longest Federated bases and longest Police & Fire bases (18 years and longer) in order to maximize interest cost savings. The 20-year POBs are sized at \$1.4 billion – the mid-point between the minimum size POB scenario and the 100% POB scenario.

This structure has a higher True Interest Cost of 3.23% since it pushes back the debt service compared to the 100% POB scenario. Therefore, this mid-point strategy generates less than half the annual Budgetary Savings when compared to the 100% POB scenario (\$29.3 million versus \$71.6 million) and \$361 million in total Budgetary Savings. We also assume that the Retirement Plans would earn 6.625% every year through final maturity. However, given that the amount of proceeds invested at once is also cut in half, this mid-point scenario assumes half the leverage and half the potential downside risk of market timing as compared to the 100% POB scenario (see Exhibit 34).

This structure may prove attractive as a component part of a long-term plan that includes multiple strategies. If the City wants to take advantage of current favorable interest rates, for example, it could

lock in long-term borrowing rates today. In the future, if the City utilizes other funding strategies such as Tax-Exempt Exchange or Leveraged Refunding, those subsequent financings will benefit from “rolling down the yield curve” by borrowing at shorter-term maturities.

Exhibit 34



If the City decides to proceed with a POB issuance, the validation and financing processes will take many months, and interest rates could rise in that time period. Below, we present an interest rate sensitivity analysis to illustrate the impact to savings of interest rates increasing by 0.50% and 1.00%. (As indicated previously, our baseline interest rates already include a 50-basis point cushion from today’s current interest rates.)

With a 0.50% additional rate increase, annual Budgetary Savings drop from \$29.3 million to \$22.1 million. With a 1.00% additional increase, the True Interest Cost increases to 4.22%, and annual Budgetary Savings decrease to \$16.7 million. At this level, the interest rate differential between the POBs and the Retirement Plans’ Discount Rate is significantly reduced.

Exhibit 35

20-Year POB \$1.45 Billion Longest Bases				20-Year POB \$1.45 Billion + 50 bps				20-Year POB \$1.45 Billion + 100 bps			
\$ 1,444,765,000	Par Value			\$ 1,444,765,000	Par Value			\$ 1,444,765,000	Par Value		
1,440,150,342	POB UAL			1,440,150,342	POB UAL			1,440,150,342	POB UAL		
20	Term			20	Term			20	Term		
360,911,446	Budgetary Savings			268,446,298	Budgetary Savings			168,204,823	Budgetary Savings		
29,255,934	Annual Savings			22,143,645	Annual Savings			16,685,649	Annual Savings		
569,489,151	Total UAL Savings			474,351,464	Total UAL Savings			374,109,989	Total UAL Savings		
454,120,380	NPV Savings			378,756,153	NPV Savings			302,778,305	NPV Savings		
32%	% NPV			26%	% NPV			21%	% NPV		
3.23%	TIC			3.72%	TIC			4.22%	TIC		

As rates move upward, savings decrease commensurately, and the probability of a successful outcome begins to decline.

Barbell –The City could choose to utilize a “barbell” strategy as an alternative to selecting the longest bases. This structure targets Federated Bases with 19-year terms totaling \$958 million, and the shortest Police & Fire Bases (9 years and under) totaling \$521 million. This hybrid structure is designed to

maximizes both interest cost savings and budgetary impact, generating \$25.5 million in annual Budgetary Savings (see Exhibit 36).

Exhibit 36

20-Year POB \$1.45 Billion Longest Bases		19-Year POB \$1.485 Billion Barbell	
\$ 1,431,390,000	Par Value	\$ 1,485,570,000	Par Value
1,440,150,342	POB UAL	1,480,855,096	POB UAL
20	Term	19	Term
376,621,567	Budgetary Savings	292,902,339	Budgetary Savings
30,464,575	Annual Savings	25,508,961	Annual Savings
585,199,272	Total UAL Savings	498,807,505	Total UAL Savings
469,308,505	NPV Savings	412,085,626	NPV Savings
33%	% NPV	28%	% NPV
3.14%	TIC	3.01%	TIC

Selecting the longest bases ostensibly provides the greatest savings opportunity (\$585 million in UAL savings with the long-base structure versus \$498 million in UAL savings with the barbell structure). When comparing the potential General Fund savings under each structure, however, we arrive at a different conclusion. The barbell POB structure generates greater budgetary relief for the General Fund than the long-base POB structure (\$342 million versus \$315 million) due to the inclusion of a greater proportion of the Fire & Safety Plan's UAL and the timing of cash flows (see Exhibit 37).

Exhibit 37

Savings \$1.4 Billion POBs			Longest Bases			Barbell		
Longest Bases		Barbell	General Fund Savings		NPV @ 3.00%	General Fund Savings		NPV @ 3.00%
2022	\$ 30,463,085	25,506,697	1	2022	\$ 16,552,133	16,070,032	\$ 18,279,655	17,747,238
2023	38,094,303	33,142,371	2	2023	20,684,179	19,496,822	23,729,637	22,367,459
2024	39,215,172	34,256,817	3	2024	21,278,026	19,472,408	24,504,620	22,425,198
2025	42,138,789	37,184,338	4	2025	22,848,567	20,300,656	26,573,829	23,610,503
2026	50,102,603	45,144,523	5	2026	27,147,991	23,418,095	32,232,351	27,803,909
2027	58,262,135	53,308,878	6	2027	31,547,507	26,420,541	38,025,853	31,846,053
2028	64,629,698	59,677,662	7	2028	34,971,381	28,434,933	42,528,831	34,579,831
2029	69,094,597	64,139,585	8	2029	37,361,778	29,493,732	45,665,657	36,048,892
2030	64,301,222	59,339,725	9	2030	34,746,112	26,630,002	40,162,660	30,781,334
2031	47,521,378	42,564,191	10	2031	25,661,399	19,094,491	26,068,467	19,397,387
2032	37,192,513	32,238,950	11	2032	20,070,210	14,499,147	18,609,085	13,443,599
2033	26,219,015	21,265,031	12	2033	14,138,997	9,916,808	9,569,264	6,711,689
2034	(4,027,205)	(8,985,320)	13	2034	(2,170,264)	(1,477,844)	(4,043,394)	(2,753,355)
2035	(5,803,397)	3,909	14	2035	(3,125,349)	(2,066,224)	1,759	1,163
2036	(13,794,893)	3,809	15	2036	(7,424,082)	(4,765,236)	1,714	1,100
2037	6,601,053	5,067	16	2037	3,550,149	2,212,336	2,280	1,421
2038	15,676,878	2,083	17	2038	8,425,635	5,097,648	937	567
2039	3,081	4,433	18	2039	1,655	972	1,995	1,172
2040	4,158	4,755	19	2040	2,147	1,224	2,140	1,220
2041	4,566	-	20	2041	2,949	1,633	-	-
2042	3,612,900	-	21	2042	1,625,805	873,950	-	-
2043	3,712,254	-	22	2043	1,670,515	871,829	-	-
2044	3,814,341	-	23	2044	1,716,454	869,713	-	-
2045	3,919,236	-	24	2045	1,763,656	867,602	-	-
2046	4,241,789	-	25	2046	1,908,805	911,656	-	-
\$ 585,199,272		\$ 498,807,505		\$ 314,956,354	\$ 256,646,926	\$ 341,917,340	\$ 284,016,382	

RECYCLING SAVINGS

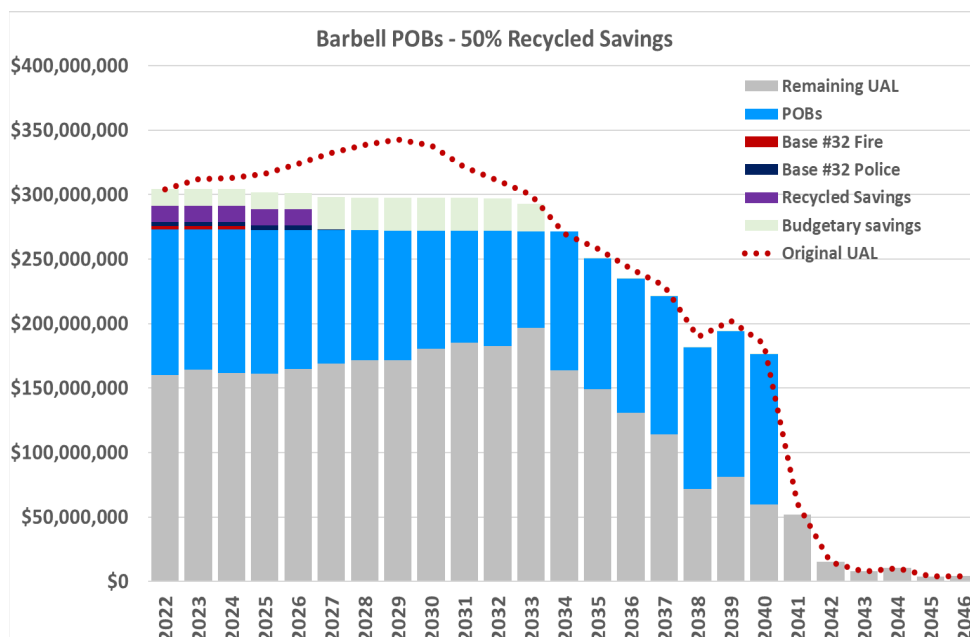
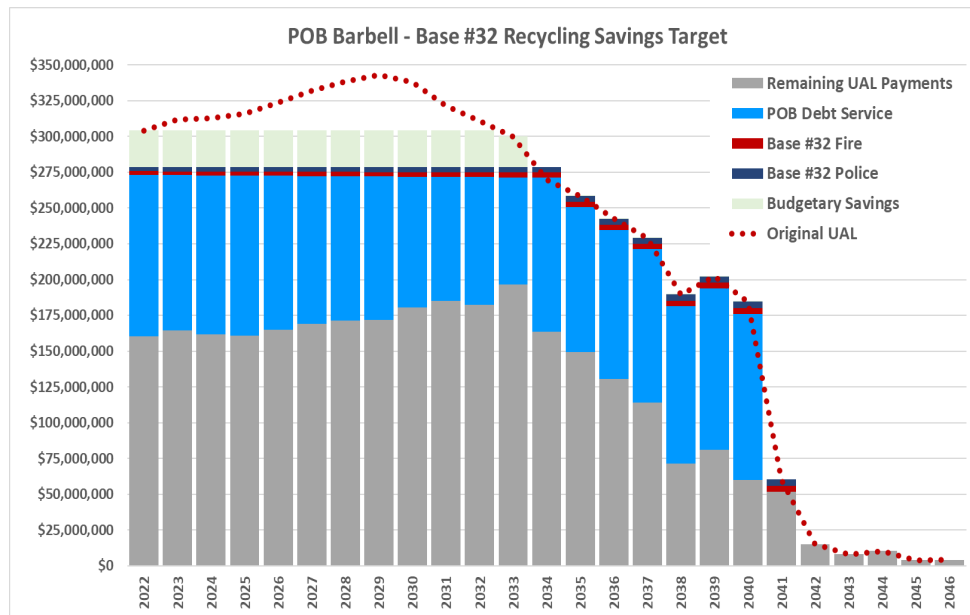
Finally, the City should consider the strategy of Recycling Savings. This is a budgetary or policy decision more than a financing mechanism, but it provides the opportunity to further augment savings.

Conceptually, Recycling Savings simply takes all or a portion of savings generated by a funding strategy and uses the freed-up funds toward additional payments on the UAL.

Depending on the City's financial/policy objectives (budget impact or total savings), the additional payments can be applied to either a short-term or long-term base. For example, the barbell POB structure described above generates annual Budgetary Savings of \$25.5 million. The City could recycle 50% of those savings each year and apply them to the 20-year Police & Fire Bases:

- **Base #32 Fire - \$34.8 million**
- **Base #32 Police - \$40.9 million**

Exhibit 38



The City would apply \$63.7 million in recycled savings to eliminate \$116.4 million in UAL payments, thereby saving a net of \$52.6 million in UAL payments (see Exhibit 39).

Exhibit 39

	Base #32 Fire	Base #32 Fire	Base #32 Police	Base #32 Police	Recycled Savings	Savings
2022	2,597,000	\$ 2,597,000	3,053,000	\$ 3,053,000	12,753,349	(12,753,349)
2023	2,655,433	2,655,433	3,121,693	3,121,693	12,755,434	(12,755,434)
2024	2,715,180	2,715,180	3,191,931	3,191,931	12,754,226	(12,754,226)
2025	2,776,271	-	3,263,749	3,263,749	12,754,567	(9,978,296)
2026	2,838,737	-	3,337,183	3,337,183	12,754,235	(9,915,498)
2027	2,902,609	-	3,412,270	379,598	-	5,935,281
2028	2,967,918	-	3,489,046	-	-	6,456,964
2029	3,034,696	-	3,567,550	-	-	6,602,245
2030	3,102,976	-	3,647,819	-	-	6,750,796
2031	3,172,793	-	3,729,895	-	-	6,902,689
2032	3,244,181	-	3,813,818	-	-	7,057,999
2033	3,317,175	-	3,899,629	-	-	7,216,804
2034	3,391,812	-	3,987,371	-	-	7,379,182
2035	3,468,128	-	4,077,086	-	-	7,545,214
2036	3,546,160	-	4,168,821	-	-	7,714,981
2037	3,625,949	-	4,262,619	-	-	7,888,568
2038	3,707,533	-	4,358,528	-	-	8,066,061
2039	3,790,952	-	4,456,595	-	-	8,247,548
2040	3,876,249	-	4,556,869	-	-	8,433,117
2041	3,963,464	-	4,659,398	-	-	8,622,863
2042	-	-	-	-	-	-
2043	-	-	-	-	-	-
2044	-	-	-	-	-	-
2045	-	-	-	-	-	-
2046	-	-	-	-	-	-
	\$64,695,218	\$ 7,967,612	\$ 76,054,871	\$ 16,347,154	\$ 63,771,812	\$ 52,663,511
		\$ 56,727,605		\$ 59,707,717		\$ 116,435,322

SECTION 7 – POB RISK ANALYSIS

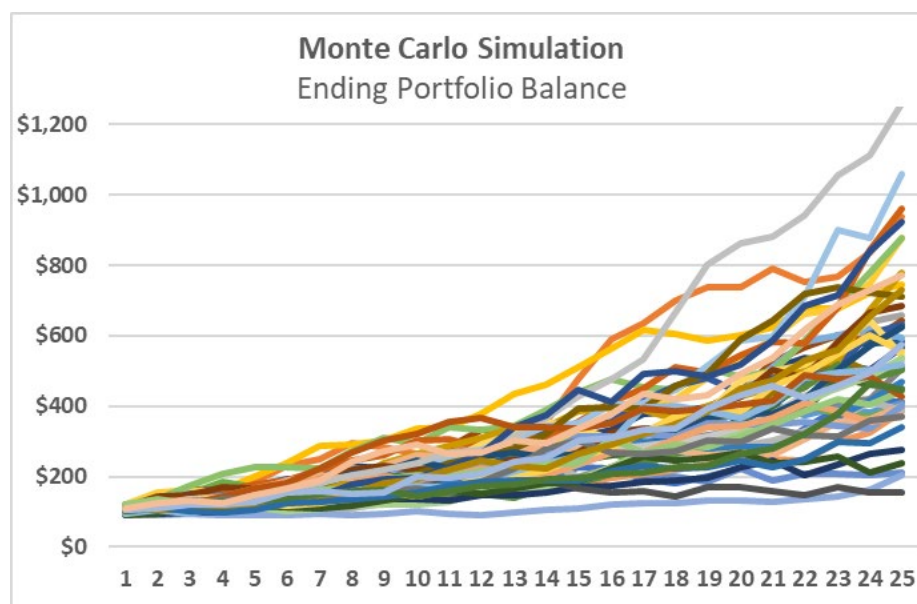
MONTE CARLO SIMULATION/RISK ANALYSIS

Monte Carlo Simulation is a robust modeling/forecasting technique that models the probable outcome of a scenario, using randomly generated inputs over time. The model produces random portfolio rates of return each year (over the life of the POBs) in order to compare the ending portfolio balances between a POB issuance scenario and making regular UAL payments.

In order to provide a consistent comparison, we assume that the same amounts are deposited into the portfolios: regular UAL payments versus POB proceeds + POB savings. We also take into account additional bases. The ending balance in each portfolio is discounted back at 6.625% rate.

The Monte Carlo Simulation generates 10,000 scenarios (represented by the colored lines in Exhibit 40) to determine an expected value or probability of success, which measures the number of outcomes with a positive net present portfolio value. This simulation is intended to provide the City with a more robust scenario analysis to gain an understanding of the key factors that drive the success of a POB financing (discussed below). It does not, however, ensure a certain outcome; this can only be known once the bonds have matured.

Exhibit 40



Timing is Critical

To evaluate the success of POBs, many assume that if the average earnings in the portfolio exceed the borrowing rate on the POBs, the POBs will generate savings. As we have illustrated in our case studies and discussed in the context of the GFOA's Advisory, this assumption is oversimplified. The *timing* of returns is most critical. Under a standard POB, the issuer makes a one-time upfront investment, as opposed to making the regular periodic UAL payments. The large initial investment provided by POBs enables the issuer to take advantage of the power of compounding. However, this additional leverage has an equal upside and downside effect, which is reduced over time. Therefore, the impact of investment returns is greater during the initial years.

To illustrate this point, we present two scenarios generated from the Monte Carlo Simulation with nearly identical portfolio returns, but dramatically different ending portfolio balance differentials. A portfolio with positive early returns (Exhibit 41) results in a much greater Ending Portfolio Balance Differential than a portfolio with very low early returns (Exhibit 42): \$108 million versus \$20 million. These results emphasize the importance of returns during the first few years.

Exhibit 41

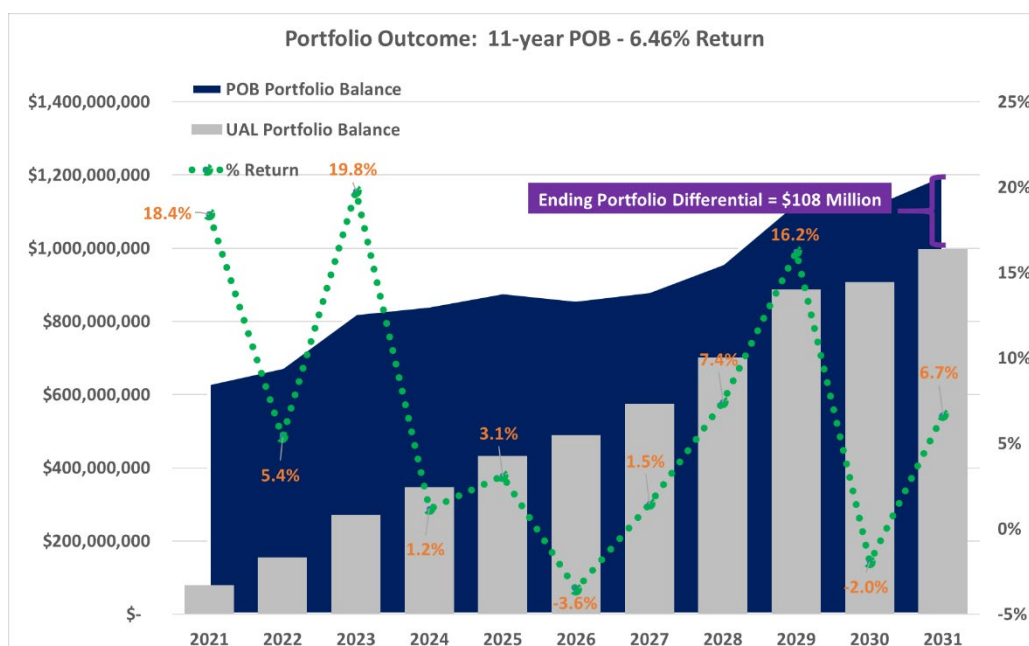
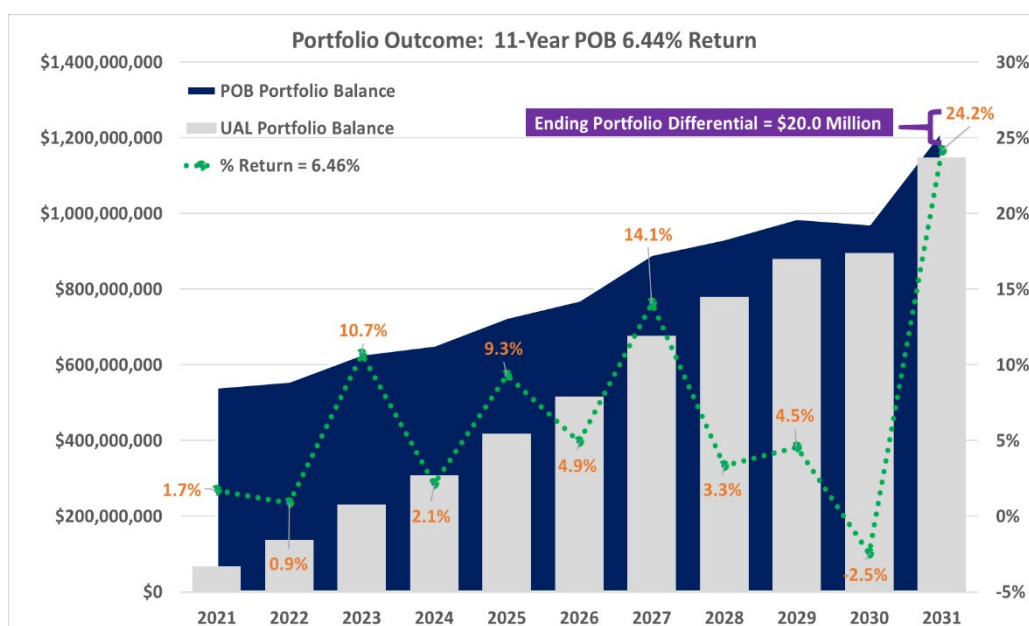


Exhibit 42



Level of Savings

This is perhaps the most intuitive factor: the greater the level of POB savings (i.e., percentage savings or interest rate differential), the greater the likelihood of success. We anticipate that many of the POBs 2.0 will realize a positive outcome because of the dramatically lower interest rate environment in which they were issued compared to prior generation POBs. For example, the City of Burbank and CSCDA POBs were issued in 2004 at 5.93% and 6.37%, respectively. In contrast, over the past three years, the majority of POBs issued in California have had a True Interest Cost below 3.25%.

We present below a Monte Carlo Simulation based on an 11-year \$524 million POB. The baseline POB generates \$80 million in present value savings. **This structure results in an expected ending portfolio balance of \$71 million and a 71% probability of success (Exhibit 43). We compare this scenario against a higher interest rate environment (+175 bps), which results in a 50% reduction in savings to \$40 million, an expected ending portfolio balance of \$26 million, and a 56% probability of success (Exhibit 44).** These scenarios illustrate how savings provide a cushion against the variability of investment results.

Exhibit 43

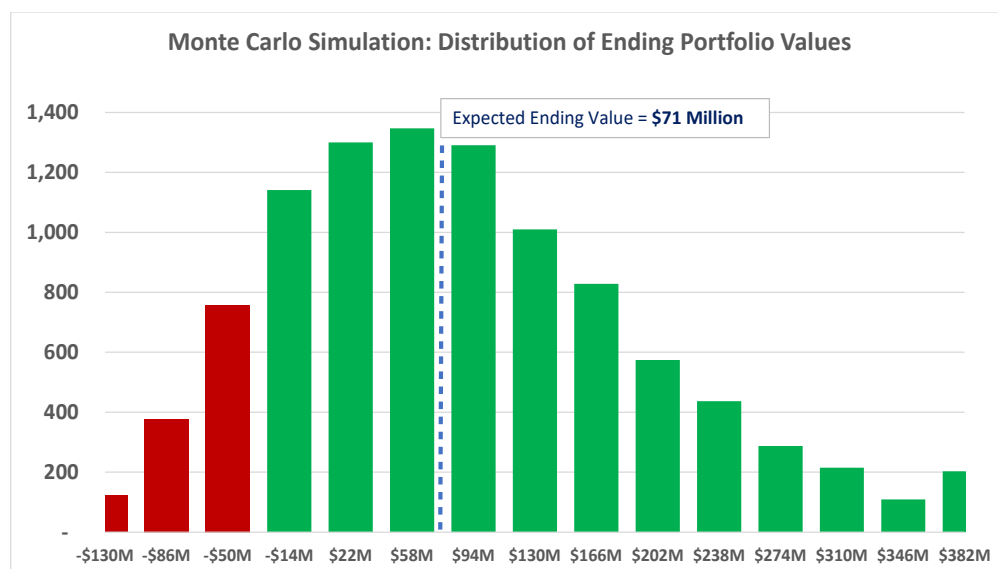
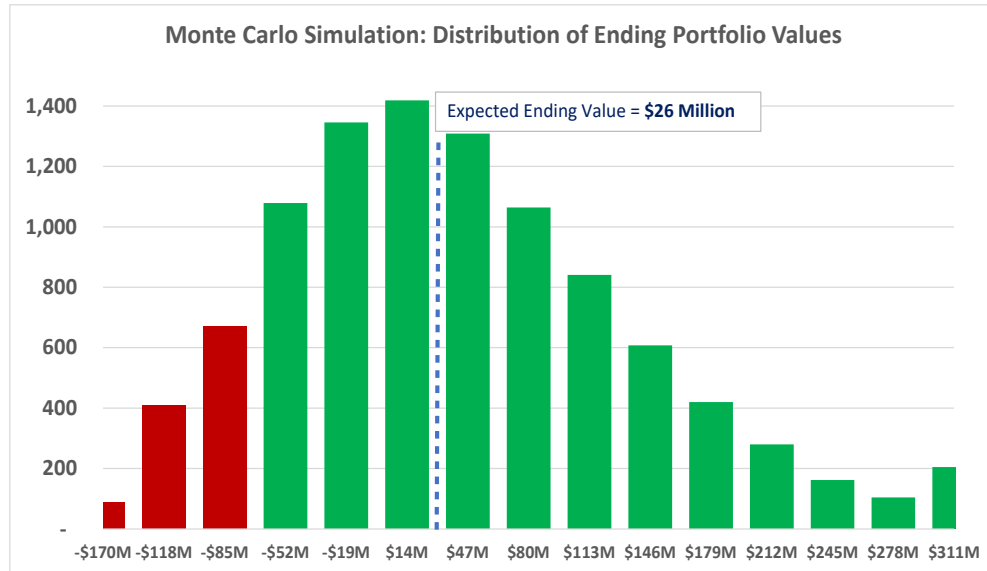


Exhibit 44



Volatility

In a low interest rate environment, investors may feel pressure to move toward higher risk investments to enhance yields. This risk/return paradigm stipulates that investors seeking greater returns must assume greater risk or volatility of returns.

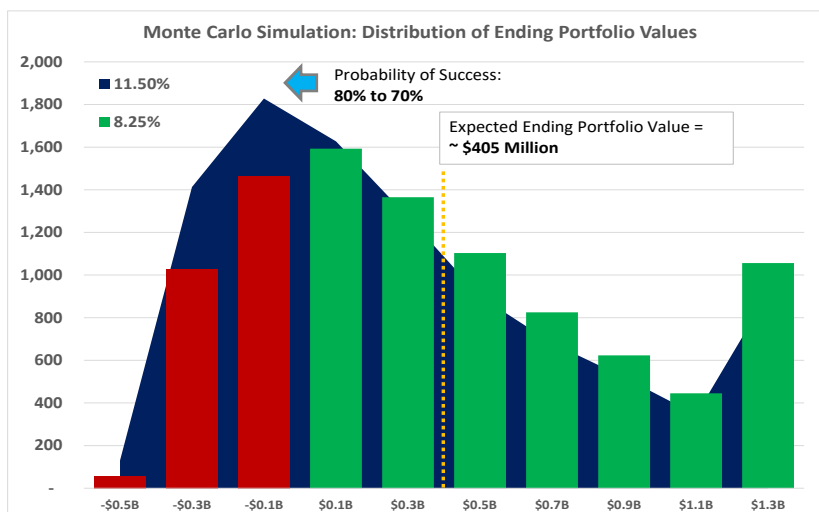
We compare the results for a \$1.4 billion POB that generates \$425 million in present value savings discounted at 6.625% under two volatility scenarios: 8.25% standard deviation and 11.25% standard deviation. (Volatility of returns is measured by the standard deviation of returns.)

The lower standard deviation of 8.25% excludes the impact of the Great Recession, while the 11.25% is the portfolio's reported standard deviation.

These two scenarios have very similar ending portfolio values. However, the probability of success is lower for the trial with the greater volatility: **70% versus 80%**. Greater portfolio volatility results in a wider dispersion of returns; and consequently, the portfolio with the higher volatility has more negative returns and fewer positive returns (as illustrated in Exhibit 45).

The City cannot directly impact general market performance and interest rate trends. Notwithstanding, the City's Retirement Plans can have a direct impact on the portfolio's volatility. Investment decisions, especially if POB proceeds can be segregated, can be geared toward lower volatility during the initial years to increase the probability of success.

Exhibit 45



UNDERSTANDING MARKET DYNAMICS

As mentioned previously, the primary risk of POBs is market timing risk, which is inherent to any investment decision. When an individual makes any investment decision, such as when to make contributions into a 401K or college savings account, that individual is making an inherent decision about the current market. In other words, the individual believes that the value of those investment will rise – “buying low”. However, timing the market is exceptionally difficult. For this reason, many investors employ a dollar cost averaging strategy.

Dollar Cost Averaging - Dollar-cost averaging is a strategy to reduce the impact of volatility by spreading out the investment purchases over time, buying at regular intervals and in roughly equal amounts. Conceptually, this strategy helps to ensure that all available funds are invested at a high point.

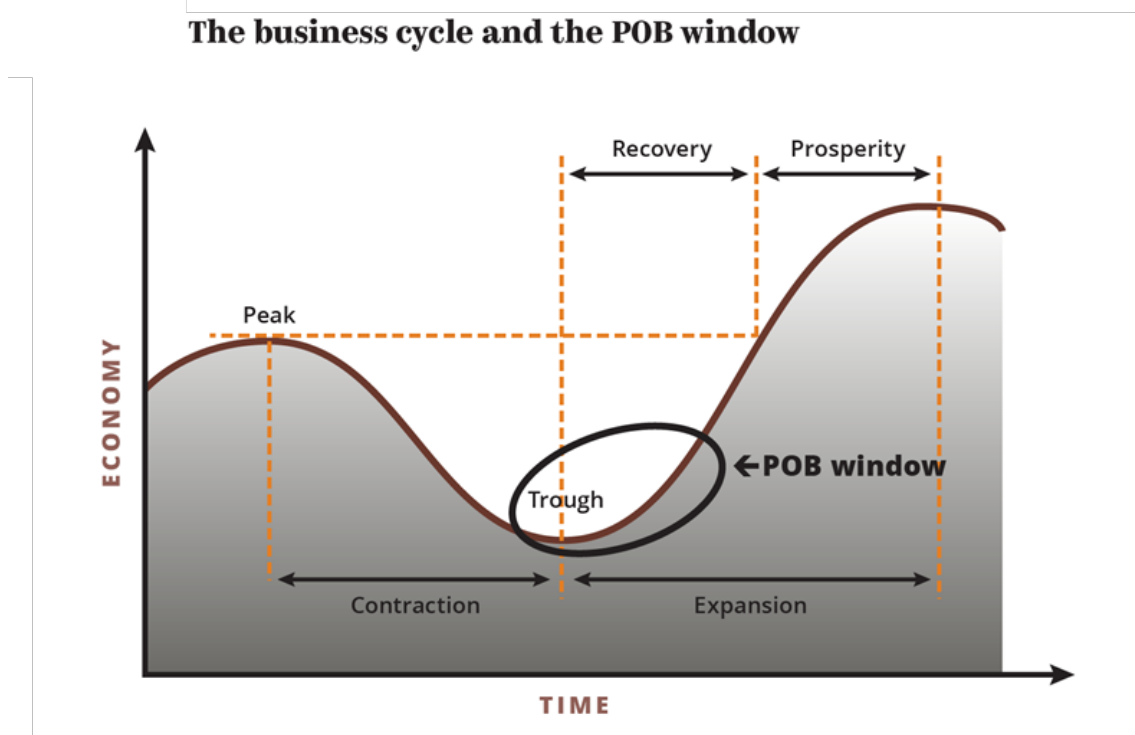
Employing this strategy makes sense during a bear market or when one expects a market downturn. Conversely, if one believes that the market will continue to rise and that the portfolio will out earn expectations, then the prudent strategy would be to leverage the position and invest all the monies today.

The success of POBs requires the optimization of two variables: investment results, especially during the initial years, and cost of borrowing. The decision of when to issue POBs will depend on the issuer’s outlook on both variables (expected future market performance versus relative interest rate environment). In an article authored by Girard Miller at the onset of the global COVID-19 pandemic in March 2020, Mr. Miller was of the opinion that the time was “ripe for public pension obligation bonds.”⁹ He has “...done historical research on stock market and business cycles, economic recessions and expansions, for all bull and bear markets since World War II, and can attest that there is no business cycle in that history when the S&P index was off by more than 35% and it wasn’t higher in two years, and returned high double digits over the following decade...POBs issued when the economy is going full steam

⁹ Pension & Investments (online) – *Commentary: The time is ripe for public pension obligation bonds*, Girard Miller, March 25, 2020 - <https://www.pionline.com/industry-voices/commentary-time-ripe-public-pension-obligation-bonds>

invariably suffer huge market losses when the next recession hits. They bought too high. POBs only work well over market cycles if they are invested during the POB window.”

Exhibit 46



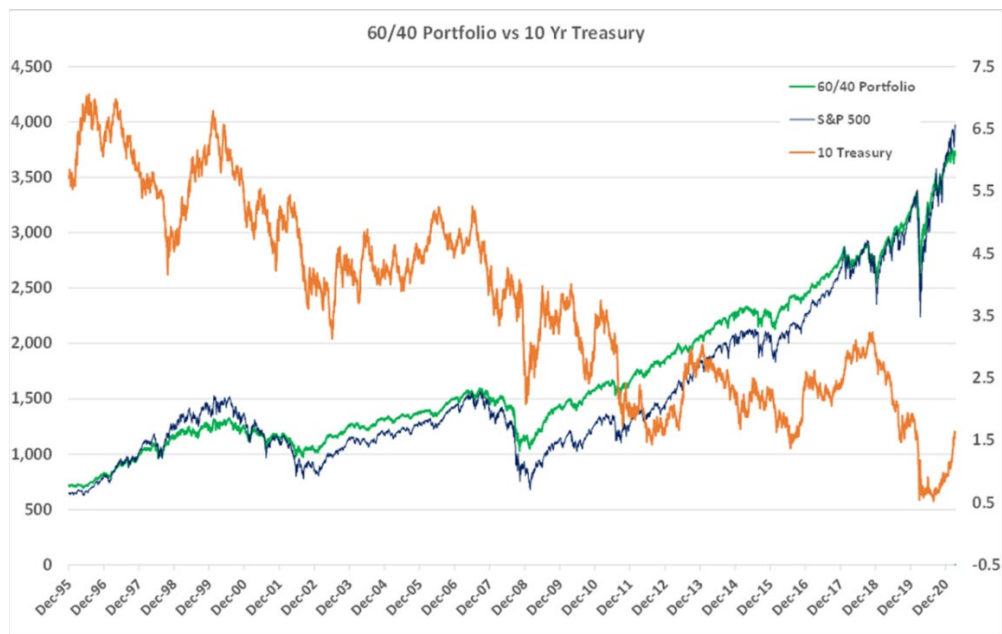
Source: Commentary: The time is ripe for public pension obligation bonds

The most recent POBs 2.0 have been issued below a 3.25% True Interest Cost; and although US Treasury rates have increased in recent weeks, the Federal Reserve has indicated that it does not intend to raise the federal funds rate for the foreseeable future. Exhibit 47 illustrates that Treasury rates remain at near historic low levels. Therefore, it may be reasonable to assume that borrowing levels will continue to remain relatively attractive for the coming months. There is no clear consensus, however, on the direction of the equity markets.

We agree with Girard Miller’s overall observation that the ideal time to issue POBs is during the recovery period of an economic cycle. Of course, borrowing rates do not match the timing of a market nadir or correction in a corresponding manner.

The Federal Reserve’s proactive approach to monetary policy uses its rate-setting power to promote economic recovery. As the Exhibit 47 illustrates, the markets appear to rebound quickly after a significant interest rate cut. Perhaps a corollary to Miller’s axiom is that an ideal time to issue POBs would be after a significant interest rate cut and a positive reaction from the capital markets. The difficulty of timing the market is one of the reasons that many investors implement dollar-cost averaging strategies to mitigate the impact of market timing risk.

Exhibit 47



Obtain Ability to Issue POBs – The market can change course in a matter of days or with one event. For this reason, it makes sense to obtain the legal authority to issue POBs as soon as possible, since it takes approximately an additional 90 days to issue POBs after the bonds are judicially validated.

MITIGATING RISKS OF POBS

POBs provide a very compelling opportunity: they refinance an outstanding liability at a much lower interest rate, which can provide significant budgetary relief. However, POBs are not without risk, primarily market timing risk. The RSSWG Final Report states:

“As with any contribution to the retirement systems, funds contributed by the Pension Obligation Bonds are subject to investment risk and that risk may be more concentrated due to the lump sum investment of bond proceeds”.

Understanding What Impacts POB Savings - It is important to understand that the City’s pension liability is dynamic and each year, new bases are added to the UAL. In some years, where investment returns exceed the discount rate of 6.625%, the fund will receive a (credit).

POB savings are only impacted by investment-related events. They leverage or increase the amount of assets invested, and if a significant market loss subsequently occurs, it is important to remember that only the commensurate portion of loss will impact POB savings. In other words, if the City were to issue \$500 million POBs and experience a 10% loss, then the POB savings would be reduced by \$50 million. Of course, the POB savings would be equally enhanced if there was a 10% increase.

In contrast, POB savings are not impacted by liability-based adjustments such as a lowering of the discount rate or adding new bases for changes to actuarial assumptions or experience. Although lowering the discount rate would increase the pension liability and increase the UAL, it does not affect the investment side of the equation (i.e., the market value of assets remains the same).

To address the potential investment market timing risk associated with issuing POBs, the City could issue POBs in multiple tranches which can help accomplish a dollar-cost-averaging strategy. However, this

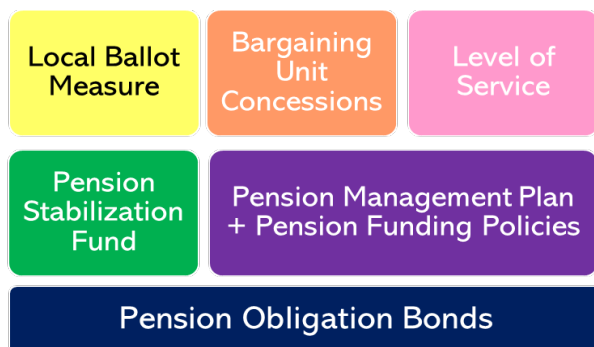
approach exposes the City to the potential risk of rising interest rates on subsequent POB issuances. Another approach is to work with the Retirement Plans to develop an investment risk mitigation strategy for POB proceeds. Unlike agencies that participate in CalPERS, the City has the potential to discuss the investment of POB monies with the Boards overseeing the Retirement Plans.

[The City will need to establish a dialogue with the Retirement Plans regarding the issuance of POBs and the integration of downside risk measures into the investment strategy.](#)

THE RISK OF NOT PAYING DOWN UAL

Savings are not locked in at the time of POB issuance, and the City is taking on risk with the issuance of POBs, but there are significant consequences from doing nothing. The City has passed local ballot measures, negotiated concessions and evaluated establishing a pension stabilization fund. At this moment, there are limited opportunities for alternative funding strategies (use of reserves and one-time monies, Tax-Exempt Exchange and Leveraged Refunding), and these options do not significantly improve the funded status of the Retirement Plans. If POBs are not considered as a viable opportunity, the City may soon be faced with unfavorable alternatives and growing pension payments crowding out the ability for the City to provide current programs and services to the San José community.

Exhibit 48



SECTION 8 – FINAL CONSIDERATIONS

UFI strongly recommends developing a comprehensive Pension Obligation Funding Plan that includes: 1) A full description of the City's Retirement Plans and liabilities; 2) Reserve and funding target levels; 3) How one-time monies and reserves will be applied; 4) Allocation of additional resources; 5) Minimum savings levels; 6) POB structuring guidelines. Our recommended course of action is to develop a long-term plan that implements multiple strategies over time. POBs are not a panacea nor the sole solution—the City will need to implement multiple strategies, with the ultimate goal of minimizing the use of POBs while optimizing the use of more efficient funding mechanisms.

The City should continue monitoring opportunities to pay down its UAL from the following sources:

1. **Reserves, Operating Surplus and One-Time Monies** – This is the most efficient funding source for making ADPs since cash does not incur interest costs. However, the “opportunity cost” of foregone earnings should be taken into consideration. As long as investment earning rates are below borrowing rates, this will be the most cost-effective solution.
2. **Tax-Exempt Exchange and Leveraged Refunding** – To the extent possible, the City should seek to maximize opportunities to implement these strategies. Given their more capital-intensive nature, Tax-Exempt Exchange is typically most viable for Enterprise Funds (Airport, Water, Sewer). Leveraged Refunding is a budgeting decision—if the City can afford to make its current debt service payments, then the savings from a refinancing are better served eliminating the City's highest cost debt – UAL payments at 6.625%.
3. **POBs** – Because POBs are taxable borrowings, they carry the highest cost of interest. Consequently, the City's objective should be to minimize the use of POBs.

The City should follow the axiom of matching the lowest cost of borrowing to the highest cost liability (i.e., longest bases). Ideally, the City will apply reserves, operating surplus and one-time monies to prepay the 19- and 20-year bases; Tax-Exempt Exchange and Leveraged Refunding should target the next longest bases, and POBs should target the remaining short-term bases. In practice, the City cannot implement all of these strategies at once. To ensure the most cost-effective strategy is implemented over time, the City should develop a comprehensive Pension Obligation Funding Plan that specifies how to pay off each base and when.

4. **Recycling Savings** – Recycling Savings (using all or a portion of the savings generated by one of the strategies listed above and applying freed-up funds toward an outstanding base or depositing them into a 115 Trust/Pension Stabilization Fund to offset future pension cost increases) leverages additional savings for the City and provides maximum flexibility since it can be done annually, on a case-by-case basis.

The City should anticipate that its UAL will change over time and investment results will vary. Therefore, it should expect to “actively manage” this liability and make adjustments to the Pension Obligation Funding Plan as the landscape changes. Finally, to the extent possible, the City should seek to address the Federated Plan first. The disparity in the funding levels between the two plans is significant. Any attempts to pre-pay or fund a portion of the UAL should be biased toward the Federated Plan until the funding status reaches a higher level (i.e., minimum 65% -70% or higher).

VALIDATION PROCEEDINGS

Section 18 of Article XVI of the State Constitution states that “No county, city, town, township, board of education, or school district, shall incur any indebtedness or liability in any manner or for any purpose exceeding in any year the income and revenue provided for such year, without the assent of two-thirds of the voters of the public entity voting at an election to be held for that purpose....” Accordingly, the issuance of bonds secured by general fund revenues generally requires a two-thirds vote of the public. However, there are certain judicially created exceptions to the Constitutional Debt Limit. One of these exceptions is the issuance of bonds to extinguish or satisfy an existing obligation imposed by law.

The City is obligated under its Charter to make annual payments to satisfy its obligations under the Federated Plan and the Police & Fire Plan. POBs are issued to satisfy and extinguish all or a portion of the City’s legal obligations to make the UAL. However, because there is not any direct legal precedent confirming authorization for public agencies to issue POBs, bond counsel requires a judicial validation proceeding to obtain a judgment from a Court that: (i) issuance of the POBs is exempt from and not subject to the debt limitations set forth in Article XVI, Section 18, of the California Constitution; (ii) the City’s obligations to make payments to the Federated Plan and the Police & Fire Plan are obligations imposed by law; and (iii) the POBs are valid, legal and binding obligations of the City issued under the Refunding Bond Law to refund the City’s obligations to the Federated Plan and the Police & Fire Plan. Bond Counsel relies on such judgment in rendering its legal approving opinion as to the validity of the POBs. A Bond Counsel approving opinion is required by the bond market for the City to successfully sell POBs to investors.

Required Legal Documents - Before the validation action is filed, the City Council must first adopt a resolution: 1) authorizing the City to issue POBs to refund its UAL; and 2) authorizing judicial validation proceedings related the issuance of such POBs. The authorizing resolution must also establish a not-to-exceed par value and maximum interest rate. As part of its approval, the City Council will approve two key legal documents in substantially final form: Trust Indenture and Bond Purchase Agreement. The Preliminary Official Statement (POS) is drafted by bond counsel and approved by the City Council after the validation has been entered.

Authorization Amount – Given that the City will be requesting authority to issue POBs and the amount of authorization will include any additional POBs in the future, we strongly recommend that the City request authority to issue POBs in the full amount of the current UAL (\$3.5 billion). Judicial validation simply provides legal authority to issue the POBs. It does not obligate the City to issue POBs in any amount; it simply provides the City with maximum flexibility and capacity in the future. Validation does not typically have an expiration.

Timeline - The validation proceedings require a 7-step sequential process, which under normal conditions can take approximately 90-120 days or more. This process can be delayed if a protest is made during the validation period by any third party and has been extended in some cases by as much as 2-3 months due to COVID impacts on the courts. COVID continues to impact and cause delays in the court system. These delays vary by individual courts. Accordingly, it is difficult to ascertain the exact amount of time it will take for bond counsel to obtain a validation judgment.

As we do not know the exact impacts of COVID on the court system at the time of a future validation action, we outline an estimated timeline under **pre-COVID** conditions in Exhibit 49:

Exhibit 49

Action		Estimated Time
1	City Council passes a resolution authorizing the sale of POBs	
2	File Validation Action with County Superior Court	
3	Receive Order for Publication of Summons from the Court	2-3 weeks
4	Publish notice in local publication of general circulation	21 days
5	Waiting period to file default judgment- minimum 10 days	3-4weeks
6	Clerk of the Court enters and schedules hearing for default judgement	3-6 weeks
7	Hearing for Default Judgement	
8	30-day Appeal Period	

Bonds can be sold after the 30-day appeal period has ended. However, staff must return to the City Council for approval of the POS and authorization for the issuance of POBs.

GLOSSARY OF TERMS

Actuarial Report – An annual appraisal of a pension fund's assets versus liabilities, using investment, economic, and demographic assumptions for the model to determine the funded status of a pension plan. The assumptions are based on a mix of statistical studies and experienced judgment.

Additional Discretionary Payments (ADPs) – Additional “pre-payments” made into the Retirement Plans to pay down the UAL.

Amortization Base – The component parts or “individual loans” of the UAL that have distinct payment schedules and terms.

Amortization Schedule – The UAL payment schedule for each Amortization Base. Each Amortization Schedule is derived based on the term and the Discount Rate.

Annual Prepayment – Lump sum Annual UAL payment made in July of each year. City receives a discount for making a single, lump sum payment in July compared to monthly UAL payments.

Base Selection Strategies (Targeting Strategies) – The concept of selecting Amortization Bases either shorter-term bases to achieve budgetary savings or longer-term bases total costs savings when making Additional Discretionary Payments.

California Public Employees Retirement System (CalPERS) – The retirement system (and health insurance provider) for the majority of state, school, and public agency members in the state of California. CalPERS is the largest public pension fund in the United States, with nearly \$450 billion in assets.

Capital Appreciation Bonds (CABs) – Zero-coupon bonds that pay principal and interest at maturity. CABs are priced at a discount when sold and mature at the full-face value (e.g., \$70 to \$100).

Current Interest Bonds (CIBs) – Traditional fixed-rate bonds that pay principal and interest on a regular (i.e., semi-annual) basis.

Discount Rate – The assumed annual rate of return for the investments in the Retirement Plans. The Discount Rate is also the interest rate used to calculate the Amortization Schedule for each Amortization Base.

Dollar Cost Averaging – An investment strategy in which an investor divides up the total amount to be invested periodically in an effort to reduce the impact of market timing risk.

Ending Portfolio Value Differential – The factor used to compare the probability of success in a Monte Carlo Simulation and the final outcome in the case studies. Both analyses provide a comparison of the final or ending investment balance between two portfolios: POBs and UAL Payments. These scenarios are intended to illustrate the impact of investment performance and the timing of market returns on the final outcome of a POB financing.

Federated Plan – The City of San José Federated City Employees’ Retirement System.

Funding Status or Funding Ratio – The funding percentage of the City’s Pension Plans. This percentage represents the amount of assets held by the Retirement Plans versus the projected Present Value of Benefits earned to date (i.e., actuarial value of assets compared to actuarial liability).

Leveraged Refunding – A pension funding strategy of structuring a refunding of an unrelated bond with “upfront” savings and then using the upfront savings to prepay a portion of the UAL. Based on current bond rates vs. typical Discount Rates, the savings from prepaying the UAL currently is typically 1.5x to 2.5x greater than the bond savings.

Monte Carlo Simulation – A robust modeling/forecasting technique that models the probable outcome of a scenario, using randomly generated inputs over time.

Normal Costs – The cost of the benefits earned during the year by current employees. The Normal Costs are paid as a percentage of payroll, as determined by the Plan’s actuary.

Pension Obligation Bonds (POBs) – Taxable municipal bonds used to refinance the UAL. POBs refinance UAL Amortization Bases that bear interest at the Discount Rate.

POB Premium – The additional spread required from investors for this class of securities over a more typical credit spread.

Police & Fire Plan – The City of San José Police and Fire Department Retirement Plan. This plan includes sworn police and fire officers. Civilian employees of the Police and Fire Departments are covered under the Federated Plan.

Recycling Savings – The concept of taking cash flow savings realized from the implementation of pension funding strategies, such as use of one-time monies, POBs, Tax-Exempt Exchange or Leveraged Refundings to make additional payments (ADPs) toward the UAL.

Retirement Board – Independent representatives of each of the Retirement Plans that have a fiduciary duty to administer their respective Retirement Plans.

Retirement Plans – Collectively, the Federated Plan and the Police & Fire Plan.

RSSWG – Retirement Stakeholder Solutions Working Group convened by the Mayor and which issued its final report in April 2021.

Stradling – Stradling Yocca Carlson & Rauth – Bond Counsel firm selected through a competitive process as bond counsel to prepare required documents for City Council to consider proceeding with validation and authorizing issuance of POBs, if so, directed by the City Council.

Synthetic Fixed-Rate Swap (Swap) – A derivative product that combines a variable rate bond with a floating-to-fixed rate swap or derivative, which effectively creates a fixed-rate structure. Swaps are derivative structures with a counterparty, typically a bank or financial institution. (The City has not and does not intend to enter into swaps).

Tax-Exempt Exchange – A pension funding strategy that finances pay-go capital projects with tax-exempt bonds, then reallocates the budget for the capital projects to make ADPs, and budgeted UAL payments pay debt service on the bonds.

Term Bonds – Bonds from the same issue which mature on the same date. Since a term bond is made up of multiple bonds, the par amount is usually greater than the par amounts of serial bonds in which each individual bond matures on an annual basis.

Total POB Savings – The total savings realized from issuing a POB, which has two component parts: 1. Budgetary Savings and 2. UAL Avoidance Costs.

Budgetary Savings – Actual annual cash flow savings resulting from issuing POBs compared to the annual UAL payment.

UAL Avoidance Costs – Represents the differential between POB debt service payments and scheduled UAL payments. This amount represents future savings, based on projected increases in future scheduled UAL payments.

True Interest Cost (TIC) – Standard measure for comparing bond interest rates, recognizing that bonds are sold with various coupons sold at a discount or premium that do not reflect the true interest cost on the bonds. The TIC is the rate necessary to discount the amounts payable on the respective bond principal and interest payment dates to the purchase price received for the bonds. Additionally, an “All-In-TIC” takes into account the fees and expenses of issuing the bonds.

UFI – Urban Futures Inc. – a financial advisory firm registered with regulators as a “Municipal Advisor” hired through a competitive process to advise the City on options for addressing and actively managing the City’s UAL, including assessing the benefits and risks associated with POBs. With respect to a new issue of municipal securities, a financial advisor commonly refers to an individual or firm that advises the issuer or other obligated person on matters pertinent to the issue, such as structure, timing, marketing, fairness of pricing, terms and bond ratings. A financial advisor may also be employed to provide advice on subjects unrelated to a new issue of municipal securities, such as advising on cash flow and investment matters in connection with outstanding municipal securities. Municipal Advisors are a broader regulatory category which can also include swap and investment advisors.

Unfunded Actuarial Liability (UAL) – The funding shortfall in the City’s Retirement Plans that represents the difference between the Accrued Liability equal to the present value of projected benefits earned by current employees and retirees to date, and the actuarial value of assets.