City of Casa Grande

Work Session Meeting

Public Safety Personnel Retirement System ("PSPRS")
Pension Liability Management

June 7, 2021

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STIFEL | Public Finance

Introduction of Presenters

City of Casa Grande

Larry Rains, *City Manager*

Scott Barber, *Director of Human Resources*

Piper Sandler

Nick Dodd, *Managing Director*

Stifel

Mark Reader, *Managing Director*

Omar Daghestani, *Managing Director*

Rushda Mustafa, *Vice President*

Executive Summary[1,2]

The Challenge

- Pension costs continue escalating for the City as the gap between assets and liabilities has widened over the years
- Normal cost payments are due and payable no matter what, which then places the entire risk of that normal cost payment stream on the sponsor
- This ongoing UAL creates significant pressure on near- and mid-term structural balance, as well as long-term overall pressure on the City's credit

The Opportunity

State-level Reform.

- In Arizona, PSPRS' 46.4% funded ratio falls in the lower 20% of funded ratios nationally (national average as of 2019: 71.2%)
- Prop 124 (creation of Tier 3) and SB 1428 elimination of PBI provide Arizona municipalities with a stable foundation for addressing these legacy costs and proactively managing their UAL
- While the introduction of the Tier 3 membership in PSPRS helps manage future UAL growth, retirement contributions associated with legacy Tier 1 and 2 UAL continue to escalate and crowd out other budget priorities as they are expected to grow to many multiples of Tier 1 and 2 payroll as it decreases over the next 20 years

Historic Low Taxable Rates.

- The 10-Year US Treasury Note Yield continues to trend around 1.69% (as of May 13, 2021)

The combination of state-level reform and attractive rate environment present a unique opportunity for the City to achieve an 100% funded ratio on its PSPRS liability, refinance the rate on this debt from 7.30% to below 3%, and potentially generate significant dollar savings for its budget.

City of Casa Grande PSPRS Pension Debt Profile

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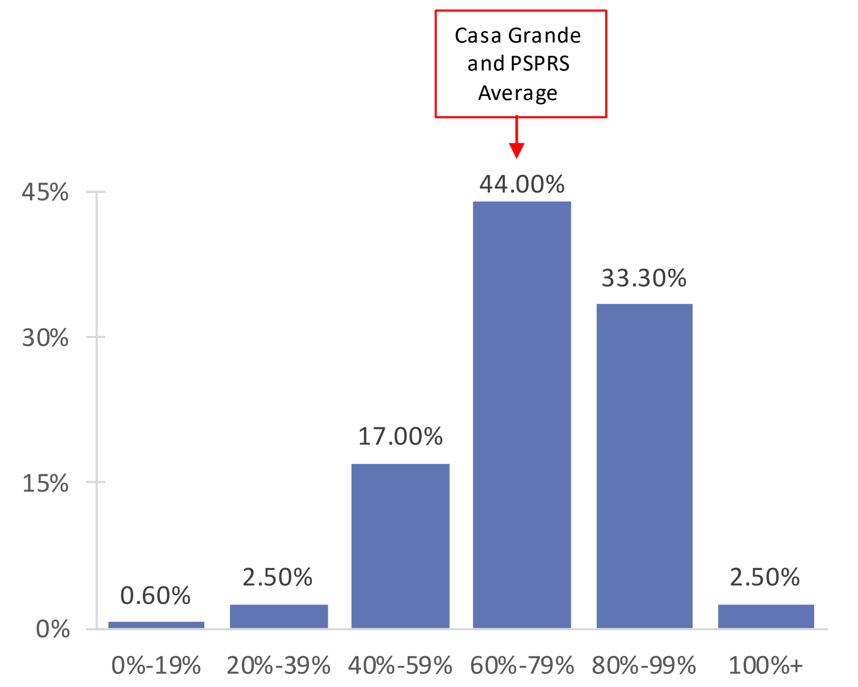
Accruing at 7.30%, the City's UAL amortization payments are among the fastest escalating costs on the City's budget

- The City of Casa Grande participates in Arizona PSPRS for its employees and retirees
- The Police plan is funded at 43.1% as of the 2020 valuation, while the Fire plan is funded at 53.7%
- Both plans accrue at an assumed actuarial rate of 7.30%, well above what the City might pay on its debt (approximately 2.65%)
  - The actuarial rate was revised from 7.40% to 7.30% in the 2019 valuation, causing the UAL to increase

Public Pensions: National Distribution of Funding Levels[2]



	City of Casa Grande Plan Statistics (as of 6/30/2020)[1]		Arizona PSPRS[1]
	Police	**Fire**	
AAL	$62,093,691	$43,389,814	$17,393,828,992
AVA	$26,748,667	$23,315,386	$8,079,039,739
UAL	$35,345,024	$20,074,428	$9,325,730,005
Actuarial Rate	7.30%	7.30%	7.30%
Funded Ratio	43.1%	53.7%	46.4%

1. *Source: Arizona Public Safety Personnel Retirement System Actuarial Valuation as of June 30, 2020.*
2. *Center for Retirement Research at Boston College, "The Funding of State and Local Pensions: 2015-2020." Alicia H. Munnell and Jean-Pierre Aubry.*

City of Casa Grande PSPRS Pension Debt Profile: Tier 1 and Tier 2 Legacy Costs

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Pension Plan	June 30, 2020 Recognized UAL	June 30, 2020 Unrecognized UAL	Timing Adjustment (6/30/2020 to 8/1/2021)	PSPRS UAL Amortization
PSPRS – Police Department	$35,345,024 (43.1% Funded) Actuarial Rate: 7.3%	$3,429,624 Actuarial Rate: 7.3%	$362,984 Actuarial Rate: 7.3%	1. 17 Years, 2038 2. Escalating annual UAL amortization ranging from $2,659,804 (2021/22) - $5,371,643 (2035/36)
PSPRS – Fire Department	$20,074,428 (53.7% Funded) Actuarial Rate: 7.3%	$2,760,495 Actuarial Rate: 7.3%	$487,584 Actuarial Rate: 7.3%	1. 18 Years, 2039 2. Escalating annual UAL amortization ranging from $1,474,944 (2021/22) - $3,343,647 (2036/37)
Total	**$55,419,452**	**$6,190,118**	**$850,568**	**$62,460,138**

Recommendation:

- **Refinance pension UAL using other debt instruments to:**
  - **Achieve 100% funded ratio levels (top 2.5% percentile nationally); greater assets will also allow the pension funds to improve investment efficiency and liquidity for paying benefits**
  - **Lower borrowing rate on $62.46 million UAL from 7.30% to approximately 2.65% (depending on market conditions)**
  - **Generate budgetary stability and potential savings to address other needs**

1. *Source: Annual Actuarial Reports and GASB 68 Reports made publicly available by PSPRS.*
2. *Represent current amortization period as determined by PSPRS and their actuarial assumptions*
3. *Timing adjustment estimates the difference between the total UAL as of the last actuarial report date (June 30, 2020) versus August 1, 2021. Calculation based on PSPRS's 7.3% actuarial rate and annual UAL amortization payment projections provided by PSPRS for comparable employers to the City. In order to fully fund the City's PSPRS UAL on August 1, 2021 and offset liabilities that are expected to be recognized over the next 7 years, the City would need to make an estimated payment of $62,460,138 to PSPRS. This amount is an estimate calculated by Stifel based on limited information from PSPRS and publicly available information, and such estimate had not been independently verified. Preliminary and subject to change.*

Mitigating Risks:
Contingency Reserve Fund

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A Contingency Reserve Fund is a risk-management tool that call mitigate the budgetary impact of future increases to pension costs arising from investment return volatility (market risk), or changes in actuarial assumptions (actuarial risk)

- **What?** Helps mitigate risks associated with year-over-year volatility in investment earnings as well as changes in actuarial assumptions, such as actuarial rate, COLA, mortality
- **How?** Use a portion of POB proceeds to establish an initial balance in CRFs for the Police and Fire Plans, respectively, and/or use existing cash
  - Apply a defined portion of ongoing year-over-year budgetary savings from the POBs (difference between what UAL payments would have been versus debt service costs) to continue funding CRF
- **Why?** In years where investment returns do not meet defined/established benchmarks, and/or changes in actuarial assumptions cause a significant change in projected annual payments, the City can draw on the CRF to smooth the budgetary impact of funding additional contributions for the newly created UAL
- **Why not?** Negative carry of issuing additional debt to fund an upfront deposit

Staff Recommendation:

City should use existing cash balances to create a Contingency Reserve Fund; this policy will ensure that the City not only achieves an 100% funded ratio today, but has implemented measures to maintain that funded ratio into the future.

Mitigating Risks:
Contingency Reserve Fund Sample Term Sheet

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The City can apply a portion of POB proceeds to create a Contingency Reserve Fund that helps manage market and actuarial risks associated with POBs

Sample Term Sheet for Police and Fire	
Purpose	• To mitigate the impact of 1) investment return volatility and 2) changes in select actuarial assumptions (as defined herein) on POBs proceeds deposited with PSPRS against the City's Police and/or Fire pension UAL
Initial Deposit	• Use a portion of existing cash balances to create a CRF for managing risks associated with the Police pension UAL
Rules for Investment	• Principal protected • Gross funded • Liquid within 90 days • Proceeds should only be invested in liquid and/or short-term products to ensure prompt availability of funds • City may have opportunity to utilize Act 151 Trusts to help PSPRS manage investment of proceeds; alternatively, could serve as a tool for supporting a local bank as trustee
Rules for Draws	• **Market.** Draw when investment return is below a defined threshold, for example 5%, or the POB Rate • **Actuarial.** Draw when changes to COLA, revisions to mortality assumptions, and/or revision of the investment return assumptions occur and cause an impact on AAL in excess of a defined threshold • The City may consider establishing a minimum fund balance threshold before which draws on the balance of the CRF could occur • Draws may also be restricted to draws of investment income only, while the balance is untouched • Establish periodic funded ratio thresholds, where CRF balance above a pre-defined level is drawn to supplement ARC
Rules for Replenishment	• Could use ongoing POB savings or use sell the float on other City held funds for periodic inflows • The City must also consider mechanisms to build up and/or maintain the CRF balance by securing a stream of steady cash flow beyond the initial deposit • Amortize replenishment from General Fund over 7 years on a level basis • This entails defining the revenue and investment sources for fiscal transparency, and redirecting investment returns in excess of an established benchmark to the Contingency Reserve Fund
Sizing	• Size initial deposit to manage "worst case" scenario of all permitted draw events (market volatility and actuarial changes) occurring in one valuation • **Market.** $2,111,089; size initial deposit to manage up to 3 years of new UAL amortization payments that would be created if PSPRS experienced 20% investment loss in year 1 of issuing POBs • **Actuarial.** $3,175,792; size initial deposit to manage up to 3 years of new UAL amortization payments that would be created if the actuarial rate was revised to 7%, COLA increased by 1% and PSPRS adopted a new mortality table
Rules for Extinguishment	• Upon the repayment of the final debt service payment, the City could redirect the reserve to apply to fund other retiree benefits, or General Fund

Mitigating Risks: Contingency Reserve Fund Size

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	PSPRS Fire Department	PSPRS Police Department	Total
POB Deposit to PSPRS	$23,322,506	$39,137,632	$62,460,138
Market CRF (Covers 3 years of UAL amortization payments for 20% investment loss to PSPRS)	$973,850	$1,137,238	$2,111,089
Actuarial CRF (Covers 3 years of UAL amortization payments for actuarial assumption changes to PSPRS)	$1,130,560	$2,045,232	$3,175,792
Recommended CRF Size	**$2,104,410**	**$3,182,470**	**$5,286,881**

Note: For more detailed calculations, please see the Estimate of Overall POB Sizing slide in the Appendix

STAFF RECOMMENDATION: SCENARIO 1

1.

ISSUE BONDS TO FULLY FUND PSPRS AND CASH FUND A CONTINGENCY RESERVE FUND ("CRF")

- Address the legacy trajectory by "chopping down the future mountain" with fixed debt service payments
- Include a fully cash funded contingency reserve fund and implement a reserve fund policy

2.

PAY-AS-YOU-GO

- Continue to pay accelerating UAL amortization payments to PSPRS resulting in possible tax increase in the future, need to cut expenses, or potentially a combination of both
- Amend current PSPRS policy and budget more dollars towards the UAL

Scenario 1: Fully Funded POB Issuance with a CRF funded 100% with City Cash

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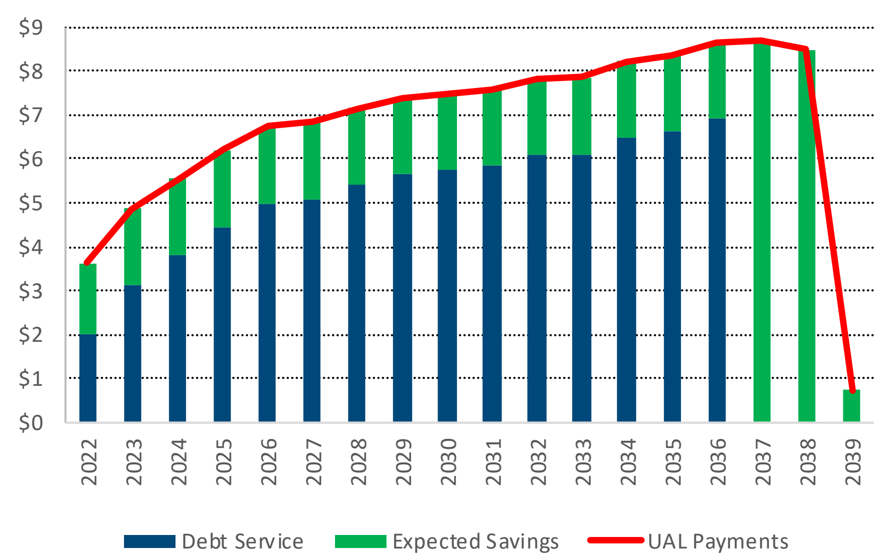
The City can also use a combination of a POB issuance and General Fund reserves to reach a fully funded contingency reserve fund for its pension plan for Police and Fire as of the transaction closing date

- Scenario 1 produces exceptional savings and reduces the borrowing cost associated with the transaction by cash funding 100% of the contingency reserve fund
- We expect rating agencies will favorably consider the nature of this structure, which 1) generates uniform savings year-over-year, 2) shortens the debt amortization from 2039 to 2036, and 3) is supported with a cash-funded CRF at the recommended $5.29 million size
- ***This structure could produce $33,516,548 of total expected NPV savings*** from reduced annual UAL amortization payments

Summary Statistics: Funding Police and Fire Pension Plan UAL[1,2]	
Dated Date	8/1/2021
Final Maturity Date	6/1/2038
All-In TIC	2.65%
Arbitrage (“Arb”) Yield	2.47%
Average Life	9.454 years
Bond Par Amount	$63,395,000
Pension Fund Deposit	**$62,460,138**
Expected Cost Savings (UAL – Debt Service)	**$43,912,352**
NPV of Expected Annual Savings @ 2.54%	**$33,516,548**
Total NPV Benefit (CRF Deposits + NPV of CRF Interest + NPV of Expected Annual Savings)	***$33,516,548***
Total Expected NPV Benefit (as % of Pension Fund Deposit)	***53.66%***
Expected Actuarial Funding Status after Pension Bonds	***100.00%***

POB Results: Impact on Annual Pension Plan UAL Payments ($mil)[1,2]



1. *Market conditions as of May 12, 2021. Spreads based on comparable recent transactions. Stifel does not guarantee to underwrite at these levels. All NPV values are discounted to August 1, 2021 (assumed transaction closing date) at a discount rate of 2.47%, the arbitrage yield. Please refer to Stifel’s risk disclaimers in this presentation. UAL and amortization computed by Stifel using assumptions from the 2020 Actuarial Reports, annual UAL payment data provided by PSPRS as of 6/30/2020, actuarial reports as of 6/30/2020 from PSPRS, and other Stifel calculations and assumptions. UAL payments shown are adjusted to reflect estimated payments made per fiscal year based on Stifel’s calculations and assumptions. Expected savings are based on PSPRS achieving the assumed 7.3% actuarial rate. Please refer to Stifel’s risk disclaimer for additional information.*

Scenario 1: Fully Funded POB Issuance with a CRF funded 100% with City Cash

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Fiscal Year Ending	Budgeted UAL Amortization Payments (a)	Debt Service	Projected Benefit [Cash Flow]	Projected Benefit [NPV @ 2.47%]
	[A]	[B]	[C]=[A]-[B]+[CRF]	[D]=PV[C]
Dated Date			$0	$0
6/30/2022	$3,617,905	$2,023,165	$1,594,739	$1,559,557
6/30/2023	$4,860,588	$3,114,148	$1,746,440	$1,666,724
6/30/2024	$5,537,532	$3,792,117	$1,745,416	$1,625,577
6/30/2025	$6,201,653	$4,456,517	$1,745,136	$1,586,122
6/30/2026	$6,738,918	$4,993,941	$1,744,977	$1,547,731
6/30/2027	$6,832,209	$5,088,867	$1,743,342	$1,508,992
6/30/2028	$7,148,228	$5,405,847	$1,742,381	$1,471,791
6/30/2029	$7,399,586	$5,654,658	$1,744,928	$1,438,398
6/30/2030	$7,498,706	$5,755,780	$1,742,927	$1,402,101
6/30/2031	$7,576,067	$5,830,449	$1,745,618	$1,370,402
6/30/2032	$7,835,425	$6,088,339	$1,747,087	$1,338,479
6/30/2033	$7,852,810	$6,106,991	$1,745,819	$1,305,254
6/30/2034	$8,213,637	$6,471,484	$1,742,154	$1,271,104
6/30/2035	$8,360,964	$6,616,967	$1,743,998	$1,241,764
6/30/2036	$8,660,439	$6,918,010	$1,742,429	$1,210,728
6/30/2037	$8,671,413	$0	$8,671,413	$5,880,037
6/30/2038	$8,482,711	$0	$8,482,711	$5,613,367
6/30/2039	$740,838	$0	$740,838	$478,421
Total	**$122,229,629**	**$78,317,276**	**$43,912,352**	**$33,516,548**

(a) Represents only the UAL payments and does not include any ongoing "Normal Costs"

1. *Market conditions as of May 12, 2021. Spreads based on comparable recent transactions. Stifel does not guarantee to underwrite at these levels. All NPV values are discounted to August 1, 2021 (assumed transaction closing date) at a discount rate of 2.47%, the arbitrage yield. Please refer to Stifel's risk disclaimers in this presentation. UAL and amortization computed by Stifel using assumptions from the 2020 Actuarial Reports, annual UAL payment data provided by PSPRS as of 6/30/2020, actuarial reports as of 6/30/2020 from PSPRS, and other Stifel calculations and assumptions. UAL payments shown are adjusted to reflect estimated payments made per fiscal year based on Stifel's calculations and assumptions. Expected savings are based on PSPRS achieving the assumed 7.3% actuarial rate. Please refer to Stifel's risk disclaimer for additional information.*

Scenario 2: Pay As You Go (Combined Police and Fire)

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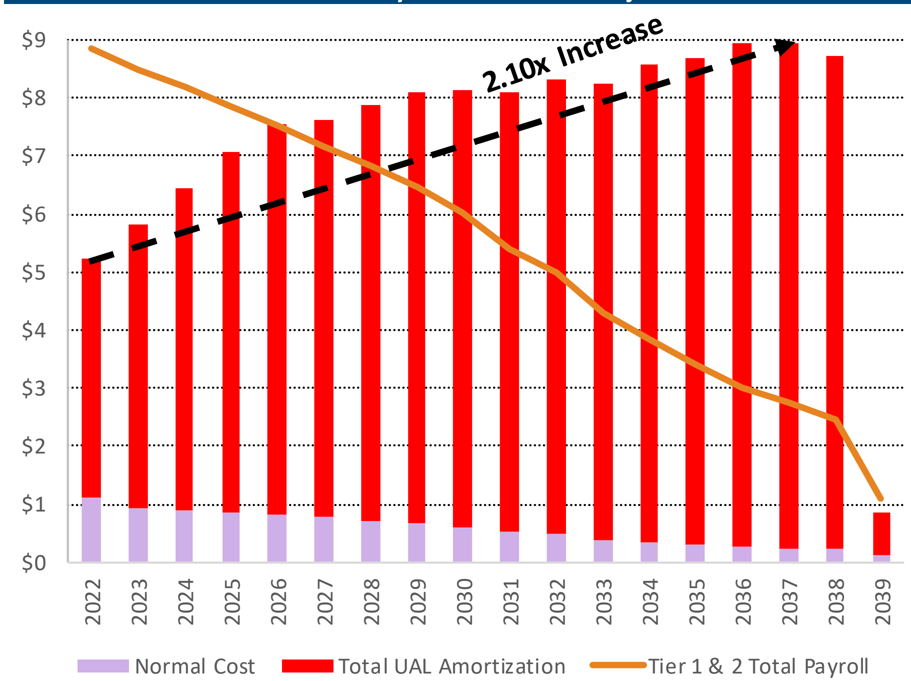
The City is essentially borrowing from PSPRS to support its pension plans and this cost continues to grow as plan assumptions evolve

- ***This ongoing UAL creates significant pressure on near- and mid-term structural balance***
- As can be observed below, UAL amortization payments will continue escalating above total employee payroll for Tiers 1 & 2

City of Casa Grande Projected Tier 1 & 2 Police and Fire Pension Payments per PSPRS (Graph in $mil)[1,2]



Fiscal Year	Tier 1 & 2 Payroll	Normal Cost	% of Payroll	Total UAL Amortization[2]	% of Payroll
2022	8,830,761	1,100,407	12.46%	4,134,748	46.82%
2023	8,486,678	948,344	11.17%	4,860,588	57.27%
2024	8,185,347	901,562	11.01%	5,537,532	67.65%
2025	7,841,316	850,147	10.84%	6,201,653	79.09%
2026	7,516,907	809,947	10.78%	6,738,918	89.65%
2027	7,153,475	766,315	10.71%	6,832,209	95.51%
2028	6,812,875	723,022	10.61%	7,148,228	104.92%
2029	6,447,364	684,376	10.61%	7,399,586	114.77%
2030	6,022,265	612,635	10.17%	7,498,706	124.52%
2031	5,386,002	523,549	9.72%	7,576,067	140.66%
2032	4,989,463	475,705	9.53%	7,835,425	157.04%
2033	4,292,774	391,391	9.12%	7,852,810	182.93%
2034	3,837,900	345,167	8.99%	8,213,637	214.01%
2035	3,427,874	308,039	8.99%	8,360,964	243.91%
2036	3,021,629	270,698	8.96%	8,660,439	286.61%
2037	2,749,469	244,505	8.89%	8,671,413	315.38%
2038	2,450,739	215,376	8.79%	8,482,711	346.13%
2039	1,109,953	121,873	10.98%	740,838	66.74%
Total	**98,562,791**	**10,293,058**	**10.44%**	**122,746,472**	**124.54%**

1. *Source: Arizona Public Safety Personnel Retirement System Actuarial Valuation as of June 30, 2020.*
2. *Total UAL Amortization is an estimate calculated by Stifel based on actuarial reports provided by PSPRS as of June 30, 2020, and GASB 68 reports provided by PSPRS as of June 30, 2020.*

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Many Arizona issuers have utilized the same approach to manage pension UAL

Arizona PSPRS UAL Funding Financings						
Sale Date	Jurisdiction	Par Amount	Security	Rating(s)	Maturity Range	All-in TIC
07/23/20	City of Flagstaff	$ 131,000,000	Certificates of Participation	"AA-" (Fitch) / "AA-" (S&P)	2021 - 2040	2.696%
10/21/20	Pinal County	$ 89,055,000	Pledged Revenue Obligations	"AA" (Fitch) / "AA-" (S&P)	2021 - 2037	2.612%
10/22/20	Gila County	$ 16,855,000	Pledged Revenue Obligations	"AA" (S&P)	2021 - 2039	2.980%
12/09/20	Yuma County	$ 35,070,000	Pledged Revenue Obligations	"AA" (Fitch) / "AA-" (S&P)	2021 - 2035	2.383%
01/12/21	City of Yuma	$ 159,475,000	Pledged Revenue Obligations	"AA-" (Fitch) / "AA-" (S&P)	2021 - 2038	2.381%
02/16/21	City of Tucson	$ 658,055,000	Certificates of Participation	"A1" (Moody's) / "A+" (Fitch) / "AA-" (S&P)	2022 - 2047	2.700%
03/09/21	Apache County	$ 15,190,000	Pledged Revenue Obligations	"AA" (S&P Insured) / "A+" (S&P Underlying)	2022 - 2038	2.890%
03/25/21	City of San Luis	$ 9,215,000	Pledged Revenue Obligations	"AA" (S&P Insured) / "A+" (S&P Underlying) / "AA" (Fitch Underlying)	2021 - 2037	2.994%
03/30/21	Coconino County	$ 18,160,000	Pledged Revenue Obligations	"AA" (Fitch) / "AA" (S&P)	2022 - 2038	2.794%
04/21/21	Pima County	$ 300,000,000	Pledged Revenue Obligations	"AA+" (S&P) / "AA+" (Fitch)	2022 - 2036	2.045%
04/22/21	Town of Wellton	$ 2,250,000	Pledged Revenue Obligations	Non rated (Private Placement transaction)	2022 - 2032	3.800%
05/06/21	Golder Ranch Fire District	$ 27,980,000	Certificates of Participation	"AA" (Fitch) / "AA" (S&P)	2022-2037	2.560%
05/20/21	Town of Pinetop-Lakeside	$ 6,675,000	Pledged Revenue Obligations	"AA" (S&P insured) / AA- (S&P)	2022-2047	2.970%
		$ 1,468,980,000				

Pension Obligations Risks

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Pension liability management carries three distinct types of risks: i) actuarial risk, ii) market risk, and iii) other risks

Risk Description	Status Quo	Pension Obligations
Market Risk. *All pension plans are subject to changes in market conditions and year-over-year investment return performance. The actuarial rate should ideally approximate a plan's long-term historical average returns*	• Performance studies allow actuaries to examine whether current return assumptions remain in line with actual performance. For example, many plans nationally have revised their actuarial rate to 7.00%	• Primary risk is investment return performance over lifetime of POBs • An issuer of POBs will remain better off for doing so as long as investment returns remain above the POBs' total interest cost
Actuarial Risk. *Any retirement system's independent actuaries calculate projections for plan assets and liabilities, and these projections are premised on a variety of assumptions such as investment returns, payroll increase, COLA, mortality, early retirement, and benefit payments. Annual employer contributions are calculated based on these assumptions*	• Actuarial risk is inherent to all pension funds, and all projections of future contributions and payouts • Any revision or variance from these assumptions will alter projections and required contributions, regardless of the issuance of POBs	• POBs address the UAL at a given point in time by swapping the actuarial rate with a market-based borrowing rate that is locked in at the time of issuance. Any new UAL created by new actuarial assumptions will have to be amortized separately
Funding Target Risk. *The POBs proceeds amount is calculated to achieve a specified funding target defined by the issuer. This amount is calculated based on known components of the issuer's UAL at the time of pricing, which is subject to achieving defined assumptions in an actuarial report; actual experience may vary*	• The funded ratio is subject to actuarial risk	• If the actual UAL upon closing of the POBs is higher or lower than the projected UAL, the issuance of the POBs may result in a funded ratio level that is above or below the target level defined
Other Risks. *Other risks may also exist*	• Changes in statutory and/or constitutional provisions, bankruptcy filing by a municipality, etc.	• Changes a soft liability (pension) into hard liability (debt); could enhance the impact of statutory/ constitutional/bankruptcy changes

Transaction Team

Underwriters	Counsel
PIPER | SANDLER	GUST ROSENFELD 100 YEARS · 1921-2021 *Bond Counsel*
STIFEL	GT GreenbergTraurig *Underwriter's Counsel*

Trustee	Rating Agencies	
ZIONS BANK®	FitchRatings	S&P Global

Preliminary Financing Calendar

MAY 2021						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

JUNE 2021						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY 2021						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST 2021						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER 2021						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Schedule Overview (Key Dates)		Participants
June 7, 2021	City Council Study Session	City, PS, S
June 9, 2021	Initial Document Preparation and Review	BC, PS
July 19, 2021	City Council Authorizing Resolution and Possible Approval	All
Week of August 9, 2021	Pre-Pricing Call and Bond Pricing	City, PS, S
September 1, 2021	Bond Closing (subject to change)	All

City	City of Casa Grande – Issuer
BC	Gust Rosenfeld – Bond Counsel
PS	Piper Sandler & Co. – Senior Manager
S	Stifel – Co-Manager
UWC	Greenberg Traurig – Underwriter's Counsel
TR	Zion's Bank - Trustee

Appendix

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Pension Liability Management: Glossary of Key Terms

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PSPRS – *Public Safety Personnel Retirement System of Arizona*. PSPRS is the state-managed retirement program that provides retirement benefits to public safety employees. It is a multi-employer system with 230 participating local units, including Casa Grande Police and Fire. The City is solely responsible for this liability, and has the opportunity to repay it with a lump sum deposit.

Employees – Includes current and retired employees in the Police and Fire Department that are in **Tiers 1 & 2**.

ASRS – *Arizona State Retirement System*. ASRS is a state-managed retirement program that provides retirement benefits to public employees and public school teachers for participating employers throughout Arizona. Unlike PSPRS, ASRS is a cost-sharing, multi-employer system, with a 72.8% funded ratio as of June 30, 2020.

AAL – *Actuarially Accrued Liability*. The value in today's dollars of all future benefit payments payable to current and future retirees.

AVA – *Actuarial Value of Assets.* The current value of all assets held/invested by PSPRS to generate investment income and make ongoing annual benefit payments to retirees. Assets held by the PSPRS are bolstered by contributions from employees, employers and investment income.

Funded Ratio. The ratio of a plan's AVA to AAL; 100% funding implies Assets = Liabilities

UAL – *Unfunded Actuarially Accrued Liability.* The difference between AAL and AVA. Since benefits are guaranteed, a system is ideally required to have sufficient dollars today (assets) to match the present value of all future payable benefits (AAL). The UAL is a debt of the City's accruing at the 7.30% PSPRS **Actuarial Rate**; insufficient assets have to be built up through additional contributions.

ARC – *Actuarially Required Contributions*. Employers like the City have to make annual contributions to PSPRS based on the required contribution amount computed by the actuary. This amount includes the **Normal Cost** as well as the **UAL Amortization Payment.**

Normal Cost. The amount in today's dollars of future benefits accrued by current employees' in the current valuation year. This is an annual expense that the City would pay regardless of a **POB**.

UAL Amortization Payment. In addition to making contributions for the current year's accruals, the City has to pay down the UAL debt through annual payments over a defined amortization period (17 years for the City's PSPRS liability). This is the debt repayment stream that the City has an opportunity to refinance through a **POB**.

Tiers 1 & 2. Benefit tiers for members hired before July 1, 2017. Tiers 1 & 2 are now closed. All new members are enrolled into Tier 3. Legacy costs associated with PSPRS refer to **UAL Amortization Payments** made to pay down the **Tiers 1 & 2 UAL.** Tier 3 is currently fully funded and does not have an associated **UAL.**

Actuarial Rate. Assumed investment earnings rate on System assets, compounded annually, net of investment and administrative expenses. Current PSPRS actuarial rate for **Tiers 1 & 2** is 7.30%.

POB – *Pension Obligation Bond*. A pension obligation bond is a debt tool that refinances the existing unfunded pension debt accruing at 7.30% with taxable bonds accruing at market rates. In the current market, the refinancing rate can be expected to be in the 2% to 4% range, or lower. In Arizona, entities can use excise tax revenue obligations or certificates of participation to execute a PSPRS refinancing

Estimate of Overall POB Sizing

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In order to provide adequate protection, a recommended CRF should cover at least 3 years of new UAL payments under worst case scenario mapping

Worst Case Scenario: PSPRS experiences a 20% investment loss and changes in actuarial assumptions in FY2022

	PSPRS Fire Department	PSPRS Police Department	Total
Market CRF	$973,850	$1,137,238	$2,111,089
Actuarial CRF	$1,130,560	$2,045,232	$3,175,792
Recommended CRF	**$2,104,410**	**$3,182,470**	**$5,286,881**

City of Casa Grande Estimated UAL and Payment Impact of Worst Case Scenario and Related CRF Sizing							
	Fire		Police		Total	Years of Protection	CRF Balance
	Market	*Actuarial*	*Market*	*Actuarial*			
New UAL Created	$4,664,501		$7,827,526		$12,492,028		
UAL Payments							
2023	$251,482	$327,355	$335,075	$602,606	$1,516,518	1 year	$1,516,518
2024	$336,662	$375,045	$380,557	$684,402	$1,776,666	2 years	$3,293,184
2025	$385,707	$428,159	$421,606	$758,225	$1,993,697	3 years	$5,286,881
2026	$440,331	$470,113	$455,387	$818,976	$2,184,807	4 years	$7,471,687
2027	$483,478	$491,091	$453,523	$815,624	$2,243,716	5 years	$9,715,403
2028	$505,052	$507,504	$478,058	$859,748	$2,350,362	6 years	$12,065,765
2029	$521,932	$532,260	$490,967	$882,965	$2,428,124	7 years	$14,493,889
2030	$547,391	$544,134	$494,866	$889,976	$2,476,368	8 years	$16,970,257
2031	$559,603	$533,169	$509,330	$915,988	$2,518,090	9 years	$19,488,347
2032	$548,326	$565,787	$518,657	$932,763	$2,565,532	10 years	$22,053,879
2033	$581,871	$568,145	$519,185	$933,713	$2,602,914	11 years	$24,656,793
2034	$584,296	$593,282	$543,588	$977,599	$2,698,765	12 years	$27,355,558
2035	$610,148	$610,139	$549,829	$988,824	$2,758,941	13 years	$30,114,499
2036	$627,484	$623,141	$574,520	$1,033,229	$2,858,375	14 years	$32,972,874
2037	$640,855	$633,533	$569,828	$1,024,789	$2,869,006	15 years	$35,841,879
2038	$651,544	$623,430	$555,348	$998,750	$2,829,072	16 years	$38,670,951
2039	$641,153	$140,369	$0	$0	$781,522	17 years	$39,452,473
Total	**$8,917,315**	**$8,566,658**	**$7,850,323**	**$14,118,178**	**$39,452,473**		

CITY OF CASA GRANDE

Summary of Outstanding Debt

Maturity (Apr 1)	$11,625,000 Excise Tax Revenue Obligations Series 2009 B (Taxable)				$9,355,000 Excise Tax Revenue Refunding Obligations Series 2012				$7,710,000 Excise Tax Revenue Refunding Obligations Series 2017				Total
	Principal	Coupon	Yield	CUSIP	Principal	Coupon	Yield	CUSIP	Principal	Coupon	Yield	CUSIP	
				147069				**147069**				**147069**	
2021	$980	6.450%	6.450%	EL4	$1,765	5.000%	2.240%	EWO	$60	2.945%	2.945%	---	$2,805
2022	1,045	6.450%	6.450%	EL4	1,530	4.500%	2.380%	EX8	60	2.945%	2.945%	---	2,635
2023	1,110	6.450%	6.450%	EL4					65	2.945%	2.945%	---	1,175
2024	880	6.450%	6.450%	EL4					365	2.945%	2.945%	---	1,245
2025									1,310	2.945%	2.945%	---	1,310
2026									1,355	2.945%	2.945%	---	1,355
2027									1,395	2.945%	2.945%	---	1,395
2028									1,430	2.945%	2.945%	---	1,430
2029									1,475	2.945%	2.945%	---	1,475
Total	**$4,015**				**$3,295**				**$7,515**				**$14,825**
Call Date	**Currently Callable**				**Non - Callabe**				**1/1/2023**				
Call Terms	**@ 100%**				**N/A**				**@ 101%**				

(a) Does not include any WIFA loans that are partially secured by the City's excise taxes as they are repaid by enterprise funds.
Source: Stifel internal records.

Actual and Projected Excise Tax Revenue Collections

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Source	Actual 2015/16	Actual 2016/17	Actual 2017/18	Actual 2018/19	Actual 2019/20	Budgeted *(c)* 2020/21
Transaction Privilege (Sales) Tax *(a)(b)*	$19,831,193	$20,314,212	$22,028,873	$24,803,913	$24,164,179	$21,385,556
State Shared Sales Tax	4,602,342	4,734,258	5,246,154	5,595,095	5,923,693	5,315,081
State Shared Income Tax	5,847,942	6,295,760	6,754,555	7,335,001	7,400,926	7,541,399
Franchise Taxes	2,388,107	2,449,704	2,502,845	2,343,033	2,179,116	1,800,000
Licenses & Permits / Fines & Forfeitures	2,773,868	1,993,952	2,085,041	2,568,979	2,871,529	2,425,550
TOTAL	$35,443,452	$35,787,886	$38,617,468	$42,646,021	$42,539,443	$38,467,586

(a) The sale of a single item over $5,000 is taxed at 2.0% for the $5,000, then the rate drops to 1.5% for the taxable amount exceeding $5,000.

(b) Does not include the two-tenths of one percent (0.2%) Economic Development and Recreation Excise Tax which is pledged to the repayment of the 2009 Obligations and obligations issued on a parity therewith only (the "2009 Parity Obligations"). In connection with allocating the Excise Taxes among payments due with respect to the 2009 Parity Obligations and all Parity Obligations, the Economic Development and Recreation Excise Taxes will then be allocated proportionately to the remaining payments due with respect to all Parity Obligations. The revenues from the Economic Development and Recreation Excise Tax for the last five fiscal years have been:

Fiscal Year	Amount
2016	1,119,070
2017	1,094,074
2018	1,085,209
2019	1,280,472
2020	1,273,655
2021 *(c)*	1,330,963

(c) Reflects forward looking statements which should be considered with an abundance of caution.

Source: City of Casa Grande, Arizona Finance Department.

Debt Service Coverage Analysis: Smooth Pension Legacy Liability

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City of Casa Grande, Arizona
Excise Tax Revenue Obligations
Debt Service Coverage

Fiscal Year Ending (June 30)	Gross Revenues Available for Debt Service (a)	Outstanding Debt Service (b)	$63,395,000 Series 2021 Bonds Principal	Interest (c)	Annual Debt Service Requirements	Estimated Debt Service Coverage	Revenues Available
2019-20	$ 42,539,443						
2020-21		3,442,384			$3,442,384	12.36	$ 10,737,430.07
2020-22		3,119,157	$ 855,000	$ 1,168,165	5,142,323	8.27	9,037,491.65
2022-23		1,521,138	1,715,000	1,399,148	4,635,286	9.18	9,544,528.57
2023-24		1,517,629	2,400,000	1,392,117	5,309,745	8.01	8,870,069.33
2024-25		1,515,119	3,080,000	1,376,517	5,971,636	7.12	8,208,178.57
2025-26		1,521,540	3,655,000	1,338,941	6,515,480	6.53	7,664,334.07
2026-27		1,521,635	3,800,000	1,288,867	6,610,502	6.44	7,569,312.33
2027-28		1,515,552	4,185,000	1,220,847	6,921,399	6.15	7,258,415.07
2028-29		1,518,439	4,515,000	1,139,658	7,173,097	5.93	7,006,717.57
2029-30		-	4,715,000	1,040,780	5,755,780	7.39	8,424,034.83
2030-31		-	4,900,000	930,449	5,830,449	7.30	8,349,365.83
2031-32		-	5,275,000	813,339	6,088,339	6.99	8,091,475.83
2032-33		-	5,425,000	681,991	6,106,991	6.97	8,072,823.33
2033-34		-	5,930,000	541,484	6,471,484	6.57	7,708,330.83
2034-35			6,235,000	381,967	6,616,967	6.43	7,562,847.83
2035-36			6,710,000	208,010	6,918,010	6.15	7,261,804.33
		$ 17,192,593					

(a) Revenues shown are for FYE June 30, 2020.
(b) Series 2009B Taxable Obligations, Series 2012 Obligations and Series 2017 Obligations.
(c) Interest on the Series 2021 Obligations is assumed at 2.65% for illustrative purposes only.

Pension Risk Disclaimer and Underwriter/Placement Agent Disclosure

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Pension Obligation Bonds ("POBs") are a source of financing for unfunded actuarial liabilities of pension funds and can serve a valuable function. However, the success of a POB financing is dependent on a number of assumptions proving to be accurate, and the failure of any of these assumptions is a risk that a government issuing POBs should consider.

Among the assumptions that are important to a POB financing, and the risks associated with those assumptions providing to be inaccurate, are the following:

- <u>Assumption</u>: The POB proceeds amount is calculated to achieve a specified funding target defined by the issuer. **<u>Risk</u>: This amount is calculated based on known components of the issuer's unfunded liability at the time of pricing. The projected unfunded liability at any given point in time is subject to achieving defined assumptions in an actuarial report, and actual experience may vary. If the actual unfunded liability upon closing of the bonds is higher or lower than the projected unfunded liability, the issuance of the POBs may result in a funding level that is above or below the target level defined.**
- <u>Assumption</u>: The investment yield on the POB proceeds once deposited in the pension fund will equal or exceed the yield on the POBs. **<u>Risk</u>: If the investment yield on the POB proceeds is less than the yield on the POBs, and the decline is not offset by positive changes in other assumptions, the issuance of the POBs may actually increase the unfunded actuarial liability.**
- <u>Assumption</u>: Payroll increases during the term of the POBs will be as anticipated when the unfunded actuarial liability was estimated at POB issuance. **<u>Risk</u>: If payroll increases during the term of the POBs exceed expectations, and the increases are not offset by positive changes in other assumptions, the POB proceeds will not suffice to cover the unfunded actuarial liability.**
- <u>Assumption</u>: Cost of living adjustments ("COLAs") will be as anticipated when the unfunded actuarial liability was estimated at POB issuance. **<u>Risk</u>: If COLAs exceed expectations during the term of the POBs, and the increases are not offset by positive changes in other assumptions, the POB proceeds will not suffice to cover the unfunded actuarial liability.**
- <u>Assumption</u>: Various assumptions used in calculating the unfunded actuarial liability -- such as mortality rates, early retirement incentives, types of payrolls covered by the pension fund -- will be as anticipated at the time of POB issuance. **<u>Risk</u>: If there are reductions in mortality rates, increases in early retirement incentives, expansions of the payrolls covered by the pension plan during the term of the POBs, and these changes are not offset by positive changes to other assumptions, the POB proceeds will not suffice to cover the unfunded actuarial liability.**

In addition to analyzing potential benefits that are based on achieving assumptions made in estimating the unfunded actuarial liability, we will also analyze potential budgetary benefits or losses based on various prospective levels of the pension systems' earnings to assist you in gauging the likelihood of success of a POB transaction. It should be noted that potential budgetary benefits vary from year to year. Actual benefits or losses and the success of the POB financing cannot be known until the POBs have been paid in full.

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