
CITY COUNCIL REPORT

GENERAL INFORMATION

TO: Ed Zuercher
City Manager

PACKET DATE: June 26, 2014

FROM: Cindy Bezaury
Interim Retirement Programs
Administrator

SUBJECT: UPDATED BALLOT INITIATIVE ANALYSIS

This report provides additional analysis on the pension-related Ballot Initiative as requested by the Mayor and City Council.

THE ISSUE

At the June 10, 2014 City Council Policy meeting, the Mayor and City Council voted unanimously to direct staff to conduct additional analysis on the Initiative that included all of the potential costs and savings, including those where there are existing contracts, conflicts with the City's Meet and Confer Ordinance, and/or there are open legal questions as to the constitutionality or legality of the terms of the Initiative providing for such costs or savings.

OTHER INFORMATION

The additional analysis contains assumptions and information which are based on the best legal and actuarial analysis available at this time. Due to the structure and text of the Initiative, there are significant legal questions about the feasibility of many of the impacts, particularly those that might produce savings.

In the information presented to Council at the June 10, 2014 meeting, the actuarial consultant, Cheiron, estimated additional costs of \$390 million from the Initiative. Because of additional data provided to Cheiron, the equivalent estimate of the costs of the Initiative is now \$358 million, excluding those changes which are considered open legal questions.

In accordance with the direction from the Mayor and City Council, the Initiative was evaluated as written and footnotes have been provided for those areas where there is unclear information or doubt about the legality of the changes. Assumptions about the impact were only made when necessary to complete an analysis.

Below is a summary analysis of the attached actuarial reports (**Attachments A - E**) by each line-item change. These changes are based on the actuarial analysis available at this time. The analyses were conducted by Cheiron and The Segal Company, with additional consultation from Buck Consultants.

Closing COPERS / Add DC Plan for New Hires

\$345 million cost / 20 years

Initiative Language:

- “3.1 No later than thirty days after the effective date of this act, the City Council shall adopt provisions implementing this act, including the adoption of a retirement plan for future hires and current employees electing participation in the plan. The adopted plan shall be the only retirement plan offered to future hires.”
- “3.2 The adopted plan shall include the following: (A) The plan is a defined contribution plan under the Internal Revenue Code and Regulations of the U.S. Department of Treasury...(C)The City is required to make a contribution to each employee’s individual plan account. The amount of this matching contribution shall be determined by the City Council in an amount not to exceed 8% of the employee’s base salary and wages and shall be paid in full into each employee’s account each pay period.”

Implications:

The City must establish a new Defined Contribution plan, and incur the costs associated with vendor selection and any associated legal or plan costs. The City would also need to obtain IRS approval. This provision, if the City were to contribute 5 percent to the DC plan for new hires only, is estimated to have a net cost of \$345 million over 20 years.

This includes:

- \$25 million in cost savings over 20 years by closing COPERS to new hires; and
- \$370 million in increased costs to fund the City’s contributions to the new DC plan.

Further savings are not expected from this change because the unfunded liability in COPERS will require continued contributions from the City whether future new hires are added to the plan or not.

Tier 2 Members Opt out of COPERS

\$13 million cost / 20 years

Initiative Language:

- “2.3 The City Council shall adopt a voluntary participation program for all current employees under which current employees may opt to discontinue their membership in the Phoenix Employees’ Retirement Plan and to enroll in the plan adopted by the City for future hires. Implementation of the voluntary participation program is contingent upon receipt of any necessary federal approval.”

Implications:

The City must offer the option for COPERS members to join the new Defined Contribution plan once all necessary federal approvals are obtained. Because of the high contribution rates of Tier II COPERS members, it is assumed they all would elect to move to the new Defined Contribution plan, which would have net costs of \$13 million over 20 years. This includes \$34 million in added costs for the new Defined Contribution plan and \$21 million in savings in City contributions to COPERS over 20 years. For purposes of this estimate, it is assumed that no Tier 1 COPERS members would elect to move to the new DC plan.

Additional costs may result from allowing Tier II COPERS employees to withdraw their existing contributions to COPERS and place them in the Defined Contribution system, if legally permissible. IRS approval would be required for the change to the COPERS plan and the impact on plan assets is unknown.

Change Definition of Pensionable Pay **\$0 – \$385 million savings / 20 years^{1,2}**
Initiative Language:

- 2.2(B)...The following shall not be included in determining a member’s Final Average Compensation:... (II) Any compensation paid in money to a current employee that is not part of a current employee’s base salary or wages or that is paid to compensate a current employee for a work related expense that is paid by the current employee.”

Implications²:

The change in the elements included in the calculation of Final Average Compensation (FAC) for current members of COPERS are likely to result in litigation because of constitutional provisions and previous court rulings.

If implemented, the compensation used to determine FAC would be calculated only on base wages and salary and could no longer be calculated to include overtime pay, City contributions to Deferred Compensation Plans, and lump sum sick and vacation payouts accrued before the snapshots (if eligible).

If the FAC calculation is based only on base wages and salary, and under the assumption that it is legal to change benefits and definitions for existing employees, the savings are estimated to be as much as \$385 million over 20 years.

It is important to note that these changes include the removal from pensionable pay of the City’s contributions to Deferred Compensation Plans. The impact of the Initiative on the elimination of deferred compensation is also discussed below.

If the definition of pension eligible compensation is changed, the economic value would be subject to renegotiation with each labor unit as part of the FY2014-2016 agreements and would likely be included in alternate form(s) of compensation, potentially negating some or all of the projected savings. Future changes to pension eligible compensation beyond the current contract would be subject to the City’s Meet and Confer Ordinance, so no assumptions can be made at this time regarding reductions to the total compensation package.

Change FAC to Five-Year Calculation **\$0 – \$90 million savings / 20 years^{1,3}**
Initiative Language:

- “2.2(A) The Final Average Compensation for current employees shall be based on the average of the highest annual compensation paid to a member for a

¹ Not likely to produce savings due to constitutional provisions and previous court rulings.

² Litigation potential if contracts not renegotiated to return economic value, and litigation potential for the change in FAC calculations.

Over 20 years, the elimination of DCP is estimated to save \$208 million from contributions to COPERS members (per Cheiron), \$181 million from contributions to PSPRS members (per Segal), and \$2 million from contributions to DCP plans for City elected officials⁷ (per Cheiron). This is only the estimated savings from reduced expenditures in the City's contributions to DCP; savings from eliminating DCP as pensionable compensation in COPERS are included in the change to FAC, which is described in an above section.

In PSPRS, there could also be savings from reduced contributions to PSPRS due to the removal of DCP from compensation. This would provide \$76 million in savings over 20 years, for a total savings related to PSPRS members of \$257 million (per Segal).

However, the Deferred Compensation Plans are negotiated benefits. It is considered part of an entire compensation package by employees, unions and associations. As such, the value of the lost DCP would likely be renegotiated in some form into total compensation with each labor unit. If the renegotiated benefits are pensionable compensation items, none of the projected savings would be realized⁶.

Changes to DCP have the potential to add costs to the City in payroll taxes. Fringe contributions, including DCP contributions, are exempt from the Federal Insurance Contributions Act (FICA) tax. If the economic value of DCP contributions is renegotiated with each labor unit, it is possible that the City's FICA tax liability would increase. This applies only to COPERS members, not to PSPRS members as they do not pay FICA taxes.

End Participation in PSPRS **\$0 – \$1,048 million savings over 20 years^{8,9}**
Initiative Language:

- 3.1 No later than thirty days after the effective date of this act, the City Council shall adopt provisions implementing this act, including the adoption of a retirement plan for future hires and current employees electing participation in the plan. The adopted plan shall be the only retirement plan offered to future hires. “
- 2.2 (C) Current employees that do not enroll in the plan established in Section 3 of this Act shall not receive City contributions to any retirement plan other than contributions to the Phoenix Employees' Retirement Plan.” “

Implications⁹:

The City participates in the Public Safety Personnel Retirement Plan (PSPRS) as required by state statute and contractual obligations, for current and future sworn police

⁷ While the Charter Amendment does not specifically apply to elected officials, this DCP contribution would no longer be available as a benefit choice for elected officials if this provision of the Charter Amendment is implemented.

⁸ Includes \$257 million in savings already counted and discussed in the DCP section above, including both the direct savings and reduced contributions to PSPRS .

⁹ Litigation potential if the City does not comply with state statute on PSPRS, and litigation potential if the City does not comply with the text of the Initiative. Also litigation potential if contracts not renegotiated to return the economic value of these benefits.

and fire employees. The Initiative specifically states contributions can only be made to COPERS or the Defined Contribution plan. While the preamble to the Initiative states this is not intended to impact individuals who are eligible to join any other system, including PSPRS, the text of the Charter Amendment does not exclude Police and Fire employees from the provisions.

As stated by the Charter Amendment, the Initiative may require the City to place all existing and future PSPRS members in the new Defined Contribution plan. If required to do so, there would be a total savings of \$1,048 million over 20 years⁸. This includes direct savings from the elimination of DCP (\$181 million over 20 years), savings from reduced contributions to PSPRS (\$1,417 million over 20 years), and additional costs to fund the Defined Contribution program for PSPRS members (\$550 million over 20 years).

It is unknown at this time how the legal questions about the applicability to PSPRS would be answered. If the Initiative is successful, the City Council would need to receive legal advice and would likely be required to make a policy decision on continued participation in PSPRS. Any decision would likely face litigation.

Eliminate PEHP, MERP, FEBT

Unknown¹⁰

Initiative Language:

- “2.2 (C) Current employees that do not enroll in the plan established in Section 3 of this Act shall not receive City contributions to any retirement plan other than contributions to the Phoenix Employees’ Retirement Plan.”
- “3.1 No later than thirty days after the effective date of this act, the City Council shall adopt provisions implementing this act, including the adoption of a retirement plan for future hires and current employees electing participation in the plan. The adopted plan shall be the only retirement plan offered to future hires.”

Implications¹⁰:

The City may not be able to continue contributions to the Medical Expense Reimbursement Plan (MERP), Post Employment Health Plan (PEHP), and Fire Employee Benefit Trust (FEBT) since these plans provide a retirement benefit which is used for medical expenses and insurance premiums. MERP is a trust plan that provides payments to existing retirees and future payments for current eligible employees who had no more than 15 years of service remaining before becoming eligible for retirement as of August 1, 2007. MERP payments to retirees can be used for the payment of medical expenses and insurance premiums in retirement. For employees not eligible for MERP and individuals who participate in the City’s health insurance, PEHP is a monthly payment into an account which can be used for the payment of medical expenses and insurance premiums in retirement. FEBT is a trust plan for sworn Fire personnel that provides payments to retirees to be used for medical expenses, insurance premiums, death benefits, and other related expenses.

¹⁰ Litigation potential if the City does or does not determine these to be “retirement benefits” affected by the Initiative. Also litigation potential if contracts not renegotiated to return economic value, and litigation potential for not funding MERP and thereby reducing benefits to current and future eligible retirees.

MERP Impacts

If the City is unable to continue payments to the MERP trust it may violate its fiduciary responsibility as well as a financial obligation for the unfunded liability. The FY2013 annual contribution was \$34 million. The unfunded liability is \$306 million, which would need to be annuitized, and could increase the annual contribution.

PEHP Impacts

Due to the language in the Initiative, the City cannot contribute to employee PEHP accounts. Over time, the value of the elimination of PEHP payments will slightly reduce health insurance premiums because PEHP is included in the medical premium calculation. The estimated 2014-15 annual expenditure for PEHP is \$10 million from the City's Health Benefit Trust, which is funded from contributions made by both the City (80%) and employees (20%).

FEBT Impacts

If the City is unable to continue payments to FEBT, firefighters will need to determine how to continue benefits for the existing retirees and any future retirees. The estimated annual expenditure is \$1.2 million. This payment is negotiated as a concession in the 2015-16 labor agreements.

These costs are part of the negotiated compensation packages with employee groups. All compensation that is part of negotiated labor packages may need to be renegotiated so that the value of the compensation is replaced in other categories of compensation¹⁰.

MERP is an obligation that was promised to current eligible retirees and some future eligible retirees. Without MERP benefits for those eligible, retirees will have to pay all health insurance costs, which continue to increase.

IMPACT ON EMPLOYEE BENEFITS

Segal Consulting provided individualized employee analysis of the impact on four sample employees in both pension systems. Due to the legal uncertainty of the impacts on both COPERS and PSPRS members, three models were created for each group of employees.

COPERS Tier 1 Members¹¹

Changes to existing COPERS Tier 1 members as described by the Initiative include the elimination of City contributions to DCP and the change in the calculation of Final Average Compensation to include a five-year average, instead of the three-year average, and to only reflect base salary and wages. As detailed in **Attachment C (COPERS Tier 1 Page 2)**, Employee Sample 1 will experience a reduction in his or her projected retirement benefit of 14.2% (assuming a 6.5% return on DCP).

New Hires – New Defined Contribution (DC) Plan Participants

Employees hired after the effective date of the Initiative, if implemented, would participate in a new Defined Contribution plan. Based on an analysis conducted by

¹¹Changes to the benefits of current members of COPERS are likely to result in litigation.

Buck Consultants, most large employers contribute a 5% match on contributions to the Defined Contribution plan, for a total of a 10% contribution from the employee and employer. Using this as an assumed contribution rate, **Attachment D (COPERS Tier 2 to 10%DC Plan)** compares the COPERS Tier 2 benefit with the DC benefit. Employee Sample 1 projects wages and inflation into the future for the next 31 years. Using actuarial assumptions, Employee Sample 1 would have his or her projected retirement benefit reduced by 56.1%.

PSPRS Plan¹²

Close Participation in PSPRS and Transition to Defined Contribution (DC) Plan Attachment E (PSPRS Page 3) assumes that future contributions to the PSPRS plan are not permitted. Employees would have their PSPRS benefits frozen, and future contributions would be made to the new DC plan with an assumed combined contribution rate of 10%. Employee Sample 3 would have a deferred retirement benefit in the PSPRS plan plus the value of the former City DCP plus the new DC plan. Using these actuarial assumptions, Employee Sample 3 will experience a reduction in their projected retirement benefit of 41.4%.

SUMMARY

Based on the legal and actuarial analysis conducted, the most likely outcome of the Initiative is \$358 million in costs over the next 20 years. Below is a summary of the estimated savings and costs over 20 years.

Initiative Provision	(Costs) or Savings / 20 Years
Closing COPERS / Add DC Plan for New Hires	(\$345 million)
Tier 2 Members Opt out of COPERS	(\$13 million)
Change Definition of Pensionable Pay ¹³	\$0 – \$385 million
Change FAC to Five-Year Calculation ¹³	\$0 – \$90 million
Eliminate Deferred Compensation ¹³	\$0 – \$391 million
End Participation in PSPRS ^{8,13}	\$0 – \$1,048 million ⁸
Eliminate PEHP, MERP, FEET ¹³	Unknown

Due to actual and implied contracts and the potential for litigation under the Constitution and/or state and federal law, it is questionable how much savings in the above chart would actually be realized.

RECOMMENDATION

This report is provided for information only; no action is necessary.

¹²Litigation potential if the City does not comply with state statute on PSPRS, and litigation potential if the City does not comply with the text of the Initiative. Also litigation potential if contracts not renegotiated to return the economic value of these benefits.

¹³ Savings are not likely to be realized due to existing labor contracts or agreements, constitutional provisions, previous court cases, and/or other implementation issues.

Attachments

Attachment A--City of Phoenix Ballot Initiative Analysis (Cheiron)

Attachment B--Estimated Impact of DC Initiative on Police and Fire (Segal Consulting)

Attachment C--COPERS Sample Employee Analysis – Tier 1 (Segal)

Attachment D--COPERS Sample Employee Analysis – 10% of Pay DC Plan (Segal)

Attachment E--Arizona PSPRS Sample Employee Analysis (Segal Consulting)

City of Phoenix Ballot Initiative Analysis

July 2, 2014



Bill Hallmark, ASA, FCA, MAAA, EA
Elizabeth Wiley, FSA, FCA, MAAA, EA



Agenda

- Overview of Initiative
- Results of Analysis
- Questions
- Appendixes



Overview of Initiative - COPERS

- Changes to Compensation
 - Covered compensation limited to base salary or wages, specifically excluding unused sick time, vacation or other compensation not paid in money as well as compensation for work-related expenses
 - Final average compensation (FAC) changed from consecutive three to five-year average
- Defined benefit plan closed – contribution rates continue to be based on payroll of all employees as if plan remained open
- Defined contribution (DC) plan established with City matching contribution not to exceed 8% of base pay
- Current employees offered option to change to new DC plan – contingent on Federal approval



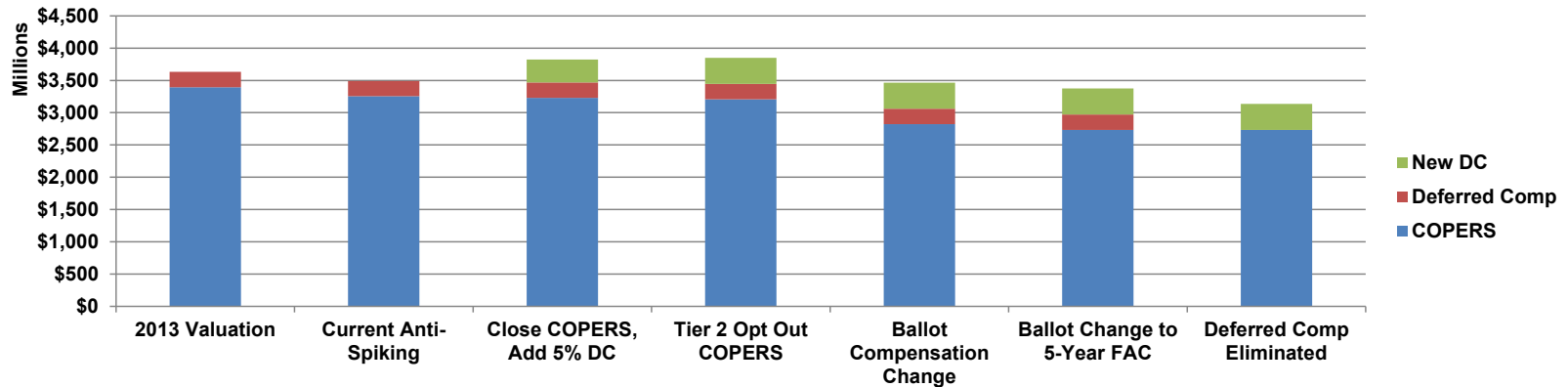
Overview of Initiative - COPERS

- Current members who do not elect the new DC plan, “shall not receive City contributions to any retirement plan” other than COPERS and the new DC plan “shall be the only retirement plan offered to future hires”
 - Effectively eliminates deferred compensation program
 - Also eliminates Other Post Employment Benefit (OPEB) plans
 - Not clear how it affects PSPRS
- Employees immediately vest in City contributions to the new DC plan
- Employees in the new DC plan elect their contribution level
- City matching structure for new DC plan is not defined by the initiative



Summary of City's Expected 20-Year Contributions – COPERS Members

City's Expected 20-Year Contributions (COPERS Members) Under Ballot Initiative Scenarios



- The savings or cost of the ballot initiative, if it passes, depends on which of the provisions prevail
- Much of the City's expected COPERS contributions are due to the current unfunded liability, which is expected to be paid off in FYE 2038
 - Recent anti-spiking changes enacted are expected to save the City about \$140 million in COPERS contributions over the next 20 years
- Most of the savings in the initiative over the next 20 years comes from additional changes to FAC for current employees and the elimination of the deferred compensation plan



Summary of Expected 20-Year Savings or (Costs) Due to Ballot Initiative

City Savings/(Costs) - COPERS Members

Source of Savings	Savings Amount	Cumulative Amount	New 5% DC Cost	Net Savings
Close COPERS to New Entrants	\$ 25	\$ 25	\$ (370)	\$ (345)
Tier 2 Members Opt Out of COPERS	21	46	(404)	(358)
Change Definition of Compensation in COPERS	385	431	(404)	27
Change to 5-Year FAC in COPERS	90	521	(404)	117
Eliminate Deferred Comp – COPERS Members*	208	729	(404)	325

There may be additional savings due to the elimination of deferred compensation for members of PSPRS and the City Council

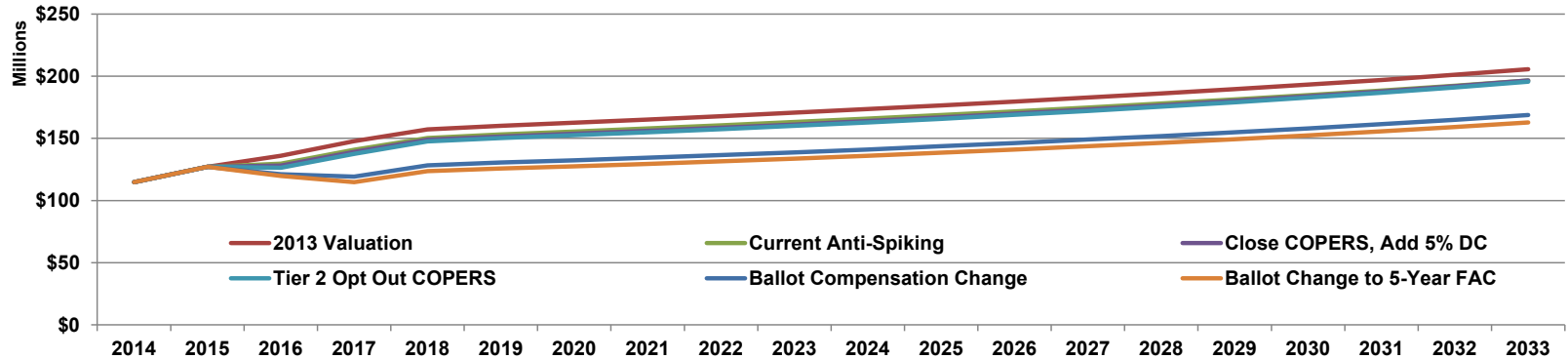
Amounts in Millions

* Deferred compensation contributions under the bargaining contracts expiring 6/30/2016 are not included.

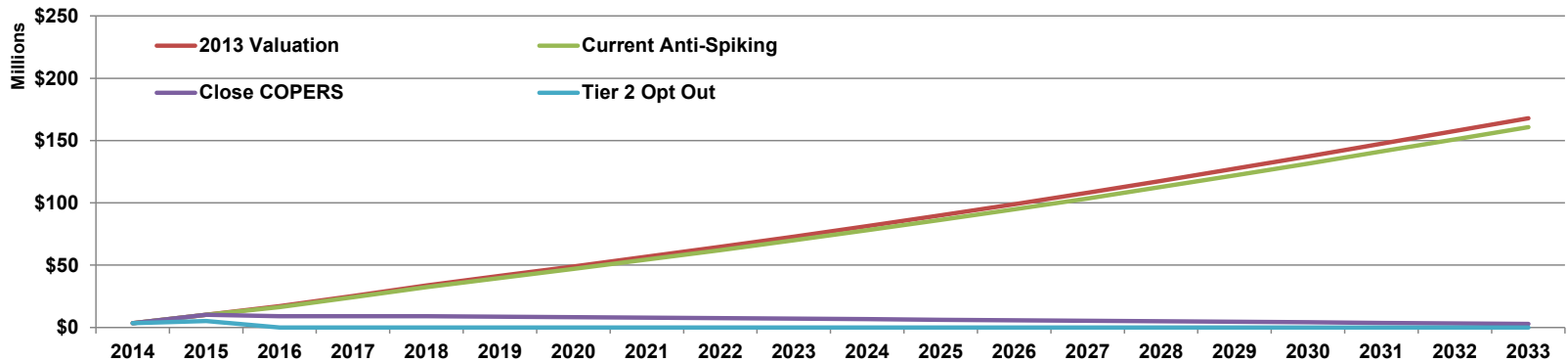


Projected Contributions to COPERS

Projected City Contributions to COPERS



Projected Tier 2 Member Contributions to COPERS





Additional Savings in Future

- Closing COPERS does not provide meaningful savings today
 - Tier 2 members are expected to contribute close to the full cost of providing their benefits until the unfunded liability is paid off
 - City contributions pay for part of Tier 1 member benefits and the unfunded liability, which is expected to be paid off in 25 years
 - Primary expected savings from ballot initiative are from changes to current employees' benefits, including plans other than COPERS such as the deferred compensation plan and OPEB plans
- If COPERS continues unchanged, in FYE 2038, the City's contribution for Tier 2 members is expected to be about 9% of pay
- If the ballot initiative passes, in FYE 2038, the City's contribution to the new DC plan would be no more than 8% of pay
- After 2038, the ballot initiative would provide ongoing cost savings compared to the continuation of COPERS of at least 1% of pay



Allocation of Risk

Risk	COPERS			New DC Plan		
	City	Tier 2 Active	Retiree	City	Tier 2 Active	Retiree
Investment	√	√			√	√
Longevity	√	√				√

- One of the big changes in the ballot initiative is the allocation of who bears investment and longevity risk



Questions



Required Disclosures

- The purpose of this presentation is to estimate the cost impact of the ballot initiative under specified scenarios. This presentation is not intended to be a complete actuarial analysis of the ballot initiative, which would include at a minimum an estimate of the benefits provided under a variety of scenarios for various employees.
- In preparing our presentation, we relied on information (some oral and some written) supplied by the City of Phoenix Employees' Retirement System. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with the Actuarial Standard of Practice No. 23.
- Future actuarial measurements may differ significantly from the current measurements and projections in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.
- To the best of our knowledge, this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.
- This presentation was prepared exclusively for the City of Phoenix Employees' Retirement System for the purpose described herein. This presentation is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

William R. Hallmark, ASA, FCA, EA, MAAA

Elizabeth Wiley, FSA, FCA, EA, MAAA



Appendix

Methods and Assumptions

- This presentation was based on the actuarial valuation as of June 30, 2013 of the City of Phoenix Employees' Retirement System. This valuation report should be referred to for more detail, including a summary of the data, methods, assumptions, and plan provisions.
- Additional assumptions made for the purpose of this study include:
 - Employees hired on or after January 1, 2015 will participate in the new DC plan and not in COPERS. Current members electing to participate in the new DC plan will also do so effective January 1, 2015.
 - The impact of the current anti-spiking measures was estimated by reducing the assumed 9.0% increase in the present value of normal retirement benefits for compensatory service credits and lump sum payments for unused vacation and compensatory time to 4.5% for Tier 1 members and 0% for Tier 2 members.
 - The impact of the ballot initiative's anti-spiking measures is based on data for base pay as of December 31, 2013 provided by the City of Phoenix. Eligible pay under the ballot initiative was estimated as the sum of regular wages, shift differential, pesticide application, CDL pay, linguistics pay, performance achievement and longevity pay. No increase in the present value of normal retirement benefits for compensatory service credits and lump sum payments for unused vacation and compensatory time was assumed.
 - The total normal cost contribution rate is calculated based on the payroll of members earning benefits in COPERS. The total UAL contribution rate is based on the payroll of all members in COPERS and the new DC plan. Tier 1 members are assumed to contribute 5% of pay; Tier 2 members are assumed to contribute 50% of the total normal cost rate plus 50% of the total UAL rate; and the City is assumed to contribute the balance of the total contribution rate.
 - City contributions to the new DC plan are assumed to be 5% of pay.
 - Projected deferred compensation contributions were based on the aggregate contribution rate for the individual data provided by the City. For COPERS, the data was scaled to the same level as the valuation data. For PSPRS, the raw data was used with 4.5% annual increases in payroll.



Appendix

Projected Contributions to COPERS

City Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	114,757	114,757	114,757	114,757	114,757	114,757
2015	127,093	127,093	127,093	127,093	127,093	127,093
2016	135,938	129,554	128,168	126,259	121,245	119,720
2017	147,671	140,898	139,156	137,475	119,306	114,854
2018	157,238	150,325	148,909	147,646	128,267	123,568
2019	160,113	153,075	151,486	150,274	130,506	125,743
2020	162,607	155,446	153,687	152,498	132,385	127,566
2021	165,191	157,903	156,021	154,852	134,375	129,494
2022	167,889	160,474	158,525	157,374	136,514	131,567
2023	170,645	163,102	161,136	160,003	138,744	133,729
2024	173,502	165,831	163,893	162,779	141,099	136,010
2025	176,515	168,710	166,843	165,746	143,618	138,450
2026	179,644	171,705	169,949	168,868	146,267	141,016
2027	182,850	174,774	173,172	172,108	149,012	143,675
2028	186,141	177,927	176,520	175,473	151,863	146,435
2029	189,575	181,220	180,044	179,013	154,861	149,339
2030	193,177	184,674	183,760	182,746	158,024	152,400
2031	197,000	188,342	187,715	186,717	161,392	155,660
2032	201,097	192,273	191,949	190,964	164,998	159,149
2033	205,496	196,493	196,482	195,509	168,860	162,884
Total	3,394,139	3,254,573	3,229,266	3,208,154	2,823,184	2,733,110



Appendix

Projected Contributions to COPERS

Tier 1 Member Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	25,012	25,012	25,012	25,012	25,012	25,012
2015	23,800	23,800	23,800	23,800	23,800	23,800
2016	22,685	22,685	22,685	22,685	20,972	20,972
2017	21,607	21,607	21,607	21,607	19,970	19,970
2018	20,556	20,556	20,556	20,556	18,999	18,999
2019	19,547	19,547	19,547	19,547	18,072	18,072
2020	18,561	18,561	18,561	18,561	17,167	17,167
2021	17,603	17,603	17,603	17,603	16,289	16,289
2022	16,651	16,651	16,651	16,651	15,418	15,418
2023	15,675	15,675	15,675	15,675	14,525	14,525
2024	14,695	14,695	14,695	14,695	13,627	13,627
2025	13,731	13,731	13,731	13,731	12,743	12,743
2026	12,761	12,761	12,761	12,761	11,851	11,851
2027	11,762	11,762	11,762	11,762	10,931	10,931
2028	10,734	10,734	10,734	10,734	9,984	9,984
2029	9,701	9,701	9,701	9,701	9,030	9,030
2030	8,670	8,670	8,670	8,670	8,076	8,076
2031	7,660	7,660	7,660	7,660	7,142	7,142
2032	6,690	6,690	6,690	6,690	6,243	6,243
2033	5,765	5,765	5,765	5,765	5,386	5,386
Total	303,865	303,865	303,865	303,865	285,237	285,237



Appendix

Projected Contributions to COPERS

Tier 2 Member Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	3,503	3,503	3,503	3,503	3,503	3,503
2015	10,111	10,111	10,111	5,056	5,056	5,056
2016	17,111	16,423	8,995	-	-	-
2017	25,178	24,170	9,096	-	-	-
2018	33,720	32,409	9,060	-	-	-
2019	41,347	39,727	8,647	-	-	-
2020	49,011	47,074	8,227	-	-	-
2021	56,763	54,499	7,814	-	-	-
2022	64,700	62,100	7,415	-	-	-
2023	72,935	69,983	7,019	-	-	-
2024	81,401	78,083	6,613	-	-	-
2025	90,015	86,322	6,204	-	-	-
2026	98,868	94,788	5,802	-	-	-
2027	108,056	103,572	5,397	-	-	-
2028	117,582	112,676	4,978	-	-	-
2029	127,355	122,015	4,547	-	-	-
2030	137,355	131,569	4,114	-	-	-
2031	147,504	141,264	3,680	-	-	-
2032	157,730	151,032	3,255	-	-	-
2033	168,011	160,851	2,846	-	-	-
Total	1,608,256	1,542,171	127,321	8,559	8,559	8,559



Appendix - Projected Deferred Compensation Contributions

Estimated Impact of Elimination of Deferred Compensation Program

FYE	Projected Eligible Pay (in thousands)		Projected Contributions (in thousands)	
	COPERS	City Council	COPERS	City Council
2014	378,446	581	15,683	95
2015	391,691	581	11,316	95
2016	405,400	581	8,839	95
2017	419,589	581	9,148	95
2018	434,275	581	9,468	95
2019	449,475	581	9,800	95
2020	465,206	581	10,142	95
2021	481,489	581	10,497	95
2022	498,341	581	10,865	95
2023	515,783	581	11,245	95
2024	533,835	581	11,639	95
2025	552,519	581	12,046	95
2026	571,857	581	12,468	95
2027	591,872	581	12,904	95
2028	612,588	581	13,356	95
2029	634,028	581	13,823	95
2030	656,219	581	14,307	95
2031	679,187	581	14,808	95
2032	702,959	581	15,326	95
2033	727,562	581	15,862	95
Total	10,702,322	11,616	243,542	1,890

Projected deferred compensation contributions reflect bargaining agreements through FYE 2016 and assume the rates for FYE 2016 remain in effect thereafter



Appendix - COPERS Projected New 5% DC Contributions

City Contributions (in thousands)

FYE	New Hire DC Contributions	Tier 2 + New Hire DC Contributions
2014	-	-
2015	213	1,456
2016	2,284	5,118
2017	4,334	7,033
2018	6,379	8,950
2019	8,409	10,855
2020	10,446	12,772
2021	12,489	14,698
2022	14,557	16,654
2023	16,685	18,669
2024	18,860	20,729
2025	21,062	22,816
2026	23,311	24,952
2027	25,635	27,160
2028	28,034	29,441
2029	30,489	31,774
2030	32,994	34,156
2031	35,529	36,568
2032	38,078	38,997
2033	40,634	41,438
Total	370,422	404,238

- New DC contributions assume a 5% contribution rate for COPERS Tier 2 members and COPERS new hires effective January 1, 2015
- Projected compensation is based on base salary and wages

Attachment B



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June 24, 2014

Mr. Rick Naimark
Deputy City Manager
Phoenix City Hall
200 W. Washington St., 12th Floor
Phoenix, AZ 85003

Re: **Estimated Impact of DC Initiative on Phoenix Police and Fire Employees**

Dear Rick:

Segal Consulting is the actuary retained by the City of Phoenix (“the City”) to perform actuarial analyses related to pension reform measures contemplated by City Council. As requested, we have determined the long-term financial impact to City police and fire employees related to the Phoenix Pension Reform Act of 2014 (the “Initiative”), which is summarized below.

Proposed Changes in the Initiative (for purposes of modeling)

The Initiative attempts to prevent pension spiking and provide a defined contribution retirement plan for future hires by amending the City Charter. Currently, City police and fire employees participate in the State-sponsored Arizona Public Safety Personnel Retirement System (PSPRS). The scenarios that we modeled relative to the City’s PSPRS members are as follows:

- Baseline projection of City contributions including:
 - Contributions to PSPRS, which reflect spiking reform provisions, as approved by the City Council on October 31, 2013;
 - Deferred Compensation Plan (DCP) contributions attributable to City police and fire employees.
- Scenario 1 – Projection of City contributions to PSPRS assuming the DCP is eliminated (assumed to be effective July 1, 2015), but that existing and future police and fire employees continue to participate in PSPRS.
- Scenario 2 – Projection of City contributions to PSPRS and to a defined contribution plan assuming the DCP is eliminated, and that existing and future police and fire employees are covered under the newly established City defined contribution plan (assuming City allocations of 5% of salary and an effective date of July 1, 2015).

The impact of the scenarios described above are outlined in Exhibits 1 and 2. Exhibit 1 shows the projected City contribution requirements through the fiscal year ending June 30, 2033, under the baseline scenario compared to Scenario 1, where police and fire employees continue to participate in PSPRS. Exhibit 2 shows the projected City contribution requirements through the fiscal year ending June 30, 2033, under the baseline scenario compared to Scenario 2, where police and fire employees participate in the newly established City defined contribution plan.

Actuarial Analysis

Based upon the actuarial assumptions and methods used in the PSPRS actuarial valuation reports, as well as those additional considerations outlined in this letter, the total estimated decrease to the City's projected contribution amounts through fiscal year 2033, as a result of the changes contained in Scenario 1, is \$257 million. Note that the savings is a cumulative amount, not discounted to a present value. A breakout of the savings under Scenario 1 is shown in the following table:

Scenario 1 (\$ in millions)	Fire Employees	Police Employees	Total
Direct (savings) due to elimination of DCP	(\$169)	(\$12)	(\$181)
(Savings) from reduced contributions to PSPRS	(49)	(27)	(76)
Total (savings)	(\$218)	(\$39)	(\$257)

The direct savings to the City due the elimination of the DCP refers to the actual DCP contributions that will not be paid to police and fire employees. In addition to this savings, pensionable salary – which currently includes DCP contributions – will also be reduced, resulting in lower projected benefits to members and, therefore, lower required contributions to PSPRS.

Based upon the actuarial assumptions and methods used in the PSPRS actuarial valuation reports, as well as those additional considerations outlined in this letter, the total estimated decrease to the City's projected contribution amounts through fiscal year 2033, as a result of the changes contained in Scenario 2, is \$1,048 million. Note that the savings is a cumulative amount, not discounted to a present value. A breakout of the savings under Scenario 2 is shown in the following table:

Scenario 2 (\$ in millions)	Fire Employees	Police Employees	Total
Direct (savings) due to elimination of DCP	(\$169)	(\$12)	(\$181)
(Savings) from reduced contributions to PSPRS	(476)	(941)	(1,417)
Cost of 5% defined contribution allocation	185	365	550
Total (savings)	(\$460)	(\$588)	(\$1,048)

The direct savings to the City due the elimination of the DCP is the same under Scenario 2 as it is under Scenario 1. If police and fire employees are no longer accruing additional benefits under PSPRS, the City's contribution to PSPRS will be reduced to the amount required to pay off the remaining unfunded actuarial liability, as there will no longer be a normal cost component of the contribution requirement. The savings from reduced PSPRS contributions is offset, however, by the amount of City contribution required under the newly established defined contribution plan (assumed to be 5% for purposes of this projection).

Actuarial Assumptions and Methods

The analysis of PSPRS contributions is based upon the liability and financial information contained in the June 30, 2013, actuarial valuations for the Phoenix Fire Department and Phoenix Police Department under PSPRS prepared by Gabriel Roeder Smith & Company (GRS). Our modeling is based on roll forwards of assets and liabilities in future years using standard actuarial techniques, with adjustments for changes outlined herein. Our analysis with respect to City DCP contributions was based on demographic and contribution information provided by City staff.

Projected City contributions are based on the current plan provisions and actuarial assumptions as valued in the June 30, 2013, actuarial valuations prepared by GRS, with the following exceptions:

- Pursuant to the spiking reform provisions adopted by City Council, transportation and technical allowances, the retirement reimbursement credit, and enhanced regular compensation are not included in pensionable earnings/payroll.
- Under Scenario 1, the value of DCP contributions are not included in pensionable earnings/payroll.
- Under Scenario 2, when future accruals for existing PSPRS active members are assumed to cease as of July 1, 2015, the unfunded actuarial liability is amortized over the remaining 21-year closed period as a level dollar amount rather than as a level percentage of payroll.

Comments about Projections

Projections, by their nature, are not a guarantee of future results. The modeled projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

Please note that the total estimated decreases to the City's projected contribution amounts through fiscal year 2033 outlined in the "Actuarial Analysis" section are not discounted to reflect the time value of money.

Mr. Rick Naimark
June 24, 2014
Page 4

Respectfully submitted,

Handwritten signature of Matthew A. Strom in black ink.

Matthew A. Strom, FSA, MAAA
Enrolled Actuary No. 14-06076
kn/ns

Handwritten signature of Kim Nicholl in black ink.

Kim Nicholl, FSA, MAAA
Enrolled Actuary No. 14-03573

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**Arizona PSPRS - Phoenix Fire Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$49,578,000	\$6,208,000	\$55,786,000	\$49,578,000	\$6,208,000		\$55,786,000	\$0
2016	54,325,000	6,288,000	60,613,000	54,325,000		0	54,325,000	-6,288,000
2017	58,587,000	6,571,000	65,158,000	56,591,000		0	56,591,000	-8,567,000
2018	61,275,000	6,867,000	68,142,000	59,248,000		0	59,248,000	-8,894,000
2019	64,022,000	7,176,000	71,198,000	61,903,000		0	61,903,000	-9,295,000
2020	67,228,000	7,499,000	74,727,000	65,006,000		0	65,006,000	-9,721,000
2021	69,875,000	7,837,000	77,712,000	67,549,000		0	67,549,000	-10,163,000
2022	72,652,000	8,190,000	80,842,000	70,217,000		0	70,217,000	-10,625,000
2023	75,520,000	8,559,000	84,079,000	72,970,000		0	72,970,000	-11,109,000
2024	78,471,000	8,944,000	87,415,000	75,802,000		0	75,802,000	-11,613,000
2025	81,504,000	9,347,000	90,851,000	78,708,000		0	78,708,000	-12,143,000
2026	84,611,000	9,768,000	94,379,000	81,681,000		0	81,681,000	-12,698,000
2027	87,781,000	10,208,000	97,989,000	84,712,000		0	84,712,000	-13,277,000
2028	91,000,000	10,667,000	101,667,000	87,784,000		0	87,784,000	-13,883,000
2029	94,245,000	11,148,000	105,393,000	90,875,000		0	90,875,000	-14,518,000
2030	97,486,000	11,649,000	109,135,000	93,953,000		0	93,953,000	-15,182,000
2031	100,676,000	12,174,000	112,850,000	96,965,000		0	96,965,000	-15,885,000
2032	103,729,000	12,722,000	116,451,000	99,830,000		0	99,830,000	-16,621,000
2033	106,510,000	13,295,000	119,805,000	102,408,000		0	102,408,000	-17,397,000
Total	\$1,499,075,000	\$175,117,000	\$1,674,192,000	\$1,450,105,000	\$6,208,000	\$0	\$1,456,313,000	-\$217,879,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$168,909,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$48,970,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$217,879,000)

**Arizona PSPRS - Phoenix Police Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Police Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$94,825,000	\$446,000	\$95,271,000	\$94,825,000	\$446,000		\$95,271,000	\$0
2016	103,056,000	449,000	103,505,000	103,056,000		0	103,056,000	-449,000
2017	110,877,000	469,000	111,346,000	109,740,000		0	109,740,000	-1,606,000
2018	115,926,000	490,000	116,416,000	114,743,000		0	114,743,000	-1,673,000
2019	121,094,000	513,000	121,607,000	119,858,000		0	119,858,000	-1,749,000
2020	127,088,000	536,000	127,624,000	125,792,000		0	125,792,000	-1,832,000
2021	132,097,000	560,000	132,657,000	130,749,000		0	130,749,000	-1,908,000
2022	137,348,000	585,000	137,933,000	135,948,000		0	135,948,000	-1,985,000
2023	142,768,000	611,000	143,379,000	141,315,000		0	141,315,000	-2,064,000
2024	148,349,000	639,000	148,988,000	146,838,000		0	146,838,000	-2,150,000
2025	154,082,000	668,000	154,750,000	152,512,000		0	152,512,000	-2,238,000
2026	159,957,000	698,000	160,655,000	158,325,000		0	158,325,000	-2,330,000
2027	165,952,000	729,000	166,681,000	164,256,000		0	164,256,000	-2,425,000
2028	172,039,000	762,000	172,801,000	170,277,000		0	170,277,000	-2,524,000
2029	178,176,000	796,000	178,972,000	176,353,000		0	176,353,000	-2,619,000
2030	184,305,000	832,000	185,137,000	182,420,000		0	182,420,000	-2,717,000
2031	190,331,000	869,000	191,200,000	188,385,000		0	188,385,000	-2,815,000
2032	196,106,000	909,000	197,015,000	194,101,000		0	194,101,000	-2,914,000
2033	201,369,000	950,000	202,319,000	199,309,000		0	199,309,000	-3,010,000
Total	\$2,835,745,000	\$12,511,000	\$2,848,256,000	\$2,808,802,000	\$446,000	\$0	\$2,809,248,000	-\$39,008,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$12,065,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$26,943,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$39,008,000)

**Arizona PSPRS - Total Phoenix Fire and Police
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire and Police Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$144,403,000	\$6,654,000	\$151,057,000	\$144,403,000	\$6,654,000		\$151,057,000	\$0
2016	157,381,000	6,737,000	164,118,000	157,381,000		0	157,381,000	-6,737,000
2017	169,464,000	7,040,000	176,504,000	166,331,000		0	166,331,000	-10,173,000
2018	177,201,000	7,357,000	184,558,000	173,991,000		0	173,991,000	-10,567,000
2019	185,116,000	7,689,000	192,805,000	181,761,000		0	181,761,000	-11,044,000
2020	194,316,000	8,035,000	202,351,000	190,798,000		0	190,798,000	-11,553,000
2021	201,972,000	8,397,000	210,369,000	198,298,000		0	198,298,000	-12,071,000
2022	210,000,000	8,775,000	218,775,000	206,165,000		0	206,165,000	-12,610,000
2023	218,288,000	9,170,000	227,458,000	214,285,000		0	214,285,000	-13,173,000
2024	226,820,000	9,583,000	236,403,000	222,640,000		0	222,640,000	-13,763,000
2025	235,586,000	10,015,000	245,601,000	231,220,000		0	231,220,000	-14,381,000
2026	244,568,000	10,466,000	255,034,000	240,006,000		0	240,006,000	-15,028,000
2027	253,733,000	10,937,000	264,670,000	248,968,000		0	248,968,000	-15,702,000
2028	263,039,000	11,429,000	274,468,000	258,061,000		0	258,061,000	-16,407,000
2029	272,421,000	11,944,000	284,365,000	267,228,000		0	267,228,000	-17,137,000
2030	281,791,000	12,481,000	294,272,000	276,373,000		0	276,373,000	-17,899,000
2031	291,007,000	13,043,000	304,050,000	285,350,000		0	285,350,000	-18,700,000
2032	299,835,000	13,631,000	313,466,000	293,931,000		0	293,931,000	-19,535,000
2033	307,879,000	14,245,000	322,124,000	301,717,000		0	301,717,000	-20,407,000
Total	\$4,334,820,000	\$187,628,000	\$4,522,448,000	\$4,258,907,000	\$6,654,000	\$0	\$4,265,561,000	-\$256,887,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$180,974,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$75,913,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$256,887,000)

**Arizona PSPRS - Phoenix Fire Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire Employees Leave PSPRS and Enter DC Plan

Column	Baseline			Scenario 2				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$49,578,000	\$6,208,000	\$55,786,000	\$49,578,000	\$6,208,000		\$55,786,000	\$0
2016	54,325,000	6,288,000	60,613,000	54,325,000		6,891,000	61,216,000	603,000
2017	58,587,000	6,571,000	65,158,000	53,085,000		7,201,000	60,286,000	-4,872,000
2018	61,275,000	6,867,000	68,142,000	53,434,000		7,525,000	60,959,000	-7,183,000
2019	64,022,000	7,176,000	71,198,000	53,769,000		7,864,000	61,633,000	-9,565,000
2020	67,228,000	7,499,000	74,727,000	54,588,000		8,218,000	62,806,000	-11,921,000
2021	69,875,000	7,837,000	77,712,000	54,505,000		8,589,000	63,094,000	-14,618,000
2022	72,652,000	8,190,000	80,842,000	54,453,000		8,975,000	63,428,000	-17,414,000
2023	75,520,000	8,559,000	84,079,000	54,403,000		9,380,000	63,783,000	-20,296,000
2024	78,471,000	8,944,000	87,415,000	54,350,000		9,802,000	64,152,000	-23,263,000
2025	81,504,000	9,347,000	90,851,000	54,296,000		10,243,000	64,539,000	-26,312,000
2026	84,611,000	9,768,000	94,379,000	54,239,000		10,705,000	64,944,000	-29,435,000
2027	87,781,000	10,208,000	97,989,000	54,178,000		11,187,000	65,365,000	-32,624,000
2028	91,000,000	10,667,000	101,667,000	54,114,000		11,690,000	65,804,000	-35,863,000
2029	94,245,000	11,148,000	105,393,000	54,042,000		12,217,000	66,259,000	-39,134,000
2030	97,486,000	11,649,000	109,135,000	53,964,000		12,767,000	66,731,000	-42,404,000
2031	100,676,000	12,174,000	112,850,000	53,875,000		13,342,000	67,217,000	-45,633,000
2032	103,729,000	12,722,000	116,451,000	53,773,000		13,942,000	67,715,000	-48,736,000
2033	106,510,000	13,295,000	119,805,000	53,652,000		14,570,000	68,222,000	-51,583,000
Total	\$1,499,075,000	\$175,117,000	\$1,674,192,000	\$1,022,623,000	\$6,208,000	\$185,108,000	\$1,213,939,000	-\$460,253,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$168,909,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$476,452,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$185,108,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$460,253,000)

**Arizona PSPRS - Phoenix Police Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Police Employees Leave PSPRS and Enter DC Plan, and DCP Eliminated

Column	Baseline			Scenario 2				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$94,825,000	\$446,000	\$95,271,000	\$94,825,000	\$446,000		\$95,271,000	\$0
2016	103,056,000	449,000	103,505,000	103,056,000		13,570,000	116,626,000	13,121,000
2017	110,877,000	469,000	111,346,000	98,778,000		14,182,000	112,960,000	1,614,000
2018	115,926,000	490,000	116,416,000	98,794,000		14,821,000	113,615,000	-2,801,000
2019	121,094,000	513,000	121,607,000	99,323,000		15,488,000	114,811,000	-6,796,000
2020	127,088,000	536,000	127,624,000	100,766,000		16,186,000	116,952,000	-10,672,000
2021	132,097,000	560,000	132,657,000	100,615,000		16,915,000	117,530,000	-15,127,000
2022	137,348,000	585,000	137,933,000	100,520,000		17,676,000	118,196,000	-19,737,000
2023	142,768,000	611,000	143,379,000	100,427,000		18,473,000	118,900,000	-24,479,000
2024	148,349,000	639,000	148,988,000	100,332,000		19,304,000	119,636,000	-29,352,000
2025	154,082,000	668,000	154,750,000	100,234,000		20,174,000	120,408,000	-34,342,000
2026	159,957,000	698,000	160,655,000	100,128,000		21,082,000	121,210,000	-39,445,000
2027	165,952,000	729,000	166,681,000	100,015,000		22,032,000	122,047,000	-44,634,000
2028	172,039,000	762,000	172,801,000	99,893,000		23,024,000	122,917,000	-49,884,000
2029	178,176,000	796,000	178,972,000	99,762,000		24,060,000	123,822,000	-55,150,000
2030	184,305,000	832,000	185,137,000	99,618,000		25,144,000	124,762,000	-60,375,000
2031	190,331,000	869,000	191,200,000	99,459,000		26,276,000	125,735,000	-65,465,000
2032	196,106,000	909,000	197,015,000	99,280,000		27,459,000	126,739,000	-70,276,000
2033	201,369,000	950,000	202,319,000	99,068,000		28,695,000	127,763,000	-74,556,000
Total	\$2,835,745,000	\$12,511,000	\$2,848,256,000	\$1,894,893,000	\$446,000	\$364,561,000	\$2,259,900,000	-\$588,356,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$12,065,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$940,852,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$364,561,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$588,356,000)

**Arizona PSPRS - Total Phoenix Fire and Police
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire and Police Employees Leave PSPRS and Enter DC Plan, and DCP Eliminated

Column	Baseline			Scenario 2				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$144,403,000	\$6,654,000	\$151,057,000	\$144,403,000	\$6,654,000		\$151,057,000	\$0
2016	157,381,000	6,737,000	164,118,000	157,381,000		20,461,000	177,842,000	13,724,000
2017	169,464,000	7,040,000	176,504,000	151,863,000		21,383,000	173,246,000	-3,258,000
2018	177,201,000	7,357,000	184,558,000	152,228,000		22,346,000	174,574,000	-9,984,000
2019	185,116,000	7,689,000	192,805,000	153,092,000		23,352,000	176,444,000	-16,361,000
2020	194,316,000	8,035,000	202,351,000	155,354,000		24,404,000	179,758,000	-22,593,000
2021	201,972,000	8,397,000	210,369,000	155,120,000		25,504,000	180,624,000	-29,745,000
2022	210,000,000	8,775,000	218,775,000	154,973,000		26,651,000	181,624,000	-37,151,000
2023	218,288,000	9,170,000	227,458,000	154,830,000		27,853,000	182,683,000	-44,775,000
2024	226,820,000	9,583,000	236,403,000	154,682,000		29,106,000	183,788,000	-52,615,000
2025	235,586,000	10,015,000	245,601,000	154,530,000		30,417,000	184,947,000	-60,654,000
2026	244,568,000	10,466,000	255,034,000	154,367,000		31,787,000	186,154,000	-68,880,000
2027	253,733,000	10,937,000	264,670,000	154,193,000		33,219,000	187,412,000	-77,258,000
2028	263,039,000	11,429,000	274,468,000	154,007,000		34,714,000	188,721,000	-85,747,000
2029	272,421,000	11,944,000	284,365,000	153,804,000		36,277,000	190,081,000	-94,284,000
2030	281,791,000	12,481,000	294,272,000	153,582,000		37,911,000	191,493,000	-102,779,000
2031	291,007,000	13,043,000	304,050,000	153,334,000		39,618,000	192,952,000	-111,098,000
2032	299,835,000	13,631,000	313,466,000	153,053,000		41,401,000	194,454,000	-119,012,000
2033	307,879,000	14,245,000	322,124,000	152,720,000		43,265,000	195,985,000	-126,139,000
Total	\$4,334,820,000	\$187,628,000	\$4,522,448,000	\$2,917,516,000	\$6,654,000	\$549,669,000	\$3,473,839,000	-\$1,048,609,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$180,974,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$1,417,304,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$549,669,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$1,048,609,000)

Attachment C

City of Phoenix Employees' Retirement Plan

SAMPLE EMPLOYEE ANALYSIS

Tier 1 COPERS, including value of Deferred Compensation Plan (DCP)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						Existing Tier 1 Before Changes	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP
Current Employees Sample 1:	25	39 14	\$67,000	60 35	1.91%	\$9,511	Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:		
							6.50%	7.00%	7.50%	6.50%	7.00%	7.50%
							\$756	\$825	\$903	\$10,267	\$10,337	\$10,414
Sample 2:	30	47 17	\$130,000	60 30	8.00%	\$10,993	\$3,393	\$3,659	\$3,951	\$14,386	\$14,652	\$14,944
Sample 3:	35	47 12	\$63,000	60 25	0.00%	\$4,439	\$0	\$0	\$0	\$4,439	\$4,439	\$4,439
Sample 4:	45	52 7	\$58,000	60 15	1.65%	\$1,975	\$113	\$117	\$122	\$2,087	\$2,092	\$2,096

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the COPERS valuation.

Monthly COPERS benefit amounts are projected to retirement and are based on projected salaries.

For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

City of Phoenix Employees' Retirement Plan

SAMPLE EMPLOYEE ANALYSIS

Tier 1 COPERS, including value of DCP, including changes as outlined in the DC Initiative

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Existing Tier 1 Under Initiative	Projected Monthly Benefit Amount						
							Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	
							6.50%	7.00%	7.50%	6.50%	7.00%	7.50%	
Current Employees Sample 1:	25	39	\$67,000	60	1.91%	\$8,472	Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:			
							\$332	\$379	\$432	\$8,804	\$8,851	\$8,904	
Sample 2:	30	47	\$130,000	60	8.00%	\$9,104							
							-\$424	-\$446	-\$471	-\$1,463	-\$1,485	-\$1,510	
							-10.9%	-56.0%	-54.1%	-14.2%	-14.4%	-14.5%	
Sample 3:	35	47	\$63,000	60	0.00%	\$3,954							
							\$0	\$0	\$0	\$3,954	\$3,954	\$3,954	
							-\$485	\$0	\$0	-\$485	-\$485	-\$485	
Sample 4:	45	52	\$58,000	60	1.65%	\$1,759							
							-\$216	-\$56	-\$57	-\$58	-\$272	-\$273	-\$274
							-10.9%	-49.7%	-48.9%	-13.0%	-13.0%	-13.1%	

Assumptions/Disclaimers:

- Salaries are projected using the assumption for individual salary increases from the COPERS valuation.
- Pensionable earnings under the Initiative is assumed to decrease by 7.5% for Sample 1, 3, and 4, and by 14% for Sample 2.
- Monthly COPERS benefit amounts are projected to retirement and are based on projected salaries.
- Under the Initiative, the existing DCP account balance is projected to retirement age at the assumed earnings rate only, and without additional contributions.
- For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

	Legend:
Projected Monthly Benefit Amount:	\$8,804
Decrease in Projected Monthly Benefit:	-\$1,463
Percentage Decrease in Projected Monthly Benefit:	-14.2%

Attachment D

Comparison of COPERS Tier 2 to 10% DC Plan

City of Phoenix Employees' Retirement Plan
SAMPLE EMPLOYEE ANALYSIS
 10% of Pay Defined Contribution Plan

	Hire Age	Current Annual Compensation	Retirement Age	Total Service	Projected Monthly Benefit Amount			
					Before Changes	Annuitized Value of DC Account Balance	Annuitized Value of DC Account Balance	Annuitized Value of DC Account Balance
Current Employees					Assumed Earnings on DC Contributions:			
					6.50%	7.00%	7.50%	
Sample 1:	25	\$35,000	56	31	\$10,097	\$4,436 -\$5,661 -56.1%	\$4,790 -\$5,307 -52.6%	\$5,179 -\$4,918 -48.7%
Sample 2:	30	\$75,000	59	29	\$15,968	\$7,977 -\$7,991 -50.0%	\$8,578 -\$7,390 -46.3%	\$9,235 -\$6,734 -42.2%
Sample 3:	35	\$40,000	60	25	\$5,546	\$2,869 -\$2,677 -48.3%	\$3,055 -\$2,491 -44.9%	\$3,255 -\$2,291 -41.3%
Sample 4:	45	\$45,000	60	15	\$2,112	\$1,042 -\$1,070 -50.7%	\$1,082 -\$1,031 -48.8%	\$1,123 -\$990 -46.8%

Assumptions/Disclaimers:

- Members are assumed to retire at their first unreduced eligibility age.
- Salaries are projected using the assumption for individual salary increases from the COPERS valuation.
- Monthly benefit amounts are projected to retirement and are based on projected salaries.
- Contributions to the Defined Contribution Plan are 10% from some combination of member and employer.
- For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions from the COPERS valuation.

Attachment E

Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS
 PSPRS, Including Value of Deferred Compensation Plan (DCP)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						PSPRS Benefit - Before Changes	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP
						Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:			
						6.50%	7.00%	7.50%	6.50%	7.00%	7.50%	
Current Employees												
Sample 1: Executive	27	49 22	\$120,000	52 25	8.00%	\$6,539	\$1,553	\$1,651	\$1,757	\$8,092	\$8,190	\$8,296
Sample 2: Middle Manager	27	45 18	\$100,000	52 25	8.00%	\$6,526	\$1,550	\$1,648	\$1,753	\$8,076	\$8,174	\$8,279
Sample 3: Police Employee	27	42 15	\$90,000	49 22	0.10%	\$5,103	\$14	\$15	\$16	\$5,117	\$5,118	\$5,119
Sample 4: Fire Employee	27	37 10	\$90,000	49 22	4.42%	\$6,581	\$808	\$852	\$899	\$7,389	\$7,434	\$7,481

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.
 Monthly PSPRS benefit amounts are projected to retirement and are based on projected salaries.
 For comparison purposes, the accumulated DCP balance at retirement is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

**Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS**

PSPRS and Value of DCP, with DCP Contributions Eliminated at Attained Age

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	PSPRS Benefit - After Changes	Projected Monthly Benefit Amount								
							Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP			
							Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:					
			6.50%	7.00%	7.50%	6.50%	7.00%	7.50%							
Current Employees															
Sample 1: Executive	27	49	\$120,000	52	8.00%	\$6,033	\$1,392	\$1,488	\$1,593	\$7,424	\$7,521	\$7,625			
		22		25		-\$506	-\$162	-\$163	-\$164	-\$668	-\$669	-\$671			
						-7.7%	-10.4%	-9.9%	-9.3%	-8.3%	-8.2%	-8.1%			
Sample 2: Middle Manager	27	45	\$100,000	52	8.00%	\$6,020	\$1,159	\$1,250	\$1,349	\$7,179	\$7,271	\$7,369			
		18		25		-\$505	-\$391	-\$398	-\$404	-\$896	-\$903	-\$910			
						-7.7%	-25.2%	-24.1%	-23.1%	-11.1%	-11.0%	-11.0%			
Sample 3: Police Employee	27	42	\$90,000	49	0.10%	\$5,098	\$10	\$11	\$11	\$5,108	\$5,108	\$5,109			
		15		22		-\$5	-\$4	-\$4	-\$4	-\$10	-\$10	-\$10			
						-0.1%	-29.7%	-28.6%	-27.6%	-0.2%	-0.2%	-0.2%			
Sample 4: Fire Employee	27	37	\$90,000	49	4.42%	\$6,290	\$381	\$412	\$447	\$6,671	\$6,702	\$6,737			
		10		22		-\$291	-\$427	-\$440	-\$453	-\$718	-\$731	-\$744			
						-4.4%	-52.9%	-51.6%	-50.3%	-9.7%	-9.8%	-9.9%			

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.

Monthly PSPRS benefit amounts are projected to retirement and are based on projected salaries.

For comparison purposes, the accumulated DCP balance at retirement is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

	Legend:
Projected Monthly Benefit Amount:	\$7,424
Decrease in Projected Monthly Benefit:	-\$668
Percentage Decrease in Projected Monthly Benefit:	-8.3%

**Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS**

Frozen PSPRS and Value of DCP, with DCP Contributions Eliminated at Attained Age, plus Value of Future DC Contributions (5% City/11.65% Member)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						PSPRS Benefit - After Changes	Annuitized Value of DCP and DC Account Balances	Annuitized Value of DCP and DC Account Balances	Annuitized Value of DCP and DC Account Balances	Total PSPRS + Annuitized Value of Balances	Total PSPRS + Annuitized Value of Balances	Total PSPRS + Annuitized Value of Balances
			6.50%	7.00%	7.50%	6.50%	7.00%	7.50%				
Current Employees												
Sample 1: Executive	27	49 22	\$120,000	52 25	8.00%	\$5,941 -\$598 -9.1%	\$1,728	\$1,828	\$1,935	\$7,669 -\$423 -5.2%	\$7,769 -\$422 -5.1%	\$7,876 -\$420 -5.1%
Sample 2: Middle Manager	27	45 18	\$100,000	52 25	8.00%	\$3,901 -\$2,625 -40.2%	\$1,973	\$2,078	\$2,191	\$5,874 -\$2,202 -27.3%	\$5,979 -\$2,195 -26.9%	\$6,092 -\$2,187 -26.4%
Sample 3: Police Employee	27	42 15	\$90,000	49 22	0.10%	\$2,290 -\$2,813 -55.1%	\$710	\$723	\$736	\$3,001 -\$2,117 -41.4%	\$3,013 -\$2,105 -41.1%	\$3,026 -\$2,093 -40.9%
Sample 4: Fire Employee	27	37 10	\$90,000	49 22	4.42%	\$749 -\$5,832 -88.6%	\$1,989	\$2,069	\$2,152	\$2,739 -\$4,650 -62.9%	\$2,818 -\$4,616 -62.1%	\$2,901 -\$4,579 -61.2%

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.

Monthly "frozen" PSPRS benefit amounts are based on current service and current final average earnings, payable at retirement age.

City Defined Contribution (DC) Plan allocations are 5% of salary.

For comparison purposes, the member contributions that would have been required under PSPRS (11.65%) are assumed to be made to the DC Plan.

This accumulated balance, as well as the DCP balance at retirement, is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

Legend:	
Projected Monthly Benefit Amount:	\$7,669
Decrease in Projected Monthly Benefit:	-\$423
Percentage Decrease in Projected Monthly Benefit:	-5.2%

City of Phoenix Ballot Initiative Analysis

July 2, 2014



Bill Hallmark, ASA, FCA, MAAA, EA
Elizabeth Wiley, FSA, FCA, MAAA, EA



Agenda

- Overview of Initiative
- Results of Analysis
- Questions
- Appendixes



Overview of Initiative - COPERS

- Changes to Compensation
 - Covered compensation limited to base salary or wages, specifically excluding unused sick time, vacation or other compensation not paid in money as well as compensation for work-related expenses
 - Final average compensation (FAC) changed from consecutive three to five-year average
- Defined benefit plan closed – contribution rates continue to be based on payroll of all employees as if plan remained open
- Defined contribution (DC) plan established with City matching contribution not to exceed 8% of base pay
- Current employees offered option to change to new DC plan – contingent on Federal approval



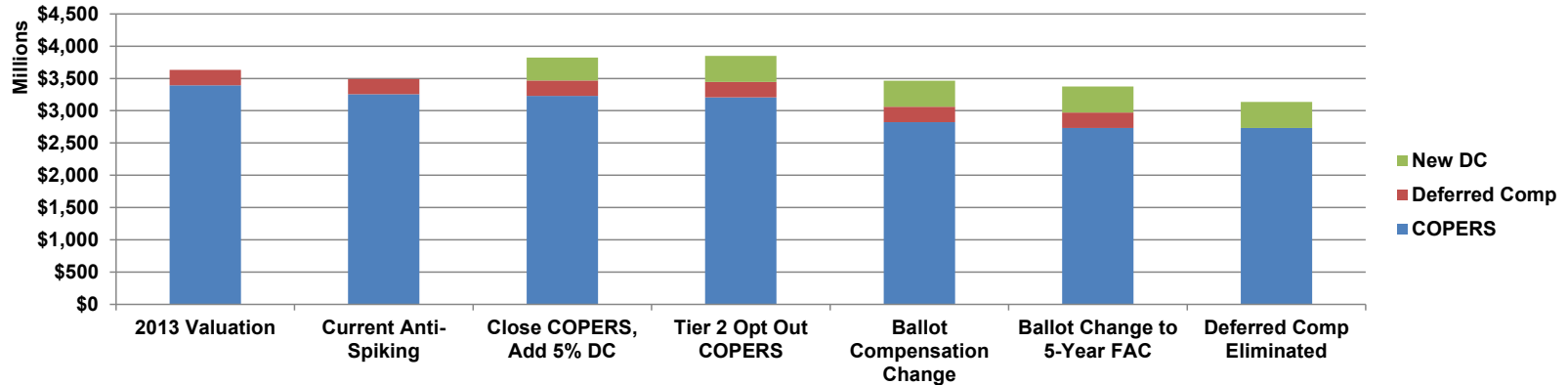
Overview of Initiative - COPERS

- Current members who do not elect the new DC plan, “shall not receive City contributions to any retirement plan” other than COPERS and the new DC plan “shall be the only retirement plan offered to future hires”
 - Effectively eliminates deferred compensation program
 - Also eliminates Other Post Employment Benefit (OPEB) plans
 - Not clear how it affects PSPRS
- Employees immediately vest in City contributions to the new DC plan
- Employees in the new DC plan elect their contribution level
- City matching structure for new DC plan is not defined by the initiative



Summary of City's Expected 20-Year Contributions – COPERS Members

City's Expected 20-Year Contributions (COPERS Members) Under Ballot Initiative Scenarios



- The savings or cost of the ballot initiative, if it passes, depends on which of the provisions prevail
- Much of the City's expected COPERS contributions are due to the current unfunded liability, which is expected to be paid off in FYE 2038
 - Recent anti-spiking changes enacted are expected to save the City about \$140 million in COPERS contributions over the next 20 years
- Most of the savings in the initiative over the next 20 years comes from additional changes to FAC for current employees and the elimination of the deferred compensation plan



Summary of Expected 20-Year Savings or (Costs) Due to Ballot Initiative

City Savings/(Costs) - COPERS Members

Source of Savings	Savings Amount	Cumulative Amount	New 5% DC Cost	Net Savings
Close COPERS to New Entrants	\$ 25	\$ 25	\$ (370)	\$ (345)
Tier 2 Members Opt Out of COPERS	21	46	(404)	(358)
Change Definition of Compensation in COPERS	385	431	(404)	27
Change to 5-Year FAC in COPERS	90	521	(404)	117
Eliminate Deferred Comp – COPERS Members*	208	729	(404)	325

There may be additional savings due to the elimination of deferred compensation for members of PSPRS and the City Council

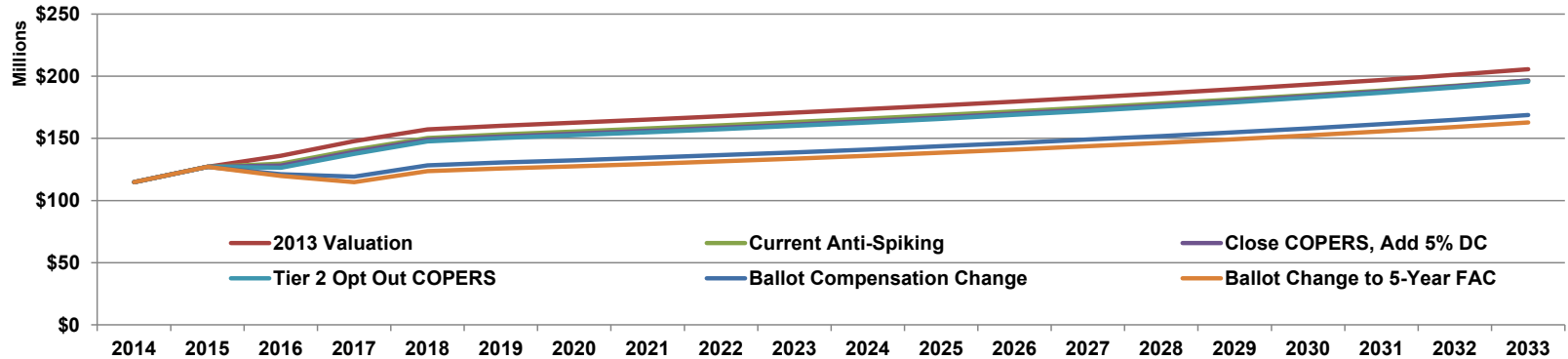
Amounts in Millions

* Deferred compensation contributions under the bargaining contracts expiring 6/30/2016 are not included.

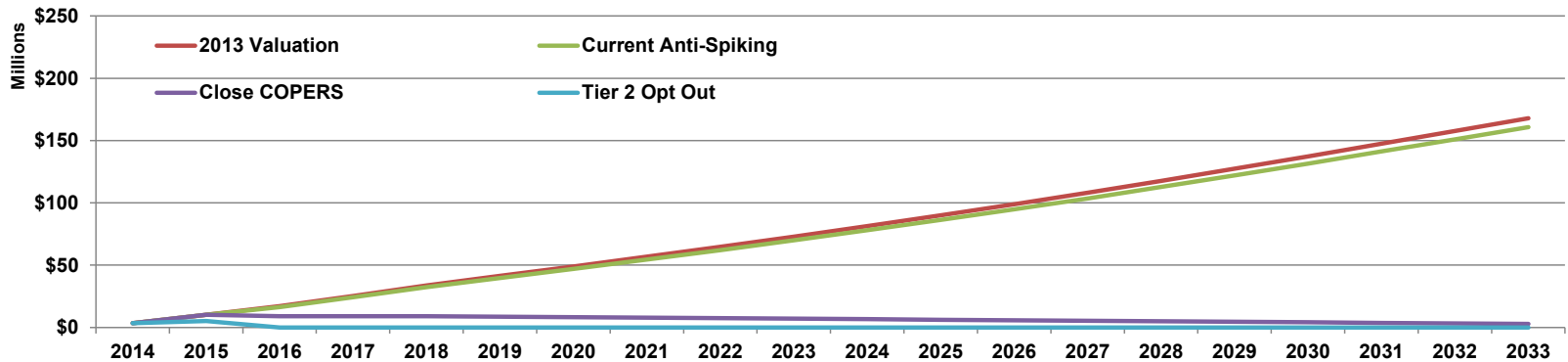


Projected Contributions to COPERS

Projected City Contributions to COPERS



Projected Tier 2 Member Contributions to COPERS





Additional Savings in Future

- Closing COPERS does not provide meaningful savings today
 - Tier 2 members are expected to contribute close to the full cost of providing their benefits until the unfunded liability is paid off
 - City contributions pay for part of Tier 1 member benefits and the unfunded liability, which is expected to be paid off in 25 years
 - Primary expected savings from ballot initiative are from changes to current employees' benefits, including plans other than COPERS such as the deferred compensation plan and OPEB plans
- If COPERS continues unchanged, in FYE 2038, the City's contribution for Tier 2 members is expected to be about 9% of pay
- If the ballot initiative passes, in FYE 2038, the City's contribution to the new DC plan would be no more than 8% of pay
- After 2038, the ballot initiative would provide ongoing cost savings compared to the continuation of COPERS of at least 1% of pay



Allocation of Risk

Risk	COPERS			New DC Plan		
	City	Tier 2 Active	Retiree	City	Tier 2 Active	Retiree
Investment	√	√			√	√
Longevity	√	√				√

- One of the big changes in the ballot initiative is the allocation of who bears investment and longevity risk



Questions



Required Disclosures

- The purpose of this presentation is to estimate the cost impact of the ballot initiative under specified scenarios. This presentation is not intended to be a complete actuarial analysis of the ballot initiative, which would include at a minimum an estimate of the benefits provided under a variety of scenarios for various employees.
- In preparing our presentation, we relied on information (some oral and some written) supplied by the City of Phoenix Employees' Retirement System. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with the Actuarial Standard of Practice No. 23.
- Future actuarial measurements may differ significantly from the current measurements and projections in this presentation due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.
- To the best of our knowledge, this presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.
- This presentation was prepared exclusively for the City of Phoenix Employees' Retirement System for the purpose described herein. This presentation is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

William R. Hallmark, ASA, FCA, EA, MAAA

Elizabeth Wiley, FSA, FCA, EA, MAAA



Appendix

Methods and Assumptions

- This presentation was based on the actuarial valuation as of June 30, 2013 of the City of Phoenix Employees' Retirement System. This valuation report should be referred to for more detail, including a summary of the data, methods, assumptions, and plan provisions.
- Additional assumptions made for the purpose of this study include:
 - Employees hired on or after January 1, 2015 will participate in the new DC plan and not in COPERS. Current members electing to participate in the new DC plan will also do so effective January 1, 2015.
 - The impact of the current anti-spiking measures was estimated by reducing the assumed 9.0% increase in the present value of normal retirement benefits for compensatory service credits and lump sum payments for unused vacation and compensatory time to 4.5% for Tier 1 members and 0% for Tier 2 members.
 - The impact of the ballot initiative's anti-spiking measures is based on data for base pay as of December 31, 2013 provided by the City of Phoenix. Eligible pay under the ballot initiative was estimated as the sum of regular wages, shift differential, pesticide application, CDL pay, linguistics pay, performance achievement and longevity pay. No increase in the present value of normal retirement benefits for compensatory service credits and lump sum payments for unused vacation and compensatory time was assumed.
 - The total normal cost contribution rate is calculated based on the payroll of members earning benefits in COPERS. The total UAL contribution rate is based on the payroll of all members in COPERS and the new DC plan. Tier 1 members are assumed to contribute 5% of pay; Tier 2 members are assumed to contribute 50% of the total normal cost rate plus 50% of the total UAL rate; and the City is assumed to contribute the balance of the total contribution rate.
 - City contributions to the new DC plan are assumed to be 5% of pay.
 - Projected deferred compensation contributions were based on the aggregate contribution rate for the individual data provided by the City. For COPERS, the data was scaled to the same level as the valuation data. For PSPRS, the raw data was used with 4.5% annual increases in payroll.



Appendix

Projected Contributions to COPERS

City Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	114,757	114,757	114,757	114,757	114,757	114,757
2015	127,093	127,093	127,093	127,093	127,093	127,093
2016	135,938	129,554	128,168	126,259	121,245	119,720
2017	147,671	140,898	139,156	137,475	119,306	114,854
2018	157,238	150,325	148,909	147,646	128,267	123,568
2019	160,113	153,075	151,486	150,274	130,506	125,743
2020	162,607	155,446	153,687	152,498	132,385	127,566
2021	165,191	157,903	156,021	154,852	134,375	129,494
2022	167,889	160,474	158,525	157,374	136,514	131,567
2023	170,645	163,102	161,136	160,003	138,744	133,729
2024	173,502	165,831	163,893	162,779	141,099	136,010
2025	176,515	168,710	166,843	165,746	143,618	138,450
2026	179,644	171,705	169,949	168,868	146,267	141,016
2027	182,850	174,774	173,172	172,108	149,012	143,675
2028	186,141	177,927	176,520	175,473	151,863	146,435
2029	189,575	181,220	180,044	179,013	154,861	149,339
2030	193,177	184,674	183,760	182,746	158,024	152,400
2031	197,000	188,342	187,715	186,717	161,392	155,660
2032	201,097	192,273	191,949	190,964	164,998	159,149
2033	205,496	196,493	196,482	195,509	168,860	162,884
Total	3,394,139	3,254,573	3,229,266	3,208,154	2,823,184	2,733,110



Appendix

Projected Contributions to COPERS

Tier 1 Member Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	25,012	25,012	25,012	25,012	25,012	25,012
2015	23,800	23,800	23,800	23,800	23,800	23,800
2016	22,685	22,685	22,685	22,685	20,972	20,972
2017	21,607	21,607	21,607	21,607	19,970	19,970
2018	20,556	20,556	20,556	20,556	18,999	18,999
2019	19,547	19,547	19,547	19,547	18,072	18,072
2020	18,561	18,561	18,561	18,561	17,167	17,167
2021	17,603	17,603	17,603	17,603	16,289	16,289
2022	16,651	16,651	16,651	16,651	15,418	15,418
2023	15,675	15,675	15,675	15,675	14,525	14,525
2024	14,695	14,695	14,695	14,695	13,627	13,627
2025	13,731	13,731	13,731	13,731	12,743	12,743
2026	12,761	12,761	12,761	12,761	11,851	11,851
2027	11,762	11,762	11,762	11,762	10,931	10,931
2028	10,734	10,734	10,734	10,734	9,984	9,984
2029	9,701	9,701	9,701	9,701	9,030	9,030
2030	8,670	8,670	8,670	8,670	8,076	8,076
2031	7,660	7,660	7,660	7,660	7,142	7,142
2032	6,690	6,690	6,690	6,690	6,243	6,243
2033	5,765	5,765	5,765	5,765	5,386	5,386
Total	303,865	303,865	303,865	303,865	285,237	285,237



Appendix

Projected Contributions to COPERS

Tier 2 Member Contributions (in thousands)

FYE	2013 Valuation	Current Anti- Spiking	Close COPERS	Tier 2 Opt Out	Ballot w/ 3- Year FAC	Ballot w/ 5- Year FAC
2014	3,503	3,503	3,503	3,503	3,503	3,503
2015	10,111	10,111	10,111	5,056	5,056	5,056
2016	17,111	16,423	8,995	-	-	-
2017	25,178	24,170	9,096	-	-	-
2018	33,720	32,409	9,060	-	-	-
2019	41,347	39,727	8,647	-	-	-
2020	49,011	47,074	8,227	-	-	-
2021	56,763	54,499	7,814	-	-	-
2022	64,700	62,100	7,415	-	-	-
2023	72,935	69,983	7,019	-	-	-
2024	81,401	78,083	6,613	-	-	-
2025	90,015	86,322	6,204	-	-	-
2026	98,868	94,788	5,802	-	-	-
2027	108,056	103,572	5,397	-	-	-
2028	117,582	112,676	4,978	-	-	-
2029	127,355	122,015	4,547	-	-	-
2030	137,355	131,569	4,114	-	-	-
2031	147,504	141,264	3,680	-	-	-
2032	157,730	151,032	3,255	-	-	-
2033	168,011	160,851	2,846	-	-	-
Total	1,608,256	1,542,171	127,321	8,559	8,559	8,559



Appendix - Projected Deferred Compensation Contributions

Estimated Impact of Elimination of Deferred Compensation Program

FYE	Projected Eligible Pay (in thousands)		Projected Contributions (in thousands)	
	COPERS	City Council	COPERS	City Council
2014	378,446	581	15,683	95
2015	391,691	581	11,316	95
2016	405,400	581	8,839	95
2017	419,589	581	9,148	95
2018	434,275	581	9,468	95
2019	449,475	581	9,800	95
2020	465,206	581	10,142	95
2021	481,489	581	10,497	95
2022	498,341	581	10,865	95
2023	515,783	581	11,245	95
2024	533,835	581	11,639	95
2025	552,519	581	12,046	95
2026	571,857	581	12,468	95
2027	591,872	581	12,904	95
2028	612,588	581	13,356	95
2029	634,028	581	13,823	95
2030	656,219	581	14,307	95
2031	679,187	581	14,808	95
2032	702,959	581	15,326	95
2033	727,562	581	15,862	95
Total	10,702,322	11,616	243,542	1,890

Projected deferred compensation contributions reflect bargaining agreements through FYE 2016 and assume the rates for FYE 2016 remain in effect thereafter



Appendix - COPERS Projected New 5% DC Contributions

City Contributions (in thousands)

FYE	New Hire DC Contributions	Tier 2 + New Hire DC Contributions
2014	-	-
2015	213	1,456
2016	2,284	5,118
2017	4,334	7,033
2018	6,379	8,950
2019	8,409	10,855
2020	10,446	12,772
2021	12,489	14,698
2022	14,557	16,654
2023	16,685	18,669
2024	18,860	20,729
2025	21,062	22,816
2026	23,311	24,952
2027	25,635	27,160
2028	28,034	29,441
2029	30,489	31,774
2030	32,994	34,156
2031	35,529	36,568
2032	38,078	38,997
2033	40,634	41,438
Total	370,422	404,238

- New DC contributions assume a 5% contribution rate for COPERS Tier 2 members and COPERS new hires effective January 1, 2015
- Projected compensation is based on base salary and wages

Attachment B



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June 24, 2014

Mr. Rick Naimark
Deputy City Manager
Phoenix City Hall
200 W. Washington St., 12th Floor
Phoenix, AZ 85003

Re: **Estimated Impact of DC Initiative on Phoenix Police and Fire Employees**

Dear Rick:

Segal Consulting is the actuary retained by the City of Phoenix (“the City”) to perform actuarial analyses related to pension reform measures contemplated by City Council. As requested, we have determined the long-term financial impact to City police and fire employees related to the Phoenix Pension Reform Act of 2014 (the “Initiative”), which is summarized below.

Proposed Changes in the Initiative (for purposes of modeling)

The Initiative attempts to prevent pension spiking and provide a defined contribution retirement plan for future hires by amending the City Charter. Currently, City police and fire employees participate in the State-sponsored Arizona Public Safety Personnel Retirement System (PSPRS). The scenarios that we modeled relative to the City’s PSPRS members are as follows:

- Baseline projection of City contributions including:
 - Contributions to PSPRS, which reflect spiking reform provisions, as approved by the City Council on October 31, 2013;
 - Deferred Compensation Plan (DCP) contributions attributable to City police and fire employees.
- Scenario 1 – Projection of City contributions to PSPRS assuming the DCP is eliminated (assumed to be effective July 1, 2015), but that existing and future police and fire employees continue to participate in PSPRS.
- Scenario 2 – Projection of City contributions to PSPRS and to a defined contribution plan assuming the DCP is eliminated, and that existing and future police and fire employees are covered under the newly established City defined contribution plan (assuming City allocations of 5% of salary and an effective date of July 1, 2015).

The impact of the scenarios described above are outlined in Exhibits 1 and 2. Exhibit 1 shows the projected City contribution requirements through the fiscal year ending June 30, 2033, under the baseline scenario compared to Scenario 1, where police and fire employees continue to participate in PSPRS. Exhibit 2 shows the projected City contribution requirements through the fiscal year ending June 30, 2033, under the baseline scenario compared to Scenario 2, where police and fire employees participate in the newly established City defined contribution plan.

Actuarial Analysis

Based upon the actuarial assumptions and methods used in the PSPRS actuarial valuation reports, as well as those additional considerations outlined in this letter, the total estimated decrease to the City's projected contribution amounts through fiscal year 2033, as a result of the changes contained in Scenario 1, is \$257 million. Note that the savings is a cumulative amount, not discounted to a present value. A breakout of the savings under Scenario 1 is shown in the following table:

Scenario 1 (\$ in millions)	Fire Employees	Police Employees	Total
Direct (savings) due to elimination of DCP	(\$169)	(\$12)	(\$181)
(Savings) from reduced contributions to PSPRS	(49)	(27)	(76)
Total (savings)	(\$218)	(\$39)	(\$257)

The direct savings to the City due the elimination of the DCP refers to the actual DCP contributions that will not be paid to police and fire employees. In addition to this savings, pensionable salary – which currently includes DCP contributions – will also be reduced, resulting in lower projected benefits to members and, therefore, lower required contributions to PSPRS.

Based upon the actuarial assumptions and methods used in the PSPRS actuarial valuation reports, as well as those additional considerations outlined in this letter, the total estimated decrease to the City's projected contribution amounts through fiscal year 2033, as a result of the changes contained in Scenario 2, is \$1,048 million. Note that the savings is a cumulative amount, not discounted to a present value. A breakout of the savings under Scenario 2 is shown in the following table:

Scenario 2 (\$ in millions)	Fire Employees	Police Employees	Total
Direct (savings) due to elimination of DCP	(\$169)	(\$12)	(\$181)
(Savings) from reduced contributions to PSPRS	(476)	(941)	(1,417)
Cost of 5% defined contribution allocation	185	365	550
Total (savings)	(\$460)	(\$588)	(\$1,048)

The direct savings to the City due the elimination of the DCP is the same under Scenario 2 as it is under Scenario 1. If police and fire employees are no longer accruing additional benefits under PSPRS, the City's contribution to PSPRS will be reduced to the amount required to pay off the remaining unfunded actuarial liability, as there will no longer be a normal cost component of the contribution requirement. The savings from reduced PSPRS contributions is offset, however, by the amount of City contribution required under the newly established defined contribution plan (assumed to be 5% for purposes of this projection).

Actuarial Assumptions and Methods

The analysis of PSPRS contributions is based upon the liability and financial information contained in the June 30, 2013, actuarial valuations for the Phoenix Fire Department and Phoenix Police Department under PSPRS prepared by Gabriel Roeder Smith & Company (GRS). Our modeling is based on roll forwards of assets and liabilities in future years using standard actuarial techniques, with adjustments for changes outlined herein. Our analysis with respect to City DCP contributions was based on demographic and contribution information provided by City staff.

Projected City contributions are based on the current plan provisions and actuarial assumptions as valued in the June 30, 2013, actuarial valuations prepared by GRS, with the following exceptions:

- Pursuant to the spiking reform provisions adopted by City Council, transportation and technical allowances, the retirement reimbursement credit, and enhanced regular compensation are not included in pensionable earnings/payroll.
- Under Scenario 1, the value of DCP contributions are not included in pensionable earnings/payroll.
- Under Scenario 2, when future accruals for existing PSPRS active members are assumed to cease as of July 1, 2015, the unfunded actuarial liability is amortized over the remaining 21-year closed period as a level dollar amount rather than as a level percentage of payroll.

Comments about Projections

Projections, by their nature, are not a guarantee of future results. The modeled projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

Please note that the total estimated decreases to the City's projected contribution amounts through fiscal year 2033 outlined in the "Actuarial Analysis" section are not discounted to reflect the time value of money.

Mr. Rick Naimark
June 24, 2014
Page 4

Respectfully submitted,

Handwritten signature of Matthew A. Strom in black ink.

Matthew A. Strom, FSA, MAAA
Enrolled Actuary No. 14-06076
kn/ns

Handwritten signature of Kim Nicholl in black ink.

Kim Nicholl, FSA, MAAA
Enrolled Actuary No. 14-03573

8023431v1/02120.026

**Arizona PSPRS - Phoenix Fire Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$49,578,000	\$6,208,000	\$55,786,000	\$49,578,000	\$6,208,000		\$55,786,000	\$0
2016	54,325,000	6,288,000	60,613,000	54,325,000		0	54,325,000	-6,288,000
2017	58,587,000	6,571,000	65,158,000	56,591,000		0	56,591,000	-8,567,000
2018	61,275,000	6,867,000	68,142,000	59,248,000		0	59,248,000	-8,894,000
2019	64,022,000	7,176,000	71,198,000	61,903,000		0	61,903,000	-9,295,000
2020	67,228,000	7,499,000	74,727,000	65,006,000		0	65,006,000	-9,721,000
2021	69,875,000	7,837,000	77,712,000	67,549,000		0	67,549,000	-10,163,000
2022	72,652,000	8,190,000	80,842,000	70,217,000		0	70,217,000	-10,625,000
2023	75,520,000	8,559,000	84,079,000	72,970,000		0	72,970,000	-11,109,000
2024	78,471,000	8,944,000	87,415,000	75,802,000		0	75,802,000	-11,613,000
2025	81,504,000	9,347,000	90,851,000	78,708,000		0	78,708,000	-12,143,000
2026	84,611,000	9,768,000	94,379,000	81,681,000		0	81,681,000	-12,698,000
2027	87,781,000	10,208,000	97,989,000	84,712,000		0	84,712,000	-13,277,000
2028	91,000,000	10,667,000	101,667,000	87,784,000		0	87,784,000	-13,883,000
2029	94,245,000	11,148,000	105,393,000	90,875,000		0	90,875,000	-14,518,000
2030	97,486,000	11,649,000	109,135,000	93,953,000		0	93,953,000	-15,182,000
2031	100,676,000	12,174,000	112,850,000	96,965,000		0	96,965,000	-15,885,000
2032	103,729,000	12,722,000	116,451,000	99,830,000		0	99,830,000	-16,621,000
2033	106,510,000	13,295,000	119,805,000	102,408,000		0	102,408,000	-17,397,000
Total	\$1,499,075,000	\$175,117,000	\$1,674,192,000	\$1,450,105,000	\$6,208,000	\$0	\$1,456,313,000	-\$217,879,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$168,909,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$48,970,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$217,879,000)

**Arizona PSPRS - Phoenix Police Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Police Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$94,825,000	\$446,000	\$95,271,000	\$94,825,000	\$446,000		\$95,271,000	\$0
2016	103,056,000	449,000	103,505,000	103,056,000		0	103,056,000	-449,000
2017	110,877,000	469,000	111,346,000	109,740,000		0	109,740,000	-1,606,000
2018	115,926,000	490,000	116,416,000	114,743,000		0	114,743,000	-1,673,000
2019	121,094,000	513,000	121,607,000	119,858,000		0	119,858,000	-1,749,000
2020	127,088,000	536,000	127,624,000	125,792,000		0	125,792,000	-1,832,000
2021	132,097,000	560,000	132,657,000	130,749,000		0	130,749,000	-1,908,000
2022	137,348,000	585,000	137,933,000	135,948,000		0	135,948,000	-1,985,000
2023	142,768,000	611,000	143,379,000	141,315,000		0	141,315,000	-2,064,000
2024	148,349,000	639,000	148,988,000	146,838,000		0	146,838,000	-2,150,000
2025	154,082,000	668,000	154,750,000	152,512,000		0	152,512,000	-2,238,000
2026	159,957,000	698,000	160,655,000	158,325,000		0	158,325,000	-2,330,000
2027	165,952,000	729,000	166,681,000	164,256,000		0	164,256,000	-2,425,000
2028	172,039,000	762,000	172,801,000	170,277,000		0	170,277,000	-2,524,000
2029	178,176,000	796,000	178,972,000	176,353,000		0	176,353,000	-2,619,000
2030	184,305,000	832,000	185,137,000	182,420,000		0	182,420,000	-2,717,000
2031	190,331,000	869,000	191,200,000	188,385,000		0	188,385,000	-2,815,000
2032	196,106,000	909,000	197,015,000	194,101,000		0	194,101,000	-2,914,000
2033	201,369,000	950,000	202,319,000	199,309,000		0	199,309,000	-3,010,000
Total	\$2,835,745,000	\$12,511,000	\$2,848,256,000	\$2,808,802,000	\$446,000	\$0	\$2,809,248,000	-\$39,008,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$12,065,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$26,943,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$39,008,000)

**Arizona PSPRS - Total Phoenix Fire and Police
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire and Police Employees Remain in PSPRS (No DC Plan), but DCP Eliminated

Column	Baseline			Scenario 1				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$144,403,000	\$6,654,000	\$151,057,000	\$144,403,000	\$6,654,000		\$151,057,000	\$0
2016	157,381,000	6,737,000	164,118,000	157,381,000		0	157,381,000	-6,737,000
2017	169,464,000	7,040,000	176,504,000	166,331,000		0	166,331,000	-10,173,000
2018	177,201,000	7,357,000	184,558,000	173,991,000		0	173,991,000	-10,567,000
2019	185,116,000	7,689,000	192,805,000	181,761,000		0	181,761,000	-11,044,000
2020	194,316,000	8,035,000	202,351,000	190,798,000		0	190,798,000	-11,553,000
2021	201,972,000	8,397,000	210,369,000	198,298,000		0	198,298,000	-12,071,000
2022	210,000,000	8,775,000	218,775,000	206,165,000		0	206,165,000	-12,610,000
2023	218,288,000	9,170,000	227,458,000	214,285,000		0	214,285,000	-13,173,000
2024	226,820,000	9,583,000	236,403,000	222,640,000		0	222,640,000	-13,763,000
2025	235,586,000	10,015,000	245,601,000	231,220,000		0	231,220,000	-14,381,000
2026	244,568,000	10,466,000	255,034,000	240,006,000		0	240,006,000	-15,028,000
2027	253,733,000	10,937,000	264,670,000	248,968,000		0	248,968,000	-15,702,000
2028	263,039,000	11,429,000	274,468,000	258,061,000		0	258,061,000	-16,407,000
2029	272,421,000	11,944,000	284,365,000	267,228,000		0	267,228,000	-17,137,000
2030	281,791,000	12,481,000	294,272,000	276,373,000		0	276,373,000	-17,899,000
2031	291,007,000	13,043,000	304,050,000	285,350,000		0	285,350,000	-18,700,000
2032	299,835,000	13,631,000	313,466,000	293,931,000		0	293,931,000	-19,535,000
2033	307,879,000	14,245,000	322,124,000	301,717,000		0	301,717,000	-20,407,000
Total	\$4,334,820,000	\$187,628,000	\$4,522,448,000	\$4,258,907,000	\$6,654,000	\$0	\$4,265,561,000	-\$256,887,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$180,974,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$75,913,000)
- Total savings (column (8)) is equal to column (7) minus column (3), or (\$256,887,000)

**Arizona PSPRS - Phoenix Fire Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire Employees Leave PSPRS and Enter DC Plan

Column	Baseline			Scenario 2				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$49,578,000	\$6,208,000	\$55,786,000	\$49,578,000	\$6,208,000		\$55,786,000	\$0
2016	54,325,000	6,288,000	60,613,000	54,325,000		6,891,000	61,216,000	603,000
2017	58,587,000	6,571,000	65,158,000	53,085,000		7,201,000	60,286,000	-4,872,000
2018	61,275,000	6,867,000	68,142,000	53,434,000		7,525,000	60,959,000	-7,183,000
2019	64,022,000	7,176,000	71,198,000	53,769,000		7,864,000	61,633,000	-9,565,000
2020	67,228,000	7,499,000	74,727,000	54,588,000		8,218,000	62,806,000	-11,921,000
2021	69,875,000	7,837,000	77,712,000	54,505,000		8,589,000	63,094,000	-14,618,000
2022	72,652,000	8,190,000	80,842,000	54,453,000		8,975,000	63,428,000	-17,414,000
2023	75,520,000	8,559,000	84,079,000	54,403,000		9,380,000	63,783,000	-20,296,000
2024	78,471,000	8,944,000	87,415,000	54,350,000		9,802,000	64,152,000	-23,263,000
2025	81,504,000	9,347,000	90,851,000	54,296,000		10,243,000	64,539,000	-26,312,000
2026	84,611,000	9,768,000	94,379,000	54,239,000		10,705,000	64,944,000	-29,435,000
2027	87,781,000	10,208,000	97,989,000	54,178,000		11,187,000	65,365,000	-32,624,000
2028	91,000,000	10,667,000	101,667,000	54,114,000		11,690,000	65,804,000	-35,863,000
2029	94,245,000	11,148,000	105,393,000	54,042,000		12,217,000	66,259,000	-39,134,000
2030	97,486,000	11,649,000	109,135,000	53,964,000		12,767,000	66,731,000	-42,404,000
2031	100,676,000	12,174,000	112,850,000	53,875,000		13,342,000	67,217,000	-45,633,000
2032	103,729,000	12,722,000	116,451,000	53,773,000		13,942,000	67,715,000	-48,736,000
2033	106,510,000	13,295,000	119,805,000	53,652,000		14,570,000	68,222,000	-51,583,000
Total	\$1,499,075,000	\$175,117,000	\$1,674,192,000	\$1,022,623,000	\$6,208,000	\$185,108,000	\$1,213,939,000	-\$460,253,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$168,909,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$476,452,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$185,108,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$460,253,000)

**Arizona PSPRS - Phoenix Police Department
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Police Employees Leave PSPRS and Enter DC Plan, and DCP Eliminated

Column	Baseline			Scenario 2				Total Cost/(Savings)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	
2015	\$94,825,000	\$446,000	\$95,271,000	\$94,825,000	\$446,000		\$95,271,000	\$0
2016	103,056,000	449,000	103,505,000	103,056,000		13,570,000	116,626,000	13,121,000
2017	110,877,000	469,000	111,346,000	98,778,000		14,182,000	112,960,000	1,614,000
2018	115,926,000	490,000	116,416,000	98,794,000		14,821,000	113,615,000	-2,801,000
2019	121,094,000	513,000	121,607,000	99,323,000		15,488,000	114,811,000	-6,796,000
2020	127,088,000	536,000	127,624,000	100,766,000		16,186,000	116,952,000	-10,672,000
2021	132,097,000	560,000	132,657,000	100,615,000		16,915,000	117,530,000	-15,127,000
2022	137,348,000	585,000	137,933,000	100,520,000		17,676,000	118,196,000	-19,737,000
2023	142,768,000	611,000	143,379,000	100,427,000		18,473,000	118,900,000	-24,479,000
2024	148,349,000	639,000	148,988,000	100,332,000		19,304,000	119,636,000	-29,352,000
2025	154,082,000	668,000	154,750,000	100,234,000		20,174,000	120,408,000	-34,342,000
2026	159,957,000	698,000	160,655,000	100,128,000		21,082,000	121,210,000	-39,445,000
2027	165,952,000	729,000	166,681,000	100,015,000		22,032,000	122,047,000	-44,634,000
2028	172,039,000	762,000	172,801,000	99,893,000		23,024,000	122,917,000	-49,884,000
2029	178,176,000	796,000	178,972,000	99,762,000		24,060,000	123,822,000	-55,150,000
2030	184,305,000	832,000	185,137,000	99,618,000		25,144,000	124,762,000	-60,375,000
2031	190,331,000	869,000	191,200,000	99,459,000		26,276,000	125,735,000	-65,465,000
2032	196,106,000	909,000	197,015,000	99,280,000		27,459,000	126,739,000	-70,276,000
2033	201,369,000	950,000	202,319,000	99,068,000		28,695,000	127,763,000	-74,556,000
Total	\$2,835,745,000	\$12,511,000	\$2,848,256,000	\$1,894,893,000	\$446,000	\$364,561,000	\$2,259,900,000	-\$588,356,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$12,065,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$940,852,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$364,561,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$588,356,000)

**Arizona PSPRS - Total Phoenix Fire and Police
ESTIMATED CITY CONTRIBUTIONS**

Impact of DC Initiative -- Fire and Police Employees Leave PSPRS and Enter DC Plan, and DCP Eliminated

Column	Baseline			Scenario 2				(8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Fiscal Year	Before Changes - PSPRS Contribution	Before Changes - DCP Contribution	Before Changes - Total City Contribution	DC Initiative - PSPRS Contribution	DC Initiative - DCP Contribution	DC Initiative - 5% DC Plan Contribution	DC Initiative - Total City Contribution	Total Cost/(Savings)
2015	\$144,403,000	\$6,654,000	\$151,057,000	\$144,403,000	\$6,654,000		\$151,057,000	\$0
2016	157,381,000	6,737,000	164,118,000	157,381,000		20,461,000	177,842,000	13,724,000
2017	169,464,000	7,040,000	176,504,000	151,863,000		21,383,000	173,246,000	-3,258,000
2018	177,201,000	7,357,000	184,558,000	152,228,000		22,346,000	174,574,000	-9,984,000
2019	185,116,000	7,689,000	192,805,000	153,092,000		23,352,000	176,444,000	-16,361,000
2020	194,316,000	8,035,000	202,351,000	155,354,000		24,404,000	179,758,000	-22,593,000
2021	201,972,000	8,397,000	210,369,000	155,120,000		25,504,000	180,624,000	-29,745,000
2022	210,000,000	8,775,000	218,775,000	154,973,000		26,651,000	181,624,000	-37,151,000
2023	218,288,000	9,170,000	227,458,000	154,830,000		27,853,000	182,683,000	-44,775,000
2024	226,820,000	9,583,000	236,403,000	154,682,000		29,106,000	183,788,000	-52,615,000
2025	235,586,000	10,015,000	245,601,000	154,530,000		30,417,000	184,947,000	-60,654,000
2026	244,568,000	10,466,000	255,034,000	154,367,000		31,787,000	186,154,000	-68,880,000
2027	253,733,000	10,937,000	264,670,000	154,193,000		33,219,000	187,412,000	-77,258,000
2028	263,039,000	11,429,000	274,468,000	154,007,000		34,714,000	188,721,000	-85,747,000
2029	272,421,000	11,944,000	284,365,000	153,804,000		36,277,000	190,081,000	-94,284,000
2030	281,791,000	12,481,000	294,272,000	153,582,000		37,911,000	191,493,000	-102,779,000
2031	291,007,000	13,043,000	304,050,000	153,334,000		39,618,000	192,952,000	-111,098,000
2032	299,835,000	13,631,000	313,466,000	153,053,000		41,401,000	194,454,000	-119,012,000
2033	307,879,000	14,245,000	322,124,000	152,720,000		43,265,000	195,985,000	-126,139,000
Total	\$4,334,820,000	\$187,628,000	\$4,522,448,000	\$2,917,516,000	\$6,654,000	\$549,669,000	\$3,473,839,000	-\$1,048,609,000

Notes:

- Direct savings due to elimination of DCP is equal to column (5) minus column (2), or (\$180,974,000)
- Savings from reduced contributions to PSPRS is equal to column (4) minus column (1), or (\$1,417,304,000)
- Cost of 5% DC Plan contributions is shown in column (6), or \$549,669,000
- Total net savings (column (8)) is equal to column (7) minus column (3), or (\$1,048,609,000)

Attachment C

City of Phoenix Employees' Retirement Plan

SAMPLE EMPLOYEE ANALYSIS

Tier 1 COPERS, including value of Deferred Compensation Plan (DCP)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						Existing Tier 1 Before Changes	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP
Current Employees Sample 1:	25	39 14	\$67,000	60 35	1.91%	\$9,511	Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:		
							6.50%	7.00%	7.50%	6.50%	7.00%	7.50%
							\$756	\$825	\$903	\$10,267	\$10,337	\$10,414
Sample 2:	30	47 17	\$130,000	60 30	8.00%	\$10,993	\$3,393	\$3,659	\$3,951	\$14,386	\$14,652	\$14,944
Sample 3:	35	47 12	\$63,000	60 25	0.00%	\$4,439	\$0	\$0	\$0	\$4,439	\$4,439	\$4,439
Sample 4:	45	52 7	\$58,000	60 15	1.65%	\$1,975	\$113	\$117	\$122	\$2,087	\$2,092	\$2,096

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the COPERS valuation.

Monthly COPERS benefit amounts are projected to retirement and are based on projected salaries.

For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

City of Phoenix Employees' Retirement Plan

SAMPLE EMPLOYEE ANALYSIS

Tier 1 COPERS, including value of DCP, including changes as outlined in the DC Initiative

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Existing Tier 1 Under Initiative	Projected Monthly Benefit Amount						
							Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	Total COPERS + Annuitized Value of DCP	
							6.50%	7.00%	7.50%	6.50%	7.00%	7.50%	
Current Employees Sample 1:	25	39	\$67,000	60	1.91%	\$8,472	Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:			
							\$332	\$379	\$432	\$8,804	\$8,851	\$8,904	
Sample 2:	30	47	\$130,000	60	8.00%	\$9,104							
							-\$424	-\$446	-\$471	-\$1,463	-\$1,485	-\$1,510	
							-10.9%	-56.0%	-54.1%	-14.2%	-14.4%	-14.5%	
Sample 3:	35	47	\$63,000	60	0.00%	\$3,954							
							\$0	\$0	\$0	\$3,954	\$3,954	\$3,954	
							-\$485	\$0	\$0	-\$485	-\$485	-\$485	
Sample 4:	45	52	\$58,000	60	1.65%	\$1,759							
							-\$216	-\$56	-\$57	-\$58	-\$272	-\$273	-\$274
							-10.9%	-49.7%	-48.9%	-48.0%	-13.0%	-13.0%	-13.1%

Assumptions/Disclaimers:

- Salaries are projected using the assumption for individual salary increases from the COPERS valuation.
- Pensionable earnings under the Initiative is assumed to decrease by 7.5% for Sample 1, 3, and 4, and by 14% for Sample 2.
- Monthly COPERS benefit amounts are projected to retirement and are based on projected salaries.
- Under the Initiative, the existing DCP account balance is projected to retirement age at the assumed earnings rate only, and without additional contributions.
- For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

	Legend:
Projected Monthly Benefit Amount:	\$8,804
Decrease in Projected Monthly Benefit:	-\$1,463
Percentage Decrease in Projected Monthly Benefit:	-14.2%

Attachment D

Comparison of COPERS Tier 2 to 10% DC Plan

City of Phoenix Employees' Retirement Plan
SAMPLE EMPLOYEE ANALYSIS

10% of Pay Defined Contribution Plan

	Hire Age	Current Annual Compensation	Retirement Age	Total Service	Projected Monthly Benefit Amount			
					Before Changes	Annuitized Value of DC Account Balance	Annuitized Value of DC Account Balance	Annuitized Value of DC Account Balance
Current Employees						Assumed Earnings on DC Contributions:		
						6.50%	7.00%	7.50%
Sample 1:	25	\$35,000	56	31	\$10,097	\$4,436 -\$5,661 -56.1%	\$4,790 -\$5,307 -52.6%	\$5,179 -\$4,918 -48.7%
Sample 2:	30	\$75,000	59	29	\$15,968	\$7,977 -\$7,991 -50.0%	\$8,578 -\$7,390 -46.3%	\$9,235 -\$6,734 -42.2%
Sample 3:	35	\$40,000	60	25	\$5,546	\$2,869 -\$2,677 -48.3%	\$3,055 -\$2,491 -44.9%	\$3,255 -\$2,291 -41.3%
Sample 4:	45	\$45,000	60	15	\$2,112	\$1,042 -\$1,070 -50.7%	\$1,082 -\$1,031 -48.8%	\$1,123 -\$990 -46.8%

Assumptions/Disclaimers:

Members are assumed to retire at their first unreduced eligibility age.

Salaries are projected using the assumption for individual salary increases from the COPERS valuation.

Monthly benefit amounts are projected to retirement and are based on projected salaries.

Contributions to the Defined Contribution Plan are 10% from some combination of member and employer.

For comparison purposes, the accumulated balance at retirement is converted to a life annuity with a 1.5% COLA using interest and mortality assumptions from the COPERS valuation.

Attachment E

Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS
 PSPRS, Including Value of Deferred Compensation Plan (DCP)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						PSPRS Benefit - Before Changes	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP
						Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:			
						6.50%	7.00%	7.50%	6.50%	7.00%	7.50%	
Current Employees												
Sample 1: Executive	27	49 22	\$120,000	52 25	8.00%	\$6,539	\$1,553	\$1,651	\$1,757	\$8,092	\$8,190	\$8,296
Sample 2: Middle Manager	27	45 18	\$100,000	52 25	8.00%	\$6,526	\$1,550	\$1,648	\$1,753	\$8,076	\$8,174	\$8,279
Sample 3: Police Employee	27	42 15	\$90,000	49 22	0.10%	\$5,103	\$14	\$15	\$16	\$5,117	\$5,118	\$5,119
Sample 4: Fire Employee	27	37 10	\$90,000	49 22	4.42%	\$6,581	\$808	\$852	\$899	\$7,389	\$7,434	\$7,481

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.
 Monthly PSPRS benefit amounts are projected to retirement and are based on projected salaries.
 For comparison purposes, the accumulated DCP balance at retirement is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

**Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS**

PSPRS and Value of DCP, with DCP Contributions Eliminated at Attained Age

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	PSPRS Benefit - After Changes	Projected Monthly Benefit Amount					
							Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Annuitized Value of DCP Account Balance	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP	Total PSPRS + Annuitized Value of DCP
							Assumed Earnings on DCP Contributions:			Assumed Earnings on DCP Contributions:		
						6.50%	7.00%	7.50%	6.50%	7.00%	7.50%	
Current Employees												
Sample 1: Executive	27	49	\$120,000	52	8.00%	\$6,033	\$1,392	\$1,488	\$1,593	\$7,424	\$7,521	\$7,625
		22		25		-\$506	-\$162	-\$163	-\$164	-\$668	-\$669	-\$671
						-7.7%	-10.4%	-9.9%	-9.3%	-8.3%	-8.2%	-8.1%
Sample 2: Middle Manager	27	45	\$100,000	52	8.00%	\$6,020	\$1,159	\$1,250	\$1,349	\$7,179	\$7,271	\$7,369
		18		25		-\$505	-\$391	-\$398	-\$404	-\$896	-\$903	-\$910
						-7.7%	-25.2%	-24.1%	-23.1%	-11.1%	-11.0%	-11.0%
Sample 3: Police Employee	27	42	\$90,000	49	0.10%	\$5,098	\$10	\$11	\$11	\$5,108	\$5,108	\$5,109
		15		22		-\$5	-\$4	-\$4	-\$4	-\$10	-\$10	-\$10
						-0.1%	-29.7%	-28.6%	-27.6%	-0.2%	-0.2%	-0.2%
Sample 4: Fire Employee	27	37	\$90,000	49	4.42%	\$6,290	\$381	\$412	\$447	\$6,671	\$6,702	\$6,737
		10		22		-\$291	-\$427	-\$440	-\$453	-\$718	-\$731	-\$744
						-4.4%	-52.9%	-51.6%	-50.3%	-9.7%	-9.8%	-9.9%

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.

Monthly PSPRS benefit amounts are projected to retirement and are based on projected salaries.

For comparison purposes, the accumulated DCP balance at retirement is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

	Legend:
Projected Monthly Benefit Amount:	\$7,424
Decrease in Projected Monthly Benefit:	-\$668
Percentage Decrease in Projected Monthly Benefit:	-8.3%

**Arizona Public Safety Personnel Retirement System
SAMPLE EMPLOYEE ANALYSIS**

Frozen PSPRS and Value of DCP, with DCP Contributions Eliminated at Attained Age, plus Value of Future DC Contributions (5% City/11.65% Member)

	Hire Age	Attained Age/ Service	Current Annual Compensation	Retirement Age/ Service	DCP %	Projected Monthly Benefit Amount						
						PSPRS Benefit - After Changes	Annuitized Value of DCP and DC Account Balances	Annuitized Value of DCP and DC Account Balances	Annuitized Value of DCP and DC Account Balances	Total PSPRS + Annuitized Value of Balances	Total PSPRS + Annuitized Value of Balances	Total PSPRS + Annuitized Value of Balances
			6.50%	7.00%	7.50%	6.50%	7.00%	7.50%				
Current Employees												
Sample 1: Executive	27	49 22	\$120,000	52 25	8.00%	\$5,941 -\$598 -9.1%	\$1,728	\$1,828	\$1,935	\$7,669 -\$423 -5.2%	\$7,769 -\$422 -5.1%	\$7,876 -\$420 -5.1%
Sample 2: Middle Manager	27	45 18	\$100,000	52 25	8.00%	\$3,901 -\$2,625 -40.2%	\$1,973	\$2,078	\$2,191	\$5,874 -\$2,202 -27.3%	\$5,979 -\$2,195 -26.9%	\$6,092 -\$2,187 -26.4%
Sample 3: Police Employee	27	42 15	\$90,000	49 22	0.10%	\$2,290 -\$2,813 -55.1%	\$710	\$723	\$736	\$3,001 -\$2,117 -41.4%	\$3,013 -\$2,105 -41.1%	\$3,026 -\$2,093 -40.9%
Sample 4: Fire Employee	27	37 10	\$90,000	49 22	4.42%	\$749 -\$5,832 -88.6%	\$1,989	\$2,069	\$2,152	\$2,739 -\$4,650 -62.9%	\$2,818 -\$4,616 -62.1%	\$2,901 -\$4,579 -61.2%

Assumptions/Disclaimers:

Salaries are projected using the assumption for individual salary increases from the PSPRS valuation.

Monthly "frozen" PSPRS benefit amounts are based on current service and current final average earnings, payable at retirement age.

City Defined Contribution (DC) Plan allocations are 5% of salary.

For comparison purposes, the member contributions that would have been required under PSPRS (11.65%) are assumed to be made to the DC Plan.

This accumulated balance, as well as the DCP balance at retirement, is converted to a non-increasing life annuity using interest and mortality assumptions intended to approximate equivalent insurance company annuity purchase rates.

Legend:	
Projected Monthly Benefit Amount:	\$7,669
Decrease in Projected Monthly Benefit:	-\$423
Percentage Decrease in Projected Monthly Benefit:	-5.2%