
CITY COUNCIL REPORT

POLICY AGENDA

TO: Ed Zuercher
City Manager

AGENDA DATE: June 10, 2014

FROM: Rick Naimark
Deputy City Manager

ITEM: 4

SUBJECT: PENSION REFORM UPDATE

This report provides a summary of pension reform actions taken by the City and analysis of possible further City pension reform packages. At the Policy session, consultants will also review pension reform trends in Arizona and across the nation. Staff requests Council policy direction on further pension-related research and/or development of pension reform proposals.

THE ISSUE

Full-time City of Phoenix employees are enrolled as members of either the City of Phoenix Employees' Retirement Systems (COPERS) or, for sworn police or fire employees, the state-managed Public Safety Personnel Retirement System (PSPRS). Elected officials are part of the state-managed Elected Officials Retirement Plan. COPERS is established in the City Charter and therefore can be changed by Phoenix voters, whereas PSPRS and EORP are state-wide plans and therefore changes to these systems would require action by the Arizona Legislature or Arizona voters. This report will focus mostly on COPERS, as this plan is governed by the City along with the COPERS Board.

Pension costs, contribution rates, and funded ratios continue to present challenges to the City of Phoenix. Some of these challenges for COPERS are:

- Pension costs continue to increase for COPERS, with more than \$5 million of increased costs for the City in fiscal year (FY) 2014-15.
- COPERS Tier 1 City contribution rates have more than doubled in the last decade, to 24.6 percent in FY 2014-15, with employee contribution rates held at 5 percent per the City Charter. City contribution rates are expected to continue to increase in the near term.
- COPERS Tier 2 (for employees hired on or after July 1, 2013) City and employee contribution rates are 14.8 percent each in FY 2014-15, with projected increases in the near term. The high employee contribution rate is beginning to present recruiting and retention challenges.
- The funded ratio of COPERS has fallen from 107 percent in 1999 to 64.2 percent in 2013.

The Mayor and City Council have taken significant steps to address these challenges. The recent history of pension reform is presented later in this report. In total, actions already taken by the Mayor and City Council and the COPERS board, and actions approved by Phoenix voters, are expected to save a cumulative \$830 million by 2038 (combined COPERS and PSPRS).

In addressing the continued challenges presented by COPERS and PSPRS, the City Council approved a contract with Buck Consultants to study local and national pension reform trends and develop further options for pension reform, and a contract with the Segal Company to model the impact of such proposals.

Buck has identified several desirable outcomes of further pension reform:

- additional cost savings;
- alignment with best practices;
- attraction and retention of employees;
- litigation avoidance; and
- improvement of the funding positions of COPERS and PSPRS.

These criteria will be used in this report to analyze pension reform packages.

PENSION REFORM INITIATIVE

The City Council recently called a Special Election for November 5, 2014, for the voters to consider an Initiative Petition on pension reform. The Initiative recommends changes to the City Charter which modify the benefit calculations for COPERS members by basing final average compensation on a five-year rather than a three-year final average and including only base pay. The Initiative also proposes to establish a new Defined Contribution (DC) plan for new employees (which existing employees may irrevocably join if they desire). This DC plan would allow employees to elect their own contribution, and the City would match that contribution at a rate to be determined but not to exceed 8 percent of pay. The City would be prohibited from making contributions to any plan other than the DC plan or COPERS.

Buck Consultants and the COPERS actuary, Cheiron, have analyzed the initiative and have determined:

- The Initiative is likely to increase costs. The Initiative authorizes an employer matching contribution to the DC plan of up to 8 percent. Buck's research has found that the average employer contribution to DC plans is approximately 5 percent, which in Cheiron's analysis would equal \$390 million in additional costs. (See **Attachment A.**)
- The Initiative decreases benefit levels. The benefit levels are not competitive with those of retirement systems offered in many other major cities and neighboring cities and towns, counties and other public employers. This could harm employee recruitment and retention, as total compensation, including benefits, would be less than that of similar employers.

- The Initiative contains provisions which affect current COPERS members and therefore will likely be subject to legal challenge. Legal challenges would present significant litigation costs to the City, and if implemented provisions are overturned, the City may have increased liability for repayment plus applicable interest. Likewise, if provisions are not implemented due to legal action, any savings expected from those provisions will not be realized.
- The Initiative places risk on employees and reduces expected retirement benefits. The move to a DC plan creates benefit shortfalls if member contributions and the City's matching contributions are insufficient or if investment returns are poor.

PENSION REFORM PACKAGES

Given City Council authorization to continue to analyze and develop possible changes to the pension system, Buck has worked with City staff to develop packages that could meet the goals outlined above. Either of these packages would require changes to the City Charter, so if such changes are desired by the Council, they would need to be referred to a future election.

Package A: Additional Reforms to COPERS as a Defined Benefit Plan

Under Package A, a new Tier 3 would be created in COPERS and all new hires after the effective date, which is assumed as July 1, 2015, would participate in Tier 3.

Reforms affecting these new employees would:

- Change the final average compensation calculation from an average of the highest three years to an average of the highest five years of service;
- Impose a \$125,000 cap on compensation, indexed to 3 percent, used to determine member contributions and benefits;
- Eliminate the Sick Leave Service Credit; and
- Revise the Cost of Living Adjustments for these employees upon retirement to be self-funded, which would eliminate PEP and the 13th Check. This would allow retiring members to choose an optional form of pension that includes guaranteed annual increases and an actuarially equivalent reduced initial benefit amount.

Also under Package A, some changes would be made affecting current and new COPERS members that are less likely to expose the City to legal liability. These changes would:

- Reduce future interest credits on member contributions to 2 percent; and
- Codify recent spiking reform provisions in the City Charter.

These changes would achieve a total estimated savings of \$146 million over 20 years, as modeled by Segal.

Package B: Additional Reforms to COPERS Creating a Cash Balance Plan

Package B is the creation of a Cash Balance plan that has features of both a defined benefit plan and a defined contribution plan.

- For each year of service, employees would be credited with a percentage of their salary. This model assumes a 10 percent pay credit, and pay credits would be protected from investment losses.

- Annual investment return credits would also be contributed, depending on returns in a given year. Investment return credits would be provided at the rate of return on actuarial assets (assets after the smoothing process) minus 2.5 percent, but not less than 0 percent. For example, if the rate of return on actuarial assets was 5 percent for a year, employees would receive a 2.5 percent interest credit on their balances. Because the plan would credit interest at a lower rate than the rate of earnings used in determining contributions, the total contribution requirement would be lower than the pay-based credits. The plan would also assume an interest credit cap of the investment return assumption plus 2 percent; the current assumption is 7.5 percent, so the maximum interest credit would be 9.5 percent.
- Member contributions would be 8 percent.
- At retirement, participants may choose to receive their balance as a lump-sum or an actuarial-equivalent annuity. Annuity amounts would be based on the mortality table and interest rates used in the COPERS valuation. This would provide a significant benefit over a standard defined contribution plan.

Package B would achieve a total estimated savings of \$64.7 million over 20 years, as modeled by Segal.

Based on the criteria from Buck, these two packages meet all of the desirable outcomes for pension reform, including:

- Additional cost savings, with Package A offering savings of \$146 million over 20 years and Package B offering \$64.7 million over year 20 years;
- Align with best practices nationally in pension reform by reducing long-term costs;
- Support the attraction and retention of employees by reducing costs for employees; however, Package B may reduce benefits and therefore be less attractive to employees;
- Less likely to be subject to costly litigation that will overturn elements that reduce the savings expected under either plan; and
- Improve the funding position of COPERS over the long-term by requiring lower contributions over time.

BACKGROUND INFORMATION

Pension reform has been a topic of discussion at the City of Phoenix since at least January 2011. Two major reforms have been adopted, including the March 2013 Charter changes overwhelmingly passed by voters, and the October 31, 2013 action by the Mayor and City Council to end pension spiking for employees.

In January 2011, the Pension Reform Task Force was appointed by the Mayor and City Council to work with management, outside consultants, and other stakeholders to review and recommend changes to COPERS. Following a thorough review of the plan and actuarial and legal analysis, Task Force recommendations were presented to the City Council on February 14, 2012.

Staff returned to Council with an update and potential options for pension reform on June 19, 2012. At that time, City Council adopted a pension reform timeline and directed staff to conduct an actuarial analysis of three reform models that apply only to new employees. On September 25, 2012, staff presented the models, and City Council directed staff to draft proposed revisions to the City Charter for referral to the March 2013 ballot.

Voters overwhelmingly approved changes to COPERS, which included the following for employees hired after July 1, 2013:

- Change Rule of 80 provision to Rule of 87;
- Change the pension multiplier to a graduated multiplier based on years of service, matching the Arizona State Retirement System (ASRS) schedule;
- Increase time of service requirements and eliminate minimum pensions as recommended by the Pension Reform Task Force;
- Change new employee contribution rate to a 50/50 split of actuarially determined rate;
- Allow new City hires with service on account with ASRS prior to 7/1/2011 to join COPERS under current provisions;
- Option for the City to contribute more than the actuarially required contribution; and
- Allow for a more flexible investment strategy.

The changes were implemented in July 2013, and were projected to save the City \$596 million through 2037.

In addition to the changes approved by voters, the City implemented a “snapshot” of sick leave balance taken on July 1, 2012 for non-sworn employees, so that unused sick leave payouts are not used to calculate pension for employees with fewer than 250 available hours as of July 1, 2012, or new employees hired after that date.

On September 9, 2013, Mayor Greg Stanton created the Pension Fairness and Spiking Elimination Ad Hoc City Council Subcommittee, which was charged to:

- (1) identify each current practice that qualifies as pension “spiking” within COPERS, PSPRS and EORP;
- (2) identify which changes can be made administratively and which ones must occur during contract negotiations, and further identify which reforms may require amending the City Code or Charter; and
- (3) create a timeline for implementing recommended reforms.

On October 31, 2013, the Mayor and City Council approved recommendations made by the Pension Fairness and Spiking Elimination Subcommittee and directed the City Manager to implement the changes, and to negotiate with City labor groups toward that end.

Major elements of the anti-spiking reforms exclude the following items from pension calculations:

- Transportation and communication allowances;
- Lump-sum payouts on unused accrued sick leave upon retirement accrued after the snapshot on July 1, 2013;
- Lump-sum payouts on unused accrued vacation leave upon separation after a similar snapshot;
- Reimbursements to employees for retirement contributions; and
- The Public Safety Enhanced Regular Compensation payments.

These changes were implemented for City middle managers and executive staff effective December 31, 2013, and will be implemented for all employees as of July 2014 based on the recently approved/imposed labor agreements. The impact of the anti-spiking reforms was projected to save the City more than \$233 million through 2038.

PSPRS ISSUES

PSPRS is the pension system for sworn police and fire employees. PSPRS is an agent multiple-employer plan, and provisions are almost entirely under state control.

While the Initiative does not address PSPRS, it is expected to affect the City's public safety personnel. As drafted, the Initiative appears to prohibit the City's participation in PSPRS and to prohibit City payments to the City's current 401a, 457, and PEHP plans.

Buck Consultants also identified challenges the City faces in the PSPRS system, including:

- Funded ratios have fallen from over 100 percent in 2003 to under 60 percent;
- Minimum City contribution rates for FY 2015 are 37.05 percent for Fire staff and 37.62 percent for Police staff; and
- The member contribution rate in FY 2015 is 11.05 percent.

Phoenix's unfunded liability under PSPRS is relatively high compared to most other Arizona cities. In speaking with PSPRS and studying the issue, Buck has identified that pension spiking was likely the primary difference that caused the higher unfunded liability. Pension spiking reform has been addressed by the Mayor and City Council. These actions are expected to save \$64 million in the City's PSPRS payments over 25 years and bring Phoenix's practices in line with other agencies.

Additional actions to reform PSPRS would need to be made at the state level. A proposal for reform at the state level is currently being discussed. Generally speaking, reforms include changes to eligibility, contribution rates, DROP provisions, and COLAs.

RECOMMENDATION

Staff requests Council policy direction on further pension-related research and/or development of pension reform proposals.

Ballot Initiative Analysis
Projected City 20-Year Contribution Cost/(Savings) for Various City DC Contribution Percentages
based on June 30, 2013 Actuarial Valuation

Fiscal Year Ending Projected City DB Contribution Amount based on June 30, 2013 Actuarial Valuation (Dollar Amounts in Thousands)																					
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
2013 Val ER \$	\$114,757	\$127,093	\$135,938	\$147,671	\$157,238	\$160,113	\$162,607	\$165,191	\$167,889	\$170,645	\$173,502	\$176,515	\$179,644	\$182,850	\$186,141	\$189,575	\$193,177	\$197,000	\$201,097	\$205,496	\$3,394,139
Assumed City DC Contribution																					
Cost/(Savings) to City Compared to June 30, 2013 Actuarial Valuation Projections (Dollar Amounts in Thousands)																					
Percentage	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
1%	\$ 0	\$ 0	\$ (2,463)	\$ (1,762)	\$ (611)	\$ (351)	\$ (108)	\$ 189	\$ 551	\$ 982	\$ 1,474	\$ 2,016	\$ 2,614	\$ 3,274	\$ 3,996	\$ 4,769	\$ 5,587	\$ 6,437	\$ 7,308	\$ 8,190	\$ 42,092
2%	0	0	(1,366)	(252)	1,313	1,986	2,645	3,360	4,147	5,015	5,954	6,949	8,010	9,148	10,363	11,640	12,973	14,345	15,740	17,149	129,118
3%	0	0	(269)	1,258	3,238	4,323	5,399	6,531	7,743	9,048	10,434	11,882	13,405	15,021	16,730	18,511	20,359	22,252	24,171	26,107	216,144
4%	0	0	829	2,768	5,162	6,661	8,152	9,702	11,338	13,082	14,914	16,814	18,800	20,895	23,097	25,383	27,745	30,159	32,603	35,066	303,171
5%	0	0	1,926	4,278	7,086	8,998	10,905	12,873	14,934	17,115	19,395	21,747	24,196	26,768	29,464	32,254	35,131	38,067	41,035	44,025	390,197
6%	0	0	3,023	5,788	9,011	11,335	13,659	16,045	18,530	21,148	23,875	26,680	29,591	32,641	35,831	39,126	42,517	45,974	49,467	52,983	477,223
7%	0	0	4,120	7,298	10,935	13,673	16,412	19,216	22,126	25,181	28,355	31,612	34,986	38,515	42,198	45,997	49,903	53,881	57,898	61,942	564,250
8%	0	0	5,217	8,809	12,860	16,010	19,165	22,387	25,722	29,215	32,835	36,545	40,382	44,388	48,565	52,869	57,290	61,789	66,330	70,900	651,276

Analysis assumes no change to definition of compensation or final average compensation for current members of COPERS and that all Tier 2 members elect to join the DC plan effective January 1, 2015. The 20-year cost/(savings) is the sum of projected City contributions for the 20-year period for the DC contribution scenario minus the sum for the baseline projection from the June 30, 2013 actuarial valuation.

Required Disclosures

The purpose of this table is to provide the Board with the information requested following the May 15, 2014 City of Phoenix Employees' Retirement System (COPERS) Board meeting. This information includes estimates of the projected cost impact of the ballot initiative under specified scenarios. This analysis 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 analysis, we relied on information supplied by COPERS. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. Attached is a summary of specific assumptions used for the ballot initiative, and the June 30, 2013 actuarial valuation should be referred to for a description of the data, methods, and assumptions, and plan provisions underlying our analysis.

Future actuarial measurements may differ significantly from the current measurements and projections in this analysis 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 analysis 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 analysis. This analysis does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This analysis was prepared exclusively for the City of Phoenix Employees' Retirement System for the purpose described herein. This analysis 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
 Consulting Actuary



Elizabeth Wiley, FSA, FCA, EA, MAAA
 Associate Actuary

Appendix

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 who elect to participate in the DC plan will also do so effective January 1, 2015
- 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 DC plan are specified for each scenario

CITY COUNCIL REPORT

TO: Ed Zuercher
City Manager

FROM: Rick Naimark
Deputy City Manager

SUBJECT: ADDITIONAL INFORMATION FOR PENSION REFORM UPDATE

Attached is additional information related to Item 4 – Pension Reform Update on the Policy Session agenda for June 10, 2014. This information was not yet available at the time the report was issued yesterday, June 5.

ADDITIONAL INFORMATION

Attachment A is the full report from Segal Consulting which details the expected long-term financial impact, as well as the impact on retirement benefits, related to the two pension reform packages included in the June 5 City Council Report.

Attachment B provides additional information from Buck Consultants on reform efforts in other cities and states, especially as it relates to combined defined benefit and defined contribution systems and cash balance plans.

RECOMMENDATION

This report provides additional information for Item 4 – Pension Reform Update on the Policy session agenda for June 10, 2014.

Attachment A



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June 6, 2014

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

Re: **Actuarial Impact of Possible Changes to COPERS**

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, as well as the impact on retirement benefit amounts, related to two pension reform packages, which are summarized below.

Proposed Changes (for purposes of modeling)

Package A: Additional Reforms to the City of Phoenix Employees’ Retirement Plan (COPERS) as a Defined Benefit Plan

Under Package A, a new Tier 3 would be created in COPERS and all new hires (without prior service with an ASRS employer before July 1, 2011) after the effective date (assumed to be July 1, 2015 for purposes of modeling) would be enrolled. The changes modeled are as follows:

- Eliminate PEP and the 13th Check and create an optional form of pension benefit, which includes guaranteed annual increases based on an actuarially equivalent reduced initial benefit amount;
- Change the final average salary calculation from the highest three years to the highest five years;
- Impose a \$125,000 cap on compensation (indexed at 3%) used to determine member contributions and benefits; and
- Eliminate the Sick Leave Service Credit.

Also, under Package A, future interest credits on member contributions would be reduced to 2% annually, which will impact current and new COPERS members. Recent spiking reform provisions, as approved by the City Council on October 31, 2013, would also be codified in the City Charter.

The impact of the Package A changes are outlined in Exhibits 1-3. Exhibit 1 shows the projected City contribution requirement through the fiscal year ending June 30, 2033, under the baseline scenario as well as with each change described above (the impact of each change is “layered”). Exhibit 2 shows the projected Tier 2/Tier 3 member contribution rate. Exhibit 3 demonstrates the impact of each change on four hypothetical “straw man” employees’ projected retirement benefit amounts.

Package B: Additional Reforms to COPERS Creating a Cash Balance Arrangement

Under Package B, all new hires (without prior service with an ASRS employer before July 1, 2011) after the effective date (assumed to be July 1, 2015 for purposes of modeling) would have benefits calculated under a Cash Balance arrangement. All existing members would have the option of electing the Cash Balance arrangement as well. The Cash Balance arrangement features are as follows:

- Pay credits are equal to 10% per year;
- Interest credits are equal to the return on the Actuarial Value of Assets for the prior year, less 2.5%. However, the interest credit for any year cannot be less than 0%, nor more than the investment return assumption plus 2% (or 9.5%, based on the current investment return assumption of 7.5%); and
- The member contribution rate is 8% of pay.

The impact of the Package B changes are outlined in Exhibits 4 and 5. Exhibit 4 shows the projected City contribution requirement through the fiscal year ending June 30, 2033, under the baseline scenario as well as with the change described above. Exhibit 5 demonstrates the impact of the change on four hypothetical “straw man” employees’ projected retirement benefit amounts.

Actuarial Analysis

Based upon the actuarial assumptions and methods used in the COPERS actuarial valuation, as well as those additional assumptions 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 Package A, is \$146 million. The largest portion of the projected decrease is due to the reduction in future interest crediting on member contributions (\$75 million). This is primarily due to the high rate at which Tier 2/Tier 3 members contribute to COPERS and the resulting value of their accumulated member contributions. The next largest component of savings is due to the self-funded COLA option (\$57 million), followed by the change to final average compensation (\$10.5 million), removal of the sick leave service credit (\$2 million), and implementation of the \$125,000 (indexed) pay cap (\$1.5 million). The total decrease in the Tier 2/Tier 3 member contribution rate gradually increases from 0.02% for fiscal 2016 to 1.49% for fiscal 2033.

The total estimated decrease to the City's projected contribution amounts through fiscal year 2033, as a result of the change contained in Package B, is \$65 million.

Actuarial Assumptions and Methods

The analysis was based upon the census data and financial information used in the June 30, 2013, actuarial valuation prepared by Cheiron. The plan provisions and member contribution amounts valued include changes to the City Charter that were approved by voters with Proposition 201 on March 12, 2013. We matched the June 30, 2013 COPERS actuarial valuation liabilities to within a reasonable range and valued the effect of the plan changes using our model.

Projected City contributions and Tier 2/Tier 3 member contribution rates are based on the current plan provisions and actuarial assumptions as valued in the June 30, 2013, actuarial valuation prepared by Cheiron, with the following exceptions:

- Members hired after June 30, 2013, who have prior service with an ASRS employer before July 1, 2011, enter COPERS as a Tier 1 member;
- For Tier 2 members, lump sum payouts of unused accrued sick leave and vacation are not included in pensionable earnings;
- For Tier 1 members, lump sum payouts of unused accrued sick leave that can be included in pensionable income are limited to the amount as of the sick leave “snapshot” date of July 1, 2012;
- For Tier 1 members, lump sum payouts of unused vacation that can be included in pensionable earnings are limited to the amount of unused accrued vacation as of the vacation leave “snapshot” date (December 31, 2013 for City middle managers, executives and select Mayor and City Council staff and July 1, 2014 for all other general City employees).

Additional Assumptions

In addition to the actuarial assumptions stated in the Cheiron report and used for the June 30, 2013, actuarial valuation, we utilized the following additional assumptions to complete our modeling:

- One in five new hires (20%) in the 12-month period that began July 1, 2013, has prior ASRS service before July 1, 2011. In each subsequent year, this percentage gradually decreases until July 1, 2031, when no new hires are assumed to have prior ASRS service dating back to pre-July 1, 2011.
- Based on a review of available information, we assumed that 8% of the 9% load on retirement benefits related to compensatory time was attributable to lump sum payouts of unused accrued sick leave and vacation. Therefore, we assumed that the load for Tier 2 and Tier 3 members applicable only to the Sick Leave Service Credit is 1% and that the load for Tier 1 members would gradually decline from 9% to 1% by July 1, 2042.
- All Tier 2 members are assumed to elect the Cash Balance arrangement while all Tier 1 members are assumed to remain in their existing contribution/benefit structure.

- For purposes of valuing the interest credit on the Cash Balance arrangement, we assumed an average interest credit of 5% is applied each year.

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.

Respectfully submitted,



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Enrolled Actuary No. 14-06076
kn/ns



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

City of Phoenix Employees' Retirement Plan
ESTIMATED CITY CONTRIBUTIONS (\$ in thousands)
 Package A

Fiscal Year	Baseline	Add Self Funded COLA Option*	(Savings)	Add 5-year Final Average Pay*	(Savings)	Add \$125,000 (Indexed) Earnings Cap*	(Savings)	Add Eliminate Sick Leave Service Credit*	(Savings)	Add Change Crediting Rate From 7.5% to 2%**	(Savings)	Reflecting All Changes	(Savings)
2014	\$114,757	\$114,757	\$0	\$114,757	\$0	\$114,757	\$0	\$114,757	\$0	\$114,757	\$0	\$114,757	\$0
2015	126,816	126,816	0	126,816	0	126,816	0	126,816	0	126,816	0	126,816	0
2016	133,659	133,476	-183	133,468	-8	133,461	-7	133,459	-2	133,412	-47	133,412	-247
2017	145,024	144,549	-475	144,461	-88	144,453	-8	144,431	-22	143,834	-597	143,834	-1,190
2018	154,441	153,520	-921	153,348	-172	153,342	-6	153,298	-44	152,124	-1,174	152,124	-2,317
2019	156,615	155,276	-1,339	155,026	-250	155,020	-6	154,959	-61	153,228	-1,731	153,228	-3,387
2020	158,485	156,758	-1,727	156,437	-321	156,431	-6	156,353	-78	154,118	-2,235	154,118	-4,367
2021	160,611	158,519	-2,092	158,130	-389	158,121	-9	158,028	-93	155,331	-2,697	155,331	-5,280
2022	162,868	160,432	-2,436	159,980	-452	159,969	-11	159,861	-108	156,711	-3,150	156,711	-6,157
2023	165,328	162,560	-2,768	162,048	-512	162,033	-15	161,912	-121	158,315	-3,597	158,315	-7,013
2024	167,972	164,880	-3,092	164,308	-572	164,286	-22	164,153	-133	160,118	-4,035	160,118	-7,854
2025	170,708	167,296	-3,412	166,666	-630	166,632	-34	166,487	-145	162,022	-4,465	162,022	-8,686
2026	173,680	169,962	-3,718	169,277	-685	169,227	-50	169,071	-156	164,168	-4,903	164,168	-9,512
2027	176,647	172,618	-4,029	171,878	-740	171,806	-72	171,641	-165	166,297	-5,344	166,297	-10,350
2028	179,744	175,410	-4,334	174,615	-795	174,517	-98	174,343	-174	168,559	-5,784	168,559	-11,185
2029	183,018	178,385	-4,633	177,537	-848	177,409	-128	177,226	-183	171,002	-6,224	171,002	-12,016
2030	186,357	181,429	-4,928	180,528	-901	180,365	-163	180,174	-191	173,504	-6,670	173,504	-12,853
2031	189,931	184,714	-5,217	183,763	-951	183,557	-206	183,359	-198	176,245	-7,114	176,245	-13,686
2032	193,537	188,033	-5,504	187,031	-1,002	186,770	-261	186,566	-204	179,005	-7,561	179,005	-14,532
2033	197,443	191,658	-5,785	190,608	-1,050	190,290	-318	190,079	-211	182,076	-8,003	182,076	-15,367
Total	\$3,297,641	\$3,241,048	-\$56,593	\$3,230,682	-\$10,366	\$3,229,262	-\$1,420	\$3,226,973	-\$2,289	\$3,151,642	-\$75,331	\$3,151,642	-\$145,999

* Tier 3 only

** All COPERS members

City of Phoenix Employees' Retirement Plan
ESTIMATED TIER 2/TIER 3 MEMBER CONTRIBUTION RATE
 Package A

Fiscal Year	Baseline	Add Self Funded COLA Option	(Decrease)/ Increase	Add 5-year Final Average Pay	(Decrease)/ Increase	Add \$125,000 (Indexed) Earnings Cap	(Decrease)/ Increase	Add Eliminate Sick Leave Service Credit	(Decrease)/ Increase	Add Change Crediting Rate From 7.5% to 2%	(Decrease)/ Increase	Reflecting All Changes	(Decrease)/ Increase
2014	13.62%	13.62%	0.00%	13.62%	0.00%	13.62%	0.00%	13.62%	0.00%	13.62%	0.00%	13.62%	0.00%
2015	14.80%	14.80%	0.00%	14.80%	0.00%	14.80%	0.00%	14.80%	0.00%	14.80%	0.00%	14.80%	0.00%
2016	14.70%	14.68%	-0.02%	14.68%	0.00%	14.68%	0.00%	14.68%	0.00%	14.67%	0.00%	14.67%	-0.02%
2017	15.63%	15.58%	-0.04%	15.57%	-0.01%	15.58%	0.01%	15.58%	0.00%	15.52%	-0.05%	15.52%	-0.10%
2018	16.35%	16.27%	-0.08%	16.25%	-0.02%	16.27%	0.02%	16.26%	0.00%	16.16%	-0.11%	16.16%	-0.20%
2019	16.41%	16.29%	-0.12%	16.27%	-0.02%	16.29%	0.02%	16.29%	-0.01%	16.13%	-0.16%	16.13%	-0.28%
2020	16.43%	16.27%	-0.16%	16.24%	-0.03%	16.27%	0.03%	16.27%	-0.01%	16.06%	-0.20%	16.06%	-0.36%
2021	16.44%	16.26%	-0.19%	16.22%	-0.03%	16.26%	0.04%	16.25%	-0.01%	16.01%	-0.24%	16.01%	-0.43%
2022	16.46%	16.25%	-0.22%	16.20%	-0.04%	16.26%	0.05%	16.25%	-0.01%	15.96%	-0.28%	15.96%	-0.50%
2023	16.49%	16.24%	-0.25%	16.20%	-0.05%	16.26%	0.06%	16.25%	-0.01%	15.93%	-0.32%	15.93%	-0.56%
2024	16.52%	16.25%	-0.27%	16.20%	-0.05%	16.27%	0.07%	16.25%	-0.01%	15.90%	-0.36%	15.90%	-0.62%
2025	16.55%	16.25%	-0.30%	16.20%	-0.05%	16.28%	0.08%	16.27%	-0.01%	15.87%	-0.39%	15.87%	-0.68%
2026	16.59%	16.26%	-0.32%	16.21%	-0.06%	16.30%	0.09%	16.28%	-0.01%	15.86%	-0.43%	15.86%	-0.73%
2027	16.63%	16.28%	-0.35%	16.22%	-0.06%	16.32%	0.10%	16.31%	-0.01%	15.85%	-0.46%	15.85%	-0.78%
2028	16.67%	16.30%	-0.37%	16.24%	-0.07%	16.35%	0.11%	16.33%	-0.01%	15.84%	-0.50%	15.84%	-0.83%
2029	16.72%	16.33%	-0.39%	16.26%	-0.07%	16.38%	0.12%	16.36%	-0.02%	15.83%	-0.53%	15.83%	-0.88%
2030	16.77%	16.35%	-0.41%	16.28%	-0.08%	16.41%	0.13%	16.40%	-0.02%	15.83%	-0.56%	15.83%	-0.93%
2031	16.82%	16.38%	-0.43%	16.31%	-0.08%	16.45%	0.15%	16.43%	-0.02%	15.84%	-0.59%	15.84%	-0.98%
2032	16.87%	16.42%	-0.45%	16.33%	-0.08%	16.49%	0.16%	16.47%	-0.02%	15.85%	-0.63%	15.85%	-1.02%
2033	16.92%	16.45%	-0.47%	16.36%	-0.09%	16.53%	0.17%	16.51%	-0.02%	15.86%	-0.66%	15.86%	-1.06%

City of Phoenix Employees' Retirement Plan
STRAW MAN EMPLOYEE ANALYSIS
 Alternative A (Tier 3 of COPERS)

	Hire Age	Current Annual Compensation	Retirement Age	Total Service	Projected Monthly Benefit Amount					
					Before Changes	Add Self Funded COLA Option	Add 5-year Final Average Pay	Add \$125,000 (Indexed) Earnings Cap	Add Eliminate Sick Leave Service Credit	Reflecting All Changes
Current Employees										
Sample 1:	25	\$35,000	56	31	\$10,097	\$8,811	\$8,453	\$8,453	\$8,370	\$8,370
						-\$1,287	-\$357	\$0	-\$84	-\$1,728
						-12.7%	-4.1%	0.0%	-1.0%	-17.1%
Sample 2:	30	\$75,000	59	29	\$15,968	\$14,045	\$13,512	\$12,743	\$12,617	\$12,617
						-\$1,923	-\$533	-\$769	-\$126	-\$3,351
						-12.0%	-3.8%	-5.7%	-1.0%	-21.0%
Sample 3:	35	\$40,000	60	25	\$5,546	\$4,892	\$4,710	\$4,710	\$4,664	\$4,664
						-\$655	-\$181	\$0	-\$47	-\$882
						-11.8%	-3.7%	0.0%	-1.0%	-15.9%
Sample 4:	45	\$45,000	60	15	\$2,112	\$1,863	\$1,794	\$1,794	\$1,776	\$1,776
						-\$249	-\$69	\$0	-\$18	-\$336
						-11.8%	-3.7%	0.0%	-1.0%	-15.9%

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.
- The \$125,000 Earnings Cap is indexed at 3% per year.

Legend:

Projected Monthly Benefit Amount:	\$8,811
Decrease in Projected Monthly Benefit:	-\$1,287
Percentage Decrease in Projected Monthly Benefit:	-12.7%

City of Phoenix Employees' Retirement Plan
ESTIMATED CITY CONTRIBUTIONS (\$ in thousands)
 Package B

Fiscal Year	Baseline	Cash Balance Option: Pay Credit = 10% Interest Credit = 5% (avg.) Member Rate = 8%	(Savings)
2014	\$114,757	\$114,757	\$0
2015	126,816	126,816	0
2016	133,659	132,970	-689
2017	145,024	144,289	-735
2018	154,441	153,688	-753
2019	156,615	155,375	-1,240
2020	158,485	156,712	-1,773
2021	160,611	158,321	-2,290
2022	162,868	160,091	-2,777
2023	165,328	162,091	-3,237
2024	167,972	164,296	-3,676
2025	170,708	166,615	-4,093
2026	173,680	169,202	-4,478
2027	176,647	171,831	-4,816
2028	179,744	174,610	-5,134
2029	183,018	177,603	-5,415
2030	186,357	180,712	-5,645
2031	189,931	184,085	-5,846
2032	193,537	187,550	-5,987
2033	197,443	191,336	-6,107
Total	\$3,297,641	\$3,232,950	-\$64,691

**City of Phoenix Employees' Retirement Plan
STRAW MAN EMPLOYEE ANALYSIS**

Alternative B (Cash Balance Arrangement: 10% Pay Credit Schedule, AVA Return Less 2.5% Interest Credit*, 8% Member Contribution)

	Hire Age	Current Annual Compensation	Retirement Age	Total Service	Projected Monthly Benefit Amount			
					Before Changes	Proposed Cash Balance Arrangement	Annuitized Value of Accumulated Member Contribution Savings	Total Cash Balance and Value of Member Contribution Savings
Current Employees								
Sample 1:	25	\$35,000	56	31	\$10,097	\$3,552	\$2,086	\$5,639
								-\$4,459
								-44.2%
Sample 2:	30	\$75,000	59	29	\$15,968	\$6,462	\$4,104	\$10,566
								-\$5,403
								-33.8%
Sample 3:	35	\$40,000	60	25	\$5,546	\$2,390	\$1,681	\$4,070
								-\$1,476
								-26.6%
Sample 4:	45	\$45,000	60	15	\$2,112	\$934	\$613	\$1,547
								-\$565
								-26.8%

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.

Interest credits are assumed to equal 5% each year.

For comparison purposes, the lower member contributions under this arrangement compared to the baseline COPERS Tier 2 projected member rates are accumulated to retirement assuming annual investment return of 6.5%. The accumulated balance at retirement is converted to a life annuity with a 1.5% COLA at assumptions intended to approximate equivalent insurance company annuity purchase rates.

* Subject to a minimum of 0% and a maximum of the investment return assumption, plus 2% (or 9.5% based on the current 7.5% assumption)

Pension Reform Package B – *Examples of other states' DB/DC combinations*

	Utah Retirement System	Michigan Public School Employees Retirement System
Coverage	Employees (other than Judges) hired after June 30, 2011, who would otherwise have been covered by the prior benefit structures of the System.	Eligible employees hired after June 30, 2010, who would otherwise have been covered by the prior benefit structures of the System
DB benefit	1.5% of highest five-year average compensation per year of service.	1.5% of final five-year average compensation per year of service.
DC benefit	Accumulation of the excesses of the 10% or 12% (depending on occupational category) state contribution over the contributions required to fund the defined benefit plan.	Employee contributions of 2% of pay
Employer contribution	10% or 12% of pay per year, depending on occupational category.	DB - actuarial funding requirement in excess of what is covered by employee contributions. DC - 50% match on member contributions.
Member contribution	To the extent the state contributions do not cover the actuarially determined contribution requirements of the defined benefit plan, members contribute to make up the difference.	DC - 2% of pay DB - 9.4% of pay

Pension Reform Package B – *Examples of other states' DB/DC combinations (cont'd)*

	Indiana Public Employees Retirement Fund	Oregon Public Employees Retirement System
Coverage	All full-time employees of the State of Indiana (other than state troopers, judges, and others covered by occupation-specific plans) and of political subdivisions that have adopted the plan.	All employees of participating political subdivisions of the State of Oregon (other than judges) hired after August 28, 2003.
DB benefit	1.1% of highest five-year average compensation per year of service.	1.5% of highest three-year average compensation per year of service except for police and fire employees, for whom the percentage is 1.8%.
DC benefit	Contributions of 3% of pay are made (by the employee, except where employers have opted to make them) to a defined contribution plan.	Contributions of 6% of pay are made (by the employee, except where employers have opted to make them) to a defined contribution plan. The state controls investment of these funds.
Employer contribution	Actuarial funding requirements for the defined-benefit component are entirely state-paid.	Actuarial funding requirements for the defined-benefit component are entirely state-paid.
Member contribution	3% of pay per year (except where employers have opted to pay this on employees' behalf), which is contributed to the defined-contribution component.	6% of pay per year (except where employers have opted to pay this on employees' behalf), which is contributed to the defined-contribution component.

Pension Reform Package B – *Examples of other states' cash balance plans*

	Nebraska State Employees Retirement System	Kansas PERS
Coverage	All full-time employees of the State of Nebraska (other than judges and others covered by occupation-specific plans) hired on or after January 1, 2003.	All state employees other than Corrections employees hired on or after January 1, 2015.
DB benefit	Amounts contributed by members and the state are credited to participant accounts to which annual interest credits are granted. The annual rate of interest credit is re-determined quarterly and is equal to the federal mid-term rate plus 1.5% but will not be less than 5%. Benefit improvements are made in the form of dividends, which are considered annually on the basis of the actuarial valuation.	Amounts contributed by members and the state are credited to participant accounts to which annual interest credits are added. The annual rate of interest credit will not be less than 5.25% and may exceed this rate by up to 4%, depending on investment performance and the funded status of the system.
DC benefit	N/A	N/A
Employer contribution	156% of the amount contributed by employees	Annual percentage of pay based on service: 1-4 years: 3% 5-11 years: 4% 12-23 years: 5% 24 or more years: 6%
Member contribution	4.8% of pay	6.0% of pay