TOWN OF SAHUARITA
ARIZONA PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM (PSPRS)
SAHUARITA LOCAL POLICE BOARD
November 2, 2016

Pursuant to A.R.S. § 38-431.02 notice is hereby given to the public that the Arizona Public Safety Personnel Retirement System (PSPRS) Sahuarita Local Police Board will hold a meeting and executive session at the date and time specified below at the Sahuarita Town Hall, Executive Conference Room on the second floor, 375 West Sahuarita Center Way, Sahuarita, Arizona.

To better serve our community, the conference room is wheelchair accessible. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting the Town Clerk's Office at 520-822-8801.

MEETING AGENDA
AT OR AFTER 4:00 P.M.

1. **Call to Order**

2. **Roll Call**

3. **Consent Agenda:**

   A. **Minutes for Approval – September 29, 2016**

EXECUTIVE SESSION

4. **Executive Session pursuant to A.R.S. § 38-431.03(A)(2) and (A)(3) to discuss records exempt by law from public inspection and for legal advice regarding the Catastrophic Disability Retirement Application submitted by Officer Michelle Johnson-Ochoa – continued from the meeting of September 29, 2016.**

CONTINUATION OF MEETING

5. **Consideration and possible action regarding the Catastrophic Disability Retirement Application submitted by Officer Michelle Johnson-Ochoa – continued from the meeting of September 29, 2016.**

6. **Discussion and possible action regarding the State of Arizona Public Safety Personnel Retirement System Report on Risk Pooling & Local Board Consolidation (draft) prepared by Cortex Applied Research, Inc.**

7. **Future Agenda Items**

8. **Adjournment**

Action may be taken by the Board on any item listed on this agenda. The Board may vote to go into executive session pursuant to A.R.S. § 38-431.03 (A) (3) for discussion or consultation for legal advice with the Local Board Attorney concerning any matter listed on this agenda.

TOWN OF SAHUARITA
ARIZONA PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM (PSPRS)
SAHUARITA LOCAL POLICE BOARD
MEETING MINUTES
September 29, 2016

The Public Safety Personnel Retirement System (PSPRS) Sahuarita Local Board met in the Town Hall Executive Conference Room on the second floor, 375 West Sahuarita Center Way, Sahuarita, Arizona on Thursday, September 29, 2016.

1. Call to Order

Chairman Blumberg called the meeting to order at approximately 4:00 p.m.

2. Roll Call

PRESENT: Board Members, Scott Downs, Alexander Droban Matt McGlone, Clark Munger, and Chairman Duane Blumberg

ABSENT:

ALSO PRESENT: Local Board Attorney Thomas Benavidez and Board Secretary Lisa Cole

Additional Attendees: Michelle Malott, Sahuarita Human Resources Director, Michelle Johnson-Ochoa, Applicant, and Shelly Johnson-Ochoa, Spouse of Applicant

3. Consent Agenda:

A. Minutes for Approval – September 1, 2016

B. Transfer of Redemption of Prior Service

Name	Transfer Type	Service Years	Amount
Aaron Medina	New Employment	9.8440	$25,023.36
Rosalie Petty	New Employment	7.7510	$19,724.02

MOTION was made by Board Member Downs, seconded by Board Member Munger to approve the consent agenda. **MOTION CARRIED UNANIMOUSLY.**

Michelle Johnson-Ochoa, applicant, requested the board grant a continuance of the review of her Catastrophic Disability Retirement Application and independent medical examination report in order for her to thoroughly review the report from the medical board to cite inaccuracies.

EXECUTIVE SESSION

4. Executive Session pursuant to A.R.S. § 38-431.03(A)(2) and (A)(3) to discuss records exempt by law from public inspection and for legal advice regarding the Catastrophic Disability Retirement Application submitted by Officer Michelle Johnson-Ochoa.

Chairman Blumberg declared the board convened for Executive Session at 4:08 p.m. to consult with the local board attorney for legal advice and reconvened the regular meeting at 4:38 p.m.

CONTINUATION OF MEETING

5. **Consideration and possible action regarding the Catastrophic Disability Retirement Application submitted by Officer Michelle Johnson-Ochoa.**

   MOTION was made by Board Member Droban, seconded by Board Member McGlone to grant a continuance of 30 days for Michelle Johnson-Ochoa to review the independent medical examination report and respond to the board on how she plans to proceed. **MOTION CARRIED UNANIMOUSLY.**

6. **Consideration and possible action regarding the Application for Deferred Retirement Option Plan (DROP) for Officer Wesley Genzer, Jr.**

   Lisa Cole, Board Secretary, provided a brief overview of the DROP program, program participation requirements, and a summary of the application of Officer Wesley Genzer, Jr.

   MOTION was made by Board Member McGlone, seconded by Board Member Munger to approve the DROP application of Officer Wesley Genzer, Jr. **MOTION CARRIED UNANIMOUSLY**.

7. **Annual review of Accidental Disability Retirement recipients.**

   Lisa Cole, Local Board Secretary, presented a list of retirement recipients receiving accidental disability benefits. Thomas Benavidez, Local Board Attorney, explained that the board has the option to require disability recipients to submit to an annual independent medical examination if warranted.

   No action was taken.

8. **Overview of election process for employee representative to the PSPRS local board.**

   Lisa Cole, Local Board Secretary, announced that the term of Board Member McGlone would expire on December 31, 2016 and that an election by secret ballot from amongst the local membership to fill the board member seat for a term of four years would be conducted in the near future.

9. **Discussion and acceptance of the PSPRS Sahuarita Actuarial Valuation as of June 30, 2015 (continued from the meeting of September 1, 2016).**

   Chairman Blumberg provided the board with additional information regarding PSPRS membership benefits, actuarial valuations and PSPRS fund returns. He stated that the Arizona Constitution protected the benefits of members in a public retirement system and that public retirement system benefits could not be diminished or impaired. Additionally he shared that the actual return rates of the PSPRS fund for fiscal year 2015 was 3.6% and 1.06 % for fiscal year 2016. He further explained that the assumed earnings rate used in the actuarial valuations was based on a 7 year average and that the purpose of this item was to acknowledge receipt of the actuarial valuation report.

Board Member Munger voiced his concerns regarding the unfunded liabilities of the system and who pays if the system is actuarially unsound. He further stated his apprehensions of approving or accepting an actuarial valuation report for a system that was not sustainable. Chairman Blumberg stated he would meet with PSPRS to voice the board's concerns and suggested that the board compose a letter to the PSPRS board to address the fiscal soundness of the PSPRS system.

MOTION was made by Board Member Droban, seconded by Board Member Downs to accept the June 30, 2015 PSPRS Sahuarita Actuarial Valuation. **MOTION CARRIED 4 -1**, Board Member Munger voted no.

10. Future Agenda Items

Board Member Downs requested a follow up report from Chairman Blumberg on his visit with PSPRS regarding the fiscal sustainability of the PSPRS system.

11. Adjournment

Chairman Blumberg adjourned the meeting at approximately 5:01 p.m.

____
Duane Blumberg
Chairman

ATTEST:

____
Lisa Cole, MMC
Secretary to the Board

CERTIFICATION

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Meeting of the Public Safety Personnel Retirement System Local Board of the Town of Sahuarita held on the 29th day of September, 2016. I further certify that the meeting was duly called and held and that a quorum was present.

Dated this _________day of ______________, 20________.

STATE OF ARIZONA PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM

REPORT ON RISK POOLING & LOCAL BOARD CONSOLIDATION

PREPARED BY

CORTEX APPLIED RESEARCH INC.

DRAFT AT OCTOBER 17, 2016

Table of Contents

State of Arizona Public Safety Personnel Retirement System
Report on Risk Pooling & Local Board Consolidation

EXECUTIVE SUMMARY

To be included in final report after receipt of stakeholder feedback on this draft report.

STUDY OBJECTIVES

Senate Bill 1428 enacted numerous important reforms for PSPRS including changes to the governance of the System and the creation of a new benefit tier (Tier 3). Two issues that were not addressed by the Bill include a) the extent and the basis of liability risk pooling to be established for Tier 3, and b) the extent, if any, to which the local boards (Local Boards) of the System should be consolidated.

Senate Bill 1428 imposed a requirement on the PSPRS Board to study the above two issues and report its recommendations to the Legislature on or before February 15, 2017. The relevant provisions of the Bill are reproduced below:

1. Within fifteen days after the effective date of the act, the public safety personnel retirement system shall commence a study to determine various methods in which risk pooling may be structured and Local Board consolidation and structure may be accomplished and to determine which methods, if any, are in the best interests of the public safety personnel retirement system's fund, members, beneficiaries and employers.

2. The study shall be presented to the board of trustees of the public safety personnel retirement system on or before January 15, 2017. The board shall consider the study and report its recommendations for legislation to the president of the senate, the speaker of the house of representatives and the governor on or before February 15, 2017.

The PSPRS Board retained Cortex Applied Research (Cortex) in June 2016 to undertake the above study and present its findings and recommendations to the PSPRS Board within the timeframes specified in the Bill. In interpreting the above legislative mandate, Cortex made the following assumptions about the scope of the review.

1. Investment risk is to be excluded from the risk pooling analysis because the assets of the System are already co-mingled for investment purposes for Tiers 1 and 2, and will continue to be co-mingled for Tier 3. Cortex believes such co-mingling is appropriate and we found no perceived need on the part of stakeholders to change this approach to managing investment risk.

2. The study of liability risk pooling is to be limited to Tier 3 only. While Cortex may comment on risk pooling for Tiers 1 and 2, Cortex will not be providing specific recommendations in that regard.

3. Options for Local Board consolidation are to be considered in relation to all three tiers. That is, if Local Boards are to be consolidated in some manner, the resulting board(s) should be responsible for administering all three tiers and not just Tier 3.

STUDY METHODOLOGY

See Appendix A for an overview of the basic process Cortex followed in completing the study.

BACKGROUND - PSPRS

The PSPRS was established in 1968 to administer retirement benefits to public safety personnel who are regularly assigned hazardous duty in the employment of the state of Arizona or a political subdivision thereof. Such personnel include firefighters, police officers, and highway patrol officers, as well as their beneficiaries. As at 30 June 2015, PSPRS served 18,409 active members and 14,632 retired members, beneficiaries, and terminated vested members.

PSPRS is an agent multiple-employer defined benefit pension plan, which means that the assets and liabilities of each employer (Employer or Local Employer) in the Plan are accounted for separately, thereby allowing for unique funding levels and contribution rates for each Employer. The assets of the participating employers are co-mingled for investment purposes but separate accounts are maintained for each individual employer. As a result, each participating Employer's share of the pooled assets is legally available to pay the defined benefit pensions of only its members.

Historically, the administration of PSPRS has been carried out by the Board of PSPRS (the PSPRS Board) as well as by 233 Local Boards.

The PSPRS Board currently consists of seven members who serve five-year terms and are appointed by the Governor. The PSPRS Board is comprised of the following:

- Two elected members from a Local Board to represent the employees;
- One member appointed to represent this state as an employer of public safety personnel;
- One member appointed to represent the cities as employers of public safety;

- One member appointed to represent elected officials (county or state official, judge of the superior court, court of appeals, or supreme court); and

- Two members of the public.

Each Local Board consists of five members as follows:

- A chairperson;

- Two appointed persons;

- Two PSPRS plan members who are elected by secret ballot election by all contributing members for that Employer group; and

- The chairperson and two appointed members sit on both Local Boards (fire and police), if applicable.

Historically, the allocation of responsibilities between the PSPRS Board and the Local Boards has been as follows:

- Local Boards are responsible for determining eligibility for membership, as well as normal retirement benefits based on years of service, the annual benefit accrual rate, and final compensation. They also determine eligibility for disability benefits, survivorship benefits for spouses and children, post-retirement adjustments, and health insurance premium subsidies.

- The PSPRS Board, through the administrative offices of PSPRS, is responsible for receiving, accounting for, and investing the contributions from the Local Boards, and for distributing the benefits for each Local Board. The PSPRS Board, however, is not responsible for reviewing, nor does it have the duty to review, the actions or omissions of the individual Local Boards, but it does have the discretion to seek review or rehearing to protect the qualified status of the System as a whole and to ensure consistent application of the statutes governing the System.

Until recently, the System offered two different benefit tiers, referred to as Tier 1 and Tier 2. Members hired before January 1, 2012 were placed in Tier 1, while members hired on or after January 1, 2012 were placed in Tier 2. Senate Bill 1428, which came into effect in February 2016, introduced significant changes to the benefit structure and governance of PSPRS. These changes are summarized below.

Changes in Benefit Structure

Commencing July 2017, all new members of PSPRS will participate in a revised benefit structure, referred to as Tier 3. Compared to the prior benefit tiers, Tier 3 benefits are designed to support more stable contribution rates and be more sustainable over the long term. Key features of Tier 3 benefits are summarized below.

1. Whereas the benefits available under Tiers 1 and 2 were of a defined benefit nature, members of Tier 3 will be offered the choice of joining a defined benefit plan with similar benefits to Tier 2, or a defined contribution plan. For members who take the defined benefit option and do not contribute to social security, it will be a hybrid structure whereby the member will have both defined contribution and defined benefit components.

2. Employee contributions for Tier 3 members are 50% of the total cost of the plan including payments made for any unfunded liabilities. Accordingly, members of Tier 3 will have a more direct interest in the funding and management of Tier 3, as they will share in the responsibility for paying any increased contributions necessary to fund Tier 3 benefits.

3. The maximum earnings under Tier 3 are now set at $110,000. The amount will be adjusted every 3 years based on a custom index. Under Tiers 1 and 2, maximum earnings are prescribed by the Internal Revenue Code, currently $265,000.

4. The Permanent Benefit Increases (PBI) previously available under Tiers 1 and 2 to enhance benefits to retirees has been replaced by a cost of living adjustment formula (COLA). For Tier 3, the amount of the COLA will depend on the funded ratio of the Tier 3 plan and will have a maximum increase of 2% based on the change in the Phoenix–Mesa Consumer Price Index. In determining the annual contributions to fund Tier 3, the actuarial liabilities will assume that the allowable COLA will be granted.

5. Future benefit improvements under Tier 3 can only be made if the cost of the improvement, calculated on a conservative actuarial basis, is less than any surplus available.

6. Disability and death benefit provisions under Tier 3 remain the same as under Tiers 1 and 2.

Table 1 below provides a summary of the benefits available under Tier 1 and Tier 2, as well as the new benefits to be available under Tier 3.

PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM
SB1428 Pension Reform Matrix of Changes

	Tier 1	Tier 2	Tier 3
Hire Date	Before January 1, 2012	On or after January 1, 2012	On or after July 1, 2017
Plan Type	Defined Benefit	Defined Benefit w/ Hybrid (for non-Social Security only; may opt out by 06/30/17)	Defined Contribution only or Defined Benefit w/ Hybrid (for non-Social Security only)
Determination	Automatic		Irrevocable choice (90 days; default to Hybrid)
Employee Contribution Rate	11.65% (includes 4% maintenance of effort)	**DB**: 11.65% (includes MOE) **Hybrid**: DB + 3%	**DB**: 50/50 split with ER **DC**: 9% + Disability **Hybrid**: DB + 3%
Employer Contribution Rate	Based on individual actuarial valuation	**DB**: Individual Valuation **Hybrid**: DB + 4% for short period of time; then 3%	**DB**: 50/50 split with ER **DC**: 9% + Disability **Hybrid**: DB + 3%
Salary Cap	As set by Internal Revenue Code		$110,000 adjusted by custom index
Inter-System Transfers	Total liability is transferred to new Employer with assets transferred at market funding level.		Total liability stays with previous Employer.
Termination Refund	Contributions plus match	Contributions + 3% interest	
Average Salary	High 3 in past 20 years	High 5 in past 20 years	High 5 in past 15 years
Normal Retirement (age and service)	20 years of service; no age 15 years of service; age 62	25 years of service; age 52.5 (not mutually attained)	15 years of cred service; age 55 (not mutually attained; actuarially reduced at 52.5)
Disability and Survivor Benefits	All 4 types of disability (Accidental, Catastrophic, Ordinary and Temporary) and survivor benefits are available to each tier where the determination, process and benefit amount will be the same as they are now. However, those who choose the DC only option will contribute to a separate disability fund where an actuarially determined equivalent amount will paid in conjunction with their DC fund. No survivor benefits are available for DC only participants.		
Multipliers (80% max)	50% plus 2.0% for years >20 and <25 2.5% for years >25 (reduced by 4% for <20 yrs)	62.5% plus 2.5% for years >25 (reduced by 4% for <25 yrs)	15 to <17 years: 1.50% 17 to <19 years: 1.75% 19 to <22 years: 2.00% 22 to <25 years: 2.25% 25+ years: 2.50%
Deferred Annuity	At least 10 years (double contributions)	Not Available	

<table>
<tr><th></th><th colspan="2">Tier 1</th><th>Tier 2</th><th>Tier 3</th></tr>
<tr><td>Hire Date</td><td colspan="2">Before January 1, 2012</td><td>On or after January 1, 2012</td><td>On or after July 1, 2017</td></tr>
<tr><td>Plan Type</td><td colspan="2">Defined Benefit</td><td>Defined Benefit w/ Hybrid (for non-Social Security only; may opt out by 06/30/17)</td><td>Defined Contribution only or Defined Benefit w/ Hybrid (for non-Social Security only)</td></tr>
<tr><td>Determination</td><td colspan="3">Automatic</td><td>Irrevocable choice
(90 days; default to Hybrid)</td></tr>
<tr><td>Benefit Increases
CPI-based COLA utilizing metro Phoenix-Mesa data published by Bureau of Labor Statistics</td><td colspan="3">Up to 2%
No funding requirement
No waiting period</td><td>Payable after 7 years or age 60
70% to <80% funded: 1.0% cap
80% to <90% funded: 1.5% cap
90% or more funded: 2.0% cap</td></tr>
<tr><td>Smoothing Period</td><td colspan="3">Determined by Board (currently 7 years)</td><td>Not more than 5 years</td></tr>
<tr><td>Amortization Period</td><td colspan="3">Closed period of not more than 20 years</td><td>Not more than 10 years</td></tr>
<tr><td>Amortized Rate</td><td colspan="3">Applied to Tier 1, 2, 3 and DC payroll</td><td>Only Tier 3</td></tr>
<tr><th colspan="5">Deferred Retirement Option Program (DROP)</th></tr>
<tr><td>Attainment of 20 years</td><td>On or before</td><td>After</td><td colspan="2">Not Available</td></tr>
<tr><td>Contributory</td><td>No</td><td>Yes</td><td colspan="2" rowspan="2">Not Applicable</td></tr>
<tr><td>Interest Rate</td><td>Assumed</td><td>Smoothed</td></tr>
</table>

Changes to the Governance of PSPRS

Effective January 2017, the process for appointing individuals to the PSPRS Board and the minimum qualifications of PSPRS Board Members will change, as noted below.

- The number of members on the PSPRS Board will increase from seven to nine and the basis for nominations and appointments to the PSPRS Board will change. The requirements for the members of the PSPRS Board who are not members of the System are that "they shall be independent qualified professionals who are responsible for the performance of fiduciary duties and other responsibilities required to preserve and protect the fund, and shall have at least ten years of substantial experience in an area" listed in the statute.

- In addition, Senate Bill 1428 creates an Advisory Committee of 10 members. The Advisory Committee will serve as a liaison between the PSPRS Board and the members and Employers. Any recommendations from this Committee to the PSPRS Board are only advisory in nature.

BACKGROUND – LIABILITY RISKS & POOLING

Liability risk pooling is the process of combining liabilities across Local Employers to produce large risk sharing pools, with the goal of reducing or eliminating large fluctuations in an Employer's or employees' contribution rate caused by unexpected events such as the following:

1. Demographic events or risks including those relating to:
   (a) Death in retirement (longevity);
   (b) Death before retirement;
   (c) Disabilities;
   (d) Terminations;
   (e) Average age at entry; and
   (f) Average age at retirement.

2. Economic events/risk including those relating to:
   (a) Salary levels.

Some of the above are not predictable and cannot be influenced by the human resource management policies or decisions of individual Local Employers. These include death in retirement, death before retirement, disabilities, and terminations. Throughout this report, we refer to such risks as "Non-Predictable Risks."

Some risks or events, however, can be influenced by human resource management decisions or policies of Local Employers. Throughout this report, we refer to these types of risks or events as "Management Risks." Examples include:

- *Average Age at Entry*: Consciously seeking to hire new employees who are older than what was assumed will likely have a negative impact on required contributions.
- *Average Age at Retirement*: Offering programs or incentives to encourage employees to retire at a younger age than what the actuaries assumed will also have an impact on required contributions.
- *Salary Levels*: Establishing policies or practices that result in employees receiving significant salary increases immediately prior to retirement (often referred to as salary spiking) may result in final average salaries that are higher than what was assumed and will have a negative impact on pension costs.
- *Inconsistent Contribution Practices:* Establishing inconsistent policies or practices regarding how and when contributions are to be collected on earnings from third-party contract work.

When considering risk pooling for Tier 3, one must determine which, if any, of the above risks should be pooled, and which should not; and, furthermore, whether pooling should include Non-Predictable Risks, Management Risks, or both.

EVALUATION CRITERIA

Cortex used the following criteria in evaluating the various options for dealing with risk pooling in Tier 3:

1. Promotes stability of contributions for Employers and employees;
2. Supports workforce mobility;
3. Promotes accountability in pension management (i.e. Employers are fully accountable for their pension/HR management decisions and cannot shift pension costs to other Employers or otherwise game the pension system);
4. Long-term benefit costs; and
5. Ease and cost-effectiveness of administration.

As will be discussed further in our report, risk pooling requires a trade-off among the above criteria:

- Maximum risk pooling is likely to support stable contributions, increased workforce mobility, and ease of benefit administration; but may increase the likelihood that Employers will make management decisions that increase benefit costs and shift those costs onto other Employers in the System.

- Similarly, minimal or no risk pooling imposes maximum accountability on individual Local Employers for the costs of their human resource management decisions, but likely leads to higher contribution volatility and reduced workforce mobility.

Determining the optimal trade-offs to be made with respect to the above issues was the fundamental challenge of the study and is the focus of Part I of this report.

PART I: REVIEW OF LIABILITY RISK POOLING

Key Observations

Before turning to our analysis of liability risk pooling, it is important to note a number of important observations regarding the design of Tier 3. These observations significantly influenced our analysis of risk pooling options:

Observation 1 - Some Causes of Prior Funding Deficits Were Eliminated in Tier 3

Tiers 1 and 2 contained several features that negatively impacted their funded status. These features, however, were not incorporated into Tier 3 and will therefore not pose problems for the new Tier.

1. *The Permanent Benefit Increase (PBI)*

   For Tiers 1 and 2, in years where the investment return exceeded 9%, 50% of any excess return above 9% was allocated to the PBI reserve. Annual increases were then given to retires and beneficiaries, provided there was sufficient money in the PBI reserve account to fund them. This process of giving PBI increases had two main effects on Tiers 1 and 2:

   (a) It negatively impacted the funded status of the PSPRS because the PSPRS received only 50% of any excess returns, which would reduce prior unfunded liabilities, but had to bear 100% of any deficits that arose; and

   (b) It negatively impacted Local Employers with retired members who were receiving smaller than average pensions. This was due to the fact the PBI increase granted to an Employer's retirees was calculated based on the average pension across all Local Employers rather than the actual average pension of a particular Employer's retirees. Thus, the PBI that was paid by Local Employers with below average pensions was disproportionately higher. Conversely, Employers who had retirees with pensions greater than the average gained through this allocation approach.

   Tier 3 does not contain a PBI provision and is therefore not subject to the above effects.

2. *Procedure for Transferring Members Between Employers*

   Under Tiers 1 and 2, when a member transferred from one Employer to another, assets and liabilities were also transferred. The asset transfer was based on the average funded ratio of the PSPRS, not the individual Local Employer's funded ratio. This meant that if a member transferred from a plan that was less well funded than the average, that plan would have an increase in its unfunded liability as more assets were transferred than were actually held for the transferring member.

This procedure was not carried over to Tier 3. Under Tier 3, no assets or liabilities will be transferred to the new Employer and the service and liability that existed before transfer will remain with the original Employer.

3. *Deferred Retirement Option (DROP)*

The benefits provided under the DROP provisions created additional liabilities for Tier 1, as the monthly DROP benefits were credited with interest at the assumed or smoothed rate of return. In years with lower negative returns, members still received the higher rate.

DROP benefits are not available under Tier 3 and so this risk is no longer applicable.

Observation 2 - Management Risk (Salary Spiking Risk) Has Been Reduced in Tier 3

Salary spiking is a way of improving pensions in an employee's final years of employment. Because, however, there was no risk pooling in Tiers 1 and 2, any salary spiking that may have occurred in those tiers would only impact the Local Employer in question and could not be passed on to other Local Employers in the System. In our stakeholder outreach meetings some concerns were raised as to whether this would continue to be the case in Tier 3 if risk pooling were instituted. This is a valid concern. We found however that Tier 3 includes two features that will significantly mitigate the risk of salary spiking:

(a) The maximum salary under Tier 3 is limited to $110,000 adjusted by the average change in the Public Safety Wage Index every 3 years to allow for inflation and other increases; and

(b) As a carryover from pension reform in 2011 (SB1609), the salary used in the benefit calculations will continue to be averaged over 5 years, whereas for Tier 1 it is only 3 years.

It is difficult to eliminate the risk of salary spiking altogether. In our opinion, however, it has become a much smaller risk for Tier 3.

Observation 3 – Non-Predictable Liability Risks Unlikely to Have Major Impact on Tier 3 Contribution Volatility

Stakeholders appear to believe that pooling the liability risks of Tier 3 would significantly decrease contribution volatility. We believe it is important to temper stakeholders' expectations in this regard. A review of the recent experience studies performed for Tiers 1 and 2 suggests that in fact pooling the Non-Predictable Risks of Tier 3, though useful, would be unlikely to have a dramatic effect on contribution volatility.

The Actual non-predictable experience of the PSPRS for the year 2009 to 2015 was close to the expected experience using the actuarial assumptions. It is possible that there were larger differences between the actual and expected experiences for individual Employers over this period, but, in general, we believe the impact on unfunded liabilities due to Non-Predictable Risks would have been small.

An important Non-Predictable risk that could materially affect the unfunded liabilities of individual Local Employers is death in the line of duty, particularly if it involves multiple members simultaneously. While such events are rare, they would have a significant impact on employers if they were to occur. This risk however is already pooled across the System. For clarity, death in the line of duty is defined in statute as follows:

> "For the purposes of this subsection, 'killed in the line of duty' means the decedent's death was the direct and proximate result of the performance of the decedent's public safety duties and does not include suicide. For actuarial valuation purposes, the actuarial present value of the amount computed under this subsection for a surviving spouse of a deceased member who is killed in the line of duty or who dies from injuries suffered in the line of duty, plus any amount payable for an eligible child under this section, shall be deposited directly into the Employer account and charged against the investment earnings of the fund before those earnings are distributed to each Employer."

While the risk of death in the line of duty is a relatively rare, but significant risk, longevity risk; i.e. retiree mortality, is a significant and ongoing risk of the System. Accordingly, much of our risk pooling analysis focused on longevity risk.

Another important and Non-Predictable Risk in Tier 3 is turnover experience for the Police, where the current assumption is 15% in year 1 with lower percentages thereafter. This risk however will only be significant in the first few years after the initiation of Tier 3, after which time it will decrease.

Observation 4 – Investment Risk is the Most Material Risk in Tier 3

We recognize that Cortex's mandate is limited to risk pooling and Local Board consolidation. Nevertheless, it is important to note that while these two issues are important, we believe the major funding risk to Tier 3 is the risk that investment returns for Tier 3 will fall short of the actuarial discount rate. If the discount rate is set too high, based on current capital market conditions, there is a significant risk that actual investment returns will fall short of the discount rate and Tier 3 will fall into a deficit. If investment returns fall short over the first few years following the launch of Tier 3, the new Tier will immediately experience a deficit, which is likely to cause considerable concern among stakeholders and may overshadow all of the positive features of Tier 3.

We have highlighted the above “Key Observations” for a number of reasons:

1. To ensure stakeholders understand that a number of design issues in Tiers 1 and 2, which contributed significantly to the deficits experienced in those tiers, have been eliminated from Tier 3.

2. To help ensure stakeholders have realistic expectations about the potential benefits to be gained from pooling additional Non-Predictable Risks in Tier 3.

3. To ensure stakeholders recognize that the risk of salary spiking (a Management Risk) has been significantly mitigated in Tier 3.

4. To ensure stakeholders are aware that the most significant funding risk for Tier 3 is in fact the risk that investments will fall short of the discount rate and the related risk of establishing a discount rate that is unrealistically high.

5. To provide background and context for our analysis of risk pooling in the balance of this section of the report.

Options for Tier 3 Risk Pooling

Cortex has analyzed three basic options for pooling liability risk, as summarized below.

Option 1*: Status Quo*

Under the status quo, risk pooling in Tier 3 would be identical to the approach currently used in Tiers 1 and 2. That is, none of the liability risks would be pooled, with the exception of death in the line of duty (arguably the most material Non-Predictable Risk). Accordingly, each Local Employer will have a different liability, reflecting the actuarial experience of their employees, and a different required contribution rate, and may make additional contributions at their discretion, leading to further differences in funded status among Local Employers.

Strengths

1. Under the status quo, the cost impacts of Local Employers’ decisions regarding benefits cannot be shifted to other Employers in the System, but must instead be borne fully by the Employer in question.

2. While the status quo imposes a high degree of accountability on Local Employers for their own pension and benefit costs, it does provide pooling protection for one of the

most significant Non-Predictable Risks – death in the line of duty. That is, should any Employer experience extraordinary deaths in the line of duty, the impact on the Employer in question would be muted because this risk is pooled among all Employers in the System.

3. The status quo approach can be applied to Tier 3 with minimal additional investment in administrative systems and procedures. We would therefore expect implementation of Tier 3 to be relatively smooth from an administrative standpoint.

4. Stakeholders will be familiar with this approach and should find it easy to understand, given that it is the same risk pooling approach reflected in Tier 1 and Tier 2.

Weaknesses

1. Under the status quo, Local Employers are fully exposed to all Non-Predictable Risks except death in the line of duty. That is, each Employer bears the full cost associated with such risks as longevity, death before retirement, disabilities, and terminations. This would lead to greater volatility in pension contributions than would otherwise be the case, particularly for smaller Employers and/or those with mature workforces. Significant contribution volatility may make it difficult for Employers to budget effectively for their operations on an annual basis, particularly given that they generally can only increase their revenues slowly over time to offset any increases in costs. Employees, who under Tier 3 are responsible for 50% of pension costs, would face even greater difficulty adjusting to significant changes in contributions from year to year.

2. The status quo results in different contribution rates among Employers, which may have a significant effect on workforce mobility. In the case of Tier 1 and Tier 2, for example, Employer contributions rates between 2012 and 2015 ranged between 8% and over 90% (See Table 2 below). Employers with relatively high contribution rates may have difficulty attracting and retaining personnel, and employees may have difficulty re-locating and accepting new jobs where pension contribution rates are relatively high.

Table 2		
Year ending June 30	Minimum Employer Contribution including the unfunded liability	Maximum Employer Contribution including unfunded liability
2012	10%	72%
2013	10%	72%
2014	8%	93%
2015	16%	97%

Source: GRS Actuarial valuations. Maximum contribution excludes 1 outlier at more than 100% contribution.

***Option 2**: 100% Risk Pooling*

Under the status quo, only the risk of death in the line of duty is pooled. Under Option 2, however, the pension liabilities of all Employers in the System are calculated together as a single liability pool, and each Employer is responsible for paying an identical contribution rate based on its expected payroll. If one Employer has a negative or positive actuarial experience due to demographic or economic factors, including Non-Predictable Risks and Management Risks, the resulting gains or losses will be shared proportionately among all Employers in the System. In effect, this approach serves as a form of group self-insurance against pension liability risk.

The strengths and weaknesses of a 100% risk pooling system are essentially the reverse of those associated with the status quo, and are summarized below:

Strengths

1. From a pension contribution standpoint, full risk pooling:
   (a) Provides Employers (particularly Employers with smaller and/or mature workforces) with relatively stable contribution rates and therefore facilitates the operational planning and budgeting processes.
   (b) Supports workforce mobility, which benefits both Employers and employees:
      (i) Employers, large and small, would be on a level playing field, at least from a pension contribution standpoint, when attempting to recruit and retain employees.

(ii) Members would be able to move among Employers throughout the System without being concerned about the pension contributions they would have to pay into the System (i.e. they would pay the same contributions regardless of where they choose to work).

2. From an administrative standpoint, a fully pooled system would likely be the simplest and least expensive to administer. It would require only a single actuarial valuation each year, rather than the current 233. Any reduction in actuarial fees however would likely be immaterial, given that total actuarial fees charged for performing actuarial valuations for the System including all 233 plans is only approximately $150,000. Local Boards and Employers would still need to review the annual valuation, but would likely need to devote less time to the process.

Weaknesses

1. Full liability risk pooling inevitably reduces the sense of accountability among Local Employers for decisions they make involving the management of their workforces or retirement programs. Individual Local Employers have an incentive to make human resource or pension decisions that benefit them directly, while shifting some of the costs or risks of the decisions to the liability pool, which is borne by all Employers collectively. For example, Employers that choose to hire more experienced police or firemen would likely reduce their new employee training costs and may enjoy better service, but would generate higher pension costs for the liability pool.

   This would be particularly challenging for relatively small Employers that would have to bear part of the costs or risks of decisions made by their much larger counterparts without receiving any of the corresponding benefits. Smaller Employers have an incentive to engage in similar practices, but, acting independently, their small size limits the impact they can have on other Employers in the System.

   The above problem extends to issues such as investment in employee training and wellness programs. During the stakeholder outreach meetings, we were informed that some Employers make relatively larger investments in staff training and wellness programs, which are expected to result in lower benefit costs in the long run. Under a fully pooled system, Employers that do not make such investments will also enjoy some of the benefits of the investments made by other Employers.

   Some stakeholders were concerned that under a fully pooled system, Employers that allow salary spiking would impose higher required pension contributions on all Employers in the System. However, as noted earlier in this report (see Observation 2) Tier 3 is less susceptible to salary spiking because of the lower maximum salary to $110,000 and the five year average salary. While some level of salary spiking may still occur under Tier 3 if a member's actual earnings are considerably lower than the maximum cap, the potential harm to other Employers in the pool, under a fully pooled approach, has been reduced significantly.

2. Under 100% risk pooling, the total costs of the System are likely to be higher than under other models. This is because every time an Employer considers a proposal whereby it reaps 100% of the benefits of the proposal but less than 100% of the costs, the analysis will naturally be biased in favor of the proposal. Over time, this natural bias among Employers to adopt such proposals will likely increase the total normal cost of the benefits to a level it would not otherwise have.

***Option 3**: Hybrid Option*

Under a hybrid option, some liability risks would be pooled and some would be borne by Employers individually. If one is going to only pool certain risks, the most rational choice would be to pool only those liability risks Employers cannot influence (i.e. Non-Predictable Risks).

Liability risks that are Non-Predictable and can therefore be appropriately pooled include:

- Longevity; the risk that actual mortality experience will differ from what was assumed. This is likely the most material Non-Predictable Risk.
- Death in the line of duty; the risk that the number of deaths in service will differ from the number assumed. (Note, death in the line of duty is already pooled at PSPRS).
- Termination; the risk that the number of employees who terminate employment prior to retirement differs from what was assumed.
- Disability; the risk that the number of employees who retire due to disability differs from what was assumed.

In a hybrid approach, Management Risks should not be pooled. Examples include the following:

- Management Risks Involving Age at Entry. Employers with hiring practices that seek to recruit more experienced, but older employees, would generate added pension costs, which, under a pooled risk system, would be borne by all Employers in the system. The added cost of such a recruitment strategy can be significant, as illustrated in Table 3 below, which shows the normal cost incurred under Tier 3 by a large firefighter Employer when hiring new employees at different ages, assuming a starting salary of $50,000. The normal cost associated with hiring a 30 or 35 year old is almost twice the normal cost of hiring a 20 year old; therefore, Employers that only hire older employees will in effect impose additional costs on Employers who hire younger employees. There will be a similar pattern of contributions for the other Employer groups (i.e. Police and small Fire).

Table 3	
Age at entry	Total Normal Cost*
20	10.6%
25	14.6%
30	19.2%
35	19.4%
40	17.6% **

Source: GRS analysis

* Shared equally by Employer and employee. Based on current assumptions for large firefighter groups using a 7.4% discount rate and the current actuarial methodology to value the benefits.

** The decrease for new entrants aged 40 is due to the assumption that the member will only retire when eligible for the maximum benefits under Tier 3.

- <u>Management Risk Involving Workforce Reduction.</u> Another example involves Employers that seek to reduce the size of their workforces may offer early retirement programs or other incentives to encourage employees to retire early. Such strategies will typically increase the actuarial liability of the plan, as more employees retire with higher average earnings than was assumed.

- <u>Management Risk Involving Compensation Practices.</u> Finally, pursuing a strategy of offering more generous compensation than was assumed when estimating the liabilities of the System would impact the costs of the system and shift the resulting contribution increases to other Employers. Salary spiking would be one such strategy, which a number of stakeholders identified as a concern during our interviews.

Strengths

As the name implies, the hybrid approach offers some of the benefits associated with both the status quo and a fully pooled approach:

1. It allows all Employers and employees to benefit from sharing or pooling at least some of the liability risks in the Tier 3 benefit structure. This is particularly beneficial for smaller Employers and/or mature plans.

2. It provides the most equitable approach in that Employers that make human resource management decisions that generate additional pension costs will not be able to shift any of those costs onto other Employers in the System.

Recommendation for Risk Pooling

Cortex recommends that the PSPRS implement a Hybrid approach for Tier 3 by pooling Non-Predictable Risks and making Employers responsible for any decisions they make that incur material additional benefit costs (Management Risks). The hybrid approach promises somewhat lower contribution volatility than the status quo and imposes greater accountability on Local Employers than the 100% pooling option. There are, however, a number of ways the Hybrid approach can be implemented. These are discussed below.

***Option A**: Charge-back Method*

All liability risks are to be pooled, but Employers are subsequently charged back for the costs associated with any decisions they make that result in additional material costs being incurred by the pool, using an approved methodology.

This method requires that the actuaries evaluate the experience of each Employer on an annual basis and determine if there has been some decision on the part of an Employer that triggered an incremental cost to the pool. PSPRS would then ensure that the Employer makes an additional contribution to cover the additional cost.

In theory, this method would allow PSPRS to charge Employers for any material benefit costs associated with decisions they make.

An example of a public system that uses the above model is the Arizona State Retirement System (ASRS). A number of stakeholders held out ASRS as a model that should be replicated by PSPRS. It should be noted, however, that stakeholders generally mistakenly perceive ASRS to be a fully pooled system. In fact, ASRS uses a hybrid approach in which Non-Predictable Risks are pooled and Employers are charged back for pension costs associated with any material decisions they may make.

A drawback to the charge-back method is the potential difficulty involved in establishing clear rules for determining what constitutes a discretionary cost incurred by an Employer, and how to value and charge for such cost. Disagreements are likely to arise over time, which, if not resolved, may lead to litigation.

***Option B**: Status Quo plus a Retiree Pool*

Under this option, PSPRS would continue to use the status quo model (i.e. Unpooled liability risks with the exception of death in the line of duty) for active members, but would set up a separate pooled account within PSPRS for all retirees and beneficiaries in the System.

Under this approach, when a member retires, the assets and liabilities applicable to the retiree are transferred to the separate pooled account using the current actuarial assumptions applicable for the year in which the member retires. The full actuarial reserve based on the actual pension and the current actuarial assumptions will be transferred from both the assets and liabilities of the Employer.

The above approach only pools Non-Predictable Risks that arise post-retirement; specifically, longevity risk; i.e. the risk that retirees live longer than assumed. This approach therefore reduces the volatility of the unfunded liabilities for the Employers by reducing any annual experience losses incurred due to their retirees living longer than was assumed, due to the law of large numbers that applies to larger risk pools. That is, by pooling the retired lives, it is more likely that actual longevity will be closer to the assumption. Any differences between the actual and the assumed experience for the pool is likely to be small and should not significantly affect the overall contribution rate payable by the Employers.

Employer decisions that impose additional costs on the System can only occur prior to retirement; therefore, these costs are not pooled under this approach but rather are borne by the individual Employer. This prevents Employers from shifting costs to other Employers in the System. This is a more efficient approach for dealing with Employer decisions, as there is no requirement to cost any additional experience resulting from Employer decisions.

Creating a separate account to pool post-retirement risks also offers other advantages, not necessarily related to risk pooling:

- The account provides greater benefit security for retirees and beneficiaries, as retirees are no longer dependent solely on contributions from their Local Employer to fund any unfunded liabilities. Instead, any unfunded retiree liability will be the responsibility of all Employers.

- The account simplifies ongoing administration and actuarial valuations as all payments for retired lives will be made from one account instead of allocating the payments back to the individual accounts. The actuarial valuation for each Employer will only be for the active and terminated members.
- Any gains in the separate account can be held in the account to offset future losses. Any surplus that arises due to actual deaths exceeding assumptions or investment returns exceeding the assumed return can be held as a reserve to offset any losses that might occur in the future. This approach will also stabilize the contribution requirements for the retiree separate pool.

The benefits of pooling the retirees in Tier 3 will not be realized for approximately 15 years when the first Tier 3 members retire. However, pooling of retiree liabilities may also be established for Tiers 1 and 2 to reduce contribution volatility in those tiers. The benefits of doing so would be realized immediately.

***Option C**: Separate Large and Small Employers for Risk Pooling Purposes*

Under this approach, large and small Employers will be treated differently for risk pooling purposes:

a) Employers with more than 100 employees will manage their active employees using the Status Quo approach, while their retirees will be assigned to a retiree pool established for all Tier 3 Employers.

b) Employers with less than 100 employees will have their active employees placed in an active lives pool along with those of all other small Employers, and their retirees will be placed in the same retiree pool noted in a) above established for all Tier 3 Employers.

In determining what constitutes a small or large Employer we considered the size of the current Employers in the System, as illustrated in Table 4 below.

Table 4	
PSPRS Employers by Number of Employees As at June 30, 2015	
Number of active members	**Number of Employers**
Less than 50	159
Between 51 and 100	41
Between 101 and 150	11
Between 151 and 200	6
Between 200 and 500	9
Between 501 and 1000	5
Greater than 1000	2
Total	**233**

As the above Table shows, there are 200 Employers with less than 100 members or 211 Employers with less than 150 members. There is no formula to calculate the optimal size at which risk pooling becomes feasible. Actuarial demographic assumptions are normally applicable to large groups, but much less applicable to small groups. Small Employers are more likely to regularly experience actuarial losses, with actuarial gains occurring infrequently. For example, consider an Employer with 30 active members. Assuming a 5% turnover assumption (on average), one would expect 1.5 members will terminate each year. In the first year, one member terminates and according to the actuary there is an experience loss. Such losses will continue each year until two or more members terminate, thus creating an experience gain. Pooling these small Employers will smooth out the demographic gains and losses for this group.

Option C is similar to Option B, but has the advantage of also pooling the demographic, Non-Predictable Risks of the active members of smaller Employers.

Option C will add to the costs of an actuarial valuation, as more work will be required to analyze the separate pool for small Employers, but the Employer contribution rates for the smaller Employers will be more stable due to the pooling of Management risks and Non-Predictable Risks.

Finally, by having the larger Employers operate under the status quo for their active lives, smaller Employers will be insulated from any cost impacts stemming from the human resource management decisions of larger Employers. This was a concern voiced by a number of stakeholders.

A drawback with Option C is that, under current legislation, any Employers that join PSPRS in the future are required to pay any prior unfunded liability associated with their employees upfront before joining PSPRS. Under the status quo pooling structure, such liability is simply incorporated into their individual Employer rate and is paid off over time. Forcing new Employers to pay any prior unfunded liabilities before joining PSPRS would likely serve as a significant barrier to joining. Accordingly, Option C would require a change in legislation to eliminate the requirement that new Employers pay off any prior unfunded liabilities and instead allow them to amortize it over time.

The California Public Employees' Retirement System (CalPERS) uses an approach similar to Option C described above. CalPERS pools the demographic risks for small Employers, which it defines as less than 100 employees, but uses an agent-multiple approach for all other Employers. The costs for CalPERS' small Employers are calculated as:

- Normal cost for members; plus
- Amortization of pooled unfunded experience loss; plus
- Amortization of losses due to Management items; less
- Employee contributions.

This is equivalent to using the current PSPRS agency accounting methodology, but amortizes the pooled, Non-Predictable items such as mortality, termination, and disability.

Recommended Approach to Implementing a Hybrid Model

Table 6 provides an overview of the three basic risk pooling options analyzed in this report. We have already recommended that PSPRS adopt Option 3, the hybrid option. Below we discuss our recommendations on how best to implement the hybrid option using either option 3(A), 3(B), or 3(C).

Cortex does not recommend Alternative 3(A), the Charge-back Option, because of the difficulty we noted in defining clear rules for determining material costs to be allocated back to Employers, and the disagreements and potential litigation that might arise over time as a result.

Alternatives 3(B) and 3(C), however, are both reasonable alternatives. Both alternatives are simpler and more efficient to administer than option A, as they eliminate the need to define and value any decisions by large Employers that had a material impact on the other

Employers in the System. They also eliminate the potential for legal disputes should an Employer believe that the amount charged back was unreasonable. The key difference between alternatives 3(B) and 3(C) is that Alternative 3(C) provides for full risk pooling for small Employers, whereas under Alternative 3(B), small Employers are only able to pool the risks associated with their retirees; i.e. longevity risk.

The additional risk pooling that small Employers enjoy under 3(C) must be weighed against the potential risk that some small Employers will make decisions that impose costs on their peers. Table 5 depicts the number of active members within small Employers (Tiers 1 & 2). It reveals that at the present time, 11 of the 211 small Employers (5%) have a total of 1,315 active members out of a total of 6,946 active members (19%). This suggests that under Alternative 3(C), the largest of the small Employers could influence the total costs of the small Employer pool and shift costs onto the smallest Employers. As noted however in the "Key Observations" section of this report, the risk associated with salary spiking has been mitigated considerably in Tier 3, though other Management Risks could still be imposed from one small Employer to another and could be meaningful.

Table 5

Relative Size of PSPRS Small Employers

Number of Employees	No of Employers	Total Active Members	Average number of Active Members
Less than 50	159 (75%)	2,780 (40%)	17.5
51 to 100	41 (20%)	2,851 (41%)	69.5
101 to 150	11 (5%)	1,315 (19%)	119.5
Total	**211 (100%)**	**6,946 (100%)**	**33**

Many small Employers we heard from during stakeholder outreach appear to be in favor of pooling as much risk as possible to reduce the variability of their pension contributions, and would likely favor Alternative 3(C). Those Employers who raised concerns about Employers shifting costs onto other Employers will likely have a favorable view of Alternative 3(B), which effectively eliminates such risk. The optimal approach then depends on whether one places more importance on reducing contribution volatility or minimizing the possibility that Employers will make human resource management decisions that shift costs onto other Employers.

Cortex recommends Alternative 3(B) for the following reasons:

1. It offers risk pooling for longevity risk, which is one of the more significant of the Non-Predictable Risks. Admittedly, this would not impact contribution volatility until the first members begin retiring from Tier 3;

2. While Alternative 3(B) does not pool the remaining Non-Predictable Risks, we believe those risks do not have significant impacts on contribution volatility, based on recent experience studies of the Tier 1 and Tier 2 benefits;

3. We understand some consideration is being given to pooling the retiree risks (i.e. longevity risk) for Tiers 1 and 2. This would reduce contribution volatility immediately for those two tiers. Assuming this is accomplished, implementing Alternative 3(B) would ensure consistent risk pooling across all three tiers in the System and would greatly facilitate the administration of the System;

4. Alternative 3(B) imposes maximum accountability on all Local Employers for any human resource management decisions they make that impose costs on PSPRS; and

5. Alternative 3(B) ensures that any inappropriate decisions that may occur at the Local Board level involving disability applications will only impact the Employer in question and will have no effect on other Employers in the System. A number of stakeholders shared their concerns regarding this issue during our stakeholder outreach. Note that Part 2 of this report, which deals with Local Board consolidation will address how the local board structure can be enhanced to minimize the potential for inappropriate disability decisions to occur in the first place.

<u>Calculation of Employee Contribution Rate</u>

A significant number of stakeholders expressed concern in our meetings that it is critical that there be a single employee contribution rate, to make it easy for employees to transfer between Employers in the state. For example, if someone transferred from an Employer with a fully funded liability to one with an unfunded liability, the contribution rate of the member transferring could increase significantly. One stakeholder organization voiced a strong belief that the contribution must be shared equally at all times, and that the employee should have responsibility for funding any increase in the unfunded liability, regardless of whether it was the result of Management or Non-Predictable items, as this helps to ensure employees are aware of the full cost of their benefits.

Cortex believes that a single contribution rate for all new employees is appropriate, because the major risks for Tier 3 are at the total plan level (investment returns and assumptions) and therefore will affect all Employers equally. The costs associated with

Management Risks will be paid for by the Employer, as they are generally not applicable to employees.

The employee contribution rate should be calculated based on the funded status of the total plan and should include the payments required to fund any unfunded liabilities net of the costs associated with the human resource management decisions by Employers. The employees will then contribute 50% of this rate and will still be responsible for 50% of the total cost of the plan, which arguably is consistent with the requirement of SB 1428. As stated they however will not share in the costs associated with human resource management decisions of Employers.

We believe the above calculation methodology will be fair to both employees and Employers. Each Employer's contribution rate would then be calculated as its specific normal cost plus its amortization payments less the employee contribution rate.

Table 6
Summary of Risks Pooled under Identified Options

	(1) Status Quo (SQ)	**(2)** 100% Risk Pooling	**(3)** Hybrid Option			
			(A) Charge-Back Method	**(B)** SQ + Retiree Pool	**(C)** Large (SQ Active, Pooled Retirees); Small (Pooled Active & Retirees)	
					Large Employers	Small Employers
Non-Predictable Risks						
• Death in Line of Duty	**X**	**X**	**X**	**X**	**X**	**X**
• Death in retirement (longevity)		**X**	**X**	**X**	**X**	**X**
• Death before retirement		**X**	**X**			**X**
• Disabilities		**X**	**X**			**X**
• Terminations		**X**	**X**			**X**
Management Risks						
• Average age at entry		**X**				**X**
• Average age at retirement		**X**				**X**
• Salary Increases		**X**				**X**

PART II: REVIEW OF LOCAL BOARD CONSOLIDATION

As noted at the outset of this Report, there are currently 233 Local Boards that adminster the benefits of Local Employers in PSPRS. The composition and responsiblities of the Local Boards and the PSPRS Board are summarized in the Background section on pages 3 and 4 of this report**.** Changes to the composition of the PSPRS Board, which take effect in January 2017, are also summarized therein.

We understand there is a wide range of views among PSPRS stakeholders concerning the need to consolidate the current number of Local Boards and the basis for doing so. Recent reforms to PSPRS, as enacted by Senate Bill 1428, did not resolve the issue of consolidation and Cortex was retained to study the issue.

This section of the report contains our analysis of Local Board consolidation along with our recommendations.

Overview of Current Local Board Structure

Below is a summary of relevant features of the PSPRS Local Board structure:

- Number of Local Boards: 233
- 211 of the above Local Boards are responsible for adminstering plans containing less than 150 members.
- The number of regular board meeting and the amount of board business conducted at said meetings, varies considerably among Boards depending on the size of the plan in question.
- Most, but not necessarily all, Local Boards employ independent legal counsel who attend Board meetings and advise the Board on their administrative duties.
- The vast majority of the Local Boards operate without a dedicated professional staff to support them. Instead, they are typically supported on a part-time basis by a staff person who is otherwise devoted to working for the Local Employer, normally in the human resources department. In contrast, the largest Local Boards have a dedicated professional staff to support them.
- The amount and consistency of governance-related training undertaken by the Local Boards varies considerably.

Evaluation Criteria/Factors

In evaluating the need for, and approaches to, Local Board consolidation, Cortex considered the following criteria and factors:

1. The need to ensure that board members who are responsible for administering benefits have sufficient knowledge of the local workplace environment and circumstances that may be relevant to the administrative process, particularly as they may relate to disability benefits;

2. The need to provide services to plan members that are convenient and easy to access;

3. The need to ensure that benefit provisions are applied uniformly across the State, given that all members in PSPRS are subject to the same benefits provisions;

4. The need to ensure that administrative decisions are arrived at in a sound and objective manner; and

5. The need to ensure benefit administration is carried out in a cost-effective manner.

Alternatives

Cortex has identified the following alternative approaches to Local Board consolidation:

Alternative 1 *– Status Quo with Enhancements*

This alternative would maintain all current 233 Local Boards, but would attempt to enhance Local Board decision-making through improved governance training and procedures.

Advantages of this alternative include the following:

1. The status quo ensures that the highest degree of local knowledge is brought to bear on benefit administration decisions. A number of stakeholders indicated that Local Boards, which are comprised of local employees and citizens, are most likely to have a deeper understanding of local working conditions and first-hand knowledge of the membership. It was suggested that this can be invaluable, particularly in the context of disability hearings where Local Boards must determine whether an applicant can perform a comparable job given local circumstances. Without a good understanding of how local fire and police departments operate, it was argued, making such determinations can be very difficult.

2. It was suggested that Local Board members who personally know disability applicants may be more likely to discern the truthfulness of any testimony they provide in the course of disability hearings.

3. Having Local Boards is more convenient for members in the event they need to appear before the Board; e.g. for disability hearings. As a counter-argument to the above concern, stakeholders noted technology is available (e.g. video conferencing) that allow plan members to appear before a Board, wherever the Board may be located, without the need for travel. Such technology is used by the ASRS to facilitate member attendance at board meetings.

   We were also informed that if members wish to file a lawsuit against the System in regards to an action of the System, the suit must be filed in the county in which the action was taken. Accordingly, ensuring that all benefit actions occur at the local level would facilitate the filing of any lawsuits by members.

Disadvantages of this alternative include the following:

1. The status quo is not a cost-effective option from the standpoint of the time and effort expended by Local Board members and staff. The Local Board structure requires at least one part-time staff person for each of the 233 Local Boards as well as over 800 board members. From a budget perspective, however, the direct costs are minimal, as Local Board members are not paid for their services and staff support is provided by the Local Employer. The only other administrative costs of note are those associated with any independent fiduciary counsel employed by many Local Boards. Currently, these are paid for by the Local Employers.

2. Many stakeholders perceive that the status quo is not conducive to objective and independent decision-making at the Local Board level. Members of Local Board who are personally acquainted with plan members and disability applicants may find it difficult to be independent and objective when assessing an application for death and disability benefits. Furthermore, Local Boards in small communities, where social relationships are tightknit, may also at times have to deal with pressures from individuals and groups beyond the individual claimant, which conflict with their duty to objectively evaluate benefit claims.

3. Administering the benefits through 233 different Local Boards poses considerable challenges in making sound and consistent decisions across the System on benefit administration matters. This concern was voiced by a number of stakeholders we met and who noted the following:

   - Board processes and procedures vary widely among Local Boards, particularly between the largest and smallest plans.

- Smaller Local Boards make very few administrative decisions in a year while larger ones, such as those in Maricopa and Pima County, are called upon to make numerous decisions throughout the year. As a result, smaller Local Boards do not have an opportunity to build their knowledge and expertise of benefit administration. Inappropriate decisions are not only damaging to the specific plan members and Employers in question, but may set precedents that impact other members or Employers throughout the System.

Some stakeholders suggested that the correct response to perceived weaknesses in the quality of Local Board decision-making is not to eliminate Local Boards, but to invest more resources in local board training, policies, and procedures.

While Cortex supports governance training, we believe it is unlikely that such training could have a substantial and sustained impact across all Local Boards, particularly when many of them meet infrequently and have limited business to attend to. As noted above, the current structure requires over 800 board members to sustain it. In our experience working with public retirement systems across North America, it is extremely difficult, if not impossible, to identify such a large number of individuals with relevant qualifications, backgrounds, interest, and time availability. Board governance training, while helpful, will simply not be sufficient to ensure an adequate and consistent knowledge base across the 233 Local Boards over time.

Alternative 2 *– Consolidate all Local Boards to form a single state-wide Board responsible for all benefit administration matters (Board of Administration)*

Advantages of this alternative include the following:

1. A single Board of Administration would offer maximum efficiency, as it would only require a single set of Board members, supported by a single set of administrative staff and advisors.

2. The quality of board governance and decision-making under this alternative is similarly maximized:

   (a) Having a single Board of Administration would reduce the number of board members required for the System from 1180 to less than 10. Ensuring that highly qualified individuals are recruited to serve as board members would be far easier under this approach.

   (b) Having one Board of Administration would eliminate the risk of inconsistent benefit decisions and interpretations across the System. PSPRS would no longer need to review and monitor the actions and decisions of 233 Local Boards, but rather would focus on the activities of a single Board. Communications between PSPRS and the Board of Administration would similarly be enhanced, as there would exist only one line of communication, rather than 233.

3. A single Administrative Board, with board members drawn from across the State, would be better positioned to exercise independence and objectivity in assessing benefit claims, as the number of board members with personal knowledge of claimants or their friends and acquaintances is significantly reduced.

Disadvantages of this alternative are as follows:

1. Board members serving on a single Administrative Board will likely have limited knowledge of the people, working conditions, and requirements that exist at Local Employers and may have greater difficulty making certain benefit determinations, such as whether a disability claimant is fit to carry out other duties within the Local Employer.

2. Members who need to appear before the consolidated board would likely need to travel some distance to do so, as the new Administrative Board is likely to be located in a major city such as Phoenix. While technology may alleviate that need for some members, it may not be their preferred means of interacting with the Administrative Board.

3. Under this alternative, a single consolidated Board would be required to perform the work that had previously been performed by 233 Local Boards. While a single, highly qualified Board should benefit from efficiencies not available to many of the existing Local Boards, this is nevertheless a valid consideration. However, should workloads lead to unreasonable wait times for members and claimants, the new board could consider establishing a separate appeals committee or board to handle the more labor intensive and time-consuming activities relating to disabilities. The legislation that creates a consolidated Administrative Board should provide the new Board with the authority to delegate duties in this manner.

4. In our stakeholder outreach meetings, some of the Local Boards objected to the possibility of being consolidated into a single board. While they acknowledged that many Local Boards do in fact struggle to operate effectively, they felt that they themselves had the size, scale, and resources to function effectively and were in fact doing so. This view was primarily expressed by the Local Boards of the largest Employers, but a small Local Board we met with held a similar view, with justification in our view.

***Alternative 3** – Partial consolidation.*

There are a number of ways partial consolidation could be achieved. We have focused on an approach in which all small Local Boards would be consolidated along county lines, while the largest Local Boards would remain separate and unchanged.[1] In addition, small state agency Local Boards (i.e., all except Department of Public Safety) would be consolidated into a single State Agency Board. This would result in 27 Local County Boards, 17 large Local Boards and one State Agency Board. See Table 7 for an overview.

This alternative combines the advantages of the status quo with those of a single consolidated board:

1. It generates significant efficiencies by consolidating the small Local Boards to approximately 45 boards from 233.

2. It reduces the number of qualified board members that are needed to a more manageable number, approximately 170 as opposed to 817.

3. It spreads the administrative burden of the current Local Boards among 45 Boards rather than imposing it all on a single Administrative Board.

4. It would enhance the consistency of decision-making, as there would be far fewer boards involved in decision-making, as compared to the status quo.

5. While not quite as convenient for members as the status quo, members would not need to travel beyond their county in order to meet with their Local Board.

6. Independence of Local Board decision-making would be enhanced under this alternative, as Local County Boards would likely contain board members from throughout the county who would be less acquainted with members and claimants who may appear before them. At the same time, however, the Local County Board is likely to have a reasonable knowledge of workplace circumstances within their county, or will be able to build such knowledge over time.

Disadvantages of this alternative are as follows:

1. Partial consolidation by definition represents a compromise on certain issues. For example, partial consolidation will not achieve the maximum efficiencies one might expect from full consolidation. Cortex believes however that any shortfall would be

[1] We would like to credit Stan Hoover, who during our stakeholder outreach, provided us with considerable information including the background on his idea of consolidating the Local Boards along county lines.

minimal, and that partial consolidation, as envisioned above, would provide the System a considerable amount of the available efficiencies.

2. Any Local Boards that are small, but effective, would be required to be consolidated, and the local community would lose out on the benefits of having an effective Local Board. While Cortex did meet with one Local Board during the stakeholder outreach that would likely fall into this category, we believe it is the exception and far from the rule.

Recommendations Regarding Local Board Consolidation

After considering the issues and the discussions we had with stakeholders Cortex recommends that the PSPRS implement partial consolidation, as outlined above. In the case of any Local Employer that, as at January 2017, employs at least 250 police officers or 250 firefighters, both of the Local Boards would be excluded from consolidation (assuming it in fact has two Local Boards).

According to information from the PSPRS (PSPRS Demographics June 30, 2015) the Employers who would retain their Local Boards are as follows:

Table 6

Employer	Number of members
Chandler Police	305
Chandler Fire	186
Department of Public Safety	981
Glendale Police	388
Glendale Fire	219
Maricopa Sherriff Office	654
Mesa Police	748
Mesa Fire	382
Phoenix Police	2392
Phoenix Fire	1337
Pima County Sheriff Office	478

Table 6	
Employer	**Number of members**
Scottsdale Police	384
Scottsdale Fire	245
Tempe Police	322
Tempe Fire	133
Tucson Police	861
Tucson Fire	502
Total (17 Employers)	**10,517**

The 10,517 members employed by the above 17 Local Employers represent 56% of all active members in the PSPRS.

Under our recommendation there will continue to be separate Local Boards for law enforcement and firefighters located in each county and a separate State Board.

As an option, and to accommodate situations where a small Local Board consists of highly qualified board members and is operating effectively, small Local Boards may apply for an exemption provided they meet specified criteria for governance. Granting such exemption could rest with the PSPRS Board and would need to be reviewed periodically to ensure the standards continue to be met over time. Should the exemption be revoked at any time in the future, the Local Board in question would be consolidated and would not be able to apply for an exemption again. A Local Board could also forego its exemption and join the Local County Board at any time. Similarly, larger Local Boards that would normally be automatically exempt from consolidation could be granted the option of opting into their applicable Local County Board. Finally, Local Employers whose employee count falls below the 250 threshold at some point in the future could either be required to be consolidated into the appropriate County Local Board at that time or could choose to opt in.

Table 7 shows how the Local Boards could be combined into a county model with a state Board for the State Agencies.

Cortex further recommends that each Local County Board and State board be subject to standard fiduciary duties in the administration of benefits, including the duties of loyalty and prudence. Each Local County Board and State Board should have the same ability to sue and be sued that the current Local Boards have. The costs associated with any fiduciary lawsuits in relation to Tier 3 should be borne by the Tier 3 trust assets of the Local County and State plans and shared equally by the Local County and State Employers. We understand that such costs involving Tier 1 and Tier 2 are currently ultimately borne by the Local Employers and that this would remain unchanged.

Table 7

County	Police	No. of Members	Fire	No. of Members
Apache	Apache Sheriffs	29	No participating agencies	
	Eager	7		
	Springerville	6		
	St. Johns	6		
	Total	**48**		
Cochise	Benson	11	Benson	1
	Bisbee	13	Bisbee	18
	Cochise Sheriffs	76	Douglas	22
	Douglas	29	Fry	42
	Huachuca	6	Palominas	8
	Sierra Vista	57	Sierra Vista	47
	Tombstone	2	Sun Sites Pearce	6
	Willcox	10	Whetstone	6
	Total	**204**	**Total**	**150**
Coconino	Coconino Sheriffs	54	Flagstaff	75
	Flagstaff	113	Page	15
	Fredonia	3	Pinewood	17
	Page	14	Sedona	74
	Sedona	24	Summit	36
	Williams	10	**Total**	**217**
	Total	**218**		
Gila	Gila Sheriffs	37	Chris-Kohl	6
	Globe	19	Globe	16
	Hayden	6	Hellsgate	7
	Miami	6	Payson	29
	Payson	23	Pine /Strawberry	14
	San Carlos	24	Tri City	22
	Total	**115**	**Total**	**94**

Table 7				
County	**Police**	**No. of Members**	**Fire**	**No. of Members**
Graham	Graham Sheriffs	15	No participating agencies	
	Pima	4		
	Safford	18		
	Thatcher	11		
	Total	**48**		
Greenlee	Clifton	7	No participating agencies	
	Greenlee Attorneys General	0		
	Greenlee Sheriffs	16		
	Total	**23**		
La Paz	LA Paz	0	Buckskin	11
	LA Paz Sheriffs	27	Quartzsite	8
	Parker	11	**Total**	**19**
	Quartzsite	8		
	Colorado River	0		
	Total	**46**		
Maricopa	Avondale	109	Avondale	67
	Buckeye	83	Buckeye	82
	Buckeye Valley	62	Daisy Mountain	81
	Cave Creek	1	El Mirage	25
	El Mirage	35	Gilbert	172
	Gilbert	205	Goodyear	92
	Goodyear	89	Peoria	131
	Guadalupe	4	Sun City	43
	Harqualhala	12	Sun City West	58
	Maricopa Attorney	14	Sun Lakes	37
	Maricopa Park	0	Superstition	85
	Paradise Valley	28	Sunrise	108
	Peoria	167	Tolleson	29
	Queen Creek	29	Tonopah	13
	Rio Verde	12	Wickenburg	13
	Sunrise	121	Wittman	10
	Tolleson	27	**Total**	**1,046**
	Wickenburg	17		
	Youngtown	1		
	Total	**1,016**		
Mohave	Bullhead	70	Bullhead	66
	Kingman	50	Desert Hills	17
	Lake Havasu City	69	Fort Mojave	26
	Mohave	70	Golden Shores	9
	Sheriffs	19	Golden Valley	25

Table 7				
County	**Police**	**No. of Members**	**Fire**	**No. of Members**
	Fort Mojave	17	Kingman	41
	Halalapai Tribal	0	Lake Mojave	7
	Total	**295**	Lake Havasu	74
			Mohave Valley	28
			Northern AZ	24
			Total	**317**
Navajo	Holbrook	14	Heber - Overgaard	12
	Navajo Attorney	0	Lakeside	24
	Navajo Sheriffs	46	Linden	10
	Pinetop Lakeside	13	Pinetop	25
	Show Low	29	Show Low	30
	Snowflake	12	Winslow	5
	Winslow	20	**Total**	**106**
	Total	**134**		
Pima	Marana	75	Corona De Tucson	17
	Oro Valley	95	Drexel	76
	Pima Attorney	5	Golder	135
	Pima Comm. College	28	Green Valley	57
	Sahuarita	38	Mount Lemmon	6
	South Tucson	16	Northwest	178
	Tucson Airport	18	Picture Rocks	13
	Total	**275**	Rincon	36
			South Tucson	3
			Three Points	16
			Tucson Airport	15
			Total	**552**
Pinal	Apache Junction	49	Apache Junction	85
	Casa Grande	66	Casa Grande	55
	Central AZ	6	Maricopa	55
	Maricopa Police	56	Coolidge	4
	Coolidge	26	Eloy	28
	Eloy	26	Florence	28
	Florence	30	Oracle	8
	Kearney	0	AK Chin	36
	Mammoth	0	Gila River	68
	Pinal Sheriffs	198	Queen Valley	3
	AK Chin	23	Superior	5
	Gila River	127	**Total**	**375**
	Superior	8		
	Total	**615**		

Table 7				
County	**Police**	**No. of Members**	**Fire**	**No. of Members**
Santa Cruz	Nogales	51	Nogales	41
	Patagonia	2	Rio Rico	27
	Santa Cruz Sheriffs	32	Sonoita Elgin	10
	Total	**85**	Tubac	25
			Total	**103**
Yavapai	Camp Verde	18	Black Canyon	7
	Chino Valley	21	Camp Verde	24
	Clarkdale	7	Central Yavapai	74
	Cottonwood	31	Chino Valley	31
	Jerome	3	Clarkdale	8
	Prescott	62	Cottonwood	26
	Prescott Valley	60	Groom Creek	7
	Yavapai Sheriffs	114	Mayer	17
	Total	**316**	Montezuma Rimrock	9
			Prescott	51
			Verde Valley	25
			Williamson Valley	22
			Total	**301**
Yuma	San Luis	18	San Luis	28
	Wellton	6	Somerton	18
	Yuma Sheriffs	78	Yuma	103
	Yuma	164	**Total**	**149**
	Total	**266**		
State	**Employer**	**Number of Members**		
	Dept of Liquor Licenses	10		
	Northern Arizona University	18		
	University of Arizona	57		
	Arizona State University	76		
	Arizona Game and Fish Dept	118		
	Dept of Law (State Attorney)	19		
	Dept of Emergency and Mil	46		
	Arizona State Parks	26		
	Total	**370**		

Summary of Recommendation for Local Board Governance

Cortex's recommendations are to:

1. Maintain the current Local Boards for all Employers with more than 250 law enforcement employees or 250 firefighter employees (17 boards);
2. Combine all other Local Boards along county lines with a separate board for firefighters and law enforcement in each county (27 boards);
3. Tribal Local Boards should be consolidated into the County in which they are located. Where a Tribe's territory spans multiple counties, it would be consolidated into the County in which it has the largest territory.

Under this proposal there will be 45 Local Boards compared to the current 233. The advantages of this proposal are:

1. Perception of independent governance and decision making as the members of the Local Board will be less likely to be personally acquainted with plan members;
2. Ability to create local medical support to analyze new members and disability cases as there will be a larger number of cases for each county than for each Employer;
3. A larger pool of professional people to draw on when selecting the 3 non-members;
4. With fewer boards, it will be easier for the PSPRS to educate and communicate their policies to all Local Board members. In addition, it will also facilitate better communication from the Local Boards to the PSPRS; and
5. Although the members of the Local Boards do not receive compensation, the overall time costs will be reduced, as the number of meeting across the PSPRS system will be reduced significantly.

APPENDIX A

Review Process

In completing this study, Cortex reviewed a number of documents describing recent regulatory changes and the current methods for risk pooling and governance. Below is a list of specific documentation reviewed by Cortex and the originating entity:

- “The Past, Present and Future of PSPRS” Employer Seminar - Statewide Presentation (February 2015) – PSPRS
- 2015 PSPRS Summary of Benefits – PSPRS
- Pension Task Force’s preliminary recommendations – League of AZ Cities and Towns
- Actuarial Data (Pension and Health) as of June 30, 2015 – GRS
- PSPRS Performance Audit and Sunset Review – AZ Auditor General
- A Comparison of Arizona’s Two State Retirement Systems – AZ Auditor General
- PSPRS Governance Recommendations – League of AZ Cities and Towns
- SB1428 Pension Reform Matrix of Changes and Implementation Timeline – PSPRS
- Arizona Constitution Article 29
- PSPRS Annual Valuation June 30, 2015 – GRS
- Memorandum from GRS regarding Agent Multiple-Employer/Cost-Sharing Multiple-Employer Structures

Cortex held a number of outreach meetings and interviews with stakeholders in Phoenix in June 2016. All stakeholders were invited to attend the meetings or express their concerns via email. A document setting out the objectives of the study and discussion guide was circulated to all stakeholders prior to the meetings.

A diverse group of stakeholders participated in the outreach meetings. The stakeholders represented cities, towns, districts, Local Boards, and fire and police groups across the State of Arizona. Cortex also interviewed representatives of the League of Cities and Towns and the Reason Foundation, the Arizona Legislature, and the current consulting actuary to PSPRS, Gabriel Roeder Smith & Company (GRS).

The following table lists the stakeholder organizations and individual representatives who participated in the outreach meetings and interviews. During our interviews, Cortex did not specifically confirm whether individuals were representing the views of the organizations listed. Accordingly, if any of individuals listed in the table prefers that they be listed as individuals only (i.e. the name of the organization is to be removed), please inform us and we will make the necessary changes in the final report.

Organization	Individuals
Arizona Highway Patrol Association	Jimmy Kelsey
City of Mesa	Dee Ann Mickelson
City of Phoenix	Scott Miller
City of Prescott	Alison Zelms
City of Scottsdale	Chanda Washington Jeffery Nichols Judy Doyle
Counties	Mike Townsend Shelby Scharbach Craig Sullivan
Deputy State Controller	Mike Smarik
Fraternal Order of Police	Jim Mann
Phoenix Police Local Board	Will Buividas
Green Valley Fire Department	Mike Fox
GRS Actuaries	
League of AZ Cities and Towns	Ken Strobeck Marc Skocypec Steve Moore Scott McCarty
Local Board Attorney	William Whittington
North West Fire Department	Michael Brandt (Represented by Patricia Aguilar)
Paradise Valley	Kevin Burke
Phoenix Fire Local Board	Brian Moore Brian Tobin, Board of Trustees (Chair)
Professional Fire Fighters Assoc.	Bryan Jefferies Joe Hester
Reason Foundation	Anil (recent hire) Anthony Randazzo Pete Constant Leonard Gilroy
Retired Local Board Member	Stan Hoover
Rio Verde Fire Department	Jerry Fickes
Sierra Vista Member of PSPRS Task Force	Barbara Fleming, CFO
State Legislature	Jeff Kros Lesli Sorensen Sen. Lesko
Superstition Fire Medical District	Brett Broman
Tempe Local Board	Renie Broderick
Yuma County	Greg Ferguson, Board of Trustees (Vice-Chair)

Cortex also received input from cities and towns through a number of emails. The following is a list of organizations and individual representatives that shared their views by email:

Organization	**Individuals**
Benson Local Board	Floyd Graf
City of Apache Junction	Bryant Powell
City of El Mirage	Lana Mook Robert Nilles
City of Nogales	Carlos Rivera
City of Sedona	Justin Clifton
Litchfield Park	Carla Reece
Show Low City	Daryl Seymore
Sierra Vista Arizona	Mary Jacobs
Town of Eagar	Tami Ryall
Town of Payson	Laron Garrett

Finally, Cortex conducted limited external research to understand and analyze the methodologies used by other public funds in the United States in regards to risk pooling.

APPENDIX B

Other Issues

At the stakeholders' meetings, a number of delegates raised concerns with the structure of Tier 3. The main concerns raised were:

1. **Design of the Defined Contribution (DC) plan (implementation, board membership, communication and the time for initial decision to be made by a new employee).**

   Under the DC option for Tier 3 members, the concerns raised were:

   a) The time allowed (90 days) for a new member to make a decision on whether to go the DC or the defined benefit route. The feeling was that during this initial 90 days, the new member would be in training and not able to focus on the decision.

   b) The initial communication for the DC plan needs to focus of risks of investment returns and not on the results of getting consistent 6% to 8% returns. The message we heard was that all the advantages and disadvantages of the 2 approaches need to be explained.

   c) There should be a separate advisory board that is only focused on DC issues such as education, communication, investment options for these members as the full board could be too involved in Tier 1 and 2 to focus on the DC issues.

2. **Discount rate used for Tier 3**

   As mentioned in the risk pooling section of the report, the largest risk to Tier 3 will be if the return on the fund is less than the actuarial discount rate or if the actuarial discount rate needs to be lowered in subsequent valuations. A number of the delegates suggested that the initial discount rate should be in the 5% to 6% range with one delegate suggesting that 4% would be a more reasonable figure.

   The actuarial discount rate should be considered in combination with the general actuarial salary increase assumption and expected inflation. The contributions must also be affordable to both members and employers as there is a 50% sharing for Tier 3 members.

The decision on the actuarial economic assumptions must be made by the Board on advice from the actuaries to the fund.

For discussion purposes the following table shows the expected normal costs for a new entrant profile with the Tier 3 benefit structure. The table was developed by the Reason Foundation using the model they had when discussing the new Tier 3 benefits. Please note that if the Board wants to consider other options the contribution rates must be calculated by the PSPRS actuaries.

For PSPRS Tier 3 (New Hire) DB Only:

- Gross normal cost with a 7.4% discount rate: 17.25%
- Gross normal cost with a 6.4% discount rate: 22.00%
- Gross normal cost with a 6.4% discount rate
  AND lowering the salary growth assumption (to 3%): 19.6%

Lowering the discount rate only will increase the normal cost by 4.75% to 22.0%. If the discount rate and the salary assumption were lowered by 1% the total increase would be 2.3%

Notes on methodology: We are assuming the COLA at 1.75% annually, but the plan may direct GRS to calculate normal cost with some separate assumption on the COLA. We are factoring into the normal cost refunds based on existing patterns of pre-vesting termination, but it is likely that patterns will change given the option for individuals who are less likely to stay for a full career to select the DC only plan and it is possible that GRS will make some estimate of the change and adjust normal cost accordingly. Our new entrant profile used is for a hire at age 30.

3. Investment asset allocation for Tier 3

The question of whether the investment asset allocation applicable to Tier 1 and 2 is appropriate for Tier 3 was raised as there will be no retirees in Tier 3 for a considerable number of years. Current the retirees comprise 52% of the actuarial liability and the current DROP liability is 12%. It is also that the contribution inflow will exceed benefit for a long period of time.

4. Social Security Exemption

One delegate was concerned that they would lose their social security exemption and felt that the statues governing the PSPRS could state that social security exemption is applicable where required. Cortex has not researched this issue.

5. **Communication of Financial positions for Tier 1 and 2 to employers.**

There was one delegate who felt that the communication of the financial results for each employer for Tier 1 and 2 benefits could be enhanced to help the employer understand the reasons for any changes and what could be done resolve the issue. They were trying to understand how to manage their unfunded liability contributions.