PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM
BOARD OF TRUSTEES INVESTMENT COMMITTEE MEETING

FEBRUARY 14, 2020

AGENDA

The Investment Committee of the Board of Trustees of the Public Safety Personnel Retirement System (the "System" or "PSPRS") will meet at the administrative offices of PSPRS, 3010 East Camelback Rd., Suite 200, Phoenix, Arizona, 85016, commencing at 10:00 a.m. on Friday, **FEBRUARY 14, 2020**. Members of the Investment Committee will attend either in person or by telephonic conference call. The meeting will continue until 12:00 p.m. or until the matters set forth in this agenda are otherwise addressed. All persons wishing to attend are invited. The Investment Committee reserves the right to consider agenda items out of their listed order. The Investment Committee may vote to hold an executive session, which will not be open to the public, to discuss certain matters. One or more members of the Board of Trustees of the Public Safety Personnel Retirement System who are not members of the Investment Committee might be present for purposes of auditing the Investment Committee meeting, but are not allowed to participate in the meeting or take part in the Investment Committee's deliberations.

1. Call to Order, Roll Call, Opening Remarks.

Mr. Harry A. Papp
Investment Committee Chairman

2. Call to the Public:

This is the time for the public to comment. Members of the Committee may not discuss items that are not specifically identified on the agenda. Therefore, pursuant to A.R.S. § 38-431.01 (H), action taken as a result of public comment will be limited to directing staff to study the matter, responding to any criticism, or scheduling the matter for a later date for further consideration and possible recommendations to the Board of Trustees.

3. Discussion and possible action regarding future meeting dates and future agenda items.

4. Presentation and discussion regarding investment reports.

Mr. Mark Steed
Chief Investment Officer

a. Investment performance.

b. Strategic asset allocation.

c. Tactical asset allocation.

5. Staff discussion regarding 457 program, defined contribution plan.

Mr. Mark Steed

6. The Board may vote to go into executive session (which will not be open to the public) to seek legal advice from the Board's attorney's on any matter on the agenda.

7. Adjournment

Members of the Board of Trustees who are non-members may audit the meeting at their discretion but are not permitted to participate in the Investment Committee's discussions or deliberations. A copy of the agenda background material that is provided to the Committee and Board of Trustees (with the exception of materials relating to possible executive sessions and/or materials exempt by law from public inspection) is available for public inspection at the administrative offices of the Public Safety Personnel Retirement System, 3010 East Camelback Road, Suite 200, Phoenix, Arizona, during regular business hours. The agenda is subject to revision up to 24 hours prior to the meeting.

Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Cheryl Cohen or Claudia Martinez at (602) 889-9260. Requests should be made as early as possible to arrange the accommodation.

Arizona PSPRS Trust - Performance as of 12/31/2019 (Gross of Fees)

Description	Asset Allocation Market Values ($)	%	7/1/2019 Target (%)	Range (%)	Performance (TWR) Month	3 Months Ending	Fiscal YTD	Calendar YTD	1 Year	3 Years*	5 Years*	7 Years*	10 Years*
Arizona PSPRS Trust - Total Fund	**$11,307,207,244**	**100.00%**			**1.56%**	**4.02%**	**5.20%**	**13.39%**	**13.39%**	**8.31%**	**7.19%**	**7.92%**	**7.58%**
Target Fund Benchmark †					*2.40%*	*6.07%*	*6.83%*	*17.44%*	*17.44%*	*9.17%*	*7.20%*	*7.72%*	*7.68%*
Capital Appreciation	**$7,410,422,660**	**65.54%**			**1.95%**	**5.26%**	**6.30%**	**16.84%**	**16.84%**	**9.76%**	**8.57%**	**9.80%**	**9.15%**
US Public Equity	$2,397,419,803	21.20%	**20%**	**15-25%**	3.00%	9.39%	10.92%	32.27%	32.27%	14.33%	10.81%	13.56%	12.38%
Russell 3000					*2.89%*	*9.10%*	*10.37%*	*31.02%*	*31.02%*	*14.57%*	*11.24%*	*14.38%*	*13.42%*
Int'l Public Equity	$2,013,797,987	17.81%	**18%**	**14-22%**	4.20%	8.75%	7.25%	23.01%	23.01%	10.35%	5.96%	5.84%	5.23%
MSCI ACWI IMI ex-US Net					*4.41%*	*9.20%*	*7.33%*	*21.63%*	*21.63%*	*9.84%*	*5.71%*	*5.65%*	*5.21%*
Global Private Equity	$2,905,820,116	25.70%	**23%**	**15-30%**	-0.31%	0.03%	1.97%	4.22%	4.22%	6.02%	7.49%	8.41%	7.21%
Russell 3000 + 1%					*3.02%*	*9.19%*	*10.62%*	*32.02%*	*32.02%*	*15.58%*	*12.25%*	*15.38%*	*14.42%*
Venture Capital & Buyouts	$1,347,138,689	11.91%			-1.83%	-1.45%	0.89%	5.40%	5.40%	10.08%	13.11%	15.10%	14.69%
Real Estate	$876,223,164	7.75%			0.83%	1.16%	3.85%	0.38%	0.38%	0.82%	1.67%	2.74%	0.92%
Real Assets	$682,458,263	6.04%			1.33%	1.57%	2.00%	6.11%	6.11%	4.97%	4.51%	4.07%	5.24%
Other Assets	$93,384,754	0.83%	**0%**	**0-10%**	-1.48%	-1.17%	2.36%	8.46%	8.46%	10.79%	9.78%	12.55%	13.28%
Private Securities	$93,384,754	0.83%			-1.48%	-1.17%	2.36%	8.46%	8.46%	10.79%	9.78%	12.55%	13.28%
Contractual Income	**$1,870,318,022**	**16.54%**			**0.66%**	**1.55%**	**3.20%**	**7.77%**	**7.77%**	**7.69%**	**7.41%**	**7.56%**	**7.61%**
Core Bonds	$228,660,989	2.02%	**3%**	**2-15%**	0.04%	0.19%	2.44%	9.52%	9.52%	4.66%	3.30%	3.22%	4.26%
Bloomberg Barclays US Aggregate					*-0.07%*	*0.18%*	*2.45%*	*8.72%*	*8.72%*	*4.03%*	*3.05%*	*2.72%*	*3.75%*
Private Credit	$1,387,827,130	12.27%	**22%**	**15-30%**	0.75%	1.65%	3.60%	6.03%	6.03%	9.24%	9.17%	11.82%	12.17%
50% BofA ML US High Yield BB-B Cnstr/ 50% CSFB Leveraged Loans Index					*1.34%*	*1.71%*	*2.76%*	*8.51%*	*8.51%*	*4.85%*	*4.90%*	*4.66%*	*5.39%*
Private Lending	$524,779,009	4.64%			-0.34%	1.43%	3.02%	4.73%	4.73%	7.39%	7.48%	7.86%	7.85%
Special Credit	$863,048,122	7.63%			1.44%	1.80%	3.96%	6.89%	6.89%	10.20%	9.94%	11.90%	11.11%
Other Assets	$253,829,902	2.24%	**0%**	**0-10%**	0.73%	2.18%	2.59%	11.05%	11.05%	6.74%	6.70%	6.38%	7.15%
Public Securities	$99,272,942	0.88%			1.87%	2.18%	2.94%	12.38%	12.38%	5.28%	4.53%	3.61%	**N/A**
Private Securities	$154,556,961	1.37%			0.02%	2.46%	2.18%	7.93%	7.93%	11.14%	22.49%	19.53%	16.14%
Diversifying Strategies	**$1,761,928,384**	**15.58%**	**12%**	**5-20%**	**1.17%**	**2.28%**	**3.46%**	**8.93%**	**8.93%**	**5.50%**	**4.32%**	**4.20%**	**5.35%**
LIBOR + 4%					*0.48%*	*1.46%*	*3.02%*	*6.37%*	*6.37%*	*5.96%*	*5.38%*	*5.05%*	***4.85%***
Cash**	**$264,538,178**	**2.34%**	**2%**	**2-6%**	**0.20%**	**0.62%**	**1.42%**	**3.28%**	**3.28%**	**3.17%**	**2.64%**	**2.67%**	**3.16%**
LIBOR (USD 3-Month Index)					*0.16%*	*0.49%*	*1.05%*	*2.37%*	*2.37%*	*1.96%*	*1.38%*	*1.05%*	*0.85%*

* Please note that all the returns for all time periods exceeding 1 year are *annualized*.

** The returns for Cash account for both the interest on cash holdings and the revenue from securities lending.

† - Please see Page 2 for information on the blended fund benchmark changes and effective dates.

Target Fund Benchmarks/ Effective Dates:

July 1, 2019 to Present: 20% - Russell 3000 Index, 18% - MSCI ACWI Ex-US IMI Net Index, 23% - Russell 3000 + 100 bps, 3% - Bloomberg Barclays US Aggregate Index, 22% - BofA-ML US HY BB-B Constrained Index (50%) & CSFB Leveraged Loan Index (50%), 12% - LIBOR +400 bps, and 2% - LIBOR.

July 1, 2017 to June 30, 2018: 16% Russell 3000, 14% MSCI World Ex-US Net, 12% Russell 3000 + 100 bps, 5% Fixed Income Blended Benchmark, 16% Private Credit (fka Credit Opportunities) Benchmark, 12% 3-Month LIBOR + 300 bps, 9% CPI + 200 bps, 10% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2016 to June 30, 2017: 16% Russell 3000, 14% MSCI World Ex-US Net, 11% Russell 3000 + 100 bps, 5% Fixed Income Blended Benchmark, 15% Credit Opportunities Benchmark, 5% BofA ML 3-Month T-Bill + 200 bps, 10% 3-Month LIBOR + 300 bps, 8% CPI + 200 bps, 10% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2015 - June 30, 2016: 16% Russell 3000, 14% MSCI World Ex-US Net, 11% Russell 3000 + 100 bps, 7% Fixed Income Blended Benchmark, 13% Credit Opportunities Benchmark, 5% BofA ML 3-Month T-Bill + 200 bps, 10% 3-Month LIBOR + 300 bps, 8% CPI + 200 bps, 10% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2014 - June 30, 2015: 16% Russell 3000, 14% MSCI World Ex-US Net, 11% Russell 3000 + 100 bps, 7% Fixed Income Blended Benchmark, 13% Credit Opportunities Benchmark, 4% BofA ML 3-Month T-Bill + 200 bps, 10% 3-Month LIBOR + 300 bps, 8% CPI + 200 bps, 11% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2013 - June 30, 2014: 17% Russell 3000, 14% MSCI ACWI Ex-US Net, 10% Russell 3000 + 100 bps, 8% Fixed Income Blended Benchmark, 12% Credit Opportunities Benchmark, 4% BofA ML 3-Month T-Bill + 200 bps, 10% 3-Month LIBOR + 300 bps, 8% CPI + 200 bps, 11% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2012 - June 30,2013: 18% Russell 3000, 14% MSCI World Ex-US Net, 9% Russell 3000 + 100 bps, 12% Fixed Income Blended Benchmark, 12% Credit Opportunities Benchmark, 4% BofA ML 3-Month T-Bill + 200 bps, 8% 3-Month LIBOR + 300 bps, 7% CPI + 200 bps, 10% NCREIF NPI, 4% Risk Parity Benchmark and 2% BofA ML 3-Month T-Bill.

July 1, 2010 - June 30, 2012: 20% Russell 3000, 15% MSCI World Ex-US Net, 8% 3-Month LIBOR + 300 bps, 20% Fixed Income Blended Benchmark, 4% BofA ML 3-Month T-Bill + 200 bps, 9% BofA ML US High Yield BB-B Constrained, 8% Russell 3000 + 100 bps, 6% CPI + 200 bps, 8% NCREIF NPI and 2% BofA ML 3-Month T-Bill.

April 1, 2009 - June 30, 2010: 30% Russell 3000, 20% MSCI World Ex-US Net, 20% Fixed Income Blended Benchmark, 8% NCREIF NPI, 8% Russell 3000 + 100 bps, 8% BofA ML US High Yield BB-B Constrained, 5% CPI + 200 bps and 1% BofA ML 3-Month T-Bill.

Arizona PSPRS Trust - Historical Calendar Year Performance (Gross of Fees)

Calendar Year:	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Arizona PSPRS Trust - Total Fund	**13.39%**	**0.59%**	**11.39%**	**8.49%**	**2.65%**	**6.37%**	**13.26%**	**9.38%**	**0.96%**	**10.35%**
Target Fund Benchmark	***17.44%***	***-1.86%***	***12.92%***	***7.73%***	***1.01%***	***5.36%***	***12.85%***	***11.11%***	***2.26%***	***9.55%***

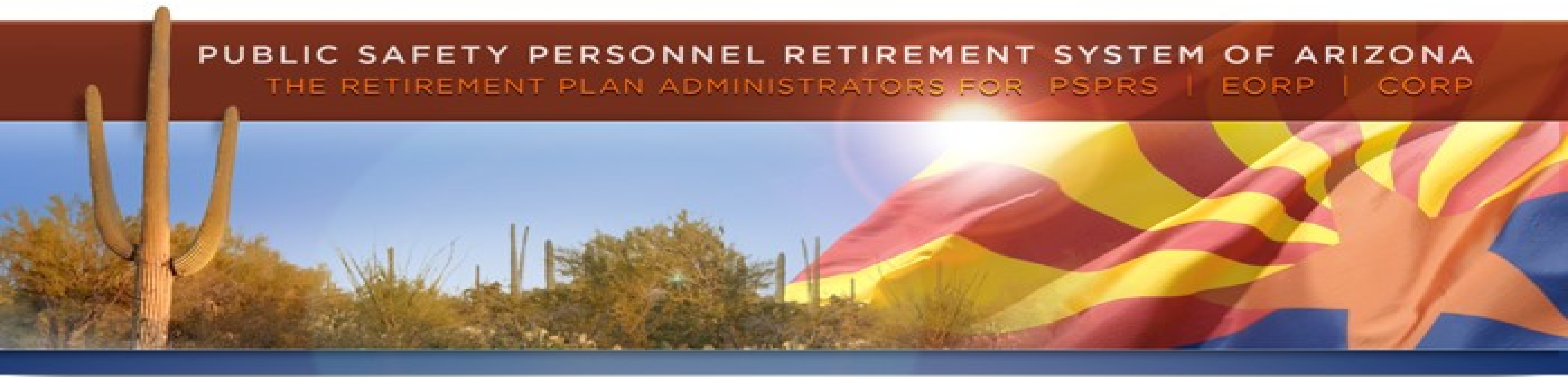
Arizona PSPRS Trust - Historical Fiscal Year Performance (Net of Fees)

	Annualized 10 Years	Annualized 20 Years	Annualized 30 Years
Arizona PSPRS Trust - Total Fund **** as of 6/30/2019***	**8.14%**	**4.13%**	**6.78%**

Investment Department
Strategic and Tactical Asset Allocation
Agenda items 4b and 4c

Investment Committee

2/14/2020



Strategic Asset Allocation (Item 4b)

Big picture, a plan's asset allocation must align and logically connect to a plans goals; including the plans obligations, objectives, liquidity and other statutory constraints.

Strategic asset allocation determines the mix of assets a plan expects to hold for the long-term based on the above analysis
Tactical asset allocation is a short to medium-term view on which assets to hold based on market opportunities.

	Target	Min	Max	Benchmark
Capital Appreciation				
US Public Equity	20%	15%	25%	Russell 3000
International Public Equity	18%	14%	22%	MSCI ACWI Ex-US IMI Net
Global Private Equity	23%	15%	30%	Russell 3000 + 1%
Contractual Income				
Core Bonds	3%	2%	15%	Bloomberg Barclays US Aggregate
Private Credit	22%	15%	30%	50% BofAML US HY BB-B Constrained Ind / 50% CSFB Leveraged Loan Index
Diversifying Strategies	12%	5%	20%	LIBOR + 4%
Cash	2%	2%	6%	LIBOR

Strategic Asset Allocation (Item 4b)

- The current allocation is overweight Diversifying Strategies and underweight private credit (which includes special situations and niche credit)
- Cash is moved from Diversifying Strategies to Private Credit as opportunities permit

	Target	Min	Max	Current (as of 12/31/19)
Capital Appreciation				
US Public Equity	20%	15%	25%	21.2%
International Public Equity	18%	14%	22%	17.8%
Global Private Equity	23%	15%	30%	25.7%
Contractual Income				
Core Bonds	3%	2%	15%	2%
Private Credit	22%	15%	30%	12.3%
Diversifying Strategies	12%	5%	20%	15.6%
Cash	2%	2%	6%	LIBOR

Strategic Asset Allocation - Process

1. Understand both the economic and actuarial realities of the pension system
2. Determine timing and size of cash flow requirements
3. Understand volatility's impact on plan objectives (contribution rates, etc.) and adopt an acceptable target range for volatility
4. Select assets based on their ability to maximize the plan's probability of success within approved volatility ranges

Staff is currently working with consultants and actuaries on the aforementioned objectives to be presented at future meetings.

	Target	Max	Potential Changes
Capital Appreciation			
US Public Equity	20%	25%	• Alter target allocation • Revisit the benchmark (Russell 3000) • Consider sector-specific instruments instead of broad index exposure
International Public Equity	18%	22%	• Overweighting Chinese equities
Global Private Equity	23%	30%	
Contractual Income			
Core Bonds	3%	15%	
Private Credit	22%	30%	
Diversifying Strategies	12%	20%	
Cash	2%	6%	• Reduce target to 1%

Strategic Principles

Strategic priorities

- Return over risk. Actuarial smoothing and the amortization of unfunded liabilities mute income volatility in any single year. This doesn't mean the System should ignore risk (volatility), only that the System can tolerate more of it and that risk matters less than returns.
- Force investments with similar economic risks to compete for capital. Many financial markets are different but not truly distinct on an economic basis. For example, junk bond prices often move the same direction as publicly-traded stock prices. Acknowledging such similarities, favoring the purest instrument for a certain risk, is more likely to result in an efficient asset mix.
- Minimize investments with returns below the AER . Cash, core bonds and treasuries, among other assets (low volatility hedge funds), won't meet the AER in the near term. Allocations should/will be kept to a minimum (i.e. for liquidity, diversification, etc.).
- Diversify without sacrificing returns . While returns (not volatility) are the priority, investments that are not correlated to existing holdings and have expected returns that are the same or higher as the reference assets reduce volatility but not returns.
- Increase the System's platform of income-based strategies. Despite competition for traditional income-based investments (private lending, leasing, etc.) new markets repeatedly develop and, though not riskless, provide income-based returns in excess of the AER.
- Look for ways to collaborate with stakeholders . Proactively explore ways to prudently partner with stakeholders to identify mutually beneficial capital solutions.

Tactical Asset Allocation (Item 4c)

Interconnectivity is increasing with globalization which increases correlations among once disparate financial markets.

Broad ↔ Detailed

Capital Appreciation	• US Equity • Int'l Equity • Private Equity	• Domestic Equity • Intl Equity • EM Equity • EM Debt • Buyouts • Venture Capital • Opportunistic Real Estate
Contractual Income	• Investment Grade Bonds • Private lending	• US IG Bonds • Int'l IG Bonds • MLPs • REITs • Direct Lending • Reinsurance • Film Royalties • Music Royalties • Leasing • Core-plus Real Estate
Diversifying Strategies	• Hedge Funds	• Event-driven • CTAs • Global Macro • Merger Arbitrage

Tactical Opportunities

Tactical Principles

Methods: Quantitative and qualitative. Sponsor must specify outcome, timing and degree of confidence. Outcomes are scored against prediction for calibration. By “high-confidence” we mean based on objective metrics, not “over-confidence”.

- **High-confidence / High value-add**: High degree of outcome predictability. Typically a structural dislocation due to regulatory changes or other non-economic behavior, rarely the result of out-smarting other investors. Rare. Merits a high allocation. Not scalable. Likely time independent. Key risk is correlation to other strategies.
- **High-confidence / Low value-add**: High degree of outcome predictability. Usually an efficiency like a fee concession. Common. Merits a high allocation. Scalable. Likely time independent. Key risk is correlation to other strategies.
- **Low-confidence / High value-add**: Low degree of outcome predictability. Relies on internal research. Time dependent, thesis can take months or years to develop. Merits a smaller allocation due to uncertainty but justified given potential payout. Key risk is idiosyncratic but correlation to other strategies is important too.
- **Low-confidence / Low value-add**: Do not pursue.

Tactical Framework

...Continued

- Ultimately high-predictability is more useful than the magnitude of an idea's potential value-add because allocators can take bigger positions which are more likely to materially contribute to investment performance.
- Low conviction allocations must be sized appropriately to avoid idiosyncratic risks, requiring allocators to be right a lot, and also must avoid cross-correlations.

Table – Profit generated based on excess performance and capital allocation

- The table below shows the expected profit (in percentage) of a particular trade based on the level of excess performance relative to the reference asset and how much capital is allocated to the idea.
- For example, an investor that expects to earn 10% will add 0.05% (10.05%) to performance by allocating 5% to a trade that makes 11%.

		Excess performance					
		+1%	+2%	+3%	+4%	+5%	+10%
Capital	5.0%	0.050%	0.100%	0.150%	0.200%	0.250%	0.500%
	7.5%	0.075%	0.150%	0.225%	0.300%	0.375%	0.750%
	10.0%	0.100%	0.200%	0.300%	0.400%	0.500%	1.000%