



*PERA's mission is to administer and promote sustainable retirement plans
and provide services that our members value.*

Public Employees Retirement Association 2017 Financial Solvency Measures

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PERA Membership as of June 30, 2016

| | General Employees Retirement Plan | Police & Fire Retirement Plan | Local Government Correctional Plan |
|-------------------------|--------------------------------------|----------------------------------|---------------------------------------|
| Receiving Benefits | 94,288 | 10,352 | 967 |
| Deferred Payment Status | 184,932 | 2,549 | 5,114 |
| Active Members | <u>148,745</u> | <u>11,398</u> | <u>3,827</u> |
| Total Members | 427,965 | 24,299 | 9,908 |
| Active to Retiree Ratio | 1.6 to 1 | 1.1 to 1 | 4.0 to 1 |
| Active Average Age | 47 | 40 | 39 |
| Active Average Service | 10 | 12 | 8 |
| Active Average Pay | \$39,700 | \$80,400 | \$52,800 |
| Retiree Average Age | 73 | 68 | 66 |
| Retiree Average Benefit | \$14,500 | \$53,700 | \$9,000 |

PERA also administers a \$54M lump-sum defined benefit plan for 2,600 volunteer firefighters and a \$58M defined contribution plan for 7,700 current and former local elected officials.

PERA Plans FY16 Cash Flow & Investment Returns

| | General Employees Retirement Plan | Police & Fire Retirement Plan | Local Government Correctional Plan |
|----------------------------|--------------------------------------|----------------------------------|---------------------------------------|
| Employee Contribution Rate | 6.5% | 10.8% | 5.8% |
| Employer Contribution Rate | 7.5% | 16.2% | 8.8% |
| State Contribution Rate | <u>0.6%</u> | <u>2.5%</u> | <u>0.0%</u> |
| Total Contribution Rate | 14.6% | 29.5% | 14.6% |
| Total Active Payroll | \$5.6B | \$868M | \$192M |
| Total Contributions | \$0.8B | \$260M | \$27M |
| Total Benefit Payments | \$1.4B | \$501M | \$10M |
| Actual Investment Earnings | (\$21M) | (\$9M) | (\$0.2M) |
| Investment Rate of Return | (0.2%) | (0.1%) | 0.0% |

Police & Fire Members do not participate in Social Security.

PERA P&F July 1, 2016 Actuarial Valuation Results

Participant
Data

Assumptions
& Methods

Plan
Provisions

Present Value of Benefits

Actuarial Accrued Liability = \$8.4B

Present Value of Future
Service Benefits

88%

Actuarial Value of Assets = \$7.4B

Unfunded
Liability \$1.0B

25-Year
Amortization
20.7%

+

Normal
Cost &
Expenses
7.6%

| | |
|----------------------------------|--------------|
| Statutory Contribution | 29.5% |
| Required Contributions | <u>28.3%</u> |
| Funding Sufficiency/(Deficiency) | 1.2% |

PERA P&F Plan Proposed Assumption Changes

Recommended **Demographic Changes** Per 2016 PERA Actuary Experience Study:

- Mortality Rates
- MP-2015 Mortality Improvement Scale
- Retirement Rates
- Disability Rates
- Withdrawal Rates
- % Married & Spouse Age Difference
- Benefit Election Rates

\$153M Liability Increase

Board Proposed **Economic Changes:**

- Investment return from 8.0% to 7.5%
- Inflation from 2.75% to 2.50%
- Individual Salary Increases 0.25% lower
- Total Payroll Growth from 3.5% to 3.25%

\$466M Liability Increase

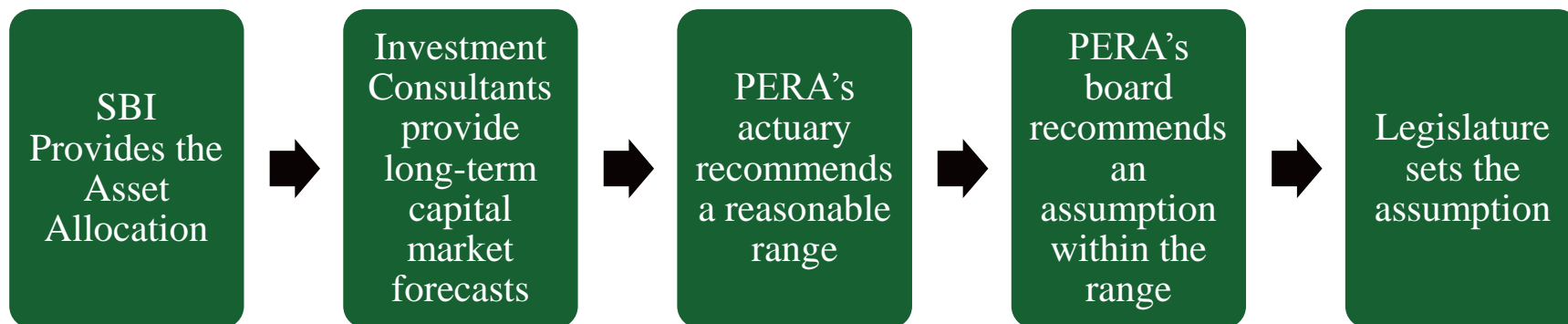
Recommended **Combined Service Loads** Change Per 2016 LCPR Actuary Study:

\$7M Liability Increase

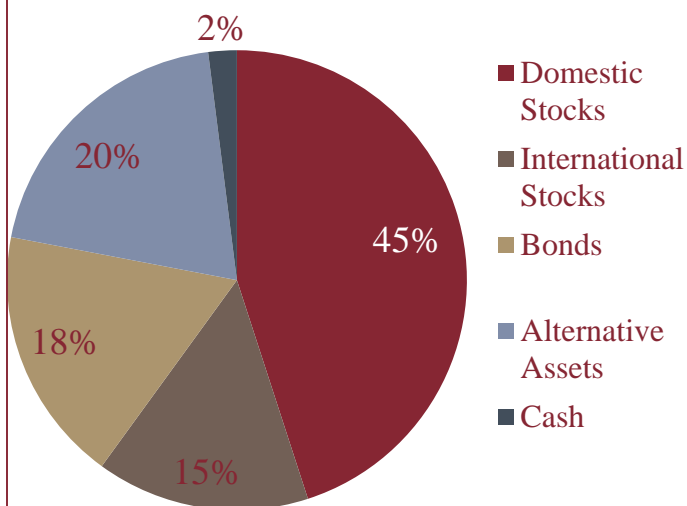
Board Recommended Change per Society of Actuaries 2016 Update to **Mortality Improvement Model:**

\$76M Liability Decrease

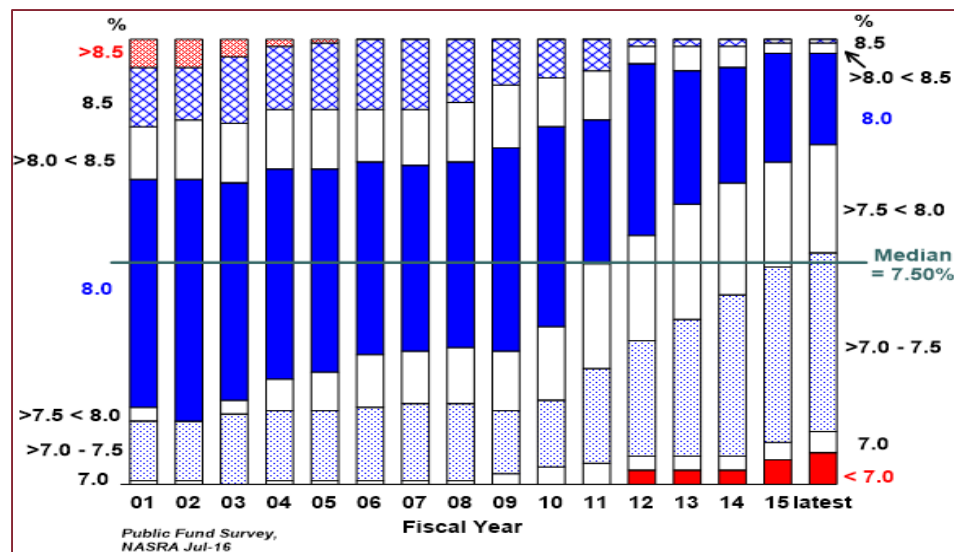
Investment Return Assumption Setting Process



SBI Long-Term Policy Target



National Investment Assumption Trend



P&F Plan Actuarial Valuation Updated

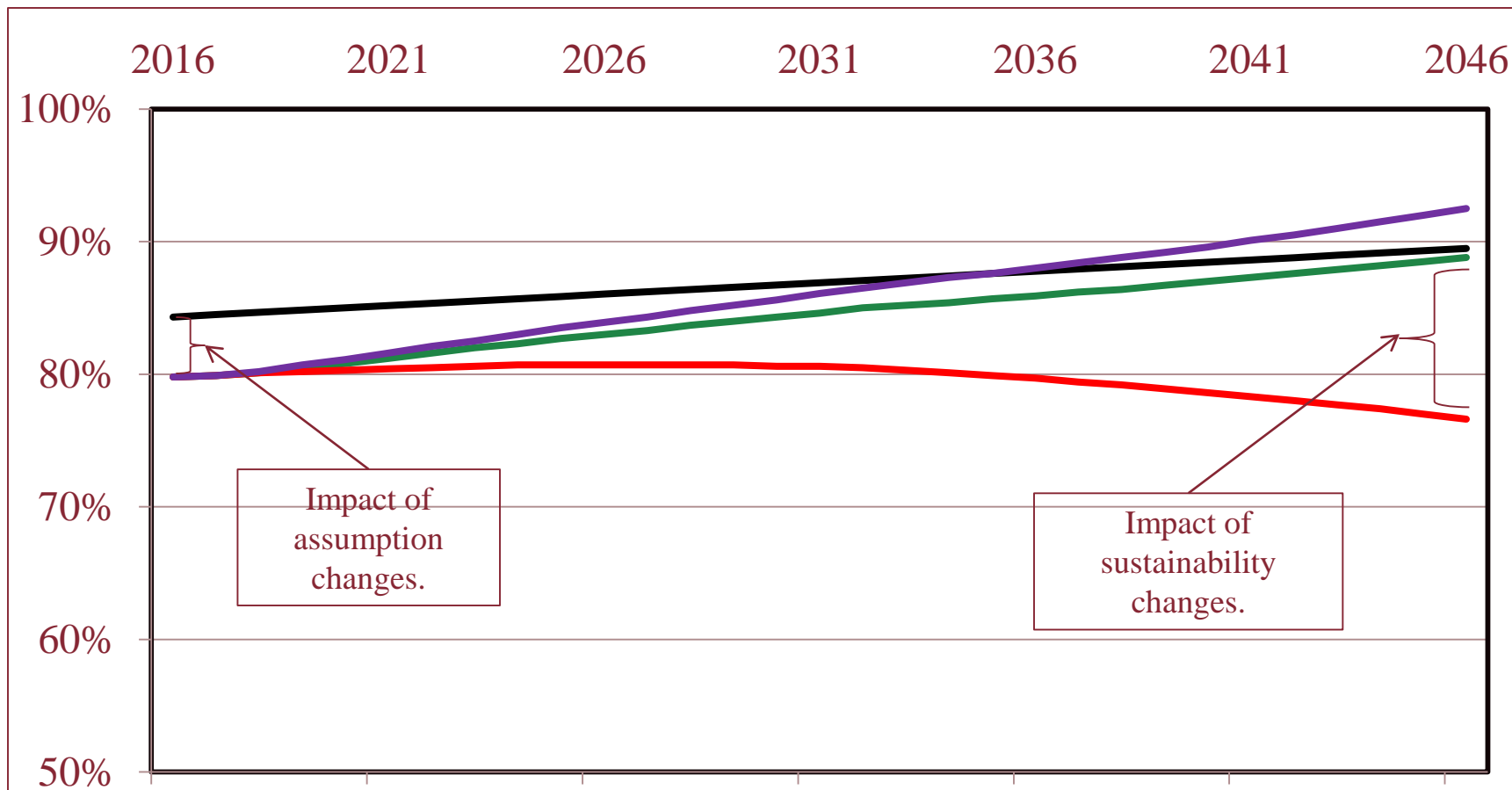
| | FY 2016 Valuation | With Assumption Changes | Comment |
|---|----------------------|-------------------------------|---|
| Actuarial Accrued Liability (AAL) | \$8.4B | \$8.9B | All Demographic & Economic Assumption Changes |
| Market Value of Assets (MVA) | <u>(7.1B)</u> | <u>(7.1B)</u> | |
| Unfunded Actuarial Accrued Liability | \$1.3B | \$1.8B | |
| Funded Ratio (MVA/AAL) | 84.3% | 79.8% | 4.5% decrease |
| Projected 2.5% COLA Start Date | 2051 | Never | No Projected 2.5% COLA |
| Statutory 100% Full Funding Date MV Funding Sufficiency/(Deficiency) | 2041 (0.9%) | 2041 (4.2%) | Declining Funded Status |

PERA P&F Proposed Sustainability Changes

| | | Funding Sufficiency/ (Deficiency) % of Payroll | Funding Sufficiency/ (Deficiency) \$ Amount |
|--|---|--|---|
| Funding Sufficiency/(Deficiency) with Proposed Assumption Changes <u>Before</u> Sustainability Measures | | (4.2%) | (\$38M) |
| Measurement Changes | Effect of Change to 30 Year Amortization Period | + 1.0% | + 9M |
| Benefit Changes | Effect of Elimination of 2.5% COLA Trigger | + 0.0% | + 0M |
| Contribution Changes | Effect of Employee Contribution Increase | + 1.0% | + 9M |
| | Effect of Employer Contribution Increase | + 1.5% | + 14M |
| Funding Sufficiency/(Deficiency) with Proposed Assumption Changes <u>and</u> Sustainability Measures | | = (0.7%) | = (\$6M) |

The Governor's proposed budget includes \$4.5M in FY18 and FY19 and \$9M per year thereafter in direct State aid to the PERA P&F Fund.

PERA P&F Plan Funding Projections



Black line: Projection based on 2016 Valuation (8%)

Red line: Projection based on proposed assumptions (7.5%)

Green line: Projection based on proposed assumptions (7.5%) and Board sustainability measures

Purple line: Projection based on proposed assumptions (7.5%), Board sustainability measures, and \$9M/year Budgeted Aid

PERA General Plan Proposed Assumption Changes

Approved **Demographic Changes** Per 2015 PERA Actuary Experience Study:

- Mortality Rates
- MP-2014 Mortality Improvement Scale
- Retirement Rates
- Disability Rates
- Withdrawal Rates
- % Married & Spouse Age Difference
- Benefit Election Rates

\$416M Liability Increase
(Included in 2016 valuation)

Board Proposed **Economic Changes:**

- Investment return from 8.0% to 7.5%
- Inflation from 2.75% to 2.50%
- Individual Salary Increases 0.25% lower
- Total Payroll Growth from 3.5% to 3.25%

\$1.3B Liability Increase

Recommended **Combined Service Loads** Change Per 2016 LCPR Actuary Study:

\$0.8BM Liability Decrease

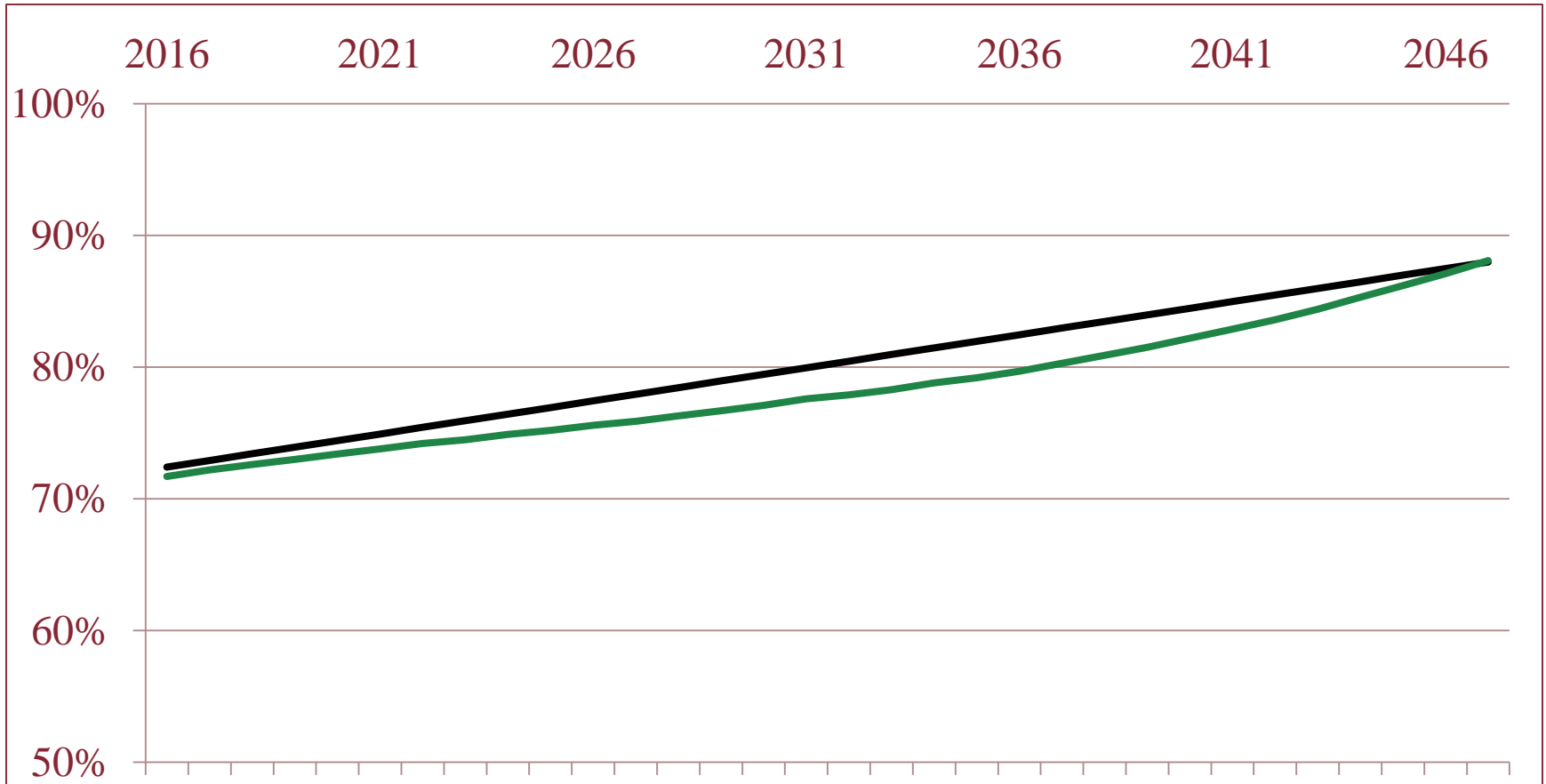
Board Recommended Change per Society of Actuaries 2016 Update to **Mortality Improvement Model:**

\$0.1BM Liability Decrease

General Plan Actuarial Valuation Updated

| | FY 2016 Valuation | With Other Assumption Changes | Comment |
|--------------------------------------|----------------------|-------------------------------------|--|
| Actuarial Accrued Liability (AAL) | \$24.8B | \$25.1B | Combined Service Annuity, MP-2016, & Economic Assumption Changes |
| Market Value of Assets (MVA) | <u>(18.0B)</u> | <u>(18.0B)</u> | |
| Unfunded Actuarial Accrued Liability | \$6.8B | \$7.1B | |
| Funded Ratio (MVA/AAL) | 72.4% | 71.7% | 0.7% decrease |
| Projected 2.5% COLA Start Date | 2053 | 2061 | 8 Year Delay |
| Statutory 100% Full Funding Date | 2033 | 2033 | Slower Funding Improvement |
| MV Funding Sufficiency/(Deficiency) | (1.1%) | (3.5%) | |

General Employee Plan Funding Projections



Black line: Projection based on 2016 Valuation (8%)

Green line: Projection based on all proposed assumptions (including 7.5%)

General Employee Plan Funding Sufficiency/(Deficiency)

| | Funding Sufficiency |
|--|---------------------|
| Based on 7.5% Assumption, 17 Year Amortization Period, and Market Value of Assets | (3.5%) |
| Based on 7.5% Assumption, 30 Year Amortization Period, and Market Value of Assets | (0.5%) |
| Based on 7.5% Assumption, 30 Year Amortization Period, and Actuarial Value of Assets | 0.2% |

Sensitivity of Results:

- If the Plan experiences a single 3% market value of asset gain, the 2.5% trigger is removed, and all other assumptions are met, the plan will be 100% funded in 30 years.
- If the liability estimate is 2% too high, and all other assumptions are met, the plan will be 100% funded in 30 years.
- Each year, either the asset gain will be \$90M higher or the asset loss will be \$90M less by using 7.5% instead of 8.0%.