Segal Consulting

University of California Retirement Plan (UCRP)

JULY 1, 2017 VALUATION PRESENTATION

Completed by Segal Consulting San Francisco

UCRS Advisory Board
December 1, 2017

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Highlights of 2017 Actuarial Valuation

- Approximately 14.5% market value return for 2016/17
  - Actuarial value return of 8.0% due to five-year smoothing of gains/losses
  - Market value of $62.1 billion exceeds actuarial value by $0.2 billion
- Increase in funded ratio (83% to 85%) and decrease in UAAL ($12.077 to $11.081 billion) and total funding policy contribution (28.0% to 27.0%) due to:
  - Contributions funding the total funding policy contributions
  - Investment gain on actuarial value of assets
- $171 million in State funding received during 2016/17
- $481 million STIP to UCRP transfer occurred during 2016/17
  - Transfer is reflected in the valuation results
  - Represents an amount that along with actual contributions results in full funding of the total funding policy contributions for 2016/17

Highlights of 2017 Actuarial Valuation

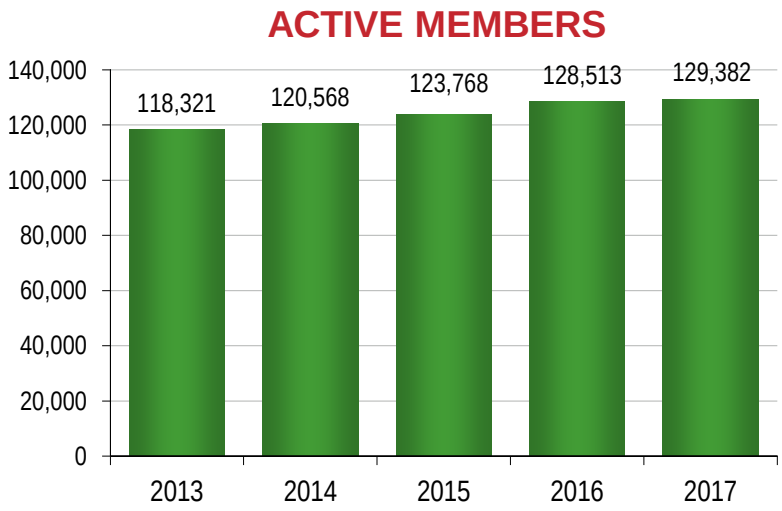
- In July 2017 the Regents approved an increase in the University contribution rate to 15% effective July 1, 2018
  - Increase also applies to the University's contribution rate towards the UAAL on behalf of employees who elect Savings Choice
    - Rate increased from 6% to 7% effective July 1, 2018
- In July 2017 the Regents also approved additional transfers from STIP and/or external financing to fully fund the ADC for fiscal years 2018/19 through 2021/22
  - These amounts will be reflected in future actuarial valuations as they are contributed to UCRP

Highlights of 2017 Actuarial Valuation

Changes in Plan Provisions

- The 2016 Tier of UCRP benefits became effective on July 1, 2016
  - Applies to employees hired (or in some cases rehired) on or after July 1, 2016
  - Limits pensionable salary to mirror pensionable salary limit under the 2013 California Public Employees' Pension Reform Act (PEPRA)
  - Employees have choice to enter the 2016 Tier ("Pension Choice") or a defined contribution plan ("Savings Choice")
  - For employees who elect the defined contribution plan, the University will maintain a contribution on pensionable salary up to the Internal Revenue Code (IRC) limit to go towards paying down the unfunded liability of UCRP

UCRP Demographics

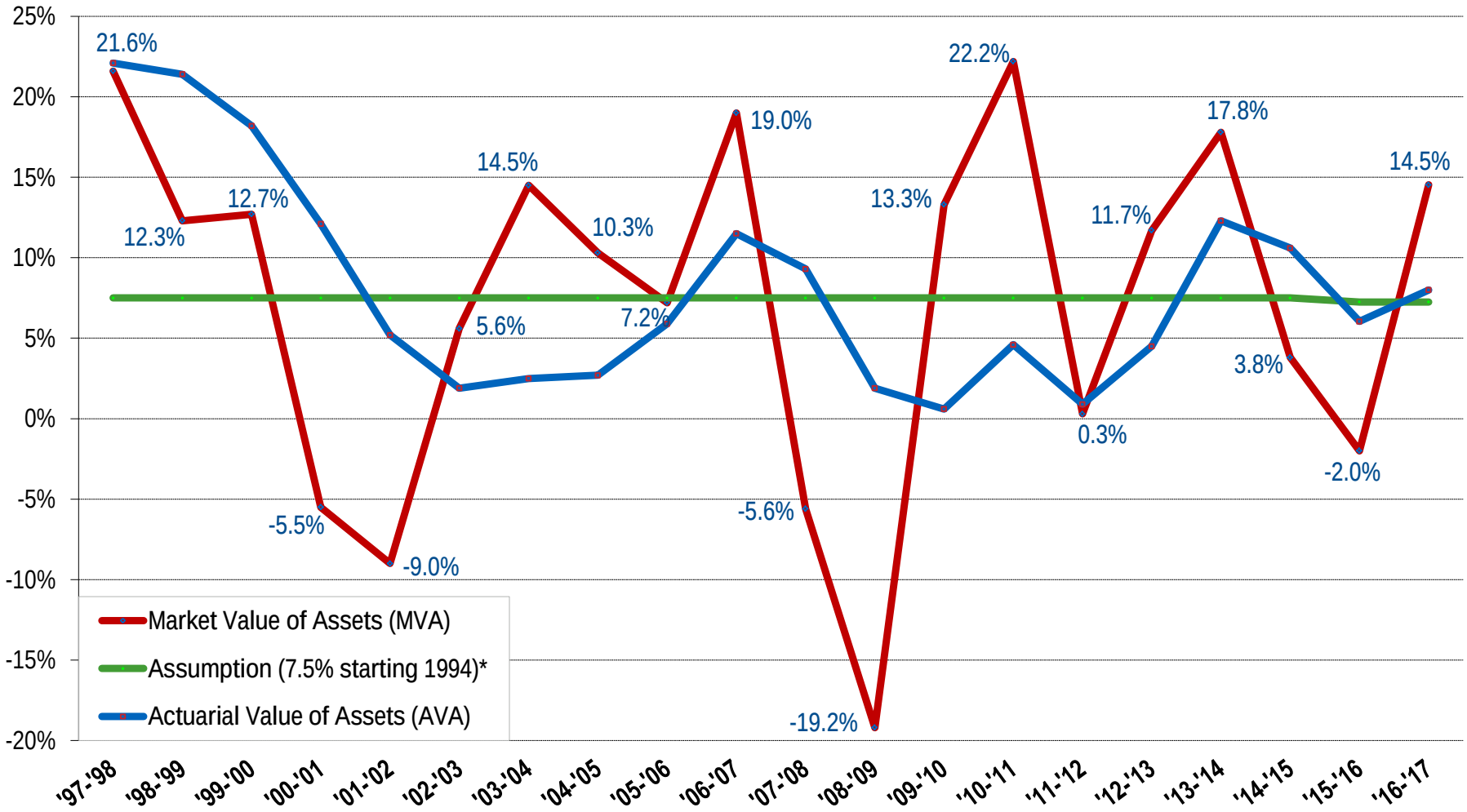


	2017	2016
Active Members	**129,382**	**128,513**
• Average Age	44.7	44.6
• Average Service	9.3	9.2
• Average Compensation	$95,938	$92,424

	2017	2016
Retired Members (in Pay Status)	**72,995**	**70,077**
• Average Age	71.5	71.3
• Average Annual Benefit	$41,647	$40,511

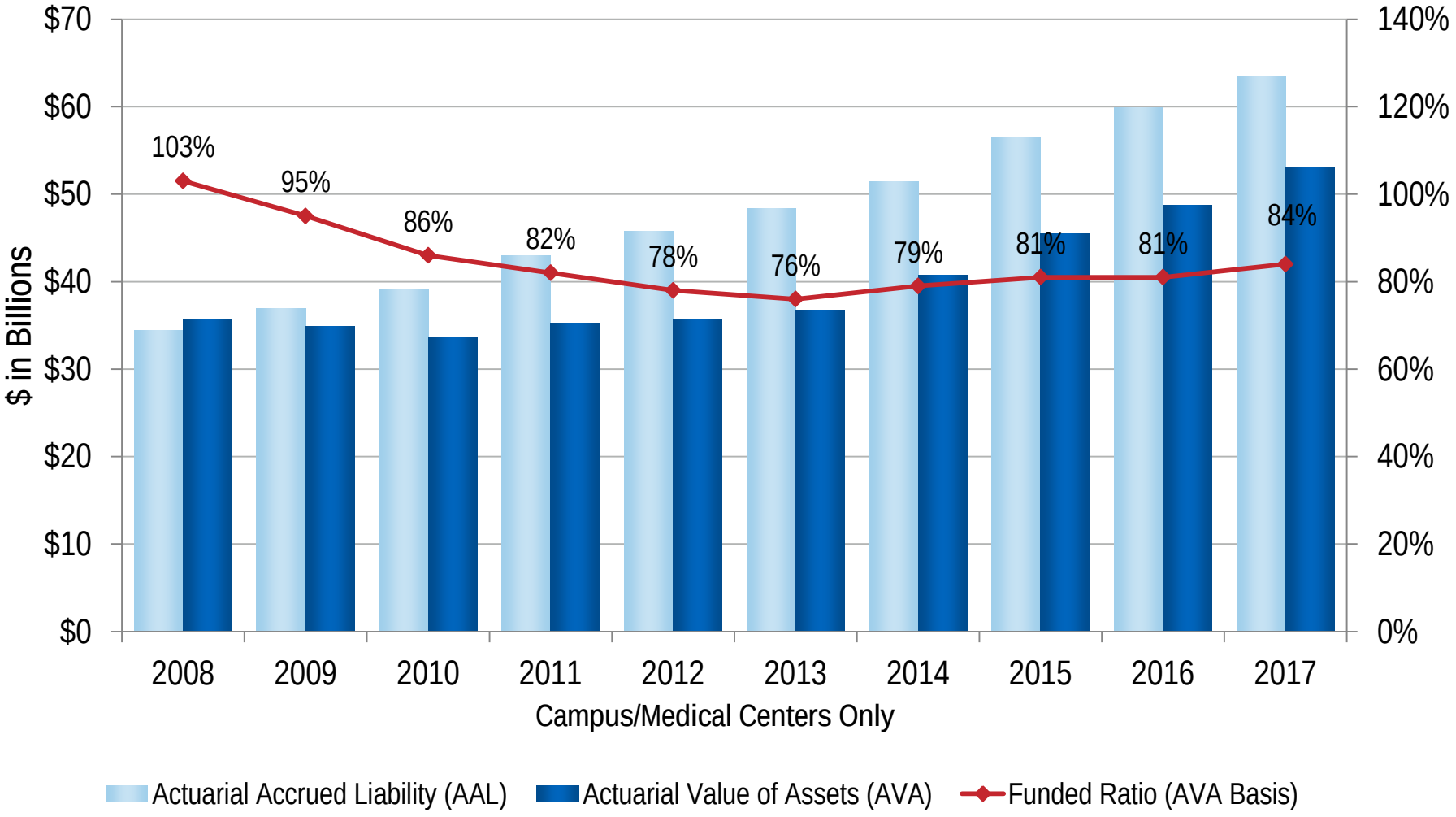
	2017	2016
Terminated Vested Members	**35,351**	**34,624**

UCRP Investment Rates of Return



***Investment rate of return assumption changed to 7.25% per annum starting July 1, 2015**

UCRP Historical Funded Status and Funded Ratio (5 year smoothing) as of July 1



UCRP Valuation Results ($ in billions)

	07/01/2017	07/01/2016
Market Value of Assets (MVA)	$62.1	$54.2
Actuarial Value of Assets (AVA)	$61.9	$57.2
Actuarial Accrued Liability (AAL)	$73.0	$69.3
Unfunded AAL – AVA Basis (AAL less AVA)	$11.1	$12.1
Unfunded AAL – MVA Basis (AAL less MVA)	$10.9	$15.1
Funded Percentage (AVA Basis)	85%	83%
Funded Percentage (MVA Basis)	85%	78%
Normal Cost (beginning of year)	$1.9	$1.9
Normal Cost (% of pay, middle of year)	18.00%	18.16%
Funding Policy Contributions (% of pay)*	27.00%	27.99%

* Campus and Medical Centers Segment only

Future Expectations

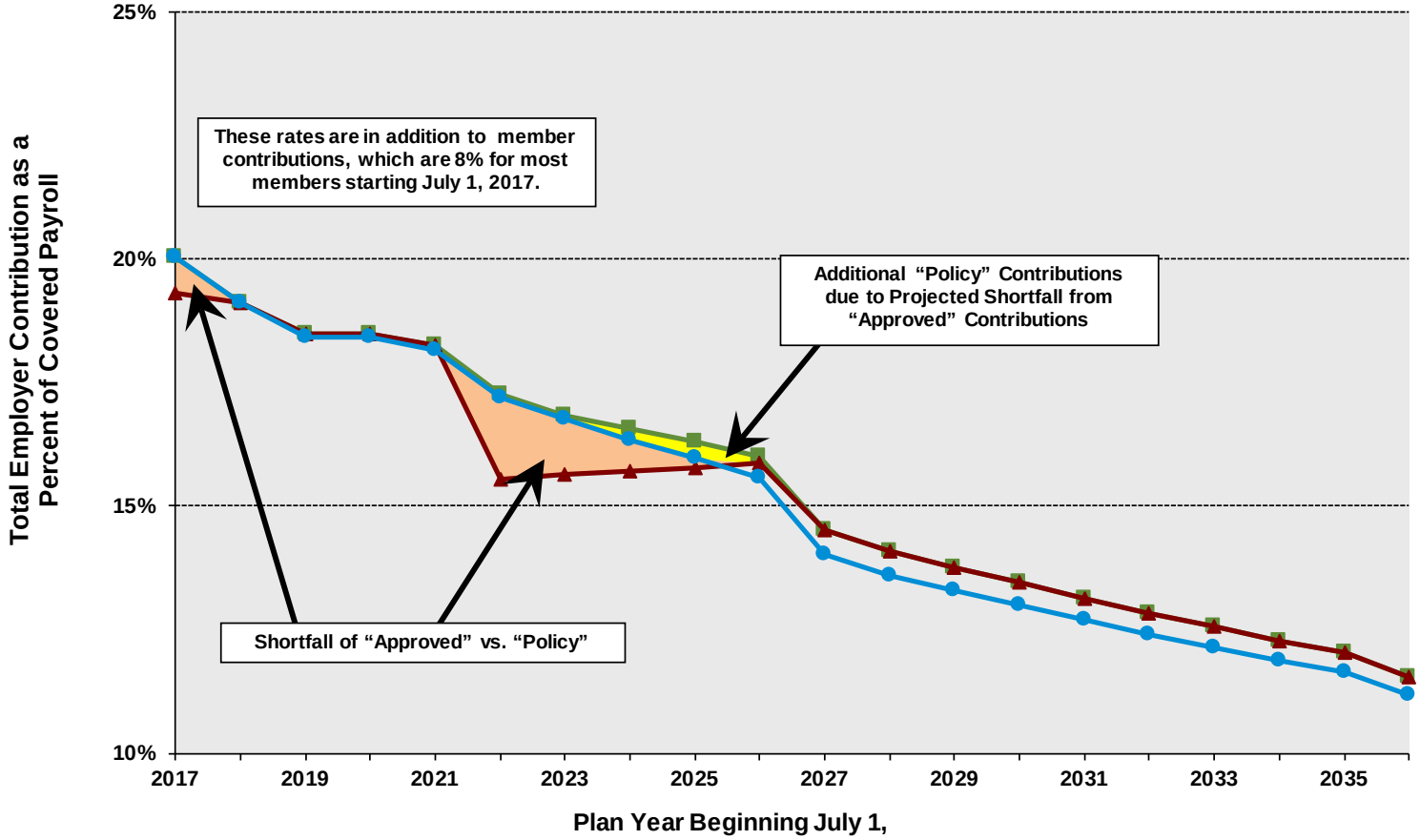
- Projections are included in valuation report (Appendix A)
  - Compares Approved and Total Funding Policy Contributions
  - Shows how current shortfall increases future Funding Policy Contributions
- Projected funded status
  - Assets, liabilities, funded ratio
  - Assuming only Approved Contributions are made
  - Assuming full Total Funding Policy Contributions are made
- Scenario #1
  - Illustrates what happens when all assumptions are met
  - 7.25% market value return per year beginning July 1, 2017
  - 20% Savings Choice election rate

Future Expectations

- Scenario #2
  - Illustrates what happens when market returns are unfavorable for one year
  - 0% market value return during 2017/2018
  - 20% Savings Choice election rate
- Scenario #3
  - Illustrates what happens when more new hires elect Savings Choice
  - 7.25% market value return per year beginning July 1, 2017
  - 40% Savings Choice election rate

Projected UCRP Employer Contributions Campus and Medical Center Segment Only

Scenario #1: 7.25% Market Return Per Year Beginning July 1, 2017 and 20% Savings Choice Election



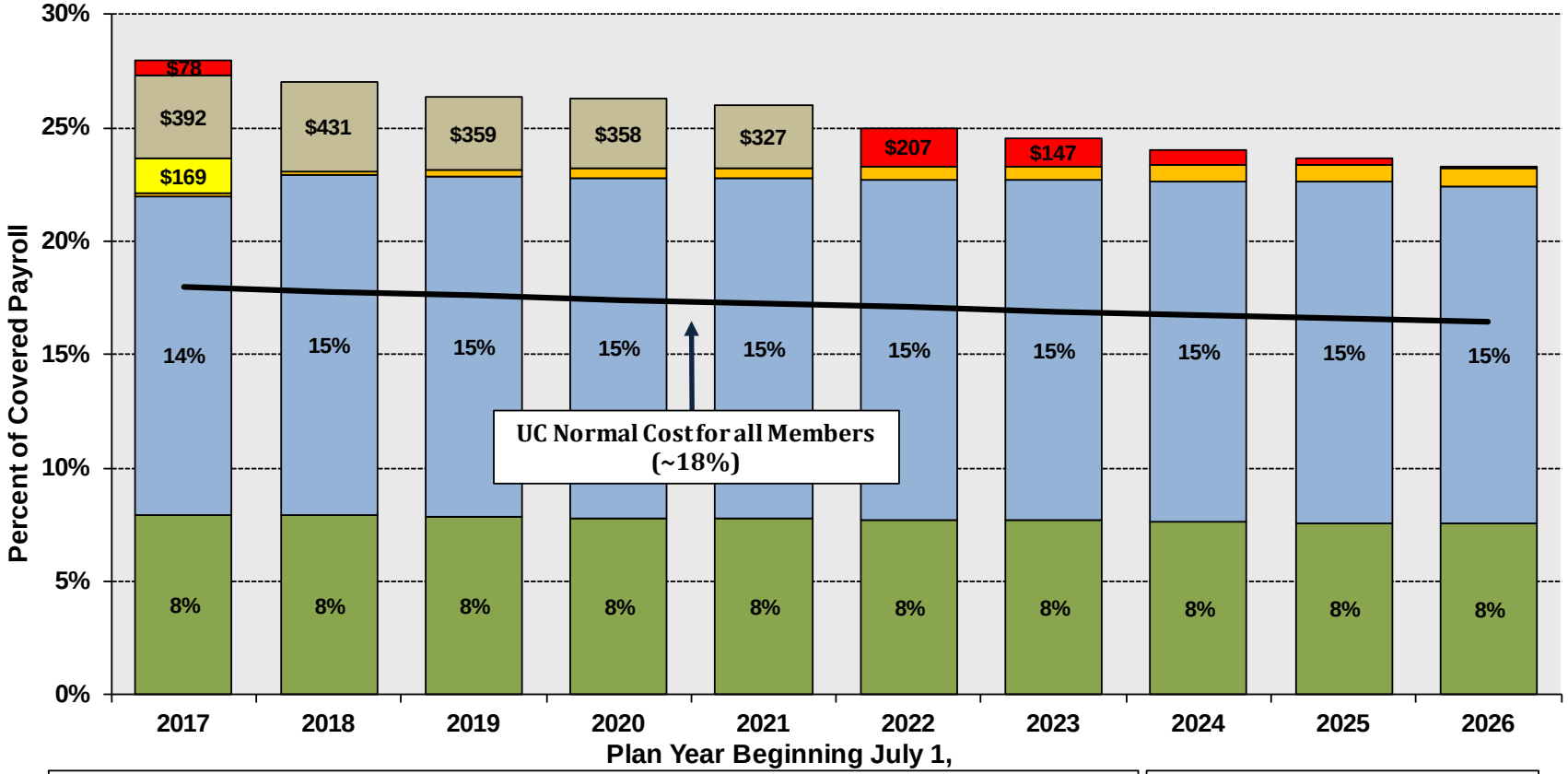
Campus and Medical Centers Only

-Assumes active member population grows by 0.7% per year.
-Assumes a 7.25% market value return per year starting July 1, 2017.
-Includes State Funding for 2017/2018.
-Includes approved STIP transfers through 2021/2022.
-Includes 2016 Tier (20% "Savings Choice" Election).

- Total Funding Policy Contribution - Assumes Approved Contributions Made
- Total Approved Contributions (Includes UAAL Surcharge)
- Total Funding Policy Contribution - Assumes Funding Policy Contributions Made

Projected Contribution Amounts
Campus and Medical Center Segment Only

Scenario #1: 7.25% Market Return Per Year Beginning July 1, 2017 and 20% Savings Choice Election

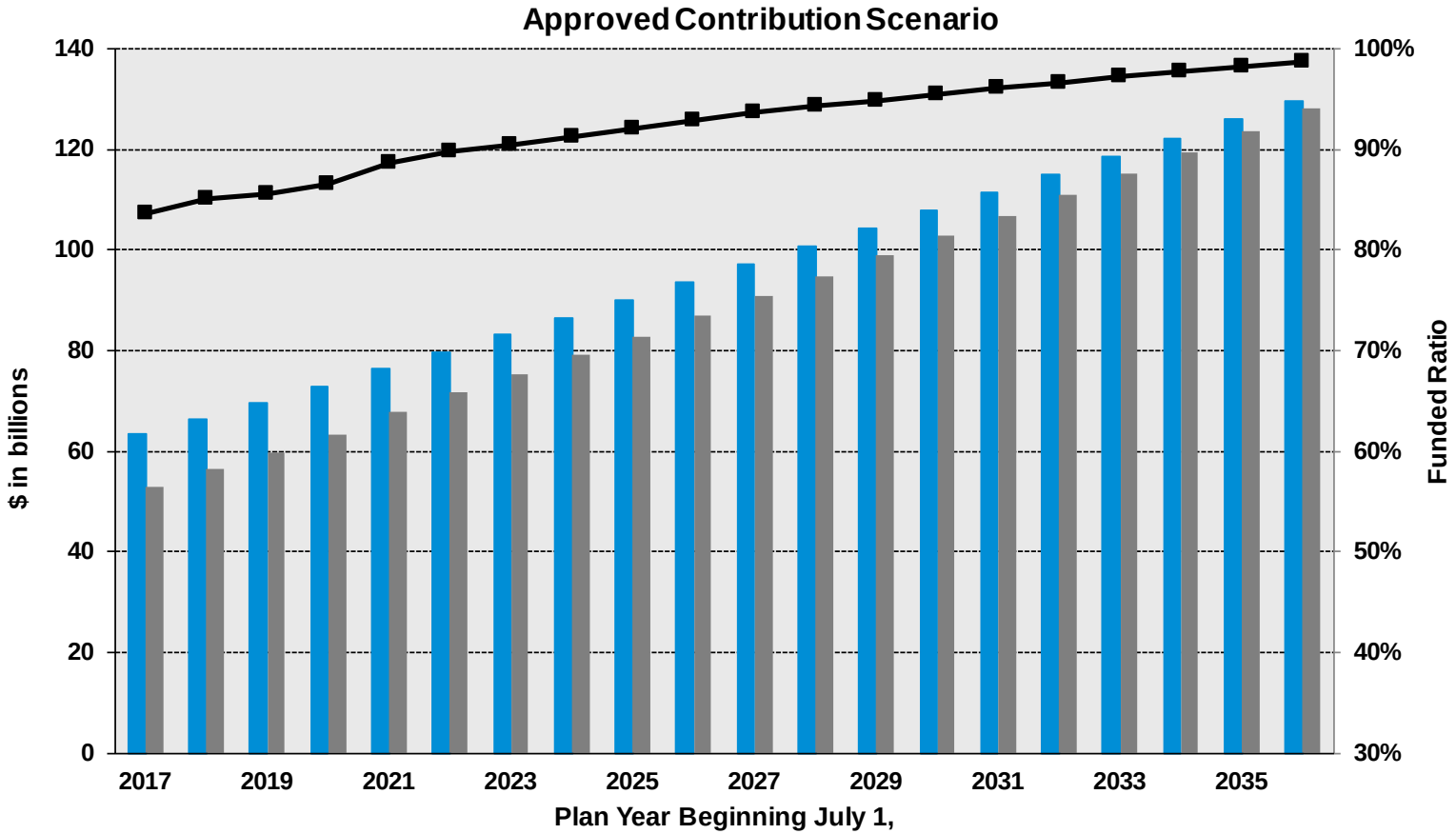


-Assumes total UCRP and Savings Choice active member population grows by 0.7% per year.
-Assumes market value return of 7.25% per year starting July 1, 2017.
-Assumes no future changes in actuarial assumptions.
-Includes State Funding through 2017/2018 and approved STIP (or other sources) transfers through 2021/2022.
-Includes 2016 Tier and a 20% Savings Choice election rate.
-Assumes Total Funding Policy Contribution made each year starting July 1, 2022.
-Assumes any funding shortfall is paid by transfers, borrowing and/or State Funding.

- Funding Shortfall
- STIP Transfers
- State Funding
- DC UAAL Surcharge
- Employer Contribution
- Employee Contribution
- Normal Cost

Projected UCRP Funded Status
Campus and Medical Center Segment Only

Scenario #1: 7.25% Market Return Per Year Beginning July 1, 2017 and 20% Savings Choice Election



Campus and Medical Centers Only

- -Assumes active member population grows by 0.7% per year.
- -Assumes a 7.25% market value return per year starting July 1, 2017.
- -Assumes approved contributions are paid each year.
- -Includes State Funding for 2017/2018.
- -Includes approved STIP transfers through 2021/2022.
- -Includes 2016 Tier (20% "Savings Choice" Election).

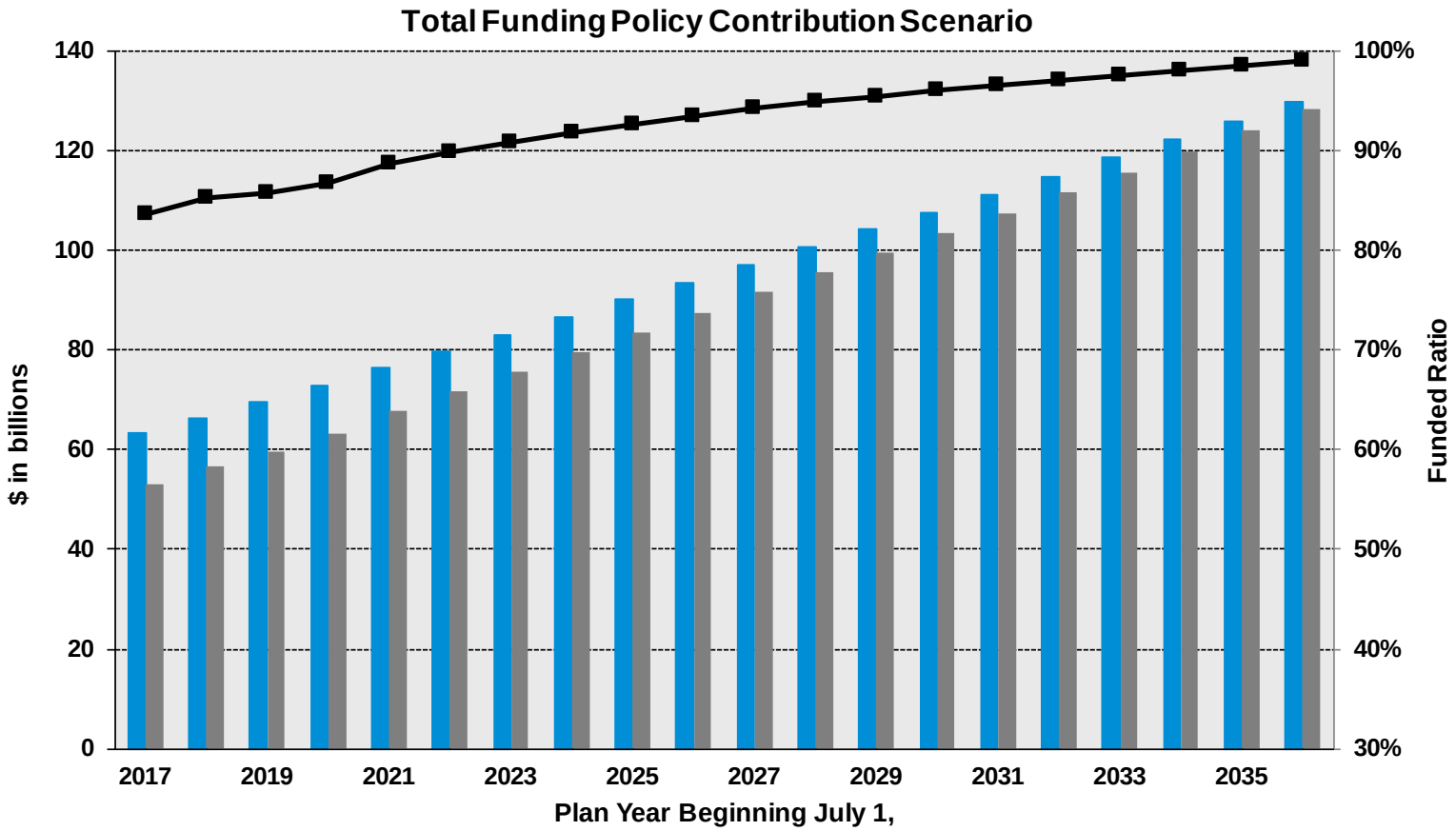
Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Projected UCRP Funded Status
Campus and Medical Center Segment Only

Scenario #1: 7.25% Market Return Per Year Beginning July 1, 2017 and 20% Savings Choice Election



Campus and Medical Centers Only

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-Assumes a 7.25% market value return per year starting July 1, 2017.
-Assumes total funding policy contributions are paid each year.
-Includes 2016 Tier (20% "Savings Choice" Election).

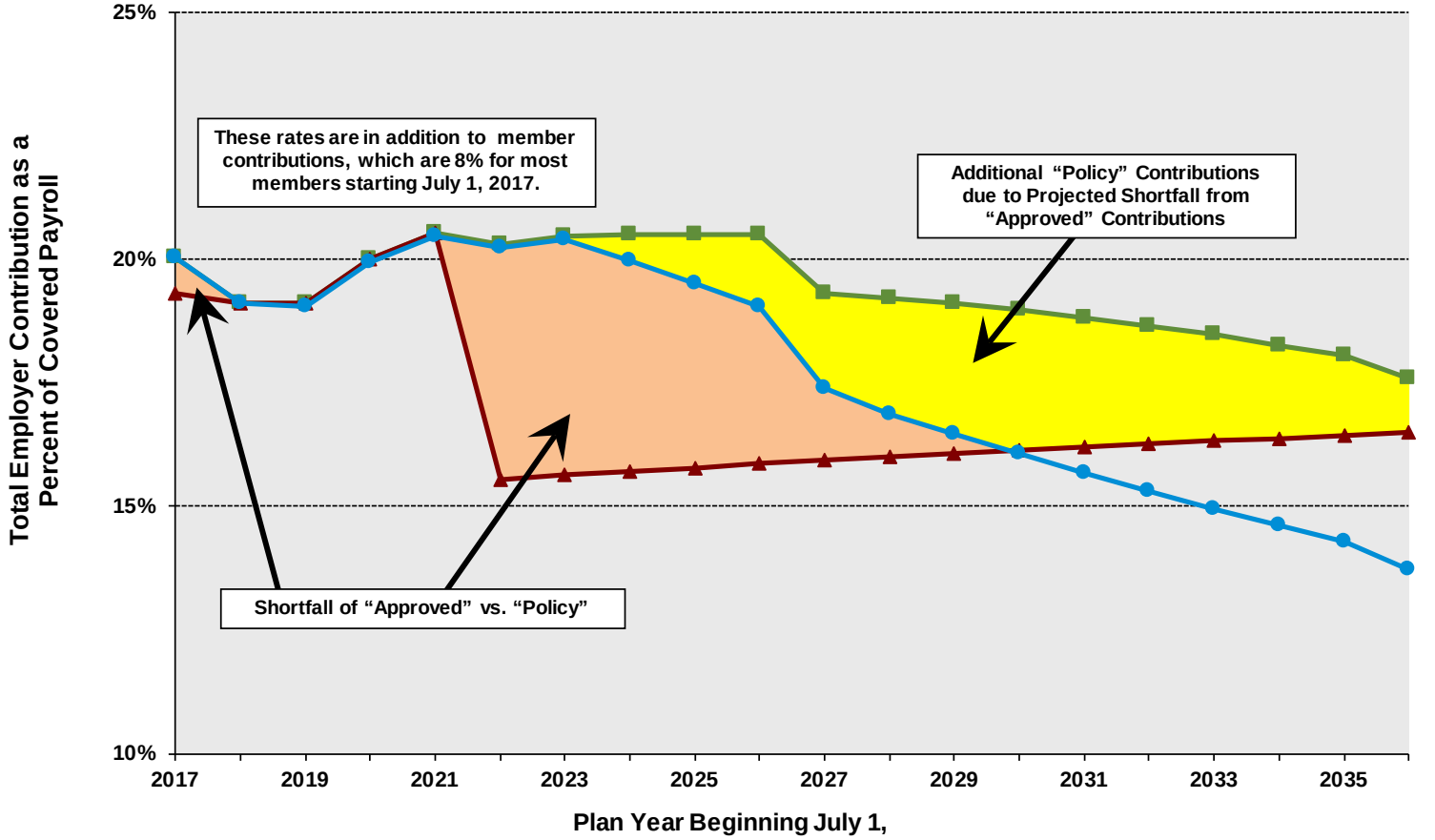
Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Projected UCRP Employer Contributions Campus and Medical Center Segment Only

Scenario #2: 0% Actual Market Return for 2017/2018 and 20% Savings Choice Election



Campus and Medical Centers Only

- Assumes active member population grows by 0.7% per year.
- Assumes a 0% market value return in 2017/2018 and a 7.25% market value return per year starting July 1, 2018.
- Includes State Funding for 2017/2018.
- Includes approved STIP transfers through 2021/2022.
- Includes 2016 Tier (20% "Savings Choice" Election).

- Total Funding Policy Contribution - Assumes Approved Contributions Made
- Total Approved Contributions (Includes UAAL Surcharge)
- Total Funding Policy Contribution - Assumes Funding Policy Contributions Made

Projected UCRP Funded Status
Campus and Medical Center Segment Only

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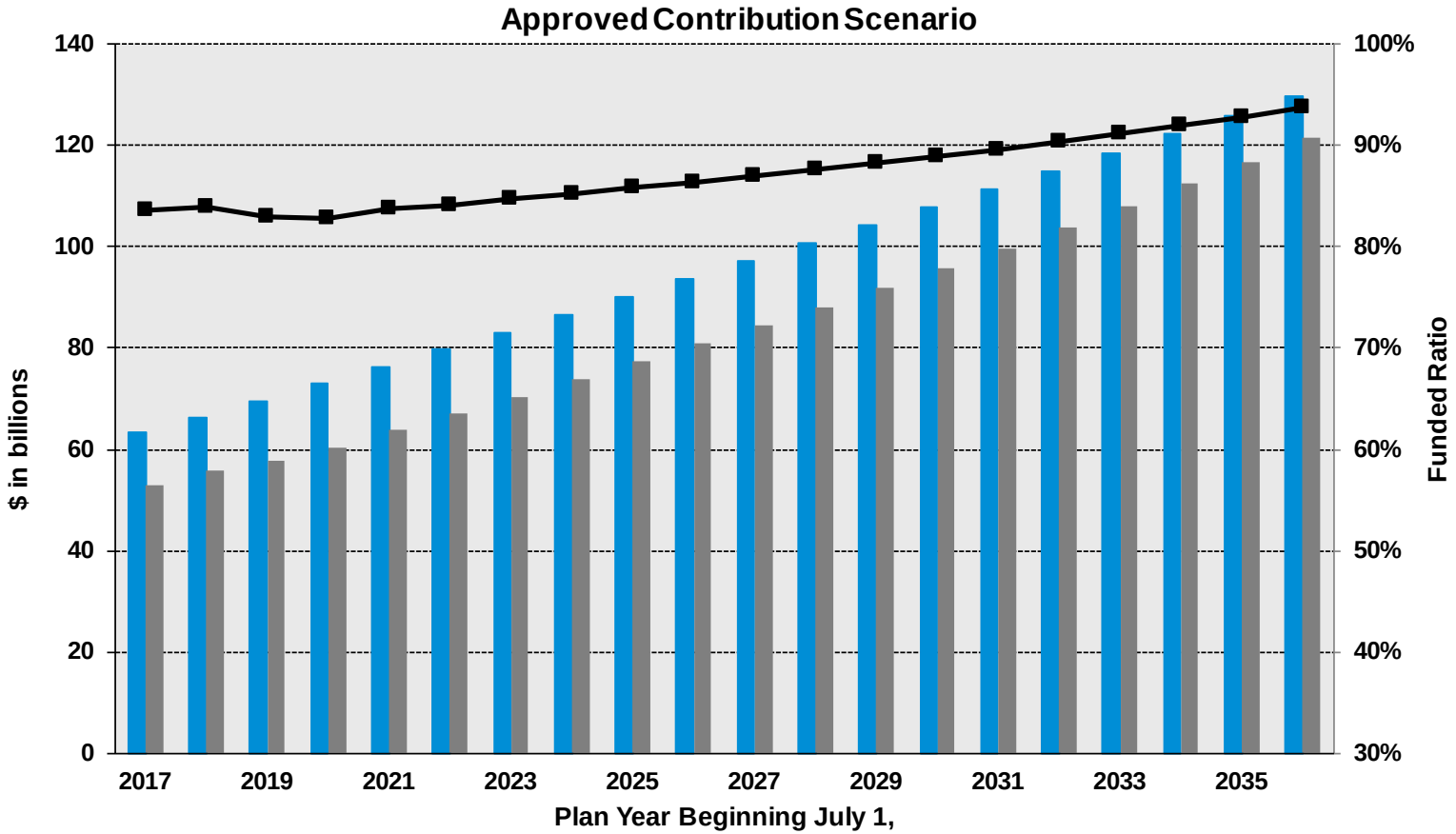

Campus and Medical Centers Only

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- -Assumes a 0% market value return in 2017/2018 and a 7.25% market value return per year starting July 1, 2018.
- -Assumes approved contributions are paid each year.
- -Includes State Funding for 2017/2018.
- -Includes approved STIP transfers through 2021/2022.
- -Includes 2016 Tier (20% "Savings Choice" Election).

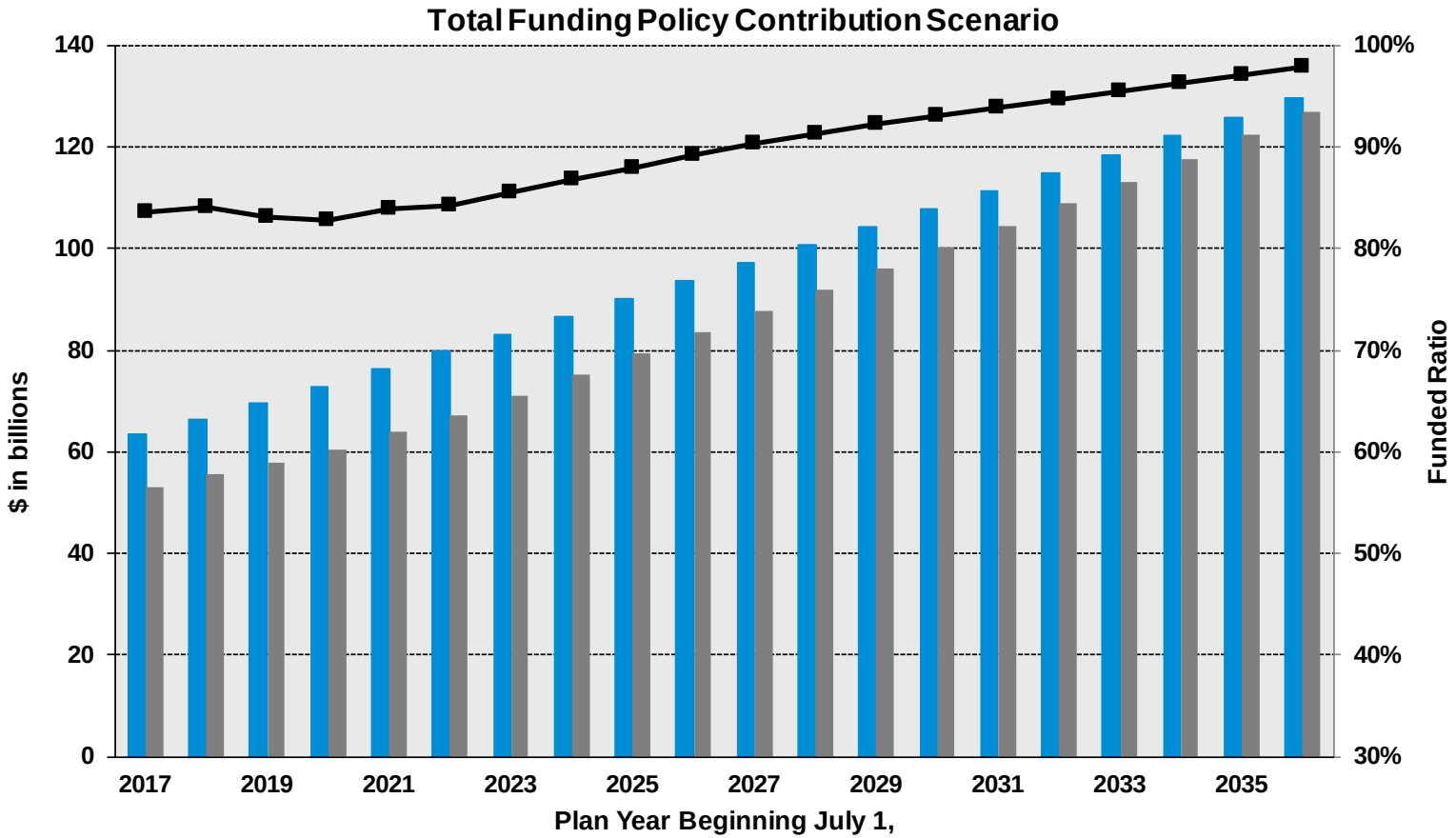
Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Projected UCRP Funded Status
Campus and Medical Center Segment Only

Scenario #2: 0% Actual Market Return for 2017/2018 and 20% Savings Choice Election



Campus and Medical Centers Only

-Assumes active member population grows by 0.7% per year.
-Assumes a 0% market value return in 2017/2018 and a 7.25% market value return per year starting July 1, 2018.
-Assumes total funding policy contributions are paid each year.
-Includes 2016 Tier (20% "Savings Choice" Election).

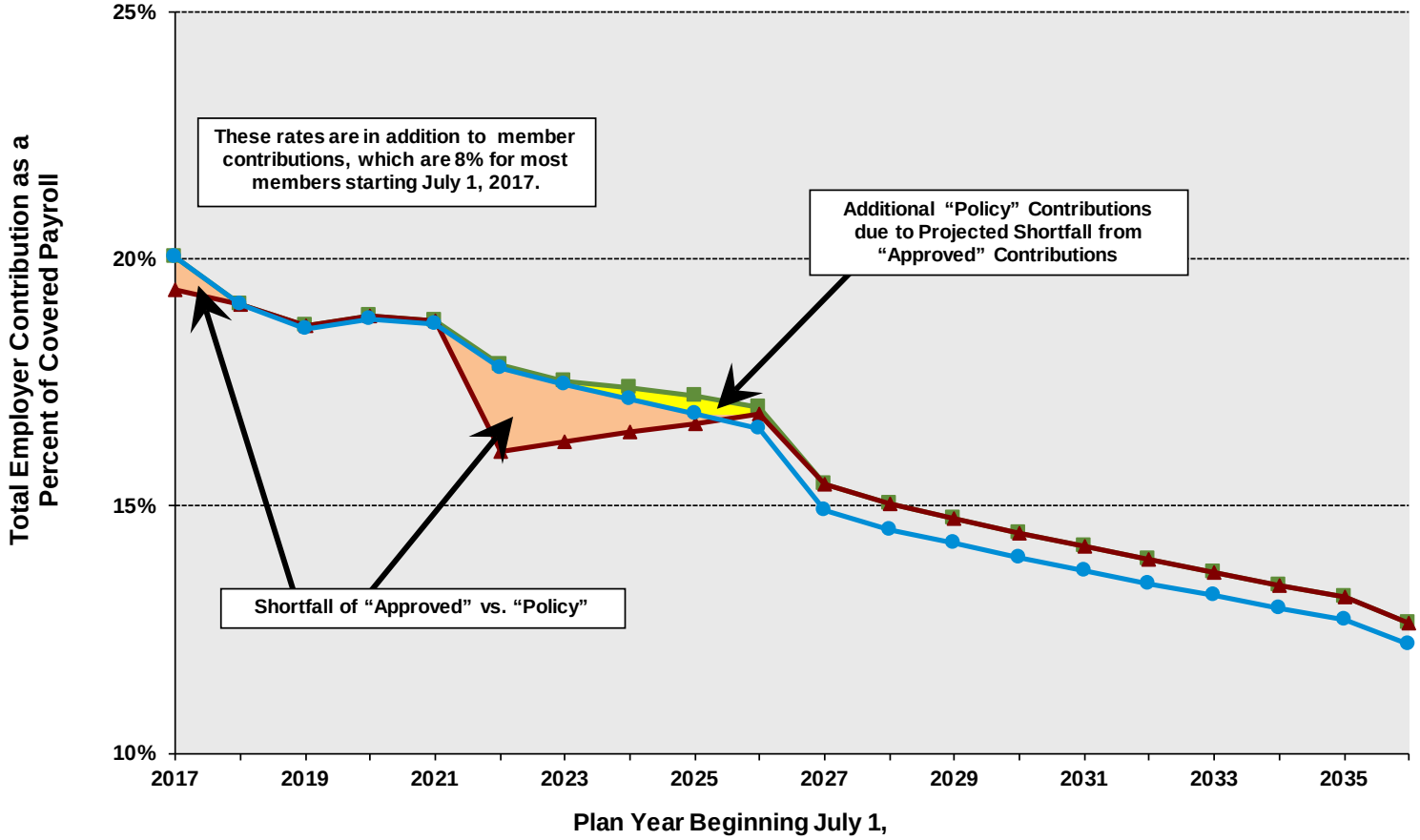
Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Projected UCRP Employer Contributions Campus and Medical Center Segment Only

Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2017 and 40% Savings Choice Election



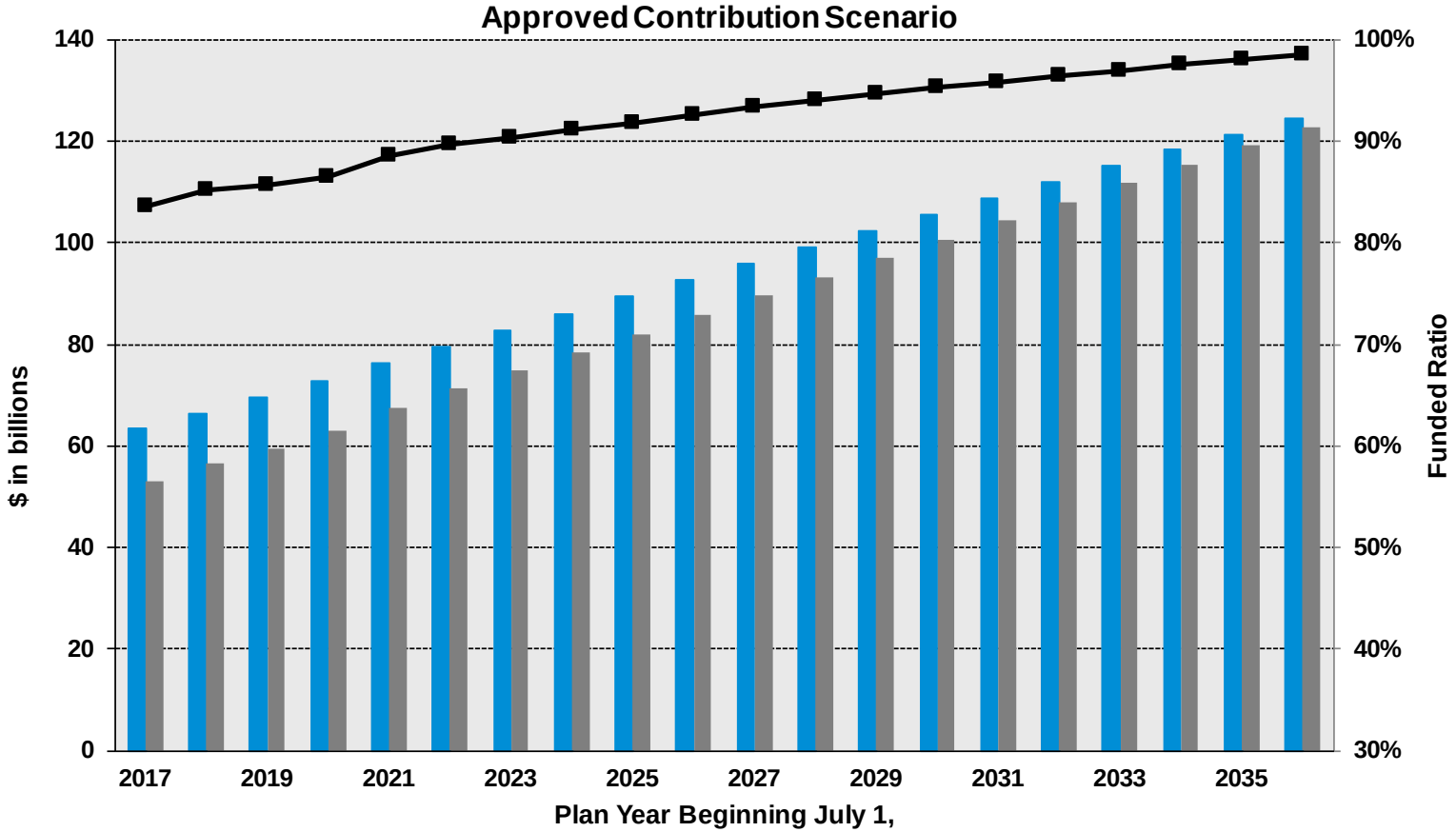
Campus and Medical Centers Only

-Assumes active member population grows by 0.7% per year.
-Assumes a 7.25% market value return per year starting July 1, 2017.
-Includes State Funding for 2017/2018.
-Includes approved STIP transfers through 2021/2022.
-Includes 2016 Tier (40% "Savings Choice" Election).

- Total Funding Policy Contribution - Assumes Approved Contributions Made
- Total Approved Contributions (Includes UAAL Surcharge)
- Total Funding Policy Contribution - Assumes Funding Policy Contributions Made

Projected UCRP Funded Status
Campus and Medical Center Segment Only

Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2017 and 40% Savings Choice Election



Campus and Medical Centers Only

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- -Assumes a 7.25% market value return per year starting July 1, 2017.
- -Assumes approved contributions are paid each year.
- -Includes State Funding for 2017/2018.
- -Includes approved STIP transfers through 2021/2022.
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Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Projected UCRP Funded Status
Campus and Medical Center Segment Only

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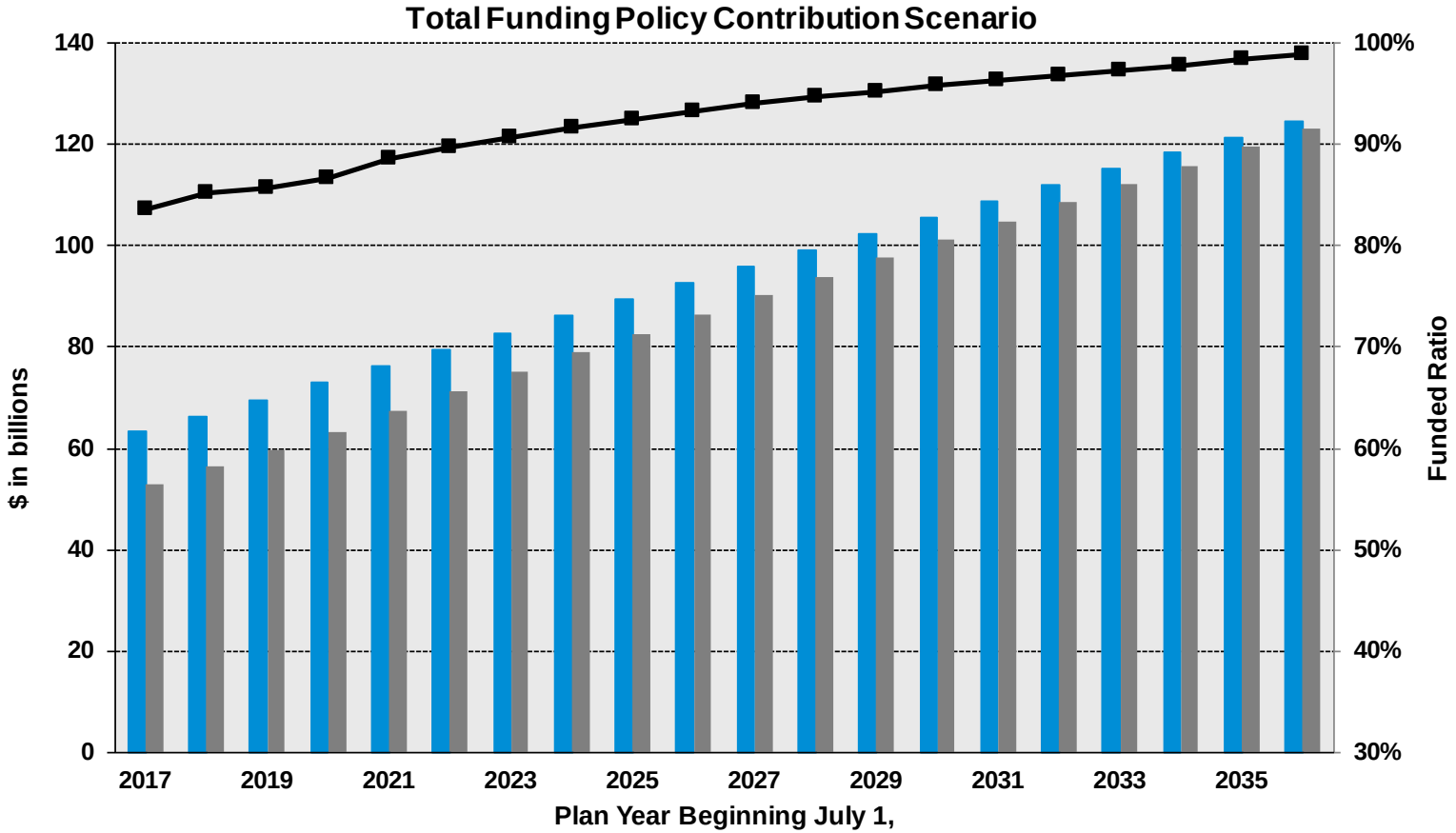

Campus and Medical Centers Only

-Assumes active member population grows by 0.7% per year.
-Assumes a 7.25% market value return per year starting July 1, 2017.
-Assumes total funding policy contributions are paid each year.
-Includes 2016 Tier (40% "Savings Choice" Election).

Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

Assumptions and Methods Used in Projections

- Unless otherwise noted, the cost calculations and projections were made using generally accepted actuarial practices and are based on July 1, 2017 actuarial valuation results. This includes the participant data and actuarial assumptions on which this valuation was based.
  Here are some of the important assumptions used:
  - Campus and medical center segment only.
  - Scenario #1 and #3 assumes market value returns of 7.25% per year beginning July 1, 2017. Scenario #2 assumes a 0% market value return during 2017/18 and returns of 7.25% per year thereafter.
  - Reflects choice of either UCRP 2016 Tier or defined contribution (Savings Choice) plan for all new hires on or after July 1, 2017. There is an employer contribution equal to 6% (7% effective July 1, 2018) of compensation towards UCRP's UAAL on behalf of employees that elect the Savings Choice plan.
  - Scenario #1 and #2 assumes an election rate of 20% Savings Choice and 80% Pension Choice for new hires on or after July 1, 2017. Scenario #3 assumes an election rate of 40% Savings Choice and 60% Pension Choice for new hires on or after July 1, 2017. Cost of choice of 0.6% of payroll added to UCRP's Normal Cost for new hires in all Scenarios.
  - Assumes a 0.7% per year growth in total active member population.
  - Transfers from STIP of up to $392 million in 2017/18, $500 million in 2018/19, $500 million in 2019/20, $600 million in 2020/21, and $700 million in 2021/22 along with State Funding of $169 million in 2017/18 is reflected.

Assumptions and Methods Used in Projections

- Employer contribution rate to UCRP increases from 14% to 15% of compensation effective July 1, 2018.
- Total of UCRP employer and member contribution rates are assumed to be no greater than the Total Funding Policy Contribution rate for any year with the exception that the employer contribution rate can be no less than the member contribution rate.
- Demographics for future new entrants are assumed to be the same as those for members hired during the two years prior to July 1, 2017.

Other Information

- Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.
- All calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary who is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.