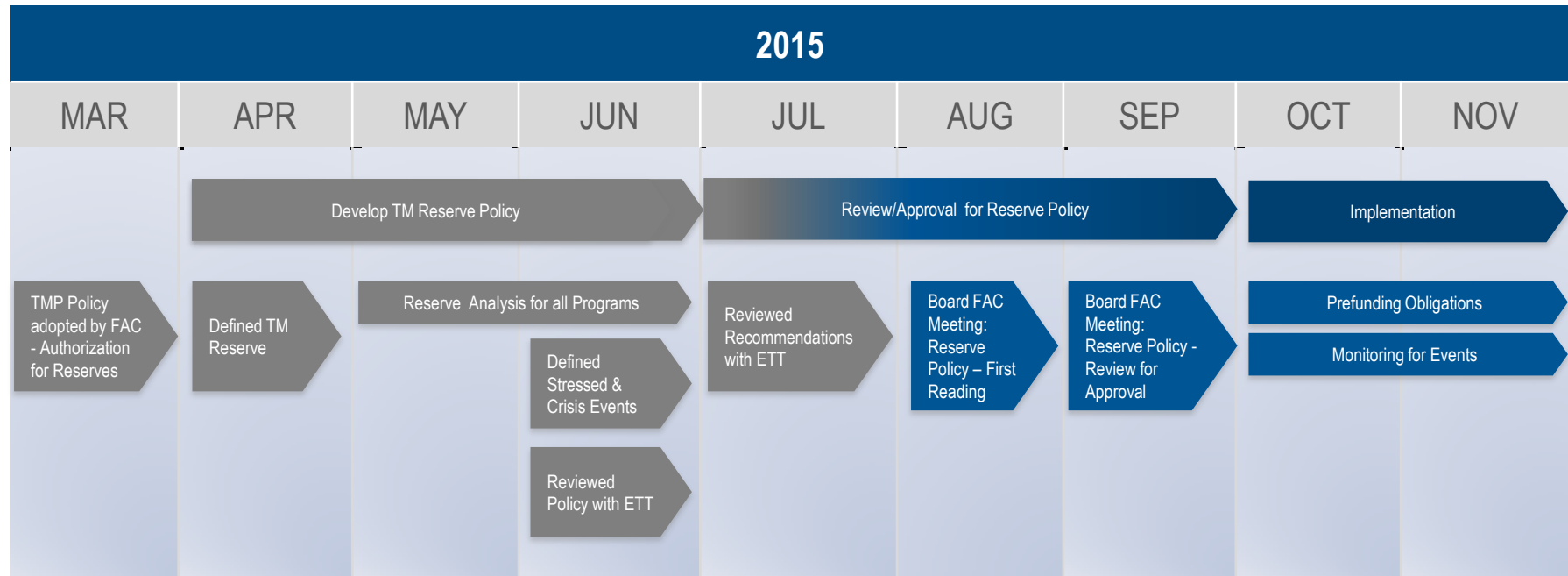


Treasury Management Reserves Overview

Finance & Administration Committee
August 18, 2015

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TM Reserve Policy – Status Timeline



- Milestone Completed
- Milestone on Track

Definition for TM Reserve

- TM Reserves are liquid assets dedicated to the payment of member benefits and other obligations during a stressed or crisis event* and shall be:

Dedicated	Liquid	Dynamic	Transparent
Held for the purpose directed by the TMP, not available for other uses, and its use is directed by the Chief Financial Officer	Assets can be converted to cash with de minimis impairment by the next business day	Amount of Treasury Reserve can scale up or down based on need	Treasury Reserve levels can be monitored by the TMP

- TM Reserves do not include liquid assets whose intended use is self-insurance, prefunding obligations, minimum bank account balances, collateral, or any use other than the use defined above

* TM Reserve Definition as stated within the Policy for Treasury Management as adopted by the Finance and Administration Committee March 2015

Stressed and Crisis Events

Staff has:

- Identified and evaluated 17 actual past stressed occurrences
- Selected two stressed scenarios from the 17 based on the following criteria:
 - severity of the impact on financial markets,
 - breadth of the impact on financial markets,
 - rapidity of the occurrence, and
 - impact was severe over a relatively short timeframe.
- Refined the working definition of crisis as being a one week (five business days) market lockup

Definitions for Stressed and Crisis Events

- Stressed Event* - A severe market or non-market event for which Funding contingency plans have been made and options are identified and available to meet CalPERS' obligations. The two models utilized to simulate a stressed event and their impact on liquidity are:
 - i. 1987 "Black Monday" Market Crash – Global market crash and single largest one day decline of the Dow Jones Index (22.1%)
 - ii. 2008 Liquidity Crisis – Severe liquidity crisis compounded by the bankruptcy of Lehman Brothers
- Crisis Event - A one week (five business days) market lockup which occurs with no ability to foresee or plan for the event and no ability to generate cash through investment activity such as the sale of public market securities or the security lending program.
 - i. During a crisis situation, the PERF would be 100% reliant on cash and cash equivalents held in the PERF to meet its obligations, including the payment of benefits.
 - ii. Example: September 11th 2001 attack on the World Trade Center resulting in the markets being closed for 5 business days

** Stressed Event definition as stated within the Policy for Treasury Management as adopted by the Finance and Administration Committee March 2015*

Public Employees' Retirement Fund ("PERF") Analysis

Liquidity Coverage Ratio = (Current Cash + Projected Inflows) / (Projected Outflows + Contingency Uses)

- Measures/ensures that there are enough high quality liquid assets to meet liquidity needs for a certain number of calendar days .
- Is comprehensive of enterprise cash flows and includes:
 - Cash and cash equivalents on hand
 - All non-investment sources and uses: Contributions, benefit payments, expenses
 - All investment sources and uses: Investment trading, capital calls, investment expenses, contingency uses*
- Does Not Include:
 - Off balance sheet contingency uses – Credit Enhancement Program, Asset Backed Lending, RE Credit Accommodation
 - Dividend and interest income – 100% re-invested

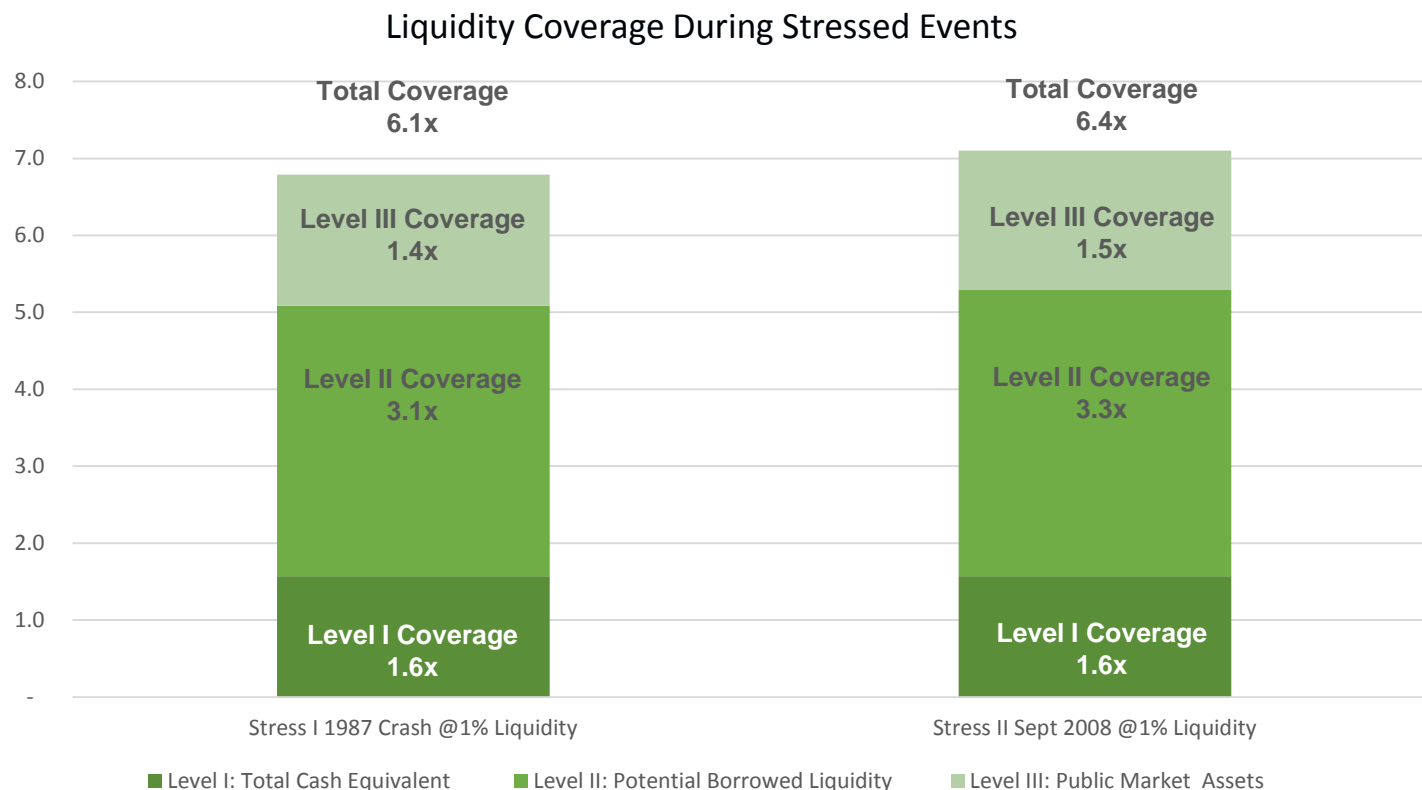
** 5 day Value at Risk (VaR) in excess of collateral held for derivative investments*

PERF Analysis

Liquidity Coverage Ratio = (Current Cash + Projected Inflows) / (Projected Outflows + Contingency Uses)

- What this ratio tells us:
 - 1.0x or 100%: projects having exactly the amount of cash needed to meet all obligations
 - Less than 1.0x or 100%: projects a shortage of cash to meet obligations
 - Greater than 1.0x or 100%: projects a surplus of cash in excess of obligations
- For example, a coverage ratio of 2.5x would mean cash assets equal 2 ½ times the projected monthly outflow of \$1.8 billion.

PERF Analysis

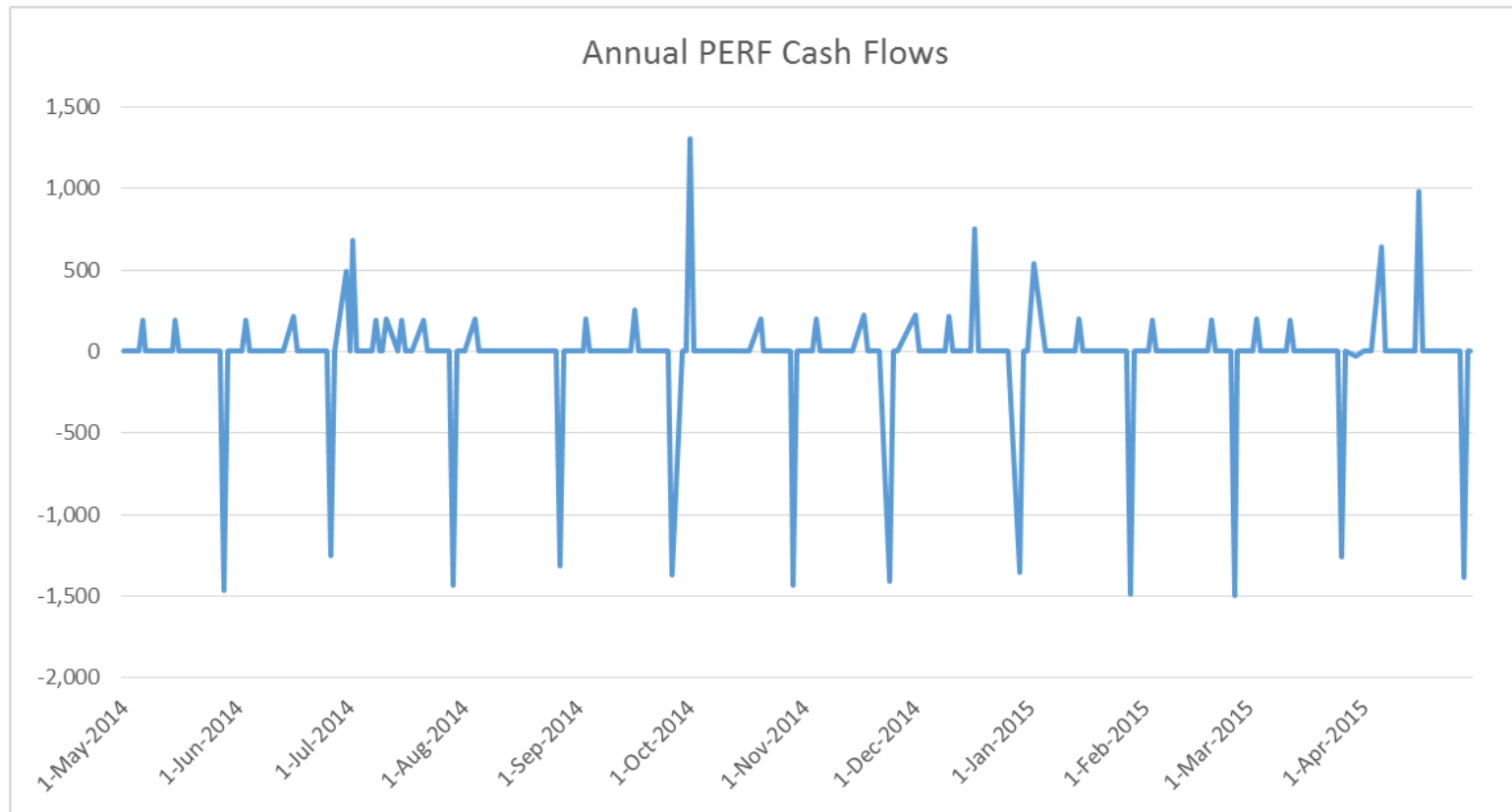


During the simulated stressed events, the cash on hand, borrowed liquidity, and the cash that can be generated from the sale of public assets greatly exceeds the cash demands.

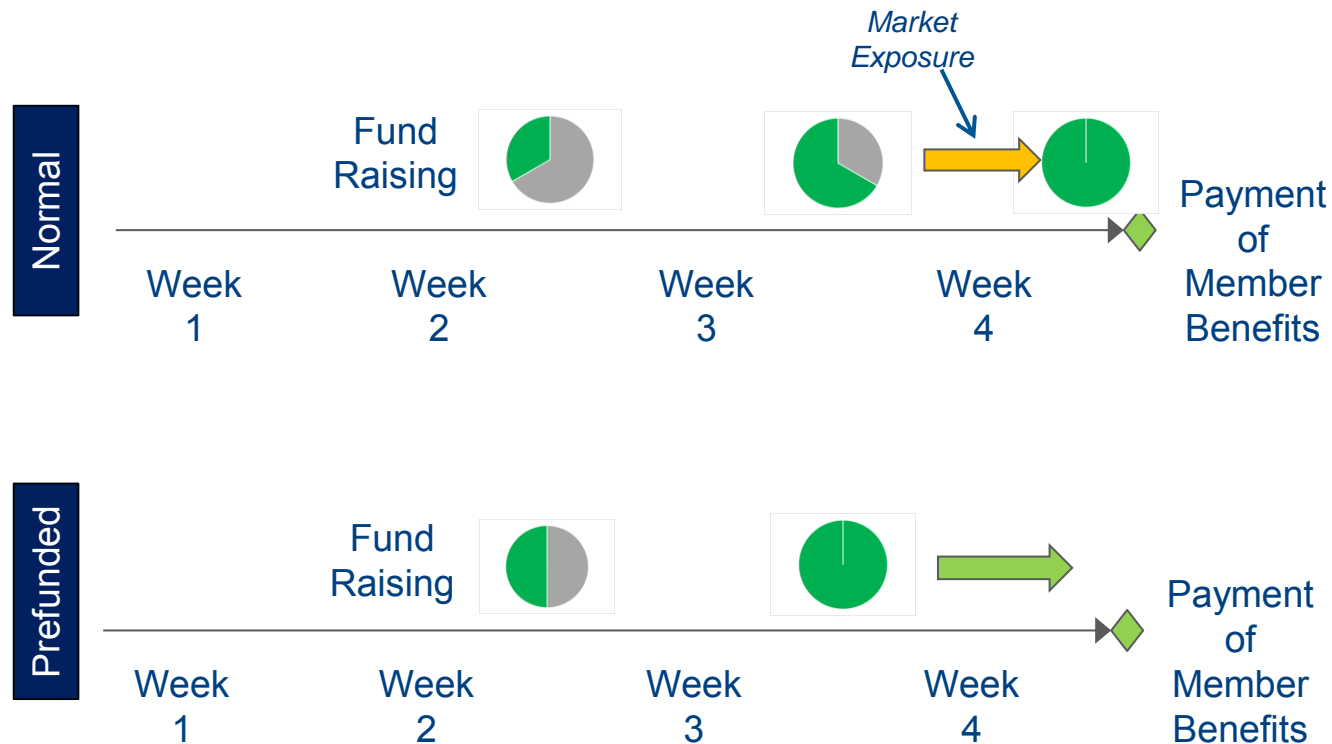
PERF Analysis

Cash inflows and outflows:

- Follow a consistent, predictable pattern
- Are concentrated at certain times of the month and quarter



Prefunding Obligations



TM Reserve Recommendations

PERF:

- No TM Reserve is required at this time
- Prefund obligations by 5 business days
- Most cost effective approach to addressing funding risk

Affiliates:

- Maintain existing TM Reserve for Judges' Retirement Fund
- No TM Reserve is required at this time for any other affiliate
- Prefund obligations by 5 business days for Legislators' Retirement Fund and California Employers' Retiree Benefit Trust Fund

** See Appendix for supporting analysis of the pre-fund option for PERF and the Affiliate recommendations.*

Next Steps:

- Incorporate comments and guidance on the Policy from the Committee
- Submit Policy as Action Item in October for review for approval
- Implement activities required by Policy (Provided the Policy is adopted by the Committee in October)
 - Commence prefunding member benefit payments for the PERF, Legislators' Retirement Fund and California Employers' Retiree Benefit Trust Fund
 - Monitor all programs for changes in the factors related to the utilization of Treasury Reserves
 - Annual review of the Treasury Reserve Policy

Appendix

FINO has identified three options for addressing the identified \$500MM funding risk and ensuring the payment of benefits without interruption, and has calculated the average cash balances that would be set aside to pay benefits as follows:

Option I:

Hold \$500 million reserve in addition to cash currently set aside cash for benefits.

This option results in an average cash balance set aside for benefits of \$1.383 billion throughout the year.

Option II:

No reserve but raise and set aside in cash 100% of the monthly benefits payment (and transfer it to STO) 5 business days prior to the end of month benefit payments.

This option results in an average cash balance set aside for benefits of \$1.133 billion throughout the year, \$250 million less than Option I.

Option III

No reserve but keep all contributions at the STO and don't transfer them to INVO to invest during the month. Have INVO only remit the monthly shortfall to STO by the 23rd of each month.

This option results in an average cash balance set aside for benefits of \$1.440 billion throughout the year, \$306 million more than Option II.

Recommendation: Based on these facts, Staff recommends selecting Option II.

TM Reserves for Affiliates

Program	Finding	Rationale
Legislators' Retirement Fund	No Treasury Reserve necessary at this time; prefund obligations by 5 BD	<ul style="list-style-type: none"> Reliant on funding from program investments to pay member benefits Market exposure: Approx. \$126MM in AUM with a large allocation to public market assets Occasional spikes in distributions to \$450K or 159% above forecast due to withdrawals or transfers
Judges' Retirement Fund	Maintain existing reserve of 2 months coverage and confirm reserve level with State	<ul style="list-style-type: none"> "Pay as you go" funding from the State Two months of benefit payments held in reserve per agreement with the State
Judges' Retirement Fund II	No Treasury Reserve necessary at this time	<ul style="list-style-type: none"> No reliance on investments for funding member benefits Highly positive cash flow monthly and annually (\$75.6MM) which greatly exceeds monthly distributions by 550%
Deferred Compensation Fund	No Treasury Reserve necessary at this time	<ul style="list-style-type: none"> Defined contribution plans invested in comingled funds at SSGA Market exposure: SSGA responsible for maintaining liquidity to meet redemptions 30 day notification period for withdrawals and the start of distributions

TM Reserves for Affiliates

Program	Finding	Rationale
Supplemental Contributions Program Fund	No Treasury Reserve necessary at this time	<ul style="list-style-type: none"> ▪ Defined contribution plans invested in comingled funds at SSGA ▪ Market exposure: SSGA responsible for maintaining liquidity to meet redemptions ▪ 30 day notification period for withdrawals and the start of distributions
California Employers' Retiree Benefit Trust Fund	No Treasury Reserve necessary at this time; prefund obligations by 5 BD	<ul style="list-style-type: none"> ▪ "Pay as you go" program ▪ Market exposure: \$4.1 BB AUM with Global Equity and Fixed Income making up 84% of holdings ▪ Disbursements concentrated around mid-month
Public Employees' Health Care Fund and Contingency Reserve Fund	No Treasury Reserve necessary at this time	<ul style="list-style-type: none"> ▪ Market exposure: \$460MM in Fixed Income with INVO, \$940MM at STO in cash/SMIF ▪ \$460MM held as self insurance for unforeseen health program events ▪ Payments received and payments made throughout the month

TM Reserves for Affiliates

Program	Finding	Rationale
Public Employees' Long-Term Care Fund	No Treasury Reserve necessary at this time	<ul style="list-style-type: none">▪ \$4.25 BB IN AUM is highly liquid with 61% allocated to US Treasury▪ Payments not concentrated and can occur at any point in month
Replacement Benefit Fund	No Treasury Reserve necessary at this time	<ul style="list-style-type: none">▪ "Pay as you go" program▪ No obligation to make payments if contributions have not been made