Office of the Treasurer & Tax Collector
City and County of San Francisco

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CACTTC Education Conference 2017: Portfolio Cash Flow Analysis and Tools

Presented by

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Portfolio Cash Flow Analysis and Tools
The Importance of Developing a Cash Forecast

Primary Objectives:

- Liquidity Management – having sufficient cash available to meet cash outflows. Matching an investment maturity to a known future cash disbursement immunizes the cash flow reducing the liquidity risk in the portfolio. Theoretically, if all cash disbursements are matched to a portfolio security maturity, liquidity risk is mitigated.

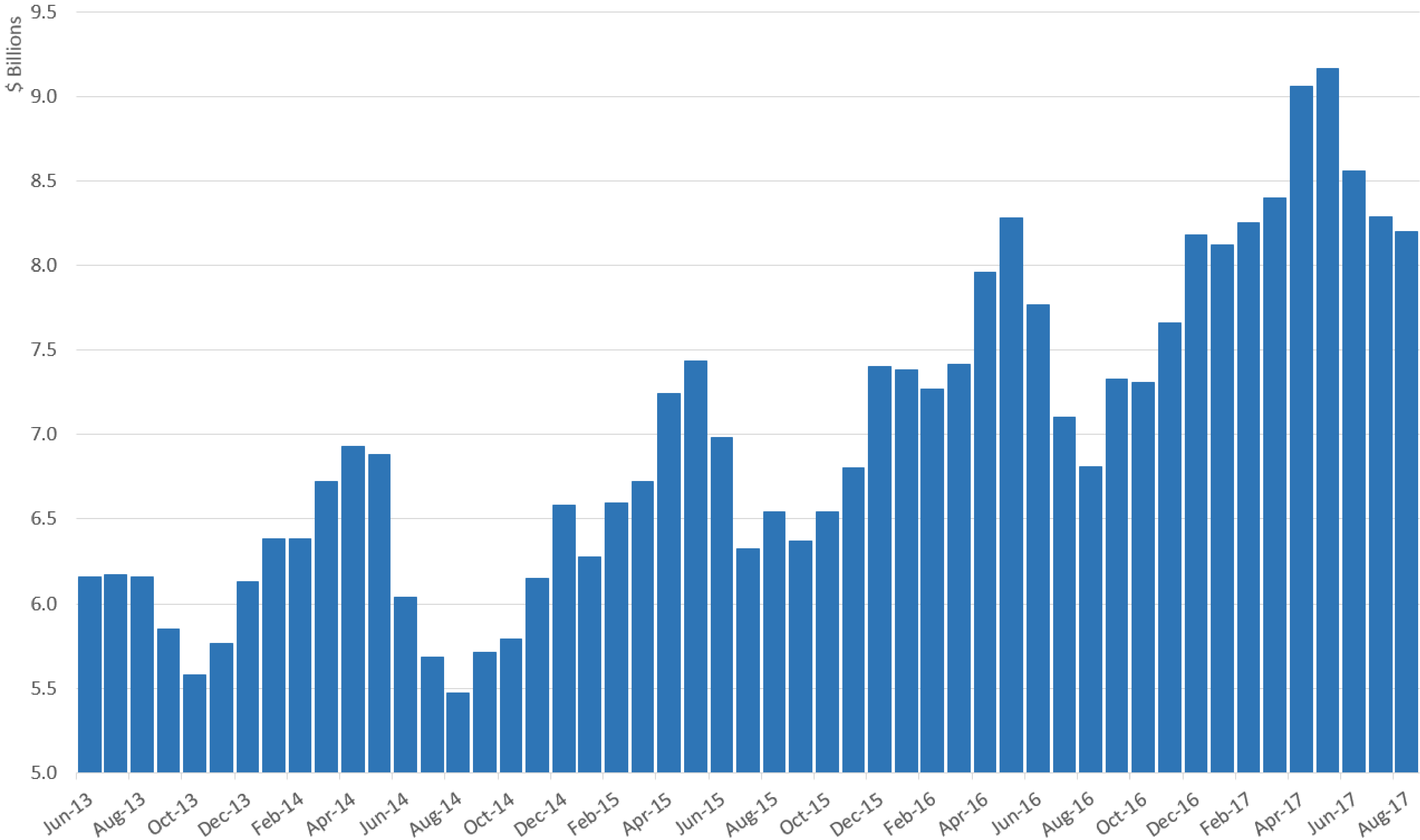
- Managing Costs – cash forecasting can help minimize excess bank balances and increase portfolio returns. Idle cash creates cash drag on an investment portfolio. The impact of cash drag is not readily visible and can be difficult to quantify.

No one likes surprises when it comes to cashflows, especially when they are outgoing. A Cash Forecast can eliminate situations of having to liquidate a portfolio holding in an unfavorable market and taking a loss.

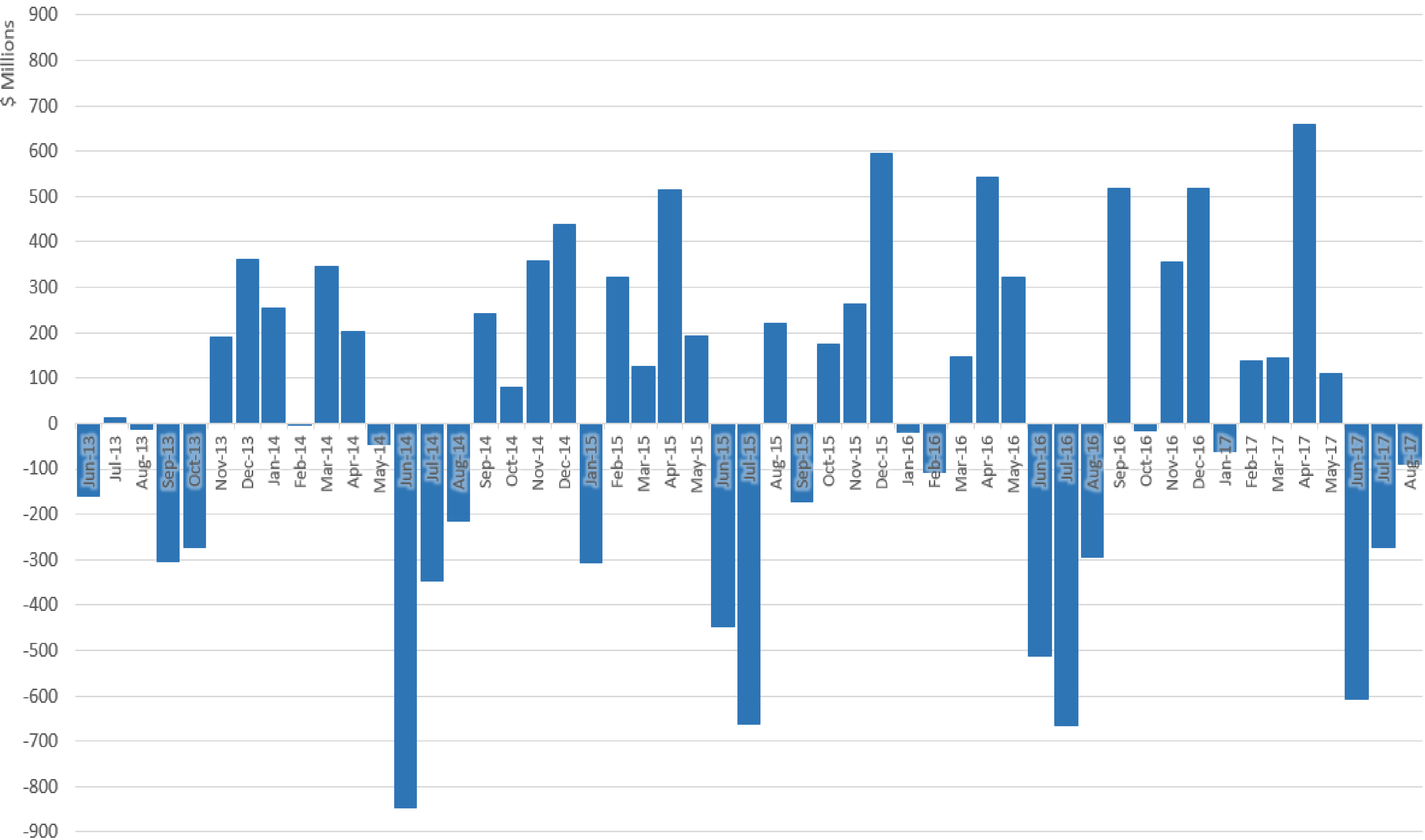
Developing a Cash Forecast – A Dynamic Process

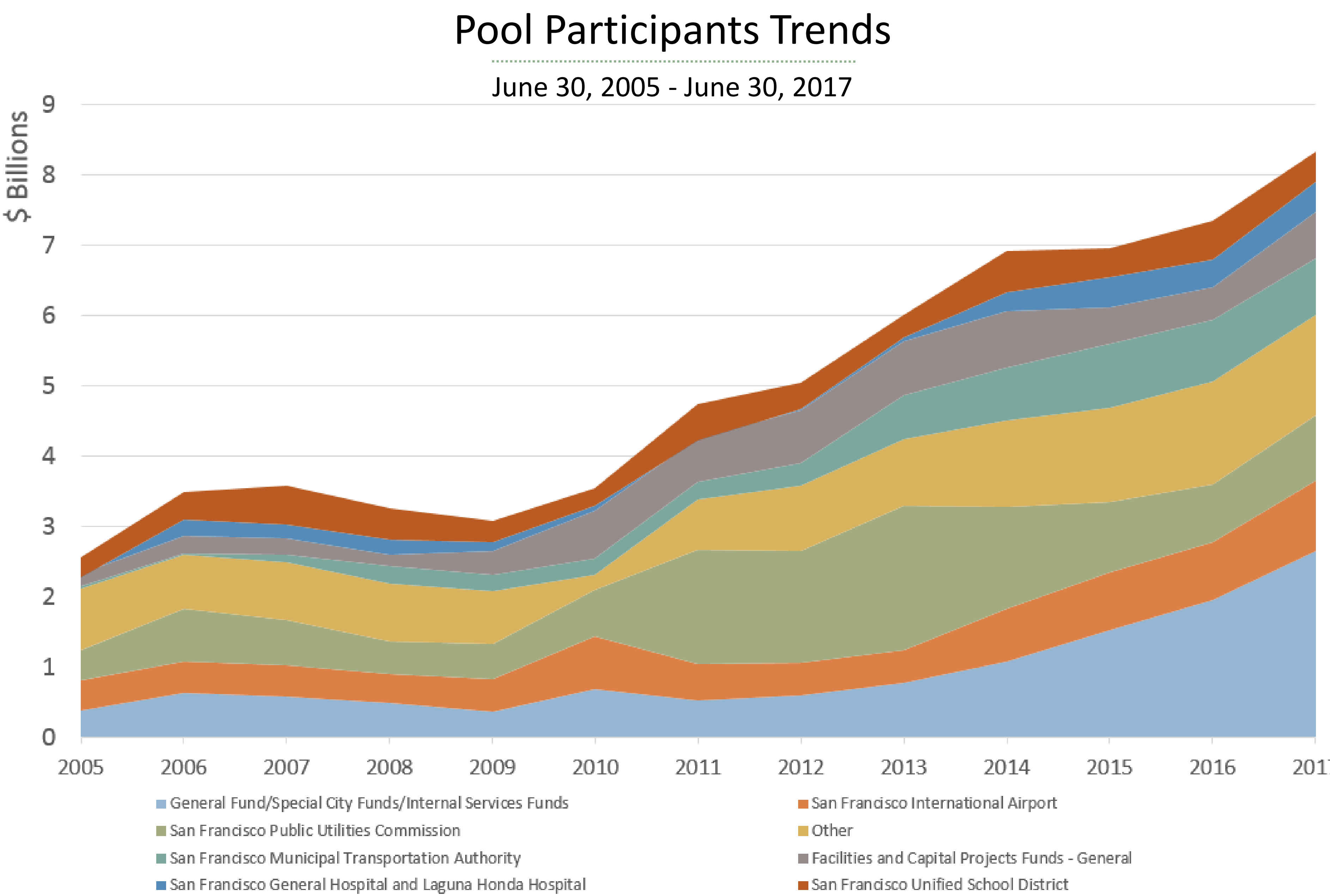
- Gather Information on Cash Disbursements and Cash Receipts from the Pool Participants
- Examine Historical Data to Identify Trends
- Use Statistical Extrapolation to Predict a Pattern of Future Cash Flows
- Create a Model Incorporating all Cash Disbursement, Cash Receipt, and Portfolio Information
- Update Model as New Information becomes available

City and County of San Francisco Pooled Fund
End of Month Balances



City and County of San Francisco Pooled Fund
Month to Month Portfolio Change




Pool Participants Trends
June 30, 2005 - June 30, 2017
$ Billions
0
1
2
3
4
5
6
7
8
9
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
General Fund/Special City Funds/Internal Services Funds
San Francisco International Airport
San Francisco Public Utilities Commission
Other
San Francisco Municipal Transportation Authority
Facilities and Capital Projects Funds - General
San Francisco General Hospital and Laguna Honda Hospital
San Francisco Unified School District

Daily Cash Projection

Opening Balance	$81,121,458.25		
Sources:	$9,690,382.36	$414,527,695.06	
Sold FRGXX	$0.00		
Sold TSTXX	$0.00		
Sold MVRXX	$0.00		
Maturity 313385MN3	$70,000,000.00		
Maturity 313385MN3	$100,000,000.00		
Maturity 313385MN3	$50,000,000.00		
Maturity 313385MN3	$50,000,000.00		
Maturity 19416EX44	$10,200,000.00		
Sold 3133EEAN0	$25,045,694.67		
Sold 36164LEN5	$50,024,590.25		
Sold 36164KEA5	$49,567,027.78		
Uses:	($42,609,722.38)	($380,511,573.49)	
Purchase FRGXX	($50,000,000.00)		
Purchase 313385MP8	($99,997,222.22)		
Purchase 313385MP8	($49,998,611.11)		
Purchase 313385MP8	($49,998,611.11)		
Purchase 06371EQT7	($50,000,000.00)		
Purchase 06538BZB2	($37,907,406.67)		
Purchase	$0.00		
Purchase	$0.00		
Purchase	$0.00		
Purchase	$0.00		
Purchase	$0.00		
Cash Balance		$115,137,579.82	($4,862,420.18)

CitiBank Wire Transfer Amount
$404,837,312.70
($287,901,851.11)
$116,935,461.59

1 Day Float
$4,353,962.01

	Sources		Uses
Investment Interest	$0.00	Payroll	$0.00
Lockbox	$42,499.11	Payroll Taxes	$0.00
Incoming Wires	$0.00	Paymode	$0.00
ACH	$0.00	Retirement	$0.00
Retirement	$0.00	Expenditures	$0.00
Bond Settlement Proceeds	$0.00	Deferred Comp	$0.00
Revenues	$0.00	Outgoing Wires	$0.00
Cash Pro Credits	$9,647,883.25	Cash Pro Debits	($42,609,722.38)
Other Incoming Funds	$0.00	Debt Service	$0.00
Total	$9,690,382.36		($42,609,722.38)

Cash Balance + 1 Day Float
$119,491,541.83

Cash Forecast

Cash Balance	10/4/2017	$115,223,977.09		Money Market Balance	Overnight Target
ECA Target Balance		($120,000,000.00)		$107,169,931.51	$300,000,000.00
		($4,776,022.91)			

Date	Description	USES	SOURCES	Daily Net Cash Flow	Cash Balance	Cash Balance + MMKT Funds	Spendable Cash
10/5/2017	UC Regents	($13,000,000.00)	$0.00	$148,500,736.83	$143,724,713.92	$250,894,645.43	($49,105,354.57)
	Kaiser Health Premium (ACH 10032017)	($38,499,263.17)	$0.00				
	Maturity 313385MP8	$0.00	$50,000,000.00				
	Maturity 313385MP8	$0.00	$50,000,000.00				
	Maturity 313385MP8	$0.00	$100,000,000.00				
10/6/2017	Payroll Taxes	($7,000,000.00)	$0.00	$43,000,000.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
	Bond Call 3136G4ND1	$0.00	$50,000,000.00				
10/7/2017		$0.00	$0.00	$0.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
10/8/2017		$0.00	$0.00	$0.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
10/9/2017		$0.00	$0.00	$0.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
10/10/2017		$0.00	$0.00	$0.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
10/11/2017		$0.00	$0.00	$0.00	$186,724,713.92	$293,894,645.43	($6,105,354.57)
10/12/2017	Maturity 06538BXC2	$0.00	$33,000,000.00	$33,000,000.00	$219,724,713.92	$326,894,645.43	$26,894,645.43
10/13/2017		$0.00	$0.00	$0.00	$219,724,713.92	$326,894,645.43	$26,894,645.43
10/14/2017		$0.00	$0.00	$0.00	$219,724,713.92	$326,894,645.43	$26,894,645.43
10/15/2017		$0.00	$0.00	$0.00	$219,724,713.92	$326,894,645.43	$26,894,645.43
10/16/2017	Payroll Transfer to US Bank	($77,000,000.00)	$0.00	$23,000,000.00	$242,724,713.92	$349,894,645.43	$49,894,645.43
	Maturity 06427KW29	$0.00	$50,000,000.00				
	Maturity 89113WH25	$0.00	$50,000,000.00				
10/17/2017		$0.00	$0.00	$0.00	$242,724,713.92	$349,894,645.43	$49,894,645.43
10/18/2017	Payroll Taxes	($36,000,000.00)	$0.00	$4,000,000.00	$246,724,713.92	$353,894,645.43	$53,894,645.43
	Maturity 06538BXJ7	$0.00	$40,000,000.00				
10/19/2017		$0.00	$0.00	$0.00	$246,724,713.92	$353,894,645.43	$53,894,645.43
10/20/2017	Payroll Taxes	($7,000,000.00)	$0.00	($7,000,000.00)	$239,724,713.92	$346,894,645.43	$46,894,645.43
10/21/2017		$0.00	$0.00	$0.00	$239,724,713.92	$346,894,645.43	$46,894,645.43
10/22/2017		$0.00	$0.00	$0.00	$239,724,713.92	$346,894,645.43	$46,894,645.43
10/23/2017		$0.00	$0.00	$0.00	$239,724,713.92	$346,894,645.43	$46,894,645.43
10/24/2017	Maturity 47816FXQ9	$0.00	$60,000,000.00	$60,000,000.00	$299,724,713.92	$406,894,645.43	$106,894,645.43
10/25/2017	SF PUC Water Enterprise Debt Service	($155,215,481.00)	$0.00	($9,860,956.00)	$289,863,757.92	$397,033,689.43	$97,033,689.43

Cash Forecasting Tools - MaxQ

- Provides added visibility into different time frames
- Adds process to better reflect immunization of cash outflows
- Automates the incorporation of Portfolio data with cashflow data