



MORNING BREAKOUT SESSION A:  
CASH FLOW CONFIDENCE  
-THE CORNERSTONE OF TREASURY  
-STEPS TO BUILD REALISTIC  
EXPECTATIONS

CMTA  
APRIL 26, 2018

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City and County of San Francisco

Cash Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations

## CA Government Code 53600.5

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### Objectives

When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, the primary objective of a trustee shall be to safeguard the principal of the funds under its control. The secondary objective shall be to meet the liquidity needs of the depositor. The third objective shall be to achieve a return on the funds under its control.

## The Importance of a Cash Forecast

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### □ 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 and reduces 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 cash flows, 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.*

## Cash Flow Due Diligence Goes a Long Way

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- When it comes to evaluating liquidity requirements, there are varying schools of thought on how to accomplish it. However in reality, we only have two choices: look back or look forward!
- Historical Cash Flow / Portfolio Value (proxy) Analysis
  - Gather several years of historical cash flows and look at multiple scenarios that give transparency into what has happened previously. The goal is to solve what liquidity profile would have sustained you during the timeframe in question and evaluate its usefulness for the future (History doesn't repeat itself but it sure does rhyme).
- Projected Cash Flow / Immunization Analysis
  - Gather information from internal and external participants as to projected cash flow needs and match portfolio assets to major liabilities. This optimizes the amount of liquidity necessary to meet obligations during the normal cyclical fluctuations of cash flow an entity experiences.

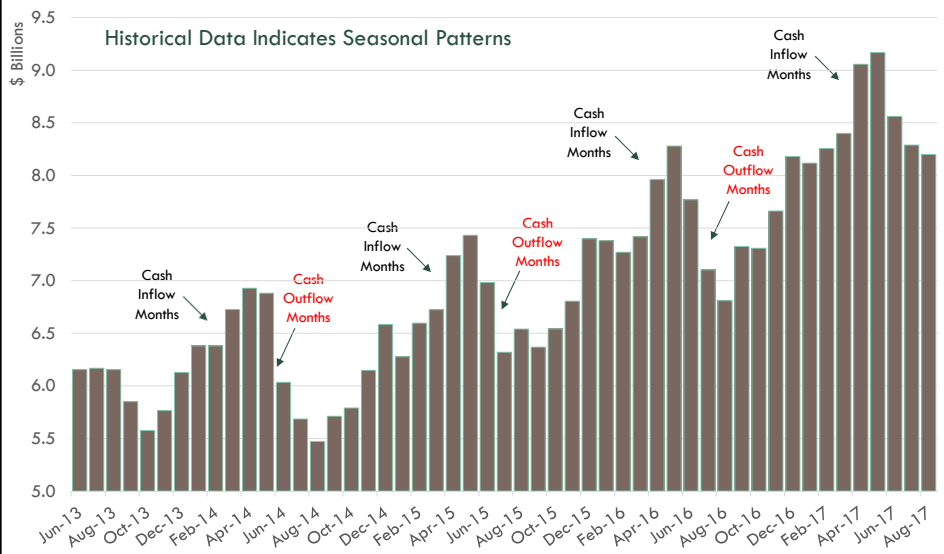
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**CCSF Developing a Cash Forecast – A Dynamic Process**

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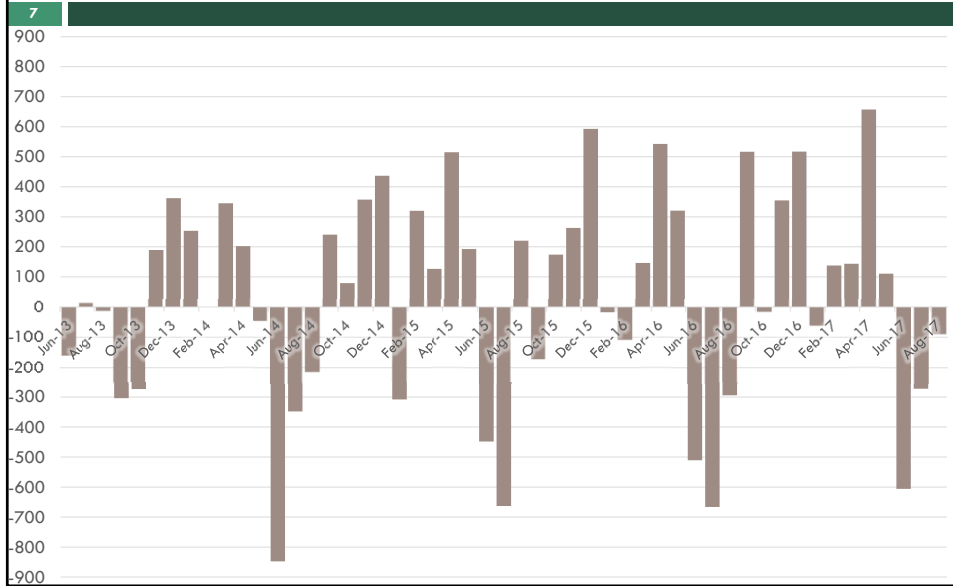
- ❑ Examine historical data to identify trends
- ❑ Gather information on cash disbursements and cash receipts from the pool participants
- ❑ Create a model incorporating all cash disbursement, cash receipt, and portfolio information
- ❑ Use statistical extrapolation to predict a pattern of future cash flows
- ❑ Update model as new information becomes available

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**City & County of San Francisco End of Month Balances**

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**CCSF Pooled Fund – Month to Month Portfolio Change**



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**CCSF Daily Cash Projection**

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Opening Balance	\$81,121,458.25			
<b>Sources:</b>				
Sold FRGXX	\$9,690,382.36	\$414,527,695.06	Citibank Wire Transfer Amount	1 Day Float
Sold TSTXX	\$0.00		\$404,837,312.70	\$4,353,962.01
Sold MVRXX	\$0.00		(\$287,901,851.11)	
			\$116,935,461.59	
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			
<b>Uses:</b>				
Purchase FRGXX	(\$42,609,722.38)	(\$380,511,573.49)	Investment Interest	Payroll
Purchase 313385MP6	(\$50,000,000.00)		Lockbox	Payroll Taxes
Purchase 313385MP6	(\$99,997,222.22)		Incoming Wires	Paymode
Purchase 313385MP6	(\$49,998,611.11)		ACH	Retirement
Purchase 313385MP6	(\$49,998,611.11)		Retirement	Expenditures
Purchase 06371EQ17	(\$50,000,000.00)		Bond Settlement Proceeds	Deferred Comp
Purchase 06538BZB2	(\$37,907,406.67)		Revenues	Outgoing Wires
Purchase	\$0.00		Cash Pro Credits	Cash Pro Debits
Purchase	\$0.00		Other Incoming Funds	Debt Service
Purchase	\$0.00		Total	
Purchase	\$0.00		\$9,690,382.36	(\$42,609,722.38)
Purchase	\$0.00			\$0.00
Purchase	\$0.00			\$0.00
Purchase	\$0.00			\$0.00
Purchase	\$0.00			\$0.00
Cash Balance		\$115,137,579.82	(\$4,862,420.18)	Cash Balance + 1 Day Float
				\$119,491,541.83

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# CCSF 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)			
	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		
	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			
10/8/2017	Payroll Taxes	(\$7,000,000.00)	\$0.00	\$43,000,000.00		
	Bond Call 313864ND1	\$0.00	\$50,000,000.00			
10/7/2017		\$0.00	\$0.00	\$186,724,713.92	\$293,894,645.43	(\$6,105,354.57)
10/8/2017		\$0.00	\$0.00	\$186,724,713.92	\$293,894,645.43	(\$6,105,354.57)
10/9/2017		\$0.00	\$0.00	\$186,724,713.92	\$293,894,645.43	(\$6,105,354.57)
10/10/2017		\$0.00	\$0.00	\$186,724,713.92	\$293,894,645.43	(\$6,105,354.57)
10/11/2017		\$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	\$26,894,645.43
10/13/2017		\$0.00	\$0.00	\$219,724,713.92	\$326,894,645.43	\$26,894,645.43
10/14/2017		\$0.00	\$0.00	\$219,724,713.92	\$326,894,645.43	\$26,894,645.43
10/15/2017		\$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		
	Maturity 06427KH29	\$0.00	\$50,000,000.00			
	Maturity 89113WH25	\$0.00	\$50,000,000.00			
10/17/2017		\$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		
	Maturity 06538BXJ7	\$0.00	\$40,000,000.00			
10/19/2017		\$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)		
10/21/2017		\$0.00	\$0.00	\$239,724,713.92	\$346,894,645.43	\$46,894,645.43
10/22/2017		\$0.00	\$0.00	\$239,724,713.92	\$346,894,645.43	\$46,894,645.43
10/23/2017		\$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	\$46,894,645.43
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 Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations

# CCSF Profile Analysis – Cumulative Negative Net Cash Flow

Cumulative Neg. Scenario		12		24		36	
	Value	Date(s)	Value	Date(s)	Value	Date(s)	
Cumulative Negative Net Cash Flow	(\$968,508,328.19)	06/30/17   08/31/17	(\$1,471,709,351.82)	06/30/16   08/31/16	(\$1,471,709,351.82)	06/30/16   08/31/16	
<b>Required Liquidity</b>		<b>Multiplier</b>		<b>Multiplier</b>		<b>Multiplier</b>	
Strategic Primary Liquidity	\$193,701,665.64	0.20x / 2.3%	\$294,341,870.36	0.20x / 3.5%	<b>\$294,341,870.36</b>	<b>0.20x / 3.5%</b>	
Strategic Secondary Liquidity	\$48,425,416.41	0.05x / 0.6%	\$73,585,467.59	0.05x / 0.9%	<b>\$73,585,467.59</b>	<b>0.05x / 0.9%</b>	
Strategic Total Liquidity	\$242,127,082.05	0.25x / 2.9%	\$367,927,337.96	0.25x / 4.4%	<b>\$367,927,337.96</b>	<b>0.25x / 4.4%</b>	
<b>Actual Liquidity</b>		<b>Multiplier</b>		<b>Multiplier</b>		<b>Multiplier</b>	
Actual Primary Liquidity	\$300,000,000.00	0.31x / 3.6%	\$300,000,000.00	0.20x / 3.6%	\$300,000,000.00	0.20x / 3.6%	
Actual Secondary Liquidity	<u>\$2,116,655,368.00</u>	<u>2.19x / 25.4%</u>	<u>\$2,116,655,368.00</u>	<u>1.44x / 25.4%</u>	<u>\$2,116,655,368.00</u>	<u>1.44x / 25.4%</u>	
Actual Total Liquidity	\$2,416,655,368.00	2.50x / 28.9%	\$2,416,655,368.00	1.64x / 28.9%	\$2,416,655,368.00	1.64x / 28.9%	
<b>Investable Liquidity</b>		<b>% Change</b>		<b>% Change</b>		<b>% Change</b>	
Investable Primary Liquidity	\$106,298,334.36	35.43%	\$5,658,129.64	1.89%	\$5,658,129.64	1.89%	
Investable Secondary Liquidity	\$2,068,229,951.59	97.71%	\$2,043,069,900.41	96.52%	\$2,043,069,900.41	96.52%	
Total Investable Liquidity	\$2,174,528,285.95	89.98%	\$2,048,728,030.05	84.78%	\$2,048,728,030.05	84.78%	



**Liquidity Profile Analysis**  
**City and County of San Francisco**  
**First Cash Flow Date: Sep 30, 2014**  
**Last Cash Flow Date: Aug 31, 2017**  
**Analysis Date: Aug 31, 2017**

Institution Name	City and County of San Francisco
Portfolio Balance	\$8,348,429,496.39
Primary Liquidity	\$300,000,000.00
Secondary Liquidity	\$2,116,655,368.00
Primary Multiplier	0.20
Secondary Multiplier	0.05
Analysis Date	08/31/2017

## Cash Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations

### CCSF Cash Flow Immunization Schedule

Bond Immunization Schedule		Excess Liquidity Amount	\$5,000,000.00					
<div style="display: flex; justify-content: space-between;"> <div> <p><b>11</b></p> </div> <div style="font-size: 0.8em;"> <p>■ Bond has no immunization amount actively being applied</p> <p>■ Immunization date has excess inflows over desired excess liquidity amount</p> <p>■ Immunization amount applied is under total available bond proceeds</p> <p>■ Immunization amount applied is equal to total available bond proceeds</p> <p>■ Immunization amount applied exceeds total available bond proceeds</p> </div> </div>								
Portfolio Bond Immunization List								
Bond Description	Amount	Date of Maturity/Call	First Immunization Date	First Immunization Amount	Second Immunization Date	Second Immunization Amount	Third Immunization Date	Third Immunization Amount
31337885 : FHLB 12/4/2018 43916	\$15,000,000.00	12/4/2018	12/4/2018	\$15,000,000.00				
31337885 : FHLB 12/4/2018 44305	\$25,000,000.00	12/4/2018	12/4/2018	\$25,000,000.00				
31337885 : FHLB 12/4/2018 44357	\$2,770,000.00	12/4/2018	12/4/2018	\$2,770,000.00				
31309067 : FHLB 12/14/2018 44738	\$3,770,000.00	12/14/2018	12/14/2018	\$3,770,000.00				
78896884 : RY 01/19/2018 44875	\$50,000,000.00	12/24/2018	12/24/2018	\$23,000,000.00	12/26/2018	\$17,000,000.00		
89121786 : WEST 12/25/2018 44905	\$50,000,000.00	12/25/2018	12/25/2018	\$50,000,000.00				
66378184 : BMO 12/26/2018 44965	\$25,000,000.00	12/26/2018	12/26/2018	\$25,000,000.00				
89121786 : WEST 12/28/2018 44957	\$50,000,000.00	12/28/2018	12/28/2018	\$7,000,000.00	01/04/2019	\$13,000,000.00	01/07/2019	\$10,000,000.00
31336084 : FICB 01/02/2019 43738	\$25,000,000.00	01/02/2019	01/02/2019	\$25,000,000.00				
31336228 : FICB 01/03/2019 43938	\$25,000,000.00	01/03/2019	01/03/2019	\$25,000,000.00				
89297062 : TOYOTA 01/09/2019 43954	\$50,000,000.00	01/09/2019	01/09/2019	\$30,000,000.00	01/11/2019	\$14,000,000.00		
31348426 : FHLB 01/16/2019 45094	\$4,270,000.00	01/16/2019	01/16/2019	\$4,270,000.00				
31348643 : FHLB 01/17/2019 43942	\$25,000,000.00	01/17/2019	01/17/2019	\$25,000,000.00				
89316185 : BMO 01/17/2019 44385	\$50,000,000.00	01/17/2019	01/18/2019	\$50,000,000.00				
89316121 : BMO 01/23/2019 44886	\$25,000,000.00	01/23/2019	01/23/2019	\$25,000,000.00				
31328063 : IANCA 01/25/2019 43987	\$25,000,000.00	01/25/2019	01/25/2019	\$22,000,000.00				
31308923 : FHLB 01/25/2019 43794	\$25,000,000.00	01/25/2019	01/25/2019	\$25,000,000.00				
81282956 : I 01/31/2019 45022	\$50,000,000.00	01/31/2019	02/04/2019	\$50,000,000.00				
31340433 : FHLB 02/01/2019 45080	\$25,000,000.00	02/01/2019	02/04/2019	\$25,000,000.00				
31320904 : IANCA 02/05/2019 44806	\$25,000,000.00	02/05/2019	02/12/2019	\$25,000,000.00				
31336888 : FICB 02/25/2019 43771	\$50,000,000.00	02/25/2019	03/04/2019	\$50,000,000.00				
81279970 : B 02/28/2019 45040	\$50,000,000.00	02/28/2019						
45909188 : FC 03/01/2019 45034	\$50,000,000.00	03/01/2019	03/04/2019	\$32,000,000.00	03/06/2019	\$10,000,000.00		
89121786 : WEST 03/05/2019 45048	\$50,000,000.00	03/05/2019	03/06/2019	\$50,000,000.00				
86427838 : BMO 03/06/2019 44838	\$7,838,000.00	03/06/2019	03/08/2019	\$7,000,000.00	03/18/2019	\$70,578,000.00		
31304443 : FHLB 03/18/2019 45100	\$5,500,000.00	03/18/2019	03/18/2019	\$5,500,000.00				
31348426 : FHLB 03/19/2019 45094	\$50,000,000.00	03/19/2019	03/19/2019	\$50,000,000.00				
31320904 : IANCA 03/19/2019 43878	\$40,000,000.00	03/19/2019	03/20/2019	\$38,000,000.00	03/22/2019	\$4,000,000.00		
31383467 : FICB 03/22/2019 45056	\$25,000,000.00	03/22/2019	03/22/2019	\$25,000,000.00				

## Cash Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations

### CCSF Cash Flow Schedule by Day

Cash Flow Schedules by Day		CF Start Date	4/19/2018	CF End Date	3/31/2023
<div style="display: flex; justify-content: space-between;"> <div> <p><b>12</b></p> </div> <div style="font-size: 0.8em;"> <p>■ Min Liquidity (\$17,261,233,815.87)</p> <p>■ Max Liquidity \$1,368,488,575.75</p> <p>■ Avg Liquidity (\$6,113,641,954.25)</p> <p>■ Std Dev Liquidity \$5,877,612,454.13</p> </div> <div style="font-size: 0.8em;"> <p>■ Innum Min Liquidity (\$17,260,233,815.87)</p> <p>■ Innum Max Liquidity \$1,388,085,575.75</p> <p>■ Innum Avg Liquidity (\$6,100,605,919.26)</p> <p>■ Innum Std Dev Liquidity \$5,863,694,202.99</p> </div> </div>					
<div style="display: flex; justify-content: space-between;"> <div> <p>Projected ECO Bank Balance \$94,111,335.28</p> <p>IC Bank Balance Target \$100,000,000.00</p> <p>Net Bank Balance Available (\$5,888,664.72)</p> <p>Portfolio MBSCT Holdings</p> <p>Intra-Day MBSCT Transactions (\$40,000,000.00)</p> <p>Target Liquidity \$300,000,000.00</p> <p>Spensible Cash (\$45,888,664.72)</p> </div> <div> <p>Include MBSCT Holdings</p> <p>Exclude Target Liquidity</p> </div> <div> <p>Negative Net Outflow Filter Amount (\$25,000,000.00)</p> <p>Artisan Filter</p> </div> </div>					
Cash Flow by Day			Immunized Cash Flow by Day		
Date	Total CF	Adjusted Liquidity	Date	Total CF	Adjusted Liquidity
04/30/2018	\$170,000,000.00	\$170,000,000.00	04/30/2018	\$170,000,000.00	\$170,000,000.00
04/11/2018	\$190,340,000.00	\$190,340,000.00	04/11/2018	\$190,340,000.00	\$190,340,000.00
04/12/2018	\$190,340,000.00	\$190,340,000.00	04/12/2018	\$190,340,000.00	\$190,340,000.00
04/13/2018	\$190,340,000.00	\$190,340,000.00	04/13/2018	\$190,340,000.00	\$190,340,000.00
04/14/2018	\$190,340,000.00	\$190,340,000.00	04/14/2018	\$190,340,000.00	\$190,340,000.00
04/15/2018	\$190,340,000.00	\$190,340,000.00	04/15/2018	\$190,340,000.00	\$190,340,000.00
04/16/2018	\$190,340,000.00	\$190,340,000.00	04/16/2018	\$190,340,000.00	\$190,340,000.00
04/17/2018	\$190,340,000.00	\$190,340,000.00	04/17/2018	\$190,340,000.00	\$190,340,000.00
04/18/2018	\$190,340,000.00	\$190,340,000.00	04/18/2018	\$190,340,000.00	\$190,340,000.00
04/19/2018	\$190,340,000.00	\$190,340,000.00	04/19/2018	\$190,340,000.00	\$190,340,000.00
04/20/2018	\$190,340,000.00	\$190,340,000.00	04/20/2018	\$190,340,000.00	\$190,340,000.00
04/21/2018	\$190,340,000.00	\$190,340,000.00	04/21/2018	\$190,340,000.00	\$190,340,000.00
04/22/2018	\$190,340,000.00	\$190,340,000.00	04/22/2018	\$190,340,000.00	\$190,340,000.00
04/23/2018	\$190,340,000.00	\$190,340,000.00	04/23/2018	\$190,340,000.00	\$190,340,000.00
04/24/2018	\$190,340,000.00	\$190,340,000.00	04/24/2018	\$190,340,000.00	\$190,340,000.00
04/25/2018	\$190,340,000.00	\$190,340,000.00	04/25/2018	\$190,340,000.00	\$190,340,000.00
04/26/2018	\$190,340,000.00	\$190,340,000.00	04/26/2018	\$190,340,000.00	\$190,340,000.00
04/27/2018	\$190,340,000.00	\$190,340,000.00	04/27/2018	\$190,340,000.00	\$190,340,000.00
04/28/2018	\$190,340,000.00	\$190,340,000.00	04/28/2018	\$190,340,000.00	\$190,340,000.00
04/29/2018	\$190,340,000.00	\$190,340,000.00	04/29/2018	\$190,340,000.00	\$190,340,000.00
04/30/2018	\$190,340,000.00	\$190,340,000.00	04/30/2018	\$190,340,000.00	\$190,340,000.00

Cash Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations  
CCSF Cash Flow Schedule by Day – Customized View

Cash Flow Schedules By Day		CF Start Date	4/10/2018	Min Liquidity	(\$17,398,711,798.00)	Innum Min Liquidity	(\$17,377,711,798.00)
		CF End Date	3/31/2023	Max Liquidity	\$1,187,008,591.93	Innum Max Liquidity	\$1,176,607,591.93
				Avg Liquidity	(\$6,222,119,638.07)	Innum Avg Liquidity	(\$6,217,078,934.00)
				Std Dev Liquidity	\$5,877,812,454.13	Innum Std Dev Liquidity	\$5,983,091,202.99
Projected EOD Bank Balance	\$94,111,335.28						
EC Bank Balance Target	\$100,000,000.00						
Net Bank Balance Available	(\$5,888,664.72)						
Portfolio MBSKT Holdings	\$191,522,895.18						
Intra Day MBSKT Transactions	(\$40,000,000.00)						
Target Liquidity	\$300,000,000.00						
Spensible Cash	(\$154,398,668.54)						

Cash Flow by Day			Innumerated Cash Flow by Day		
	Total CF	Adjusted Liquidity		Total CF	Adjusted Liquidity
04/10/2018	\$176,000,000.00	\$16,633,301.48	04/10/2018	\$176,000,000.00	\$16,633,301.48
04/11/2018	\$100,000,000.00	\$240,000.00	04/11/2018	\$100,000,000.00	\$240,000.00
04/12/2018	\$100,000,000.00	\$1,176,607,591.93	04/12/2018	\$100,000,000.00	\$1,176,607,591.93
04/13/2018	\$100,000,000.00	\$1,176,607,591.93	04/13/2018	\$100,000,000.00	\$1,176,607,591.93
04/14/2018	\$100,000,000.00	\$1,176,607,591.93	04/14/2018	\$100,000,000.00	\$1,176,607,591.93
04/15/2018	\$100,000,000.00	\$1,176,607,591.93	04/15/2018	\$100,000,000.00	\$1,176,607,591.93
04/16/2018	\$100,000,000.00	\$1,176,607,591.93	04/16/2018	\$100,000,000.00	\$1,176,607,591.93
04/17/2018	\$100,000,000.00	\$1,176,607,591.93	04/17/2018	\$100,000,000.00	\$1,176,607,591.93
04/18/2018	\$100,000,000.00	\$1,176,607,591.93	04/18/2018	\$100,000,000.00	\$1,176,607,591.93
04/19/2018	\$100,000,000.00	\$1,176,607,591.93	04/19/2018	\$100,000,000.00	\$1,176,607,591.93
04/20/2018	\$100,000,000.00	\$1,176,607,591.93	04/20/2018	\$100,000,000.00	\$1,176,607,591.93
04/21/2018	\$100,000,000.00	\$1,176,607,591.93	04/21/2018	\$100,000,000.00	\$1,176,607,591.93
04/22/2018	\$100,000,000.00	\$1,176,607,591.93	04/22/2018	\$100,000,000.00	\$1,176,607,591.93
04/23/2018	\$100,000,000.00	\$1,176,607,591.93	04/23/2018	\$100,000,000.00	\$1,176,607,591.93
04/24/2018	\$100,000,000.00	\$1,176,607,591.93	04/24/2018	\$100,000,000.00	\$1,176,607,591.93
04/25/2018	\$100,000,000.00	\$1,176,607,591.93	04/25/2018	\$100,000,000.00	\$1,176,607,591.93
04/26/2018	\$100,000,000.00	\$1,176,607,591.93	04/26/2018	\$100,000,000.00	\$1,176,607,591.93
04/27/2018	\$100,000,000.00	\$1,176,607,591.93	04/27/2018	\$100,000,000.00	\$1,176,607,591.93
04/28/2018	\$100,000,000.00	\$1,176,607,591.93	04/28/2018	\$100,000,000.00	\$1,176,607,591.93
04/29/2018	\$100,000,000.00	\$1,176,607,591.93	04/29/2018	\$100,000,000.00	\$1,176,607,591.93
04/30/2018	\$100,000,000.00	\$1,176,607,591.93	04/30/2018	\$100,000,000.00	\$1,176,607,591.93

Cash Flow Confidence – The Cornerstone of Treasury – Steps to Build Realistic Expectations  
CCSF Cash Flow Schedule by Day – Negative Outflow Filter

Cash Flow Schedules By Day		CF Start Date	4/10/2018	Min Liquidity	(\$17,398,711,798.00)	Innum Min Liquidity	(\$17,377,711,798.00)
		CF End Date	3/31/2023	Max Liquidity	\$1,187,008,591.93	Innum Max Liquidity	\$1,176,607,591.93
				Avg Liquidity	(\$6,222,119,638.07)	Innum Avg Liquidity	(\$6,217,078,934.00)
				Std Dev Liquidity	\$5,877,812,454.13	Innum Std Dev Liquidity	\$5,983,091,202.99
Projected EOD Bank Balance	\$94,111,335.28						
EC Bank Balance Target	\$100,000,000.00						
Net Bank Balance Available	(\$5,888,664.72)						
Portfolio MBSKT Holdings	\$191,522,895.18						
Intra Day MBSKT Transactions	(\$40,000,000.00)						
Target Liquidity	\$300,000,000.00						
Spensible Cash	(\$154,398,668.54)						

Cash Flow by Day			Innumerated Cash Flow by Day		
	Total CF	Adjusted Liquidity		Total CF	Adjusted Liquidity
04/30/2018	\$176,000,000.00	\$16,633,301.48	04/27/2018	CCSF Payroll Tax 1	\$100,000,000.00
04/11/2018	\$100,000,000.00	\$240,000.00	07/11/2018	CCSF Payroll Tax 1	\$100,000,000.00
04/12/2018	\$100,000,000.00	\$1,176,607,591.93	07/22/2018	SFO Debt Service ACH	\$100,000,000.00
04/13/2018	\$100,000,000.00	\$1,176,607,591.93	08/04/2018	Water Health Premium	\$100,000,000.00
04/14/2018	\$100,000,000.00	\$1,176,607,591.93	08/05/2018	UC Regents	\$100,000,000.00
04/15/2018	\$100,000,000.00	\$1,176,607,591.93	09/19/2018	CCSF Payroll Tax 1	\$100,000,000.00
04/16/2018	\$100,000,000.00	\$1,176,607,591.93	09/21/2018	SF PUC Water Enterprise Debt Service	\$100,000,000.00
04/17/2018	\$100,000,000.00	\$1,176,607,591.93	11/24/2018	Payroll Transfer to Bank	\$100,000,000.00
04/18/2018	\$100,000,000.00	\$1,176,607,591.93			
04/19/2018	\$100,000,000.00	\$1,176,607,591.93			
04/20/2018	\$100,000,000.00	\$1,176,607,591.93			
04/21/2018	\$100,000,000.00	\$1,176,607,591.93			
04/22/2018	\$100,000,000.00	\$1,176,607,591.93			
04/23/2018	\$100,000,000.00	\$1,176,607,591.93			
04/24/2018	\$100,000,000.00	\$1,176,607,591.93			
04/25/2018	\$100,000,000.00	\$1,176,607,591.93			
04/26/2018	\$100,000,000.00	\$1,176,607,591.93			
04/27/2018	\$100,000,000.00	\$1,176,607,591.93			
04/28/2018	\$100,000,000.00	\$1,176,607,591.93			
04/29/2018	\$100,000,000.00	\$1,176,607,591.93			
04/30/2018	\$100,000,000.00	\$1,176,607,591.93			