

INVESTMENT PERFORMANCE SUMMARY

OFFICE OF THE TREASURER & CASH MANAGEMENT POLICY BOARD

Month Ending September 30, 2020

John Krimmel, CPA, CFA, Partner

Kevin M. Leonard, Partner

Jennifer Appel, CFA, Research Consultant



BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

INDEX PERFORMANCE

	September 2020	YTD 2020	1Q 2020	2Q 2020	3Q 2020	5yr	10yr	2014	2015	2016	2017	2018	2019
Reserve Custom Index	0.04%	6.57%	6.53%	4.20%	1.48%	3.32%	2.25%	1.10%	0.86%	1.15%	1.00%	1.88%	6.62%
Endowment Custom Index	-2.09%	4.30%	6.53%	-11.82%	1.26%	8.20%	7.30%	5.43%	-0.07%	5.71%	14.52%	-5.07%	20.01%
3-Month Treasury Bill	0.01%	0.56%	0.55%	0.39%	0.57%	1.16%	0.61%	0.03%	0.03%	0.27%	0.84%	1.86%	2.26%
6-Month Treasury Bill	0.01%	0.77%	0.75%	0.42%	0.60%	1.27%	0.69%	0.06%	0.10%	0.40%	0.88%	1.91%	2.38%
BAML 1-3 Yr Govt/Credit A+	0.02%	3.10%	3.09%	2.22%	0.66%	1.99%	1.49%	0.72%	0.66%	1.06%	0.70%	1.65%	3.83%
BAML 1-5 Yr Govt/Credit A+	0.00%	4.27%	4.27%	2.97%	0.83%	2.42%	1.96%	1.42%	1.07%	1.30%	1.02%	1.50%	4.62%
BAML 5-10 Yr Govt/Credit A+	0.07%	9.51%	9.43%	5.82%	2.21%	4.56%	4.15%	6.61%	1.95%	1.95%	2.98%	0.59%	9.04%
BBrg Barclays US Aggregate	-0.05%	6.79%	6.85%	3.15%	2.27%	4.18%	3.63%	5.97%	0.55%	2.65%	3.54%	0.01%	8.72%
BC Municipal Bond	0.02%	3.33%	3.31%	-0.63%	1.58%	3.84%	3.99%	9.05%	3.30%	0.25%	5.45%	1.28%	7.54%
BC US Corp High Yield	-1.03%	0.62%	1.67%	-12.69%	1.33%	6.79%	6.47%	2.45%	-4.47%	17.13%	7.50%	-2.08%	14.32%
BC Long Treasuries	0.38%	21.34%	20.88%	20.90%	7.92%	8.21%	7.21%	25.07%	-1.21%	1.33%	8.53%	-1.84%	14.83%
BC US Long Credit	-0.50%	8.00%	8.55%	-4.65%	5.62%	8.82%	7.32%	16.39%	-4.56%	10.22%	12.21%	-6.76%	23.36%
MSCI World Index	-3.45%	1.70%	5.34%	-21.05%	0.53%	10.48%	9.37%	4.94%	-0.87%	7.51%	22.40%	-8.71%	27.67%

Source: Bloomberg, Barclays, Alerian, Nareit, MSCI, JP Morgan, Credit Suisse, Thomson One



TOTAL FUND PERFORMANCE DETAIL - NET OF FEES

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	4 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Delaware Total Consolidation	3,782,339,581	100.00	-0.03	0.25	4.70	5.11	5.67	4.01	3.33	2.93	1.81	2.34	Jan-05
Delaware Total Consolidation ex. CARES	2,996,155,608	79.21	-0.03	0.32	5.07	5.47	5.86	4.13	3.42	3.00	1.85	2.37	Jan-05
Total Liquidity & Reserve	2,921,049,458	77.23	0.02	0.29	5.29	5.53	5.93	4.12	--	--	--	3.54	Nov-16
Total Liquidity	901,774,875	23.84	0.02	0.11	1.41	1.96	2.49	2.14	1.88	1.67	1.07	1.83	Jan-05
PFM Asset Management	451,924,580	11.95	0.02	0.09	1.37	1.92	2.42	2.14	1.90	1.71	--	1.34	Jun-13
Wilmington Liquidity	449,850,294	11.89	0.02	0.13	1.45	2.00	2.55	2.13	1.82	1.61	1.06	4.12	Jan-85
Total Reserve	2,019,274,584	53.39	0.02	0.37	6.42	6.55	7.48	4.92	3.83	3.44	2.20	2.78	Jan-05
Reserve Custom Index			0.04	0.44	6.57	6.67	7.69	4.94	3.79	3.32	2.25	2.97	Jan-05
Over/Under			-0.02	-0.07	-0.15	-0.12	-0.21	-0.02	0.04	0.12	-0.05	-0.19	
JPM Intermediate	478,099,929	12.64	0.01	0.18	3.39	3.96	4.27	2.95	2.34	2.25	--	1.85	Jun-13
J.P. Morgan Custom Index			0.02	0.17	3.10	3.68	4.11	2.77	2.17	2.04	1.61	1.73	Jun-13
Blackrock Financial Mangement	487,853,366	12.90	0.00	0.30	4.41	4.86	5.31	--	--	--	--	4.43	Mar-18
Blackrock Custom Index			0.00	0.24	4.27	4.73	5.27	3.46	2.69	2.45	1.81	4.30	Mar-18
Chandler Asset Management	530,110,913	14.02	0.03	0.62	8.96	8.92	10.09	6.54	5.01	4.41	--	3.34	Jun-13
Lazard Financial Management	523,210,375	13.83	0.03	0.35	8.72	8.26	10.15	--	--	--	--	7.84	Mar-18
Chandler/Lazard Custom Index			0.07	0.68	9.51	9.18	10.75	6.78	5.15	4.41	2.78	8.19	Mar-18
Total Endowment	75,106,150	1.99	-1.92	2.15	-1.35	4.46	4.38	4.53	6.43	6.99	--	5.38	Aug-15
Endowment Custom Index			-2.09	5.04	4.30	9.68	7.59	7.12	7.98	8.20	7.30	6.67	Aug-15
Over/Under			0.17	-2.89	-5.65	-5.22	-3.21	-2.59	-1.55	-1.21	--	-1.29	
SEI Funds	38,737,859	1.02	-2.02	5.70	4.48	10.58	7.45	6.83	8.39	8.93	--	7.40	Aug-15
Cash Account	74	0.00	0.00	0.00	0.34	0.79	1.38	1.36	1.12	0.95	--	0.92	Aug-15
Vanguard Funds	36,368,217	0.96	-1.82	--	--	--	--	--	--	--	--	-1.82	Sep-20
Endowment Custom Index			-2.09	5.04	4.30	9.68	7.59	7.12	7.98	8.20	7.30	-2.09	Sep-20
Over/Under			0.27									0.27	
CARES	786,183,973	20.79	0.00	0.00	--	--	--	--	--	--	--	0.03	Apr-20
FTSE T-Bill 1 Month TR			0.01	0.03	0.43	0.86	1.59	1.57	1.33	1.09	0.56	0.05	Apr-20
Over/Under			-0.01	-0.03								-0.02	
PFM CARES	393,091,889	10.39	0.00	0.00	--	--	--	--	--	--	--	0.03	Apr-20
Wilmington CARES	393,092,084	10.39	0.00	0.00	--	--	--	--	--	--	--	0.03	Apr-20
FTSE T-Bill 1 Month TR			0.01	0.03	0.43	0.86	1.59	1.57	1.33	1.09	0.56	0.05	Apr-20

Notes: Net of Fees. Results for periods longer than one year are annualized.

Performance history through 12/2015 is from BNY Mellon. NEPC Performance start date is January 2016. Fiscal Year end is June 30.

Reserve Custom Index consists of 25% ICE BofA 1-5 Yrs AAA-A US Corp & Govt TR / 25% ICE BofA 1-3 Yrs AAA-A US Corp & Govt / 50% ICE BofA US Gov/Credit 5-10 Yrs A Rated and Above, as of 4/1/2018. Prior to this, the index comprised 75% ICE BofA 1-5 Yrs AAA-A US Corp & Govt TR / 25% ICE BofA 6 Months US T-Bills TR.

Endowment Custom Index consists of 60% MSCI World Index/40% BBgBarc US Aggregate.

BlackRock Custom Index consists of 100% ICE BofA 1-5 Yrs AAA-A US Corp & Govt TR.

J.P. Morgan Custom Index consists of 100% ICE BofA 1-3 Yrs AAA-A US Corp & Govt.

Chandler/Lazard Custom Index consists of ICE BofA US Gov/Credit 5-10 Yrs A Rated and Above.



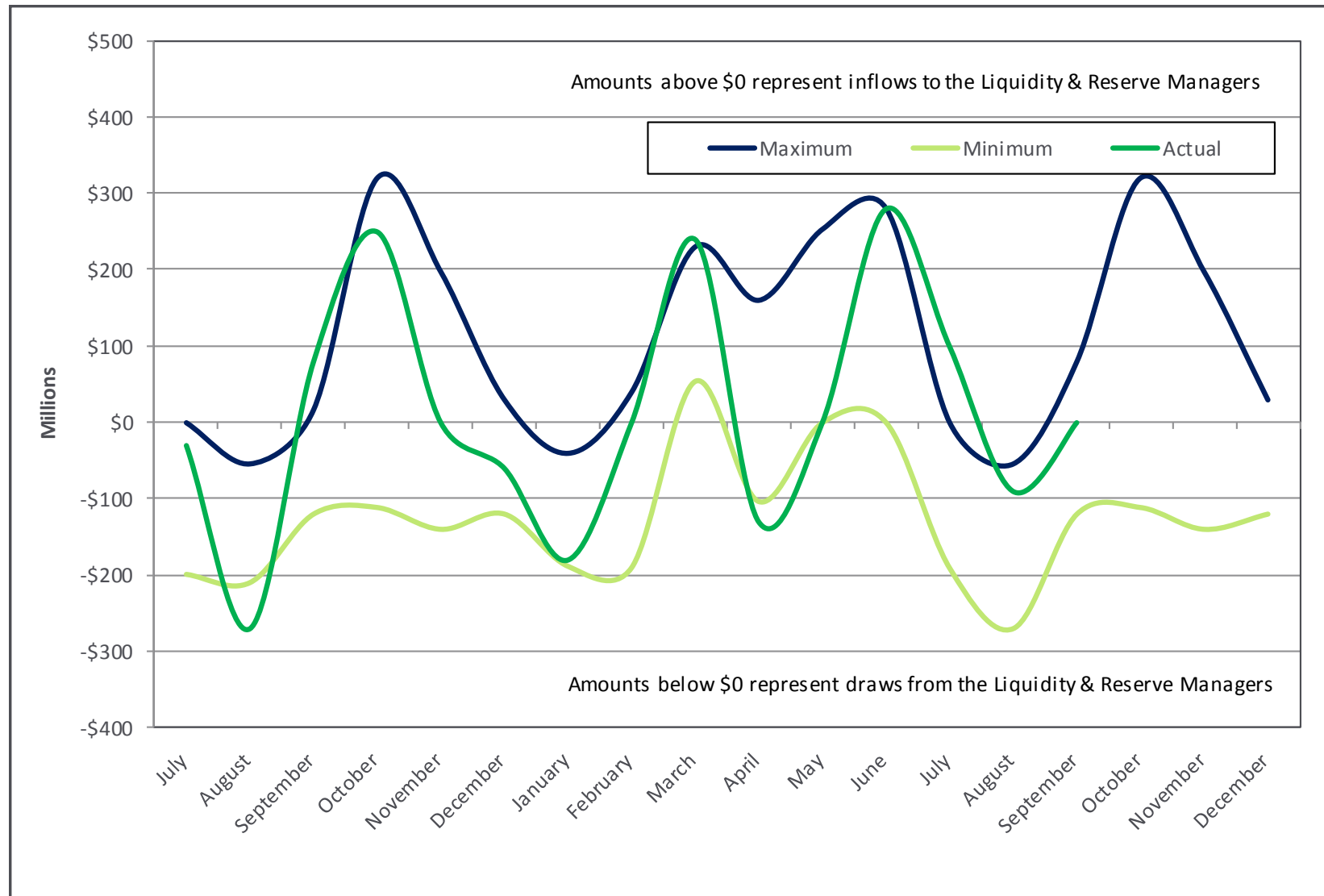
YIELD AND DURATION POSITIONING

Liquidity Portfolio Yield and Duration Analysis							
Portfolio					Benchmark		
	Portfolio Value	% of Assets	Yield	Duration		Yield	Duration
PFM \$	451,924,580	15.5%	0.36%	0.50	6-Month Treasury Bill	0.11%	0.48
Wilmington Trust \$	449,850,294	15.4%	0.33%	0.82	6-Month Treasury Bill	0.11%	0.48
Total Liquidity \$	901,774,874	30.9%	0.34%	0.66	6-Month Treasury Bill	0.11%	0.48
Reserve Portfolio Yield and Duration Analysis							
Portfolio					Benchmark		
	Portfolio Value	% of Assets	Yield	Duration		Yield	Duration
JP Morgan \$	478,099,929	16.4%	0.27%	1.71	BAML 1-3 Yr Govt/Credit A+	0.22%	1.90
BlackRock \$	487,853,366	16.7%	0.38%	2.46	BAML 1-5 Yr Govt/Credit A+	0.28%	2.67
Chandler \$	530,110,913	18.1%	0.90%	6.21	BAML 5-10 Yr Govt/Credit A+	0.77%	6.63
Lazard \$	523,210,375	17.9%	0.56%	6.22	BAML 5-10 Yr Govt/Credit A+	0.77%	6.63
Total Reserve \$	2,019,274,584	69.1%	0.54%	4.24	Custom Reserve Benchmark	0.51%	4.46
Total Liquidity & Reserve Portfolio Yield and Duration Analysis							
Portfolio					Benchmark		
	Portfolio Value	% of Assets	Yield	Duration		Yield	Duration
Total Liquidity & Reserve \$	2,921,049,457	100.0%	0.48%	3.13	Weighted Average	0.39%	3.26

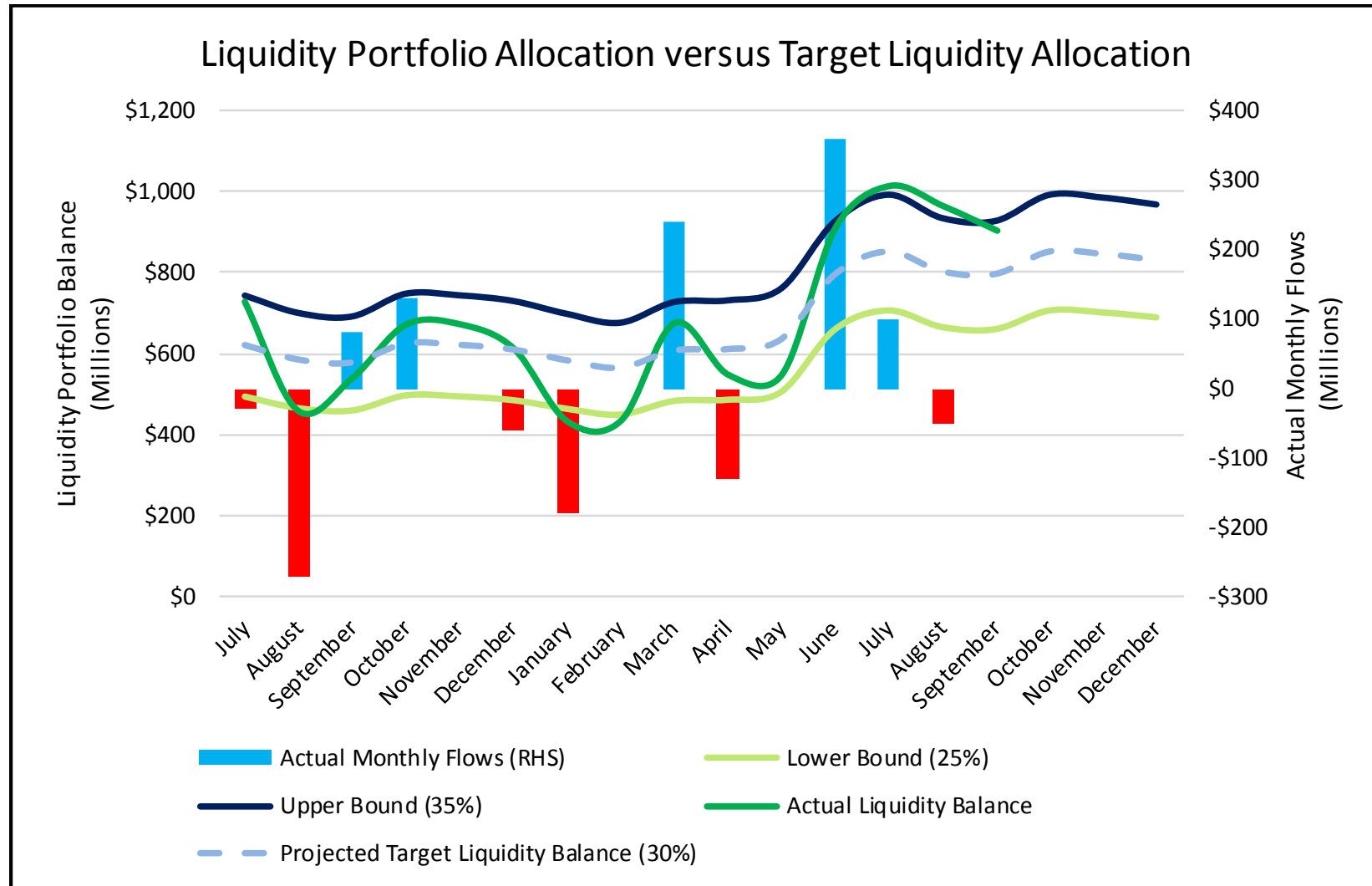
As of June 1, 2020, the target allocation between Liquidity and Reserve Portfolios was adjusted to 30%/70%. The previous target allocation was 25%/75%.



LIQUIDITY & RESERVE CASH FLOWS



LIQUIDITY BALANCE



As of June 1, 2020, the target allocation between Liquidity and Reserve Portfolios was adjusted to 30%/70%. The previous target allocation was 25%/75%.



RHS refers to the use of the Right Hand Scale.

MONTH ENDED SEPTEMBER 30, 2020

Change in Market Value Month Ending September 30, 2020											
	Beginning Market Value	Contributions	Withdrawals	Fees	Income	Unrealized Gain (Loss)	Realized Gain (Loss)	Amortization / Accretion	Ending Market Value		
Liquidity Managers											
PFM Asset Management	\$ 481,851,534	\$ -	\$ (30,000,000)	\$ -	\$ 407,353	\$ (242,425)	\$ 20,763	\$ (112,645)	\$ 451,924,580		
Wilmington Liquidity	\$ 479,766,686	\$ -	\$ (30,000,000)	\$ -	\$ 444,307	\$ (204,992)	\$ 1,222	\$ (156,930)	\$ 449,850,294		
Total Liquidity Managers	\$ 961,618,220	\$ -	\$ (60,000,000)	\$ -	\$ 851,660	\$ (447,416)	\$ 21,985	\$ (269,575)	\$ 901,774,875		
Reserve Managers											
BlackRock Financial Management	\$ 487,869,320	\$ -	\$ -	\$ -	\$ 662,291	\$ (1,624,114)	\$ 1,003,564	\$ (57,695)	\$ 487,853,366		
Chandler Asset Management	\$ 529,942,801	\$ -	\$ -	\$ -	\$ 947,527	\$ (1,267,436)	\$ 448,435	\$ 39,586	\$ 530,110,913		
JPM Intermediate	\$ 478,041,613	\$ -	\$ -	\$ -	\$ 614,423	\$ (1,076,053)	\$ 585,600	\$ (65,654)	\$ 478,099,929		
Lazard Asset Management	\$ 523,069,052	\$ -	\$ -	\$ -	\$ 909,127	\$ (5,563,035)	\$ 4,998,862	\$ (203,631)	\$ 523,210,375		
Total Reserve Managers	\$ 2,018,922,786	\$ -	\$ -	\$ -	\$ 3,133,368	\$ (9,530,637)	\$ 7,036,461	\$ (287,394)	\$ 2,019,274,584		
Total Liquidity & Reserve Managers	\$ 2,980,541,006	\$ -	\$ (60,000,000)	\$ -	\$ 3,985,028	\$ (9,978,054)	\$ 7,058,446	\$ (556,969)	\$ 2,921,049,458		
Land & Water Endowment											
SEI Funds	\$ 39,544,368	\$ -	\$ (6,000)	\$ -	\$ 26,904	\$ (831,610)	\$ 4,198	\$ -	\$ 38,737,859		
Vanguard	\$ 37,045,962	\$ -	\$ (4,000)	\$ -	\$ 121,296	\$ (795,031)	\$ (10)	\$ -	\$ 36,368,217		
Cash Account	\$ 74	\$ 10,000	\$ (10,000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 74		
Total Land & Water Endowment	\$ 76,590,404	\$ 10,000	\$ (20,000)	\$ -	\$ 148,200	\$ (1,626,641)	\$ 4,188	\$ -	\$ 75,106,150		
CARES											
PFM CARES	\$ 412,364,573	\$ -	\$ (19,272,684)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 393,091,889		
Wilmington CARES	\$ 412,364,768	\$ -	\$ (19,272,684)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 393,092,084		
Total CARES	\$ 824,729,341	\$ -	\$ (38,545,368)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 786,183,973		
Total	\$ 3,881,860,751	\$ 10,000	\$ (98,565,368)	\$ -	\$ 4,133,228	\$ (11,604,695)	\$ 7,062,634	\$ (556,969)	\$ 3,782,339,581		

Footnotes:

Values provided by Northern Trust and are reconciled to the audited custodian reports.

Income is a product of income received during the month plus accrued income.

Numbers may not add due to rounding.



FISCAL YEAR TO DATE

Change in Market Value Fiscal Year-to-Date Through September 30, 2020										
	Beginning Market Value	Contributions	Withdrawals	Fees	Income	Unrealized Gain (Loss)	Realized Gain (Loss)	Amortization / Accretion	Ending Market Value	
Liquidity Managers										
PFM Asset Management	\$ 456,492,365	\$ 50,000,000	\$ (55,000,000)	\$ (62,418)	\$ 1,371,727	\$ (596,947)	\$ 62,326	\$ (342,472)	\$ 451,924,580	
Wilmington Liquidity	\$ 454,246,650	\$ 50,000,000	\$ (55,000,000)	\$ (65,233)	\$ 1,372,126	\$ (414,359)	\$ 157,912	\$ (446,802)	\$ 449,850,294	
Total Liquidity Managers	\$ 910,739,015	\$ 100,000,000	\$ (110,000,000)	\$ (127,651)	\$ 2,743,853	\$ (1,011,306)	\$ 220,238	\$ (789,274)	\$ 901,774,875	
Reserve Managers										
BlackRock Financial Management	\$ 486,370,073	\$ 3,610	\$ -	\$ (85,825)	\$ 2,105,026	\$ (2,721,174)	\$ 2,421,321	\$ (239,665)	\$ 487,853,366	
Chandler Asset Management	\$ 526,857,829	\$ -	\$ -	\$ (87,053)	\$ 2,896,829	\$ (2,304,138)	\$ 2,647,580	\$ 99,867	\$ 530,110,913	
JPM Intermediate	\$ 477,223,108	\$ -	\$ -	\$ (97,834)	\$ 1,989,452	\$ (2,259,921)	\$ 1,436,771	\$ (191,648)	\$ 478,099,929	
Lazard Asset Management	\$ 521,377,153	\$ -	\$ -	\$ (148,280)	\$ 2,766,067	\$ (9,969,029)	\$ 9,832,706	\$ (648,243)	\$ 523,210,375	
Total Reserve Managers	\$ 2,011,828,163	\$ 3,610	\$ -	\$ (418,992)	\$ 9,757,374	\$ (17,254,262)	\$ 16,338,378	\$ (979,689)	\$ 2,019,274,584	
Total Liquidity & Reserve Managers	\$ 2,922,567,178	\$ 100,003,610	\$ (110,000,000)	\$ (546,643)	\$ 12,501,226	\$ (18,265,568)	\$ 16,558,616	\$ (1,768,963)	\$ 2,921,049,458	
Land & Water Endowment										
SEI Funds	\$ 25,440,594	\$ 11,390,752	\$ (24,000)	\$ (21,556)	\$ 111,545	\$ 1,826,761	\$ 13,764	\$ -	\$ 38,737,859	
Vanguard	\$ -	\$ 36,788,900	\$ (4,000)	\$ -	\$ 127,176	\$ (543,848)	\$ (10)	\$ -	\$ 36,368,217	
Cash Account	\$ 46,153,234	\$ 2,071,007	\$ (48,225,652)	\$ -	\$ 1,484	\$ -	\$ -	\$ -	\$ 74	
Total Land & Water Endowment	\$ 71,593,828	\$ 50,250,659	\$ (48,253,652)	\$ (21,556)	\$ 240,205	\$ 1,282,913	\$ 13,754	\$ -	\$ 75,106,150	
CARES										
PFM CARES	\$ 427,436,714	\$ -	\$ (34,360,931)	\$ -	\$ 16,107	\$ -	\$ -	\$ -	\$ 393,091,889	
Wilmington CARES	\$ 427,436,909	\$ -	\$ (34,360,931)	\$ -	\$ 16,107	\$ -	\$ -	\$ -	\$ 393,092,084	
Total CARES	\$ 854,873,623	\$ -	\$ (68,721,862)	\$ -	\$ 32,214	\$ -	\$ -	\$ -	\$ 786,183,973	
Total	\$ 3,849,034,629	\$ 150,254,269	\$ (226,975,514)	\$ (568,199)	\$ 12,773,644	\$ (16,982,655)	\$ 16,572,369	\$ (1,768,963)	\$ 3,782,339,581	

Footnotes:

Values provided by Northern Trust and are reconciled to the audited custodian reports.

Income is a product of income received during the month plus accrued income.

Numbers may not add due to rounding.

The \$3,610 contribution in August 2020 for BlackRock represents proceeds from a securities litigation settlement.



DEFAC PROJECTION

	DEFAC Current Year	Δ From Previous Observation	FY 22	FY 22 Δ From Previous Observation	FY 23	FY 23 Δ From Previous Observation	FY 24	FY 24 Δ From Previous Observation	FY 25	FY 25 Δ From Previous Observation
	<u>Totals</u>		<u>Totals</u>		<u>Totals</u>		<u>Totals</u>		<u>Totals</u>	
Total Interest	\$54,808,001	\$9,945,888	\$11,968,374	\$37,215	\$12,029,579	\$66,101	\$12,088,371	\$97,876	\$12,067,006	\$142,112
Total Sweep Income	\$278,426	(\$29,752)	\$375,000	-	\$375,000	-	\$375,000	-	\$375,000	-
Change in Market Value	\$37,927,405	\$6,105,247	\$32,075,087	(\$2,028,255)	\$32,077,368	(\$2,029,484)	\$29,406,532	\$977,570	\$24,568	(\$12,989)
Less: School Special Fund Interest Payments	(\$10,680,572)	(\$785,273)	(\$2,500,000)	-	(\$2,500,000)	-	(\$2,500,000)	-	(\$2,500,000)	-
Less: Banking Services	(\$4,923,700)	-	(\$5,169,885)	-	(\$5,428,379)	-	(\$5,699,798)	-	(\$5,984,788)	-
Less: Investment Manager Fees	(\$2,372,291)	(\$4,168)	(\$2,399,997)	(\$4,105)	(\$2,399,997)	(\$4,105)	(\$2,399,997)	(\$4,105)	(\$2,399,997)	(\$4,105)
DEFAC Projection	\$75,037,268	\$15,231,941	\$34,348,579	(\$1,995,146)	\$34,153,570	(\$1,967,489)	\$31,270,107	\$1,071,340	\$1,581,789	\$125,017

As of 09/30/2020; School and Special Funds Interest Payments incorporate an estimate for the current month figure
Current year DEFAC estimate may be volatile with higher than expected total interest compared to model estimates based on current market yields

Global bond yields were relatively flat during the month, reflecting continued economic uncertainty

Interest rate expectations modestly increased in future fiscal years, which caused expected total interest to rise

Future 1-year rate expectations: FY22: 0.13%, FY23: 0.18%, FY24: 0.23%, FY25: 0.30%



ASSUMPTIONS FOR DEFAC PROJECTION

Net Cash Flows – Assumed to be net neutral over the course of each fiscal year and follow historical seasonality patterns, FY 21 through FY 24 each follow the previous year's cash flow pattern

Changes in Yield – Actual changes reflected as they are realized, projected changes based on forward yield curve at 1 year and 5 year forward points

Interest – Actual interest reflected as it is realized, projected interest calculated as projected yield times projected market value

Banking Services – Flat estimate of \$410,308 per month; projected to increase 5% annually

School and Special Fund Interest Payments – Actual payments reflected as realized, projected payments calculated based on \$1B average balance and a range-bound rate as implied by the trailing 12M liquidity and liquidity & reserve returns

Investment Manager Fees – Estimated as 8.2 bps per year of assets under management

Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

