

# King County Investment Pool

## Portfolio Review

Quarter Ended December 31, 2016



**PFM Asset Management LLC**

Presented by:

**PFM Asset Management LLC**

John Molloy, CFA, Managing Director

# Executive Summary

## Purpose, Scope and Approach

- PFM Asset Management LLC (“PFM”) prepared this report to update our ongoing analysis and to address any Investment Pool developments since our September 2016 review. Our approach included a detailed portfolio analysis and Investment Policy Compliance review, based on the County’s Investment Policy, dated September 2016.
- Our analysis was based on the Investment Pool’s holdings as of December 31, 2016, with reference to holdings in past periods.
- The review encompasses all current investments in the County’s Investment Pool.

## Investment Program and Portfolio Review

- PFM reviewed the County’s portfolio with respect to Investment Policy Compliance, Sector Allocation, Issuer Concentration, Credit Quality, Maturity Distribution, and Duration Distribution.
- The County’s Investment Pool appears to provide ample liquidity, is well diversified, and is of sound credit quality. All holdings are investment grade and pose very low risk to principal.

## Market Recap

- Interest rates surged in the fourth quarter, concluding the year in the positive. Yields rose significantly across the curve, led by the longer-end, causing the yield curve to steepen overall. The two-year Treasury yield climbed 43 basis points (bps), while the yield on the 10-year Treasury rose 85 bps, a considerable rebound from the record low set in July.
- In the money market space, shorter-term Treasury yields rose alongside expectations of a Federal Reserve rate hike. Although the money market reform effective date has passed, the supply-demand dynamic persists, with short-term credit instruments, like commercial paper and negotiable bank certificates of deposit (CDs), continuing to offer significant added income as yields remained elevated.
- U.S. Treasury indexes posted losses for the fourth quarter, declining for the second straight quarter as yields rose. Declines in the second half of the year were not enough to offset the first half’s gains. Shorter maturity issues outperformed longer maturities as the yield curve steepened.
- Non-callable federal agency spreads drifted tighter during the quarter as supply levels diminished, leading to the sector’s modest outperformance relative to comparable-maturity Treasuries.
- Corporate yield spreads remained mostly unchanged up until the U.S. Presidential election, after which they tightened, reaching new lows for the year. The sector once again outperformed Treasuries, and did so every quarter in 2016, to cap the sector’s best year since 2012.

## Observations

- The portfolio is of very high credit quality. The majority of securities (80%) are explicitly guaranteed or carry a high level of support by the U.S. Government (U.S. Treasury and Federal Agency) and/or possess overnight liquidity (Washington State LGIP, bank deposits, and repurchase agreements).
- The County’s Investment Pool balance (market value) as of December 31, 2016 was \$6.2 billion, a net increase of approximately \$220 million over the prior quarter end.
- Notable sector allocation shifts over the quarter included increases to U.S. Treasuries (+3.71%), Cash and Equivalents (+1.60%), and the Washington State LGIP (+1.32%), and decreases to Repurchase Agreements (-3.52%), Corporate Notes (-2.59%), and Commercial Paper (-1.41%).
  - The portfolio decreased allocations to corporate credit-oriented investments, which now account for 20% of the overall portfolio, totaling \$1.2 billion (down from 24% or \$1.4 billion this time last quarter).
- Over the past several quarters, the Pool has shifted its maturity strategy to reflect a more defensive stance. As of December 31, the duration of the County Investment Pool is 1.09 years, an increase from a duration of 0.95 years on September 30. While the duration increased over the quarter, the portfolio is still defensively positioned to mitigate effects of a rise in interest rates, while still being able to take advantage of movements in the markets.
- In anticipation of the upcoming quarter, in the first quarter of the past four years, the average net **outflow** from the Pool was \$244 million.
- The County Pool appears to provide adequate liquidity, with 14% (or \$859 million) invested in a combination of the State LGIP, bank deposits, and repurchase agreements (overnight) and an additional 40% (or \$2.5 billion) of the portfolio’s holdings scheduled to mature within the next 12 months.

# Investment Pool Portfolio Review

## Portfolio Review

### **I. Investment Policy Compliance**

### **II. Sector Allocation**

- **U.S. Treasuries**
- **Federal Agencies**
- **Commercial Paper**
- **Corporate Notes**
- **LGIP and Cash Equivalents**

### **III. Issuer Concentration**

### **IV. Overall Credit Quality**

### **V. Maturity and Duration Distribution**

# I. Investment Policy Compliance – Investment Policy Summary

- The Investment Policy summary is based on the current Investment Policy for the County Investment Pool, dated September 28, 2016.

Type	Maximum Portfolio Allocation	Issuer Restrictions	Credit Ratings	Maturity Restrictions
U.S. Treasuries	100%	None	N/A	Up to 5 years
U.S. Agencies	100%	35% exposure to any single Agency	Senior debt obligations issued by any government sponsored enterprise, agency or instrumentality of the United States.	Up to 5 years
Repurchase Agreement	100%	100% for repurchase agreements with the Federal Reserve Bank of New York  25% maximum exposure to any one repo counterparty.  For the purposes of aggregating issuers across sectors, overnight repo counterparties are not included.	The counterparty must have: 1. A rating in the highest short-term credit rating category by at least one Nationally Recognized Statistical Rating Organization (NRSRO); and 2. A minimum asset and capital size of \$5 billion in assets and \$175 million in capital	60 days or less
Reverse Repurchase Agreement	20%	5% per investment dealer	1. rated in the highest short-term credit rating category by at least one NRSRO; and 2. a minimum asset and capital size of \$5 billion in assets and \$175 million in capital	6 months or less
Local Government Investment Pool ("LGIP")	25%	State of Washington LGIP	N/A	N/A
Bankers' Acceptances	25%  When combined with Term Repos (greater than overnight), Certificates of Deposit, Commercial Paper and Corporate Notes not to exceed 50% of the Pool assets.	Must be issued by a bank organized and operating in the U.S.  Maximum 5% per issuer applied across investment types.	Rated in the highest short-term credit rating category by at least two NRSROs.	Up to 180 days

# I. Investment Policy Compliance – Investment Policy Summary (cont'd)

Type	Maximum Portfolio Allocation	Issuer Restrictions	Credit Ratings	Maturity Restrictions
<b>Certificates of Deposit</b>	<p>25%</p> <p>When combined with Banker's Acceptance, Term Repos (greater than overnight), Commercial Paper and Corporate Notes not to exceed 50% of the Pool assets.</p>	<p>Must be a public depository in the State of Washington.</p> <p>Maximum 5% per issuer applied across investment types.</p>	<p>See RCW 39.58 of the state Code.</p> <p>If not 100% collateralized, must be rated in the highest short-term rating category by at least one NRSRO.</p> <p>Those institutions not meeting the 100% collateralization or minimum credit requirements may receive deposits up to the FDIC or federally guaranteed amounts.</p>	Up to 1 year
<b>Commercial Paper</b>	<p>25% of total market value when combined with Corporate Notes.</p> <p>When combined with Banker's Acceptance, Certificates of Deposit, Term Repos (greater than overnight) and Corporate Notes not to exceed 50% of the Pool assets.</p>	<p>Secondary market purchases only.</p> <p>Must be issued by a bank or corporation organized and operating in the U.S.</p> <p>Maximum 3% per issuer in combined categories of commercial paper and corporate notes.</p> <p>Maximum 5% per issuer applied across investment types.</p>	<p>Purchases with greater than 100 days maturity must have an issuer long-term rating in one of the three highest credit rating categories by one major NRSRO.</p> <p>Rated in the highest short-term rating category by at least two major NRSROs. If the commercial paper is rated by more than two major NRSROs, it must have the highest rating from all of the organizations.</p> <p>State law requires that Commercial Paper be purchased only from dealers.</p>	270 days
<b>General Obligation Municipal Bonds</b>	20%	5% of portfolio: bond issues by pool participants must be purchased on the secondary market only	Rated in at least the highest three long-term rating categories by at least one NRSRO.	5 years
<b>Mortgage-Backed Securities</b>	25%	<p>Must be issued by Federal Agencies of the United States.</p> <p>Investments in MBS will count toward the total that can be invested in any one agency as described in U.S. Agencies above.</p> <p>Full faith and credit MBS are limited to 25%.</p>	<p>Senior debt obligations issued by any government sponsored enterprise, agency or instrumentality of the United States.</p> <p>The securities must pass the Federal Financial Institutions Examination Council ("FFIEC") suitability test, which banks use to determine lowest risk securities.</p>	5 year average life at time of purchase

# I. Investment Policy Compliance – Investment Policy Summary (cont'd)

Type	Maximum Portfolio Allocation	Issuer Restrictions	Credit Ratings	Maturity Restrictions
Corporate Notes	<p>25% of total market value when combined with commercial paper</p> <p>When combined with Banker's Acceptance, Certificates of Deposit, Commercial Paper and Term Repos (greater than overnight) not to exceed 50% of the Pool assets.</p>	<p>3% per issuer rated AA or better.</p> <p>2% per issuer rated in broad single A category.</p> <p>Split ratings will take most conservative rating.</p> <p>Maximum 3% per issuer in combined categories of commercial paper and corporate notes.</p> <p>Maximum 5% per issuer applied across investment types.</p>	<p>Must be rated at least in the broad single A category or better.</p> <p>Broad single A category with a negative outlook may not be purchased.</p>	<p>5 years</p> <p>The maximum duration of the corporate notes portfolio shall not exceed 3 years.</p>

## Additional Notes to the Investment Policy

- The Pool will maintain an effective duration of 1.5 years or less.
- The Pool will maintain at least 40% of its total value in securities having a remaining maturity of 12 months or less.
- Floating rate and variable rate securities are permitted subject to the following criteria:
  - 1) The rate on the FRN/VRN resets no less frequently than quarterly; and
  - 2) The FRN/VRN is indexed to a money market rate.
- Major NRSRO is defined as Moody's and Standard & Poor's.
- Purchases prior to 9/15/16 are considered grandfathered in for issuer limit purposes and can be held to maturity.

# I. Investment Policy Compliance – County Investment Pool

Topic	Observations
<b>Sector Allocation</b>	<ul style="list-style-type: none"> <li>All sector allocations fall within the limits set forth by the County's Investment Policy Statement. The Pool is predominantly invested in U.S. government securities which are either explicitly guaranteed or carry a high level of support by the U.S. government.</li> <li>The County's Investment Pool balance (market value) as of December 31, 2016 was \$6.2 billion and it experienced a net increase of approximately \$220 million over the quarter.</li> <li>Over the quarter, sectors that experienced allocation percentage increases included: U.S. Treasuries (+3.71%), Cash and Equivalents (+1.60%), the Washington State LGIP (+1.32%), and Federal Agencies (+0.91%).</li> <li>Sectors that experienced decreases in quarter-over-quarter allocation percentages included: Repurchase Agreements (-3.52%), Corporate Notes (-2.59%), Commercial Paper (-1.41%), and Agency Mortgages (-0.01%).</li> </ul>
<b>Credit Quality</b>	<ul style="list-style-type: none"> <li>Securities held by the County are of very high quality and are within the limits set forth in the County Investment Policy.</li> <li>Approximately 66% of the County pool's assets are guaranteed or supported by the U.S. government. Further, approximately 10% is invested in the State LGIP, where 65% of the LGIP is invested directly in U.S. Treasuries or Federal Agencies. Additionally, considering the County pool's holdings of repurchase agreements and bank accounts collateralized by government securities**, the overall government-related credit quality exceeds 80%.</li> <li>Corporate allocations (both commercial paper and corporate notes) were decreased over the quarter to approximately 20% of the portfolio, down from 24% on September 30, 2016, and all securities are investment grade.</li> </ul>
<b>Maturity Distribution</b>	<ul style="list-style-type: none"> <li>All maturities fall within the limits set forth in the County's Investment Policy.</li> <li>Approximately 54% of the Pool's assets mature in one year or less and approximately 29% of the portfolio is scheduled to mature within the next quarter.</li> </ul>

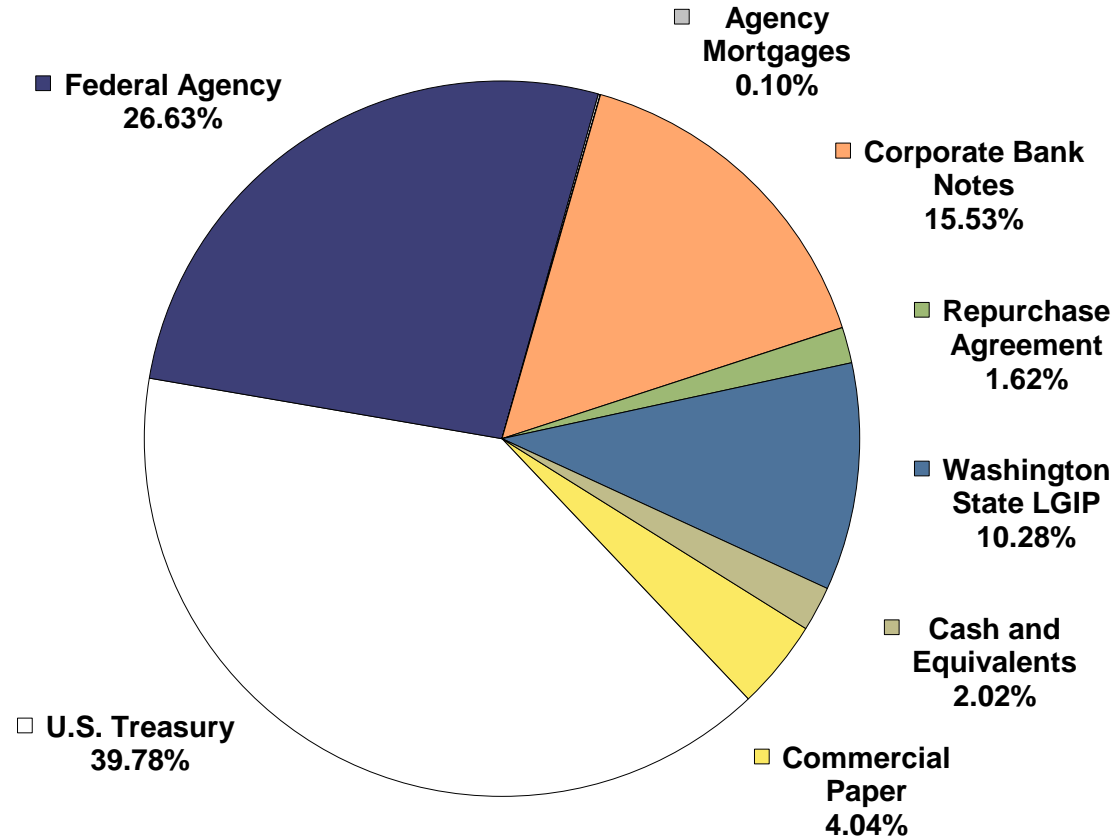
Security Type	Market Value(\$)	Allocation Percentage	Within Policy Limits	Max Maturity Held	Within Policy Limits
U.S. Treasury	2,456,510,760	39.78%	✓	3.42 years	✓
Federal Agency (non-MBS)	1,644,240,104	26.63%	✓	2.87 years	✓
Corporate Notes	959,115,231	15.53%	✓	2.82 years	✓
Washington State LGIP	634,558,358	10.28%	✓	1 day	✓
Commercial Paper	249,504,688	4.04%	✓	114 days	✓
Cash and Equivalents	124,890,248	2.02%	✓	1 day	✓
Repurchase Agreements	100,000,000	1.62%	✓	1 day	✓
Agency Mortgages	6,069,808	0.10%	✓	3.71 years (WAL)	✓
Municipal Notes	0	0.00%	✓	n/a	✓
Certificates of Deposit	0	0.00%	✓	n/a	✓
<b>TOTAL</b>	<b>\$6,174,889,198</b>	<b>100.00%</b>			

\*Percentages may not total to 100% due to rounding.

\*\*Effective July 1, 2016, the Public Deposit Protection Commission collateralization requirement were lowered from 100% to 50%.

# II. Sector Allocation

**Sector Diversification**  
as of December 31, 2016



*\*Percentages may not total to 100% due to rounding.*

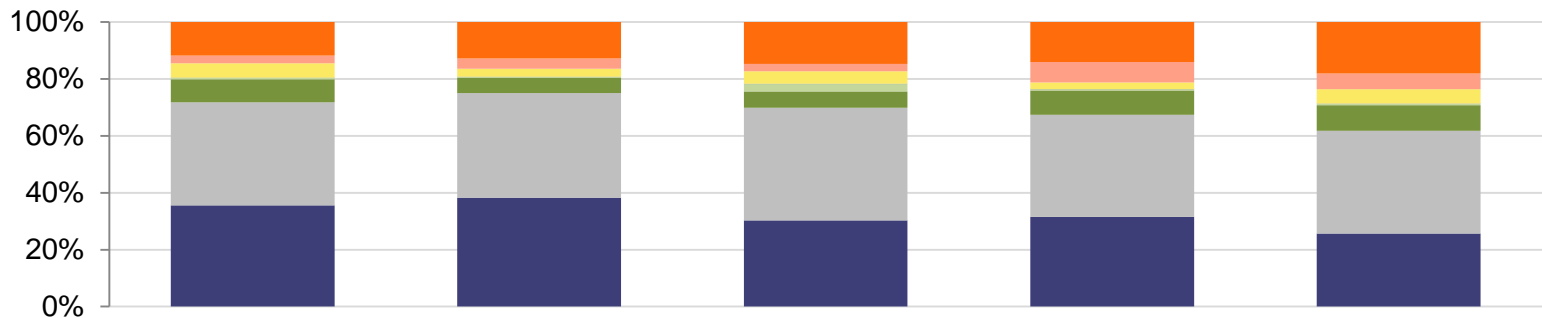


# II. Changes in Portfolio Sector Allocation over Past 12 Months

## Changes in Sector Allocation

- The County's investment pool increased percentage allocations to U.S. Treasuries (+3.71%), Cash and Equivalents (+1.62%), the Washington State LGIP (+1.32%), and Federal Agencies (+0.91%), while decreases occurred in Repurchase Agreements (-3.52%), Corporate Notes (-2.59%), Commercial Paper (-1.41%), and Agencies Mortgages (-0.01%).
- Federal Agencies** Federal agency allocations remained below U.S. Treasury allocations in the fourth quarter. Approximately \$159 million of agency holdings matured or were sold during the quarter.
- U.S. Treasuries** U.S. Treasury allocations increased by \$308 million over the quarter. Treasury purchases made during the quarter were targeted in the 1.5- to 2.5-year maturity range.
- Corporate Notes** The portfolio decreased allocations to corporate notes over the quarter, reversing a trend of growth in the sector. This sector accounts for 15.5% of the overall portfolio totaling \$959 million (compared to 18.1%, or \$1.1 billion, last quarter).
- Commercial Paper** The portfolio currently owns six commercial paper issuers totaling \$250 million (or 4.0% of the total portfolio), representing a decrease of \$75 million over the quarter.
- Washington State LGIP** Balances invested in the State LGIP increased over the quarter by approximately \$101 million, and continued to serve as the Pool's primary liquidity vehicle. This sector accounts for 10.3% of the overall portfolio.
- Repurchase Agreements and Bank Deposits** Allocations to repurchase agreements decreased by \$206 million over the quarter and accounted for 1.6% of the total portfolio. Bank deposits were increased by approximately \$99 million over the quarter to \$125 million (or to 2.0% of the total portfolio).

Sector Allocation December 2015 – December 2016



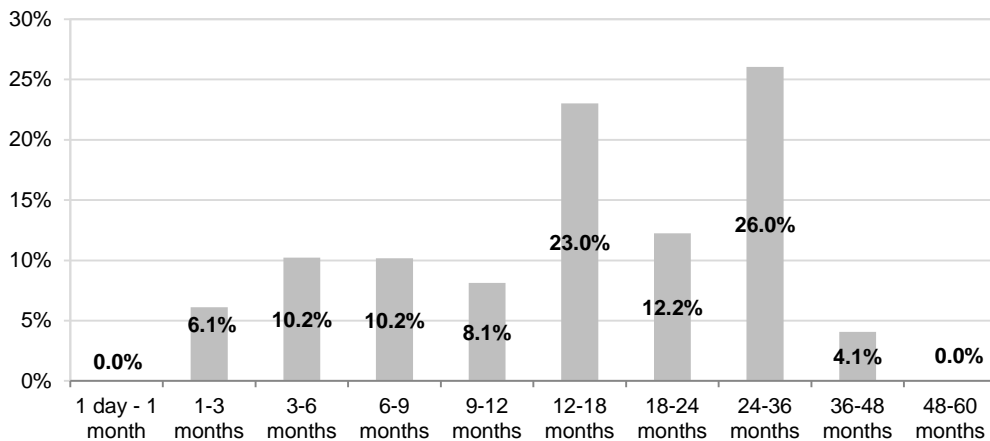
	December 31, 2015	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016
Federal Agencies	38.30%	30.30%	31.51%	25.72%	26.63%
U.S. Treasury	36.70%	39.55%	35.88%	36.08%	39.78%
Washington State LGIP	5.36%	5.76%	8.55%	8.96%	10.28%
Cash and Equivalents	0.35%	2.58%	0.39%	0.43%	2.02%
Agency Mortgages	0.11%	0.12%	0.11%	0.11%	0.10%
Municipal Notes	0.00%	0.00%	0.00%	0.00%	0.00%
Repurchase Agreements	2.82%	4.33%	2.29%	5.14%	1.62%
Commercial Paper	3.58%	2.60%	7.21%	5.45%	4.04%
Corporate Notes	12.78%	14.76%	14.06%	18.12%	15.53%

\*Percentages may not total to 100% due to rounding.

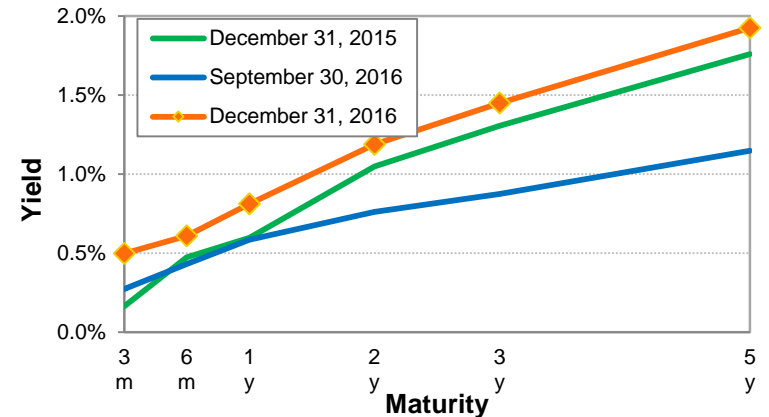
# II. Sector Allocation – U.S. Treasury Securities

Topic	Observations
Observations	<ul style="list-style-type: none"> <li>The County's balances held in U.S. Treasuries increased by \$308 million over the quarter, growing to nearly 40% of the total portfolio.               <ul style="list-style-type: none"> <li>Over the quarter, it appears the Pool targeted approximately \$701 million in new U.S. Treasury notes with maturities in the 1.5- to 3-year maturity range.</li> <li>U.S. Treasury indexes posted losses for the second straight quarter as yields rose, decreasing market values. Declines in the second half of the year were not enough to offset the first half's gains.                   <ul style="list-style-type: none"> <li>As shown in the chart on the right below, shorter maturity issues outperformed longer maturities as the yield curve steepened.</li> <li>Longer maturity yields have rebounded late in 2016 after falling substantially during the first two quarters over concerns about global growth and higher global demand for U.S. Treasuries given negative yields abroad.</li> </ul> </li> <li>The majority of the Pool's Treasury investments (\$1.6 billion, or 65% of all Treasury holdings, up from \$1.1 billion, or 52% last quarter) have remaining maturities of greater than one year and are positioned in the steeper portions of the U.S. Treasury yield curve. In contrast to the increase in allocations to these longer-term Treasuries, allocations to shorter Treasury holdings decreased a total of 8.0% over the quarter.</li> </ul> </li> <li>The County's weighted average maturity (WAM) of its Treasury allocation increased over the quarter by 109 days, from 436 days on September 30th, to 545 days on December 31st.</li> <li>The chart below, on the left, illustrates the current maturity distribution of the County's allocations to U.S. Treasuries and the chart on the right illustrates the current shape of the US Treasury yield curve, compared to the yield curve three months ago and one year ago.               <ul style="list-style-type: none"> <li>Of the County's Treasury allocations, 35% is allocated to maturities less than 12 months (versus 48% last quarter).</li> </ul> </li> </ul>

**U.S. Treasury Maturity Distribution as of December 31, 2016**



**U.S. Treasury Yield Curve 12/31/16 vs 9/30/16 vs 12/31/15**

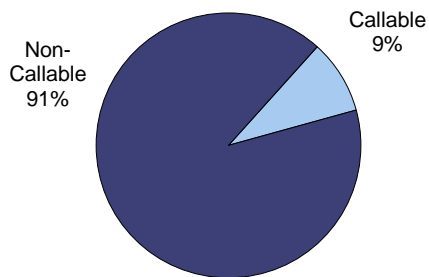


\* Source Bloomberg Financial Systems

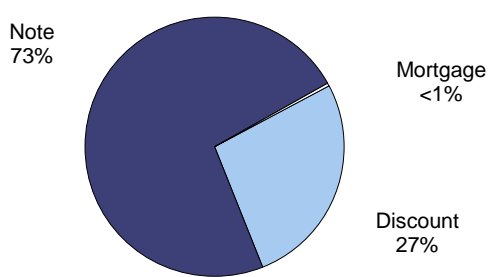
# II. Sector Allocation – Federal Agencies

Topic	Observations			
<b>Structure (as % of Federal Agency Allocations)</b>	• Non-Callable	91%	• Discount Notes	27%
	• Callable	9%	• Coupon bearing Notes	73%
			• Agency Mortgage	<1%
<b>Diversification (as % of Federal Agency Allocations)</b>	• Freddie Mac (FHLMC)	21%	• Federal Farm Credit Bank (FFCB)	33%
	• Federal Home Loan Bank (FHLB)	19%	• Freddie Mac Mortgage-Backed (FHR)	0%
	• Fannie Mae (FNMA)	27%	• Fannie Mae Mortgage-Backed (FNR)	<1%
<b>Conclusions</b>	<ul style="list-style-type: none"> <li>The County's federal agency allocation continues to be well diversified among the four major issuers and among security structures. All issuer allocations fall within the issuer guidelines set forth in the County's investment policy (max per agency issuer 35%).</li> <li>Federal agency allocations increased by \$112 million over the quarter. The increase was due to \$274 million in new Agency purchases, paired with \$159 million in maturities.</li> <li>From a security structure standpoint (the ratio of non-callable to callable securities), callable securities decreased over the quarter, to 9% of agency holdings, down from 13% last quarter.                             <ul style="list-style-type: none"> <li>In the past quarter, the three holdings that experienced a call date, were not called, leaving two holdings with a next call date in the first quarter of 2017.</li> <li>New agency note purchases during the quarter were all non-callable.</li> </ul> </li> <li>The County Pool's only remaining allocation to agency mortgages is in Fannie Mae pools, totaling approximately \$6.1 million.</li> </ul>			

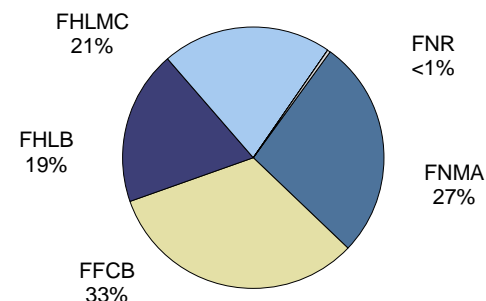
**Callable vs. Non-Callable as of December 31, 2016**



**Structure Distribution as of December 31, 2016**



**Issuer Diversification as of December 31, 2016**



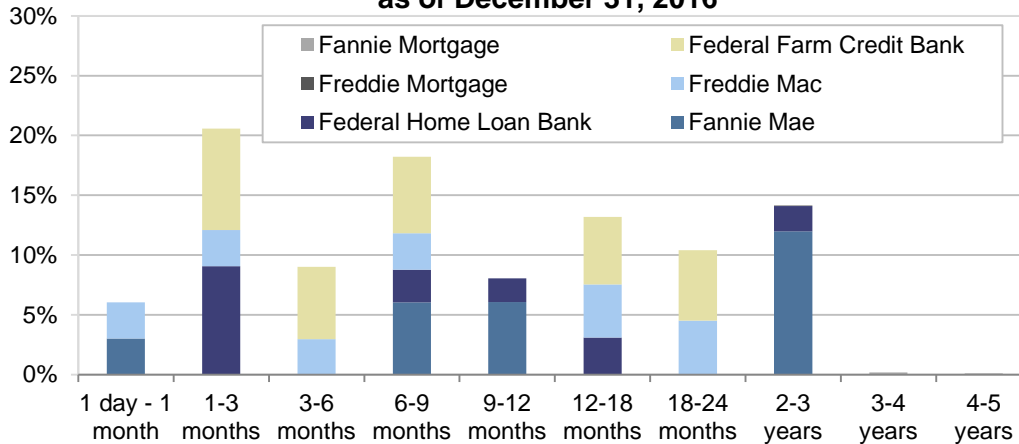
\*All calculations above are based on total cash equivalents exposure, not overall Portfolio.

\*\*Percentages may not total to 100% due to rounding.

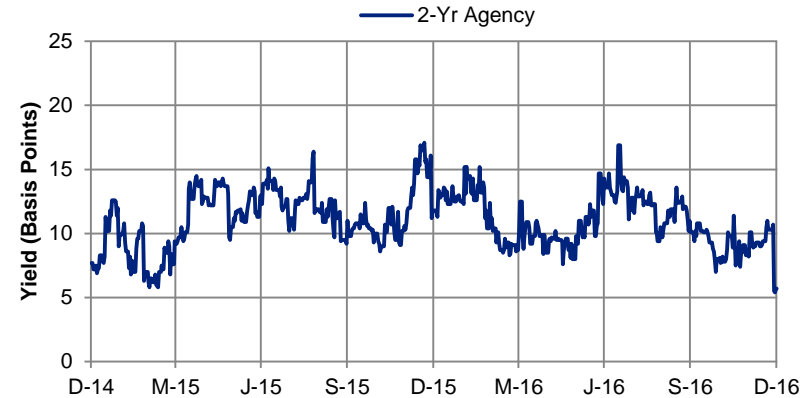
# II. Sector Allocation – Federal Agencies

Topic	Observations
Maturity Distribution	<ul style="list-style-type: none"> <li>The County's federal agency maturity distribution falls within the limits set forth by the Investment Policy Statement.</li> <li>Over the quarter, the County's weighted average maturity (WAM) of federal agency holdings increased by 52 days, from 310 days on September 30th to 362 days on December 31st.               <ul style="list-style-type: none"> <li>The County prefers short-term federal agencies and longer-term U.S. Treasuries. This is evident by, as of December 31, 2016, 62% of agency allocations being invested in maturities less than 12 months, versus only 35% of U.S. Treasury allocations. Of the agency and U.S. Treasury allocations invested in maturities under a year, 36% of federal agency allocations and 16% of U.S. Treasury allocations were invested in maturities less than 6 months.</li> <li>Conversely, while 38% of agency allocations were invested beyond 1 year, 65% of Treasury allocations were invested beyond 1 year. This "short/long" relationship between Treasuries and agencies illustrates the cross-sector value along the yield curve.                   <ul style="list-style-type: none"> <li>The overweight to shorter-term agencies can be attributed to the combination of:                       <ol style="list-style-type: none"> <li>previously purchased longer-term agencies being held and naturally drifting shorter, and</li> <li>Targeting purchases of longer-term Treasuries due to the relatively tight yield spreads between agency and Treasury securities of similar maturity beyond 2 years. That is, yields of 2-year agencies and Treasuries are relatively close, and in these instances, the U.S. Treasury security is typically preferred for this area of the yield curve.</li> </ol> </li> </ul> </li> </ul> </li> </ul>

**Federal Agency Maturity Distribution by Name as of December 31, 2016**



**2-Year Federal Agency Yield Spreads Past 24 Months**



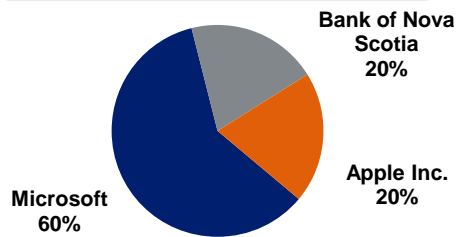
\* Source Bloomberg Financial Systems

- Agency Mortgage maturities are calculated as average life. Average life data taken from Bloomberg Financial Markets
- Callable securities are shown to their next call date.
- All other Agency maturities are calculated as days to maturity.

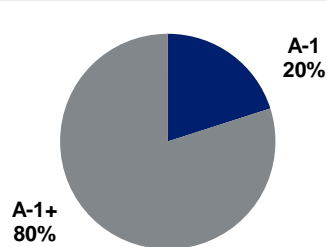
# II. Sector Allocation – Commercial Paper

	Observations
<b>Issuer Diversification</b>	<ul style="list-style-type: none"> <li>The County's allocations to commercial paper decreased over the quarter, by approximately \$75 million, and now account for 4.0% of the total portfolio, down from 5.5% at the end of the third quarter.</li> <li>The portfolio now owns commercial paper of three issuers: Bank of Nova Scotia, Microsoft and Apple Inc.</li> <li>\$275 million of maturities in previously held issuers over the quarter allowed for reinvestment into five new CP issues; \$150 million of Microsoft and \$50 million into Apple, Inc.</li> <li>It appears the County continues to regularly reinvest the proceeds of commercial paper maturities into new commercial paper issues.               <ul style="list-style-type: none"> <li>“Rolling” short-term commercial paper is an attractive investment strategy relative to most other short-term permitted investment options in the current fixed income market.</li> </ul> </li> <li>The new investment policy changed permitted investment guidelines to 3% per issuer and 25% maximum to the sector when combined with corporate notes. Also, there is a maximum allowable issuer allocation of 5% across all investment types. All current allocations meet the guidelines set within the Investment policy.</li> </ul>
<b>Credit Distribution</b>	<ul style="list-style-type: none"> <li>Standard &amp; Poor's rates the short-term credit of Microsoft and Apple Inc. as A-1+ and Bank of Nova Scotia as A-1.</li> <li>Moody's rates the short-term credit of all of the County's CP issuers as P-1.</li> </ul>
<b>Conclusions</b>	<ul style="list-style-type: none"> <li>High-quality commercial paper has offered a noticeable yield advantage relative to similar maturity Treasury and agency securities over the past several years. This yield advantage of commercial paper is even more pronounced at longer maturities and has grown with regulatory changes to money market mutual funds. As a result, the County's portfolio may benefit from additional allocations to other high-quality commercial paper issuers. The commercial paper yield curve is steepest in maturities beyond three months (chart on far right).</li> <li>Utilizing short term commercial paper helps the County to offset the purchasing of longer term securities while still maintaining a short duration position. These commercial paper investments generally offer greater yields than other short term securities and overnight investments.</li> </ul>

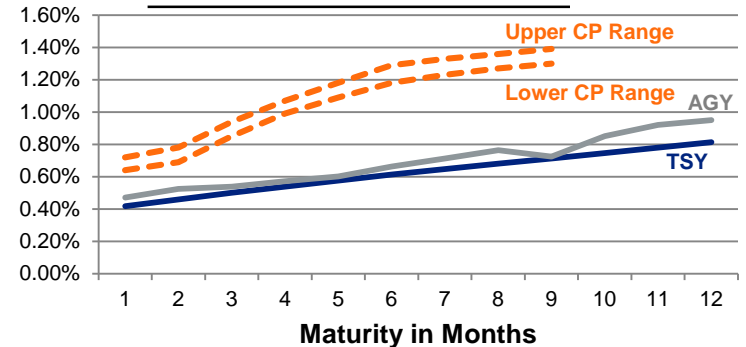
**Issuer Distribution**  
as of December 31, 2016



**Credit Distribution**  
as of December 31, 2016



**Current Short-Term Yields**  
as of December 31, 2016



\*All calculations above are based on total commercial paper exposure, not overall Portfolio.  
\*\*Percentages may not total to 100% due to rounding.

\* Source Bloomberg Financial Systems

# II. Sector Allocation – Corporate Notes

Observations									
Issuer Diversification	<ul style="list-style-type: none"> <li>The County decreased allocations over the quarter to high-quality corporate notes. This sector accounts for 15.5% of the overall portfolio totaling \$959 million, a decrease of \$120 million over the quarter.</li> <li>The portfolio's corporate note allocations include nine issuers, as seen in the table below.</li> <li>Of the County's allocations to corporate notes, \$299 million (or 31% of corporate notes, up from 28% at previous quarter end) is allocated to callable structures; however, all of the callable corporate holdings have a "next call date" that is approximately one month before their respective final maturity. As a result, the callable structures of these investments will have minimal impact on maturity and duration management of the overall portfolio.</li> <li>When viewing the County's corporate note holdings to the next call date, the weighted average maturity of these investments is 1.5 years.</li> <li>Of the County's total allocation to this sector, 72% is allocated to maturities beyond 1 year.</li> <li>Permitted investment guidelines are now restricted to: 3% per issuer rated AA or better, 2% per issuer rated in broad single A category and 25% maximum to the sector when combined with commercial paper. Also, there is a maximum allowable issuer allocation of 3% per issuer with combined with commercial paper and 5% across all investment types.                             <ul style="list-style-type: none"> <li>Currently the County has one issuer that exceeds these limitations, Royal Bank of Canada at 3.20%, highlighted below.</li> <li><b>Although this issuer exceeds the new limitations, the investment policy states that purchases prior to 9/15/16 (the effective date of governing state law) are considered grandfathered in for issuer limit purposes and may be held to maturity.</b></li> </ul> </li> </ul>								
	Credit Distribution	Bank of America	Bank of Montreal	Bank of Nova Scotia	PNC Bank	Royal Bank of Canada	Toronto Dominion Bank	US Bank	Wells Fargo Bank
S&P Short	A-1	A-1	A-1	A-1	A-1+	A-1+	A-1+	A-1+	A-1
S&P Long	A	A+	A+	A	AA-	AA-	AA-	AA-	A+
Moody's Short	P-1	P-1	P-1	P-1	P-1	P-1	P-1	P-1	P-1
Moody's Long	A1	Aa3	Aa3	Aa2	Aa3	Aa1	Aa1	Aa1	Aa3

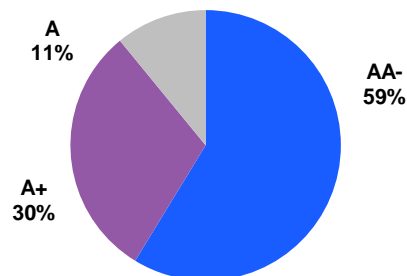
**Issuer Distribution**  
as of December 31, 2016

Issuer	% of Corporates	% of Portfolio
Royal Bank of Canada	21%	3.20%
US Bank	15%	2.40%
Toronto Dominion	13%	1.99%
Bank of Montreal	13%	1.96%
PNC Bank	11%	1.70%
Wells Fargo	10%	1.53%
Bank of America	9%	1.38%
Bank of Nova Scotia	6%	0.89%
Canadian Imperial Bank	3%	0.48%

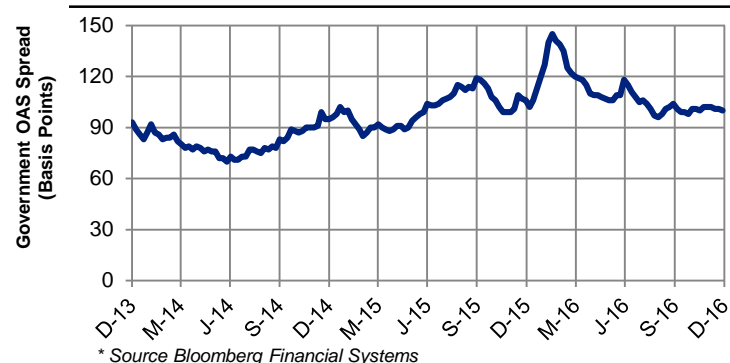
\* "Credit Distribution" calculations above are based on total Corporate Bank Note exposure, not overall Portfolio.

\*\*Percentages may not total to 100% due to rounding.

**Credit Distribution (S&P)\***  
as of December 31, 2016



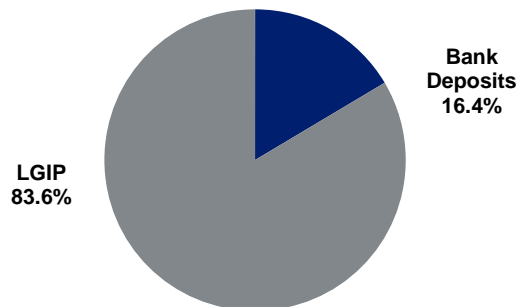
**1-5 Year Financial Corporate/Treasury Yield Spreads**  
December 2014 through December 2016



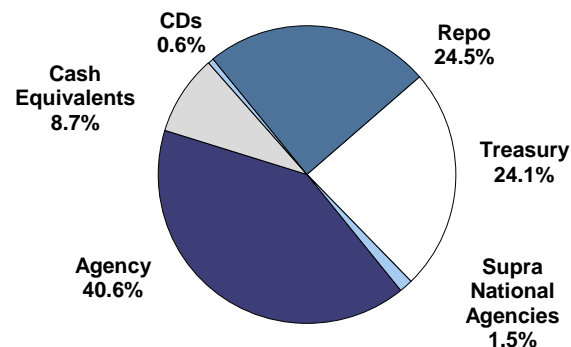
# II. Sector Allocation – LGIPs and Cash Equivalents

	Underlying Investments	Rating (Short-Term: S&P/Moody's/Fitch)	Observations
<b>Washington State LGIP</b>	<ul style="list-style-type: none"> <li>Federal Agencies 40.6%</li> <li>U.S. Treasuries 24.1%</li> <li>Cash Equivalents 8.7%</li> <li>Certificates of Deposit 0.7%</li> <li>Repurchase Agreements 24.5%</li> <li>Supra National Agencies 1.5%</li> </ul> <p><i>As of December 31, 2016</i></p>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>The County currently has allocated \$634.6 million to the Washington State LGIP, which is an increase of approximately \$101 million over the previous quarter.</li> <li>The County's allocation to the State LGIP continues to serve as the primary overnight liquidity vehicle for the portfolio.</li> <li>The State LGIP increased federal agency discount notes approximately 4.12% and U.S. Treasuries 8.29%. Every other sectors experienced decreases in percentage allocations over the quarter with Repurchase Agreements decreasing the most by 13.23%.</li> </ul>
<b>Cash Equivalents</b>	<ul style="list-style-type: none"> <li>State LGIP 83.6%</li> <li>U.S. Bank 15.5%</li> <li>Key Bank 0.9%</li> <li>Bank of America 0.1%</li> </ul>	<ul style="list-style-type: none"> <li><u>U.S. Bank:</u> A-1+/P-1/F1+</li> <li><u>Key Bank:</u> A-2/P-2/F-1</li> <li><u>Bank of America:</u> A-1/P-2/F-1</li> </ul>	<ul style="list-style-type: none"> <li>The County's deposit accounts at U.S. Bank, Key Bank, and Bank of America are FDIC-insured up to FDIC limits, and are collateralized by the Public Deposit Protection Commission. Effective July 1, 2016, the Public Deposit Protection Commission collateralization requirement was lowered to 50%.</li> <li>The County increased allocations to bank deposits by approximately \$99 million over the quarter to \$124.9 million. The U.S. Bank account now represents over 94% of the Pool's bank deposit allocations (Key Bank 6% and Bank of America &lt;1%).</li> <li>Additionally, while the County pool is limited to CDs issued by banks in the State of Washington, there still may be an opportunity to add small allocations to CDs, as this sector continues to provide incremental yield advantages relative to many shorter-term investment options of similar maturity.</li> </ul>

**Cash Equivalents Distribution as of December 31, 2016**



**Washington State LGIP Sector Distribution as of December 31, 2016**



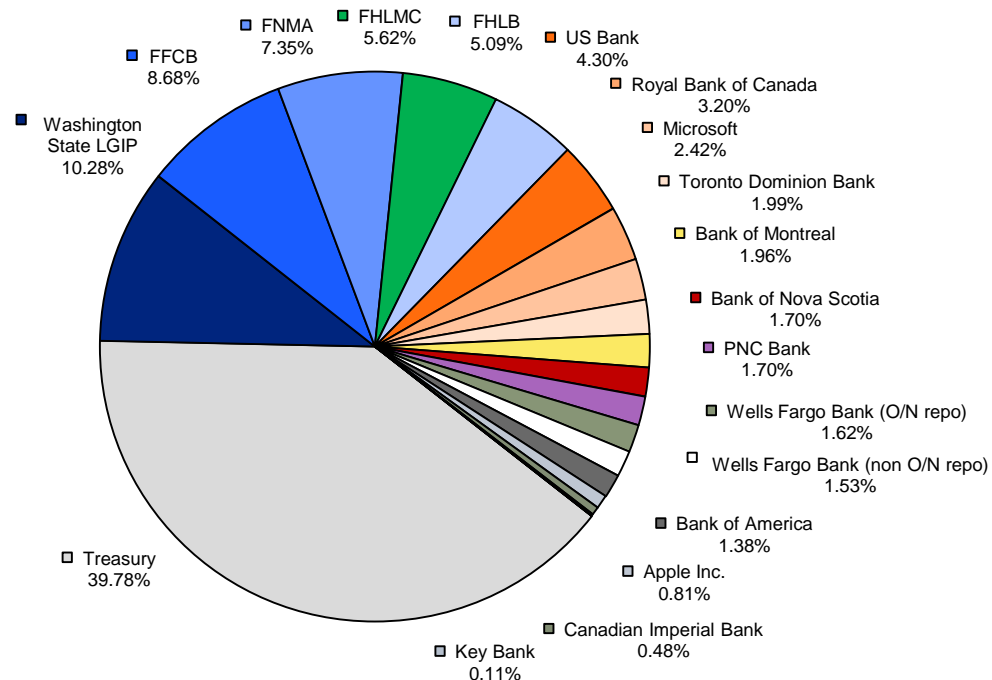
\*All calculations above are based on total cash equivalents exposure, not overall Portfolio.  
 \*\*Percentages may not total to 100% due to rounding.

# III. Issuer Concentration

## Issuer Exposure

- The County continues to maintain a well-diversified portfolio by issuer, as is evidenced by the chart below.
- Approximately 66% of the portfolio is allocated directly to U.S. government guaranteed or government supported entities.
- Of the remaining 34% of the portfolio, 14% is allocated to ultra short-term or overnight investment vehicles, including the State LGIP, repurchase agreements, and bank deposits. The remaining 20% is allocated to credit issuers, including commercial paper and corporate notes.
- When including the Pool's indirect exposure to issuers through its holdings in the Washington State LGIP, the Pool's allocation to securities issued by U.S. government or government supported entities would increase to 80%.
- With the maturity of a commercial paper issuer in the portfolio, United Parcel Service Inc., the County reinvested into a new CP issuer, Apple Inc.
- Of the corporate issuers in the portfolio, Royal Bank of Canada exceeds the new investment policy limits based on credit ratings but is grandfathered in for purchases prior to 9/15/16. The previous quarter there were four, Royal Bank of Canada, Bank of Nova Scotia, PNC Bank, and Bank of Montreal, that were over the issuer concentration limit. All but Royal Bank of Canada are now in compliance with the new investment policy limits.

Issuer Distribution	Value	Percentage	Issuer Limit
Treasury	2,456,510,760	39.78%	100%
Washington State LGIP	634,558,358	10.28%	25%
FFCB	535,738,342	8.68%	35%
FNMA	453,707,808	7.35%	35%
FHLMC	346,725,132	5.62%	35%
FHLB	314,138,630	5.09%	35%
US Bank	265,772,213	4.30%	5%
Royal Bank of Canada	197,793,904	3.20%	5%
Microsoft	149,543,855	2.42%	5%
Toronto Dominion Bank	122,571,987	1.99%	5%
Bank of Montreal	121,292,312	1.96%	5%
Bank of Nova Scotia	104,999,767	1.70%	5%
PNC Bank	104,771,623	1.70%	5%
Wells Fargo Bank (O/N repo)	100,000,000	1.62%	25%
Wells Fargo Bank (non O/N repo)	94,637,150	1.53%	5%
Bank of America	85,340,435	1.38%	5%
Apple Inc.	49,979,167	0.81%	5%
Canadian Imperial Bank	29,714,400	0.48%	5%
Key Bank	7,093,355	0.11%	5%
<b>Total</b>	<b>\$6,174,889,198</b>	<b>100.00%</b>	



Percentages may not add to 100% due to rounding.

\* For the purposes of totaling issuer concentration, issuers are aggregated across all sector types. It is noted however that issuers across sector types may maintain separately rated issuer credits.



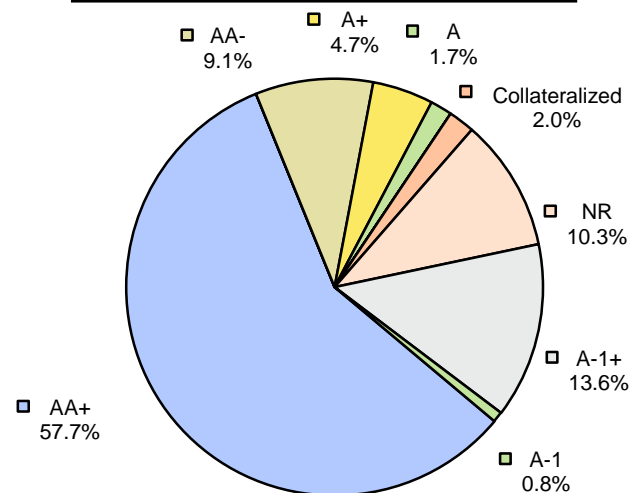
# IV. Overall Credit Quality

## County Investment Pool Credit Analysis

- The County Pool's overall average credit position remains very strong and is primarily concentrated in U.S. government guaranteed and/or supported securities which maintain a long-term credit rating of AA+ by Standard & Poor's and federal agency discount notes, which maintain a short-term credit rating of A-1+ by S&P.
- The County reduced its commercial paper exposure with the maturing of four holdings, or \$275 million, reinvesting \$200 million into new CP issues of Microsoft and Apple Inc.
  - Commercial paper now accounts for 4.0% of the entire portfolio.
- Allocations were maintained to corporate notes for Bank of America, U.S. Bank, Wells Fargo, PNC Bank, Royal Bank of Canada, Toronto Dominion Bank, Bank of Nova Scotia, Canadian Imperial bank, and Bank of Montreal and commercial paper allocations were maintained for Bank of Nova Scotia and Microsoft, adding Apple Inc. CP back into the portfolio for the quarter.
  - Corporate bank note allocations held throughout the quarter have ratings of A/A1 or higher.
  - Commercial paper allocations are all rated A-1/P-1 or higher.
  - Currently, Royal Bank of Canada exceeds the issuer limitations based on its current credit rating. As mentioned previously, this issuer was purchased prior to the adoption of the new investment policy and is considered to be grandfathered in for issuer limit purposes and may be held to maturity.
- The County has modest additional corporate exposure through its 2.0% allocation to bank deposits.
  - Effective July 1, 2016, the Public Deposit Protection Commission collateralization requirement was lowered to 50%.
- The 10.3% NR allocation represents the County's investment in the Washington State LGIP, which is not currently rated by any ratings agency.
- The County's investment in the Washington LGIP includes indirect corporate exposure:
  - Through the LGIP, 2.6% of the County's Pool is allocated indirectly to corporate securities (repurchase agreements and certificates of deposit).
  - The collateralization of the securities held by the LGIP minimizes credit risk.

## Credit Distribution\*

as of December 31, 2016



## Issuer Ratings Table (Corp/CP)

as of December 31, 2016

Issuer Distribution	Sectors Invested	S&P Short	S&P Long	Moody's Short	Moody's Long
Bank of America	Corp	A-1	A	P-1	A1
Bank of Montreal	Corp	A-1	A+	P-1	Aa3
Bank of Nova Scotia	Corp/CP	A-1	A+	P-1	Aa3
PNC Bank	Corp	A-1	A	P-1	Aa2
Royal Bank of Canada	Corp	A-1+	AA-	P-1	Aa3
Toronto Dominion Bank	Corp	A-1+	AA-	P-1	Aa1
US Bank	Corp	A-1+	AA-	P-1	Aa1
Wells Fargo Bank	Corp	A-1+	AA-	P-1	Aa1
Microsoft	CP	A-1+	AAA	P-1	Aaa
Canadian Imperial Bank	Corp	A-1	A+	P-1	Aa3
Apple Inc.	CP	A-1+	AA+	P-1	Aa1

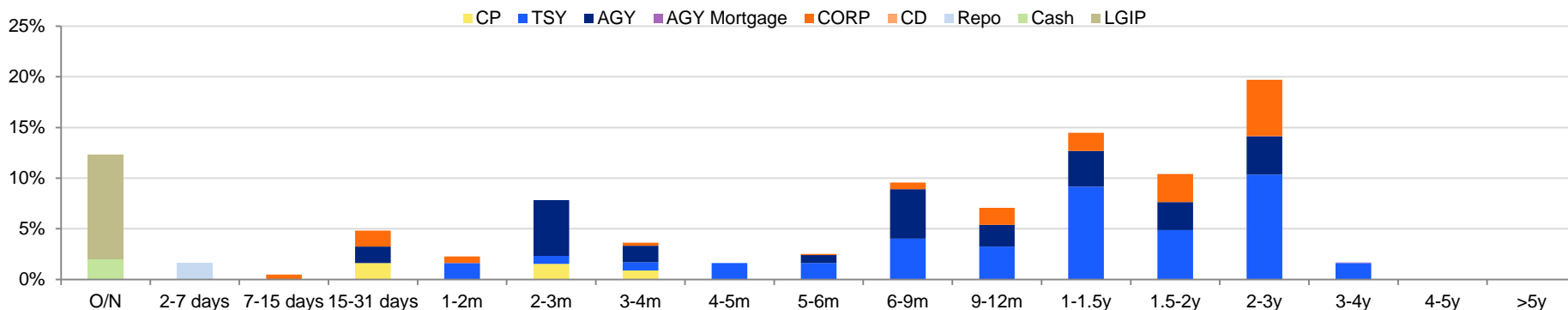
\*Ratings by S&P; percentages may not add to 100% due to rounding.

\*\*Bank ratings of the depositories for the collateralized securities are given on page 14.

# V. Maturity Distribution

Maturity Distribution	Observations
<b>Weighted Average Maturity (“WAM”)</b>	<ul style="list-style-type: none"> <li>The County continues to diversify holdings across its permitted maturity range, as seen in the chart below.</li> <li>A majority of the holdings – 54% of the portfolio – are scheduled to mature or have a call date within the next twelve months, lower than the previous quarter-end at 62%, yet well above the 40% mandated by the investment policy.</li> <li>It appears the County’s maturity strategies over the past several quarters have included:               <ul style="list-style-type: none"> <li>Allowing previously purchased, longer-dated U.S. Treasury, federal agency, and corporate bank note investments to naturally shorten in maturity and roll-down the yield curve,</li> <li>Target duration extensions in the following spaces:                   <ul style="list-style-type: none"> <li>U.S. Treasuries in the 1.5- to 3-year maturity range.</li> <li>Agency Notes in the 1-3 year maturity range.</li> <li>Corporate Bank Notes in the 1.5- to 3-year maturity range.</li> </ul> </li> </ul> </li> <li>Over the quarter, the WAM of the portfolio extended to 399 days from 343 days at previous quarter-end.               <ul style="list-style-type: none"> <li>The rise in portfolio WAM can primarily be attributed to U.S. and corporate note extensions.</li> </ul> </li> </ul>
<b>Liquidity</b>	<ul style="list-style-type: none"> <li>The County Pool appears to provide adequate liquidity, both in terms of final maturities and the sectors in which the Pool has invested. In addition to the 13.9% (or \$859 million) invested in a combination of the Washington State LGIP, bank deposits, and repurchase agreements (overnight liquidity), an additional 5.3% of the portfolio’s holdings are scheduled to mature within the next thirty-one days.</li> <li>Based on historical cash flow patterns, the Pool would expect a decrease in funds during the first quarter of 2017. On average, over the past four years, the County has experienced an average net cash outflow of \$244 million in quarters ended March 31.</li> </ul>

**Maturity Distribution as of December 31, 2016**

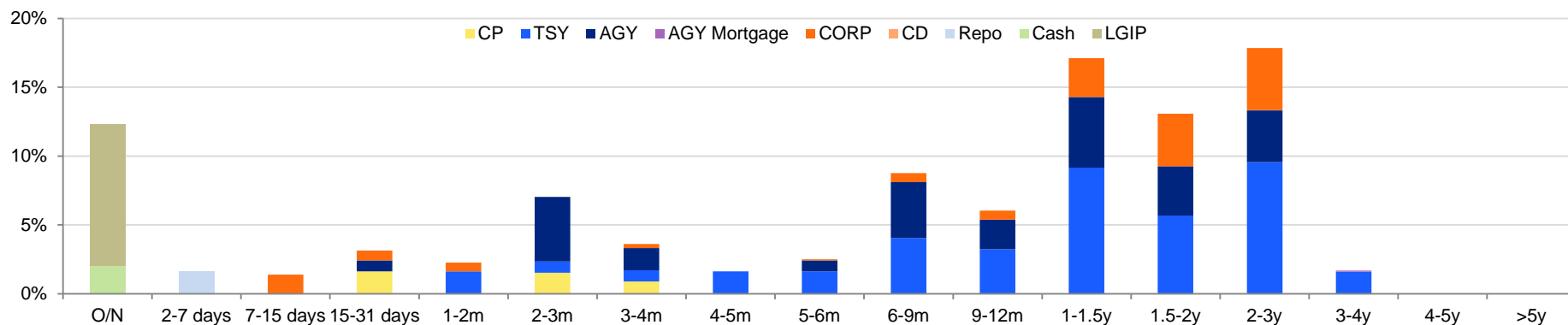


- Agency Mortgage maturities are calculated as average life. Average life data taken from Bloomberg Financial Markets
- Callable securities shown to their call date.
- All other security maturities are calculated as days to maturity. WA LGIP is considered to have a one day maturity.

# V. Duration Distribution

Duration Distribution	Observations
<b>Definition</b>	<ul style="list-style-type: none"> <li>Duration is a measure of the sensitivity of the value of principal of an investment to a change in interest rates. The value of a portfolio with a higher duration is more sensitive to interest rate increases and decreases.</li> <li>Duration is often quoted in years and is commonly used as a measure of the market risk of a security or portfolio. Duration can be derived in a number of ways; please refer to the notes at the bottom of this page for details.</li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>The portfolio's weighted average duration is within the IPS guidelines (no greater than 1.5 years).</li> <li>As of December 31st, the duration of the County Investment Pool was 1.09 years, a noticeable increase from the previous quarter which ended at 0.95 years. The Pool's duration had gradually shifted shorter (3Q15 0.98 years, 4Q15 0.93 years, 1Q16 0.91 years, 2Q16 0.89 years), which reflected a defensive posture, until 3Q16 when the duration began to increase slightly. <ul style="list-style-type: none"> <li>The increase in portfolio duration can be attributed to purchases of securities in the 1-3 year maturity range.</li> </ul> </li> <li>For performance and duration comparison purposes, the portfolio is measured against a blended benchmark consisting of 40% Bank of America Merrill Lynch 3-Month Treasury Index and 60% Bank of America Merrill Lynch 1-3 Year Treasury &amp; Agency Index. <ul style="list-style-type: none"> <li>Though its duration increased over the quarter, the Pool still maintains a defensive duration bias which is evident by the Pool ending at 95% of the benchmark's duration of 1.15 years. This is an increase from 83% of the benchmark's duration at the end of the third quarter of 2016.</li> <li>In anticipation of rising rates, a more defensive duration bias helps mitigate the adverse impact that potential interest rate increases may have on market value.</li> </ul> </li> </ul>

**Duration Distribution as of December 31, 2016**



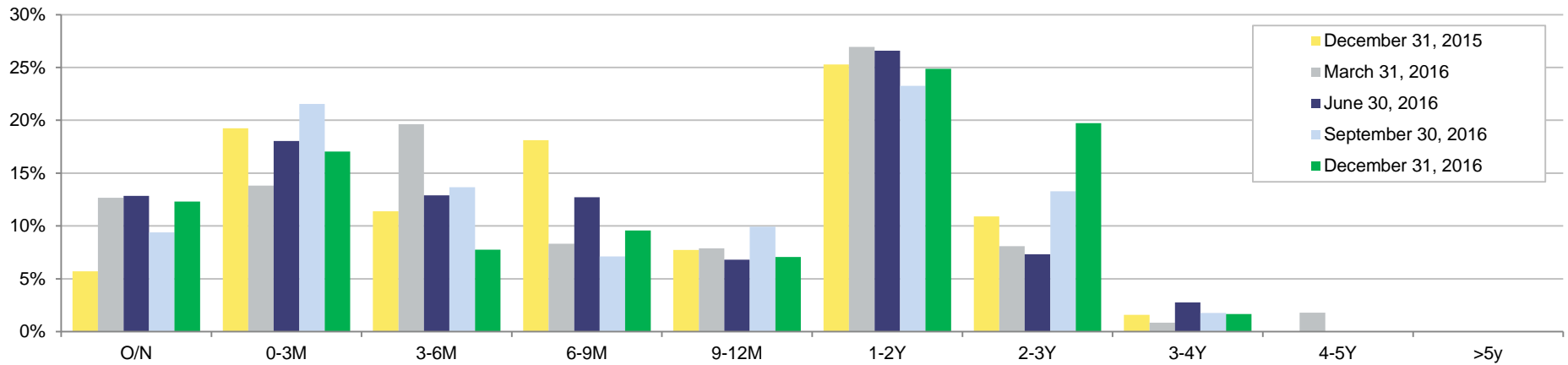
- Agency Mortgage durations are shown as effective duration taken from Bloomberg Financial Markets.
- Duration for Federal Agency Discount Notes and Repurchase Agreements are calculated as days to maturity. WA LGIP and bank deposits considered to have a one day duration.
- All other security durations are calculated as effective duration as given by Bloomberg Financial Markets.

# V. Changes in Portfolio Maturity Distribution

## Changes in Portfolio Maturity Distribution

- When viewing the current maturity distribution (dark green bars) in relation to previous periods, a few primary observations are noted:
  - It appears the County is targeting allocations in the “1-2 Year” and “2-3 Year” portion of the yield curve, offsetting these purchases with an increase in overnight securities or bank deposits.
  - The County’s previous tactical allocations to the “1-2 Year” and “2-3 Year” maturity range benefited the portfolio. Over the 12-month period ending December 31, 2016, 0-3 Year Treasuries outperformed 0-1 Year Treasuries by approximately 17 basis points.
  - As of December 31, 2016, 30% of the portfolio is positioned in the overnight to 3 month maturity range and 45% in the 1 to 3 year area of the curve creating a barbell structure. This barbell structure balances short term investments, utilized for stability, and longer term investments, which capture the benefits of higher yields offered further out on the yield curve and roll down potential.
    - The increase in allocations to overnight investments is due to an increase in both, the Washington State LGIP and bank deposits. The increase in the 1 to 3 year area of the curve is due to increases in allocations to U.S. Treasuries, federal agencies, and corporate notes.
  - Overnight allocations appeared to have increased over the quarter. Increased liquidity has not only offset longer term purchases allowing targeting of the steep portion of the yield curve, but has also provided for the anticipated outflow of cash in the first quarter of 2017.
- Seasonality of cash flows is critical to maturity distribution and liquidity management and the following is a snapshot of the historical cash flow averages for upcoming quarters.
  - Over the past four years, for the quarters ending March 31, the average net **outflow** to the Investment Pool was \$244 million.
  - Over the past four years, for the quarters ending June 30, the average net **inflow** to the Investment Pool was \$570 million.

Maturity Distribution December 31, 2015 to December 31, 2016



- Agency Mortgage maturities are calculated as average life. Average life data taken from Bloomberg Financial Markets
- Callable securities shown to their call date.
- All other security maturities are calculated as days to maturity. WA LGIP is considered to have a one day maturity.

# Disclaimer

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