

# King County Investment Pool

## Portfolio Review

Quarter Ended September 30, 2016



**PFM Asset Management LLC**

Presented by:

**PFM Asset Management LLC**

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# 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 June 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 September 30, 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 rose significantly in the quarter, reversing 2nd quarter declines spurred by Brexit. Short-term yields led the rise, as expectations for a Fed rate hike this year rebounded, further flattening the yield curve. The spread between the two-year and 10-year Treasury yields declined further to 83 basis points (0.83%) compared to 89 basis points (0.89%) at the end of the second quarter. The two-year Treasury yield rose 18 basis points (0.18%) during the quarter, while the yield on the 10-year Treasury rose 12 basis points (0.12%).
- In the money market space, shorter Treasury yields rebounded from their 2nd quarter compression while short-term credit instruments, like commercial paper, continued to offer significant added income as spreads remained wide ahead of money market reform in October.
- U.S. Treasury indexes posted declines for the 3rd quarter as yields rose, reversing almost all 2nd quarter declines, decreasing market values. Shorter maturity issues outperformed longer maturities as the yield curve flattened.
- Non-callable federal agency spreads drifted tighter during the quarter leading to the sector’s modest outperformance relative to comparable-maturity Treasuries.

## Observations

- The portfolio is of very high credit quality. The majority of securities (76%) 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 September 30, 2016 was \$6.0 billion, a net decrease of approximately \$278 million over the prior quarter end.
- Notable sector allocation shifts over the quarter included increases to Corporate Notes (+4.06%), and Repurchase Agreements (+2.84%), and decreases to Federal Agencies (-5.79%) and Commercial Paper (-1.76%).
  - The portfolio continued to increase allocations to corporate credit-oriented investments. Corporate sectors now account for 24% of the overall portfolio, totaling \$1.4 billion (up from 14% or \$813 million this time last year). These investments add value to the portfolio as their yields are higher relative to similar maturity government securities and all are investment grade.
- Over the past several quarters, the Pool has shifted its maturity strategy to reflect a more defensive stance. As of September 30, the duration of the County Investment Pool is 0.95 years, a modest increase from a duration of 0.89 years on June 30. While the duration increased over the quarter, the portfolio is still defensively positioned and positioned to mitigate effects of a rise in interest rates, while being able to take advantage of any advantageous movements in the markets.
- In anticipation of the upcoming quarter, in the fourth quarter of the past four years, the average net **inflow** from the Pool was \$392 million.
- The County Pool appears to provide adequate liquidity, with 14% (or \$800 million) invested in a combination of the State LGIP, bank deposits, and repurchase agreements (overnight) and an additional 50% (or \$3.1 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 Bank 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
<b>Corporate Notes</b>	<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 September 30, 2016 was \$6.0 billion and experienced a net decrease of approximately \$278 million over the quarter.</li> <li>Over the quarter, sectors that experienced allocation percentage increases included: Corporate Notes (4.06%), Repurchase Agreements (2.84%), the Washington State LGIP (0.41%), U.S. Treasuries (0.20%) and Cash and Equivalents (0.04%).</li> <li>Sectors that experienced decreases in quarter-over-quarter allocation percentages included: Federal Agencies (5.79%) and Commercial Paper (1.76%).</li> <li>The County continues to maintain a small allocation to agency mortgage backed securities, but has not purchased new agency MBS in several quarters.</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 62% of the County pool's assets are guaranteed or supported by the U.S. government. Further, approximately 9% is invested in the State LGIP, where 66% 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 76%.</li> <li>Corporate allocations (both commercial paper and corporate notes) were slightly increased over the quarter to approximately 24% of the portfolio, up from 14% this time last year; 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 62% of the Pool's assets mature in one year or less and approximately 31% 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	2,148,485,820	36.08%	✓	3.67 years	✓
Federal Agency (non-MBS)	1,531,654,000	25.72%	✓	2.41 years	✓
Corporate Notes	1,079,056,878	18.12%	✓	3.08 years	✓
Washington State LGIP	533,669,566	8.96%	✓	1 day	✓
Commercial Paper	324,636,050	5.45%	✓	115 days	✓
Repurchase Agreements	306,000,000	5.14%	✓	1 day	✓
Cash and Equivalents	25,459,158	0.43%	✓	1 day	✓
Agency Mortgages	6,401,995	0.11%	✓	3.53 years (WAL)	✓
Municipal Notes	0	0.00%	✓	n/a	✓
Certificates of Deposit	0	0.00%	✓	n/a	✓
<b>TOTAL</b>	<b>\$5,955,363,467</b>	<b>100.00%</b>			

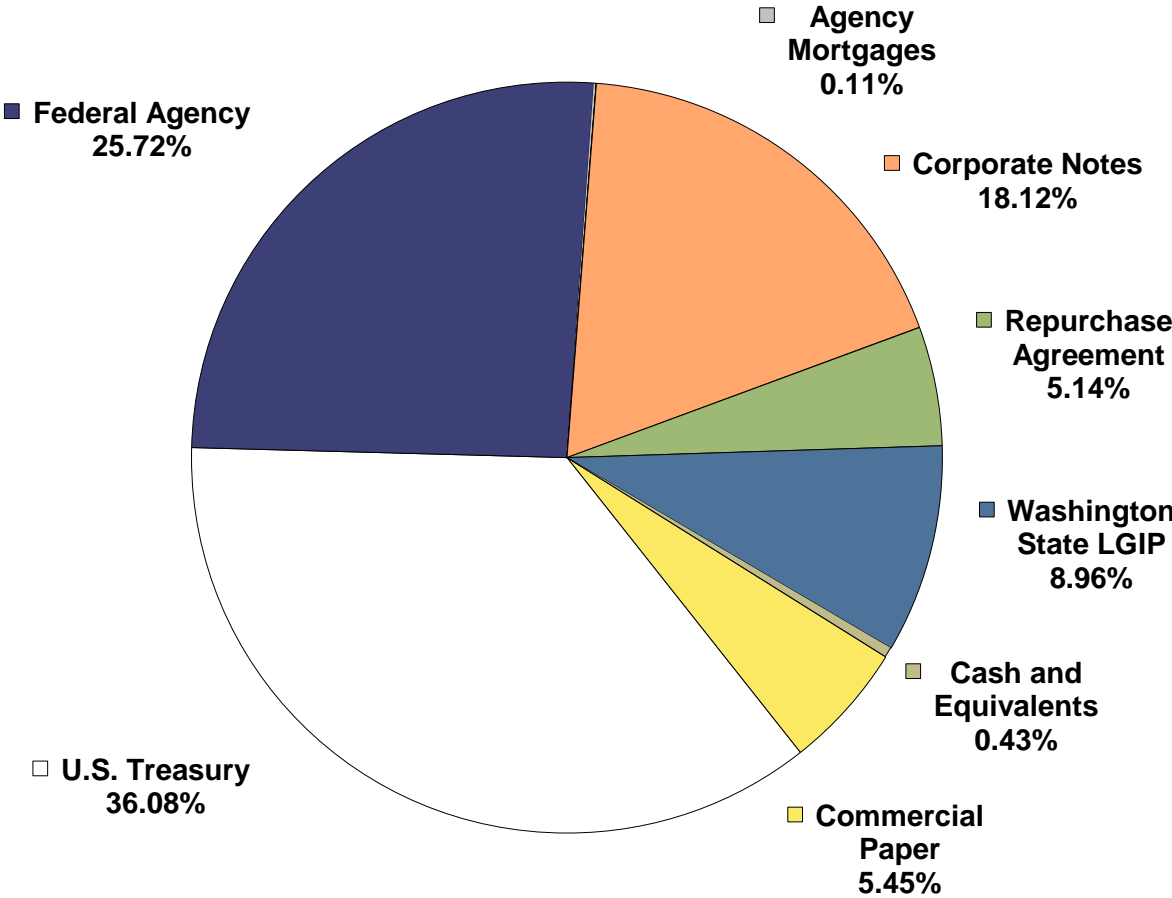
\*Percentages may not total to 100% due to rounding.

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



# II. Sector Allocation

**Sector Diversification**  
as of September 30, 2016



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

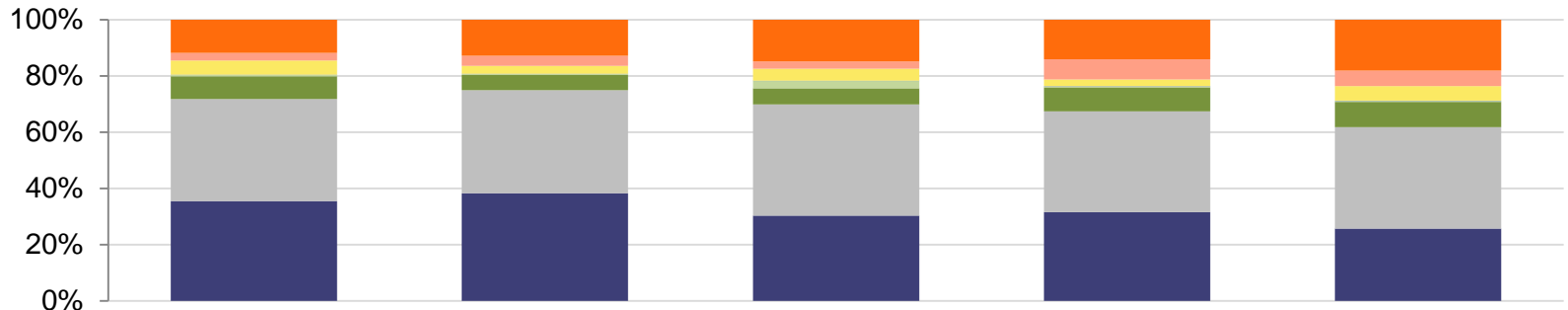


# II. Changes in Portfolio Sector Allocation over Past 12 Months

## Changes in Sector Allocation

- The County's investment pool increased percentage allocations to Corporate Notes (4.06%), Repurchase Agreements (2.84%), the Washington State LGIP (0.41%), Cash and Equivalents (0.41%), and U.S. Treasuries (0.20%), while decreases occurred in Federal Agencies (5.79%) and Commercial Paper (1.76%).
- **Federal Agencies** Federal agency allocations remained below U.S. Treasury allocations in the third quarter. Approximately \$683 million of agency holdings matured or were sold during the quarter.
- **U.S. Treasuries** U.S. Treasury allocations decreased by \$88 million over the quarter. Treasury purchases that were made during the quarter were targeted in the 1- to 2.5- year maturity range.
- **Corporate Notes** The portfolio increased allocations to corporate notes over the quarter. This sector accounts for 18.1% of the overall portfolio totaling \$1.1 billion (compared to 14.1%, or \$877 million, last quarter).
- **Commercial Paper** The portfolio currently owns four commercial paper issuers totaling \$325 million (or 5.5% of the total portfolio), representing a decrease of \$125 million over the quarter.
- **Washington State LGIP** Balances invested in the State LGIP increased over the quarter by approximately \$667,897, and continued to serve as the Pool's primary liquidity vehicle. This sector accounts for 9.0% of the overall portfolio.
- **Repurchase Agreements and Bank Deposits** Allocations to repurchase agreements increased by \$163 million over the quarter and accounted for 5.1% of the total portfolio. Bank deposits were increased by approximately \$1 million over the quarter to \$25 million (or to 0.43% of the total portfolio).

Sector Allocation September 2015 – September 2016



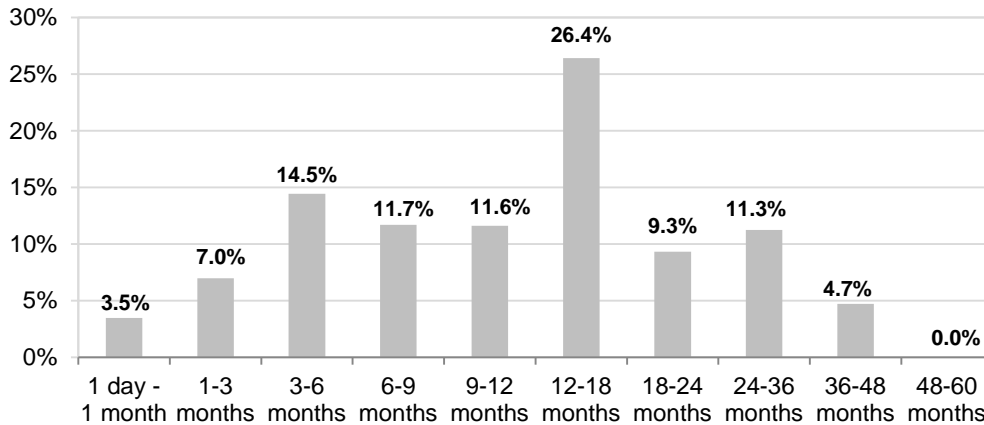
	September 30, 2015	December 31, 2015	March 31, 2016	June 30, 2016	September 30, 2016
Federal Agencies	35.54%	38.30%	30.30%	31.51%	25.72%
U.S. Treasury	36.22%	36.70%	39.55%	35.88%	36.08%
Washington State LGIP	8.14%	5.36%	5.76%	8.55%	8.96%
Cash and Equivalents	0.40%	0.35%	2.58%	0.39%	0.43%
Agency Mortgages	0.13%	0.11%	0.12%	0.11%	0.11%
Municipal Notes	0.00%	0.00%	0.00%	0.00%	0.00%
Repurchase Agreements	5.08%	2.82%	4.33%	2.29%	5.14%
Commercial Paper	2.67%	3.58%	2.60%	7.21%	5.45%
Corporate Notes	11.81%	12.78%	14.76%	14.06%	18.12%

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

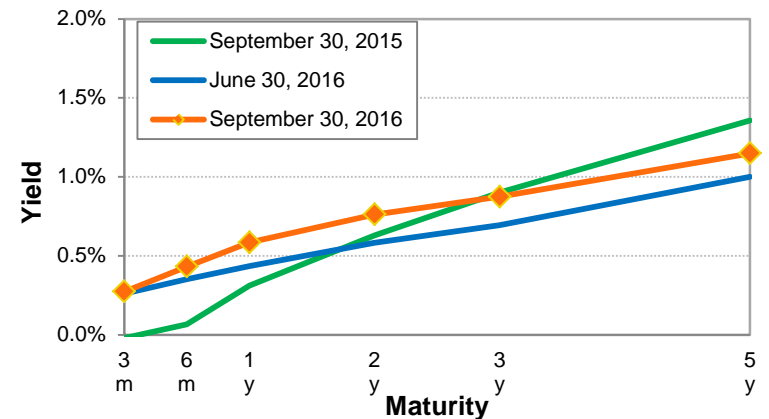
# II. Sector Allocation – U.S. Treasury Securities

Topic	Observations
Observations	<ul style="list-style-type: none"> <li>The County's balances held in U.S. Treasuries decreased by \$88.3 million over the quarter but still represent approximately 36% of the total portfolio.               <ul style="list-style-type: none"> <li>Over the quarter, it appears the Pool targeted approximately \$141 million in new U.S. Treasury notes with maturities in the 1- to 3- year maturity range.</li> <li>Treasury yields rose in the third quarter as early-quarter Brexit fears faded and U.S. economic data rebounded, bringing the Fed closer to an eventual rate hike, perhaps in December.                   <ul style="list-style-type: none"> <li>As shown in the chart on the right below, over the past 3 months, U.S. Treasury yields on maturities in the 3-month to 5-year area of the yield curve have increased.</li> <li>Longer maturity yields have fallen substantially in 2016 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 (\$1.1 billion, or 52% of all Treasury holdings, down from \$1.2 billion, or 55% 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 decrease in allocations to these longer-term Treasuries, allocations to Treasury holdings with maturities less than one year increased a total of 3.0% over the quarter.</li> </ul> </li> <li>The County's weighted average maturity (WAM) of its Treasury allocation decreased over the quarter by 28 days, from 464 days on June 30th, to 436 days on September 30th.</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, 48% is allocated to maturities less than 12 months (versus 45% last quarter).</li> <li>As liquidity permits and new investment opportunities become available, these short-term US Treasury holdings (less than 12 months) are ideal to trade for (1) longer-term Treasury or corporate note investments targeted to the steepest portions of the yield curve and/or (2) higher-yielding, similar-maturity investments in other sectors, such as federal agencies, commercial paper, or short-term corporate bank notes.</li> </ul> </li> </ul>

**U.S. Treasury Maturity Distribution as of September 30, 2016**



**U.S. Treasury Yield Curve 9/30/16 vs 6/30/16 vs 9/30/15**

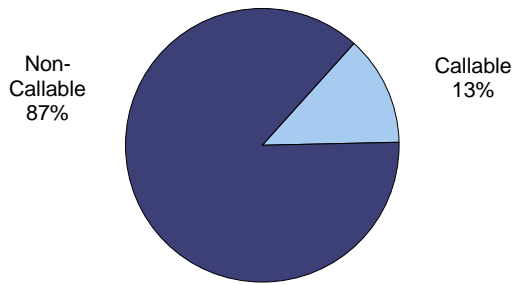


\* Source Bloomberg Financial Systems

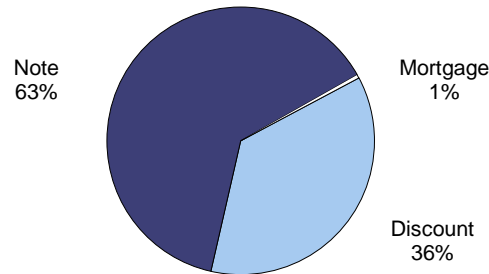
# II. Sector Allocation – Federal Agencies

Topic	Observations			
<b>Structure (as % of Federal Agency Allocations)</b>	<ul style="list-style-type: none"> <li>Non-Callable 87%</li> <li>Callable 13%</li> </ul>	<ul style="list-style-type: none"> <li>Discount Notes 36%</li> <li>Coupon bearing Notes 63%</li> <li>Agency Mortgage &lt;1%</li> </ul>		
<b>Diversification (as % of Federal Agency Allocations)</b>	<ul style="list-style-type: none"> <li>Freddie Mac (FHLMC) 23%</li> <li>Federal Home Loan Bank (FHLB) 22%</li> <li>Fannie Mae (FNMA) 26%</li> </ul>	<ul style="list-style-type: none"> <li>Federal Farm Credit Bank (FFCB) 29%</li> <li>Freddie Mac Mortgage-Backed (FHR) 0%</li> <li>Fannie Mae Mortgage-Backed (FNR) &lt;1%</li> </ul>		
<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 decreased by \$433 million over the quarter. The decrease was due mainly to \$226 million in new Agency purchases, paired with \$683 million in maturities.</li> <li>From a security structure standpoint (the ratio of non-callable to callable securities), callable securities continued to increase over the quarter, as callable allocations increased to 13% of agency holdings, up from 7% last quarter.                             <ul style="list-style-type: none"> <li>In the past quarter, the only holding that experienced a call date, is no longer held, therefore it was either called or sold.</li> <li>New Agency Note purchases during the quarter were both callable and non-callable.</li> </ul> </li> <li>The County Pool's only remaining allocation to agency mortgages is in Fannie Mae pools, totaling approximately \$6.4 million.</li> </ul>			

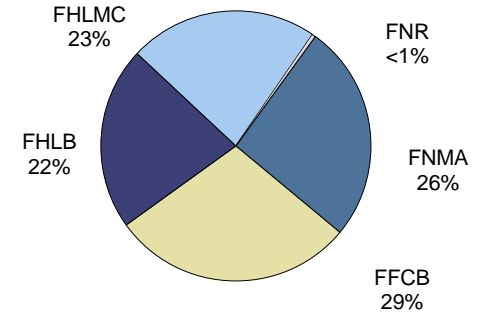
**Callable vs. Non-Callable as of September 30, 2016**



**Structure Distribution as of September 30, 2016**



**Issuer Diversification as of September 30, 2016**



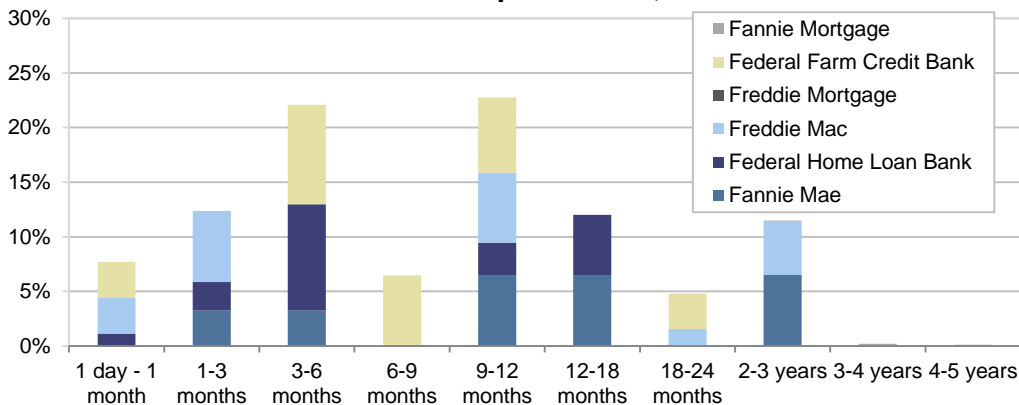
\*All calculations above are based on total cash equivalents exposure, not overall Portfolio.

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

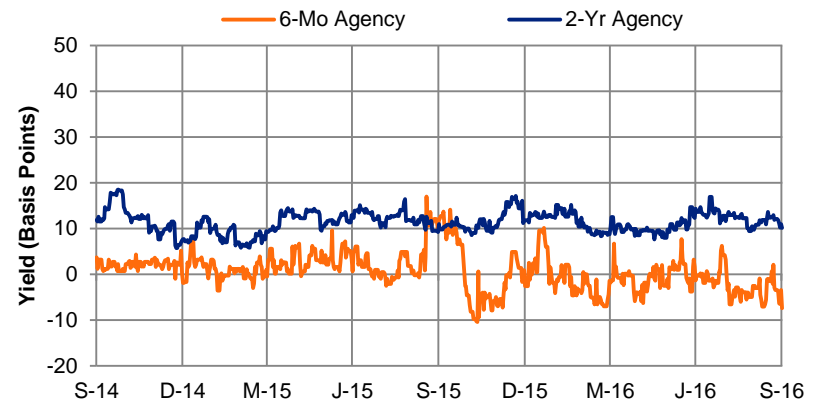
# II. Sector Allocation – Federal Agencies

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 36 days, from 274 days on June 30th to 310 days on September 30th.               <ul style="list-style-type: none"> <li>It appears that approximately \$683 million in agency securities were either called, sold, or matured during the quarter.</li> <li>As of September 30, 2016, 71% of agency allocations were invested in maturities less than 12 months and 42% in maturities less than 6 months. Comparatively, 48% of U.S. Treasury allocations were invested in maturities less than 12 months and 25% in maturities less than 6 months.</li> <li>Conversely, while 29% of agency allocations were invested beyond 1 year, 52% 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>targeted purchases of additional short-term agencies when yield spreads between comparable agency and Treasury securities increased, as was the case in the beginning of August (as depicted in the graph on the right), though spreads tightened and declined into negative territory through the remainder of the quarter, and</li> <li>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 September 30, 2016**



**6-Month and 2-Year Federal Agency Yield Spreads Past 24 Months**

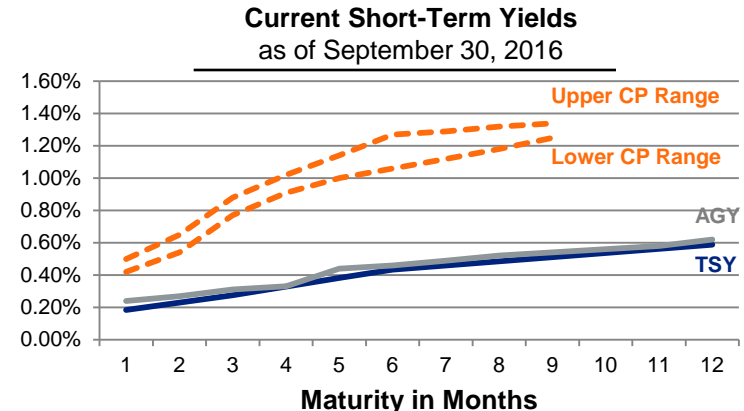
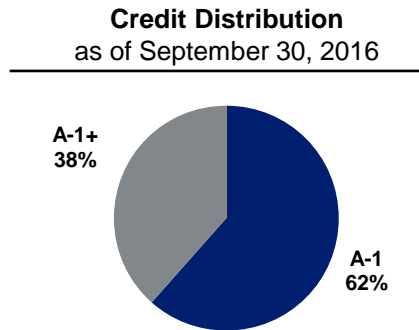
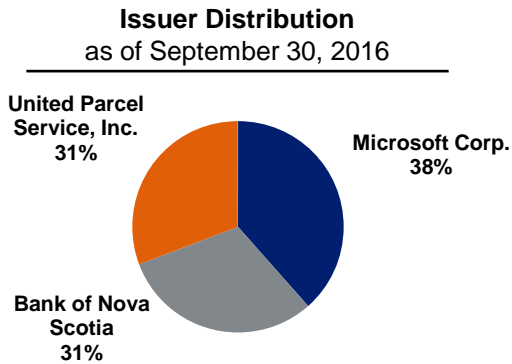


- Agency Mortgage maturities are calculated as average life. Average life data taken from Bloomberg Financial Markets
- Callable securities are shown to their next call date.
- All other Agency maturities are calculated as days to maturity.

\* Source Bloomberg Financial Systems

# 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 \$125 million, and now account for 5.5% of the total portfolio, down from 7.2% at the end of the second quarter.</li> <li>The portfolio now owns commercial paper of three issuers: Bank of Nova Scotia, Microsoft and United Parcel Service, Inc.</li> <li>\$250 million of maturities in previously held issuers over the quarter allowed for reinvestment into two Microsoft CP issues.</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 ultra 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.               <ul style="list-style-type: none"> <li>When combined with corporate notes, Bank of Nova Scotia exceeds the combined issuer limit at a total of 3.34%. Although this exceeds the new limitations, the investment policy states that purchases prior to 9/15/16 are considered grandfathered in for issuer limit purposes and may be held to maturity.</li> </ul> </li> </ul>
<b>Credit Distribution</b>	<ul style="list-style-type: none"> <li>Standard &amp; Poor's rates the short-term credit of Microsoft as A-1+ and Bank of Nova Scotia and United Parcel Service 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>Commercial paper provides the County an opportunity and an investment outlet to access non-bank, corporate debt (industrial, technology, etc.).</li> <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. 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> </ul>



\*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 Bank Notes

Observations	
<b>Issuer Diversification</b>	<ul style="list-style-type: none"> <li>The County increased allocations over the quarter to high-quality corporate notes. This sector accounts for 18.1% of the overall portfolio totaling \$1.1 billion, an increase of \$202 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, \$300million (or 28% of corporate notes, up from 7% 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, 66% 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 allocations that exceed these limitations, including Royal Bank of Canada at 3.34%, PNC Bank at 2.08%, and Bank of Montreal at 2.05%, highlighted below.</li> <li>— When combined with commercial paper, Bank of Nova Scotia also exceeds the issuer limit at a total of 3.34%.</li> <li>— <b>Although these issuers exceed the new limitations, the investment policy states that purchases prior to 9/15/16 are considered grandfathered in for issuer limit purposes and may be held to maturity.</b></li> </ul> </li> </ul>

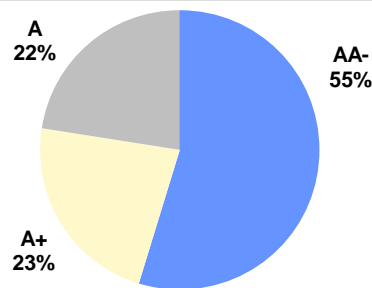
Credit Distribution	Bank of America	Bank of Montreal	Bank of Nova Scotia	PNC Bank	Royal Bank of Canada	Toronto Dominion Bank	US Bank	Wells Fargo Bank	Canadian Imperial Bank
S&P Short	A-1	A-1	A-1	A-1	A-1+	A-1+	A-1+	A-1+	A-1
S&P Long	A	A+	A+	A	AA-	AA-	AA-	AA-	A+
Moody's Short	P-1	P-1	P-1	P-1	P-1	P-1	P-1	P-1	P-1
Moody's Long	A1	Aa3	Aa3	Aa2	Aa3	Aa1	Aa1	Aa1	Aa3

**Issuer Distribution**  
as of September 30, 2016

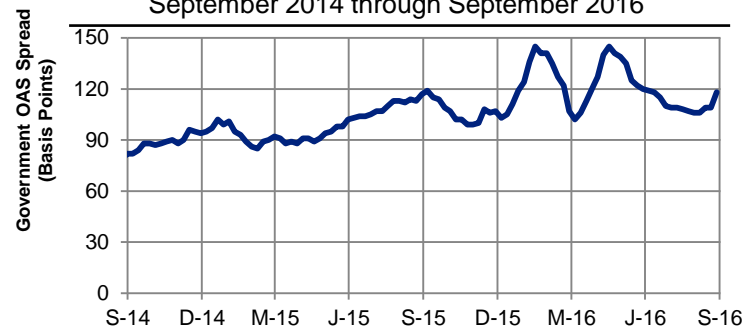
Issuer	% of Corporates	% of Portfolio
Royal Bank of Canada	18%	3.34%
US Bank	14%	2.50%
Toronto Dominion	14%	2.47%
PNC Bank	12%	2.08%
Bank of Montreal	11%	2.05%
Bank of America	11%	2.00%
Wells Fargo	9%	1.60%
Bank of Nova Scotia	9%	1.57%
Canadian Imperial Bank	3%	0.50%

\* "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 September 30, 2016



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



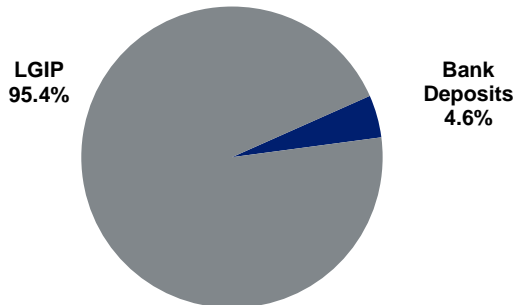
\* Source Bloomberg Financial Systems



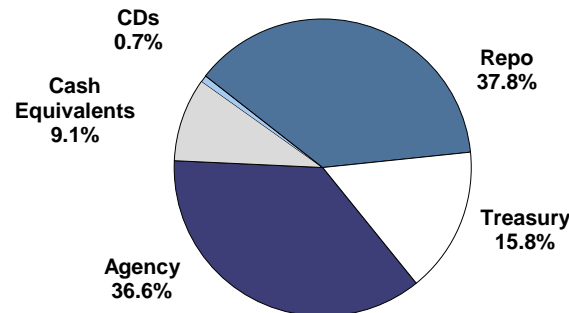
# II. Sector Allocation – LGIPs and Cash Equivalents

	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 36.5%</li> <li>U.S. Treasuries 15.8%</li> <li>Cash Equivalents 9.1%</li> <li>Certificates of Deposit 0.7%</li> <li>Repurchase Agreements 37.7%</li> </ul> <i>As of September 30, 2016</i>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>The County currently has allocated \$533.7 million to the Washington State LGIP, which is an increase of approximately \$668 thousand 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 decreased federal agency discount notes approximately 19.8%, while every other sectors experienced increases in percentage allocations over the quarter with Repurchase Agreements increasing the most by 12.9%.</li> </ul>
<b>Cash Equivalents</b>	<ul style="list-style-type: none"> <li>State LGIP 95.4%</li> <li>U.S. Bank 2.5%</li> <li>Key Bank 2.0%</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%. Credit ratings of these banks are in compliance with the new investment policy and are all rated investment grade or better.</li> <li>The County increased allocations to bank deposits by approximately \$1.3 million over the quarter to \$25.5 million. The U.S. Bank account now represents over 55% of the Pool's bank deposit allocations (Key Bank 43% and Bank of America 2%).</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 September 30, 2016**



**Washington State LGIP Sector Distribution as of September 30, 2016**



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

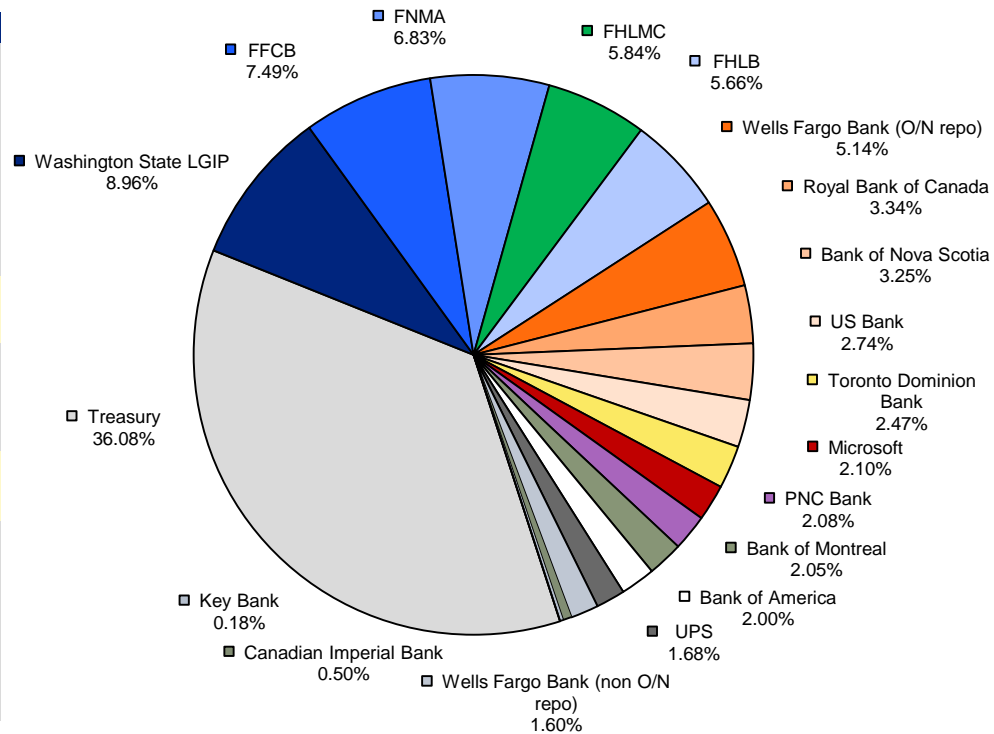


# III. Issuer Concentration

## Issuer Exposure

- The County continues to maintain a well-diversified portfolio by issuer, as is evidenced by the chart below.
- Approximately 62% of the portfolio is allocated directly to U.S. government guaranteed or government supported entities.
- Of the remaining 38% 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 24% 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 76%.
- The County removed a commercial paper issuer from the portfolio, Apple Inc., which accounted for 3.2% of total pool assets at the end of the second quarter.
- Of the corporate issuers in the portfolio, a few exceed of the new investment policy limits based on credit ratings but all have been grandfathered in for purchases prior to 9/15/16, highlighted below.

Issuer Distribution	Value	Percentage	Issuer Limit
Treasury	2,148,485,820	36.08%	100%
Washington State LGIP	533,669,566	8.96%	25%
FFCB	446,157,634	7.49%	35%
FNMA	406,893,495	6.83%	35%
FHLMC	347,769,320	5.84%	35%
FHLB	337,235,546	5.66%	35%
Wells Fargo Bank (O/N repo)	306,000,000	5.14%	25%
Royal Bank of Canada	199,005,870	3.34%	5%
Bank of Nova Scotia	193,366,879	3.25%	5%
US Bank	163,164,624	2.74%	5%
Toronto Dominion Bank	147,182,934	2.47%	5%
Microsoft	124,883,508	2.10%	5%
PNC Bank	124,135,464	2.08%	5%
Bank of Montreal	121,799,314	2.05%	5%
Bank of America	119,328,181	2.00%	5%
UPS	99,906,806	1.68%	5%
Wells Fargo Bank (non O/N repo)	95,395,500	1.60%	5%
Canadian Imperial Bank	30,000,300	0.50%	5%
Key Bank	10,982,706	0.18%	5%
<b>Total</b>	<b>\$5,955,363,467</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.

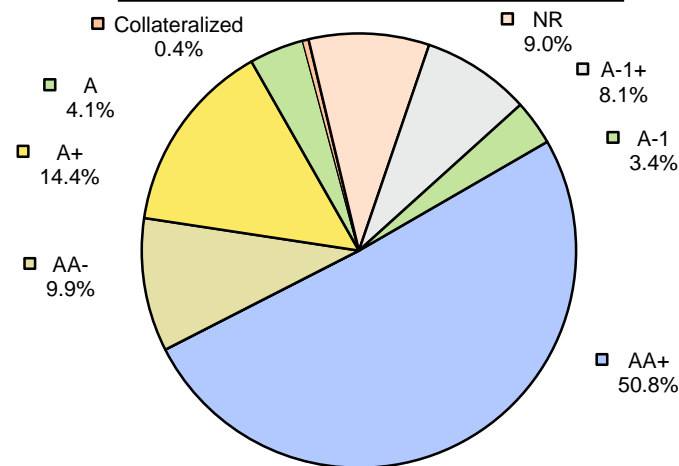
# IV. Overall Credit Quality

## County Investment Pool Credit Analysis

- The County Pool's overall average credit rating 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 Apple Inc. holdings (\$200 million or 3.2% of the total portfolio at the end of the second quarter).
- 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, United Parcel Service, Inc., and Microsoft.
  - Corporate bank note allocations held throughout the quarter have ratings of A/A1 or higher.
  - Commercial paper allocations that were maintained are all rated A-1/P-1 or higher.
- The County has modest additional corporate exposure through its 0.4% allocation to bank deposits.
  - Effective July 1, 2016, the Public Deposit Protection Commission collateralization requirement was lowered to 50%. Credit ratings of the banks are in compliance with the new investment policy and are all rated investment grade or better.
- The 9.0% 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, 3.4% 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 any credit risk.

## Credit Distribution\*

as of September 30, 2016



## Issuer Ratings Table (Corp/CP)

as of September 30, 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
United Parcel Service Inc.	CP	A-1	A+	P-1	Aa3

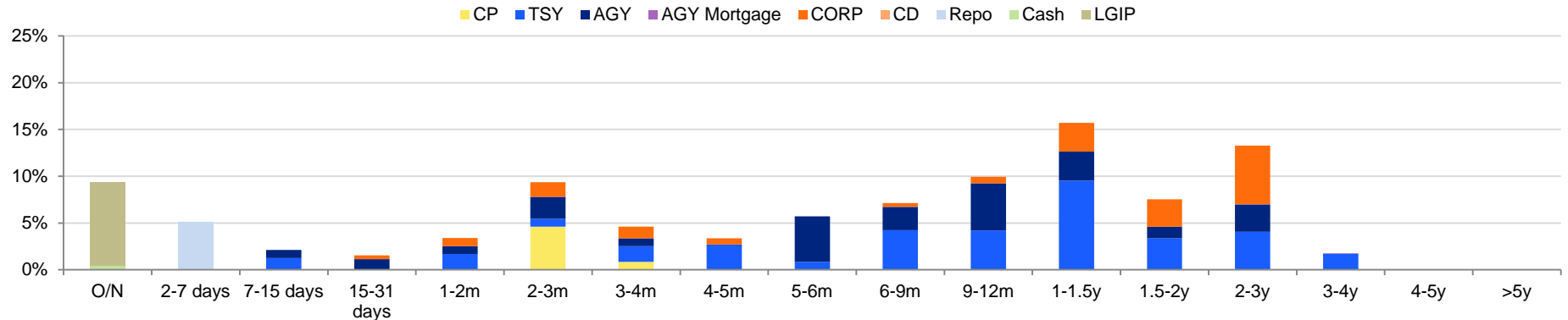
\*Ratings by S&P; percentages may not add to 100% due to rounding.

\*\*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 – 62% of the portfolio – are scheduled to mature or have a call date within the next twelve months. This percentage is in line with the previous quarter-end.</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>Reallocate a portion of overnight investments into higher-yielding, short-term investment vehicles, including: corporate notes, repurchase agreements, and agency discount notes,</li> <li>Target duration extensions in the following spaces:                   <ul style="list-style-type: none"> <li>U.S. Treasuries in the 1.5- year to 3- year range.</li> <li>Agency Notes in the 1-2 year maturity range.</li> </ul> </li> </ul> </li> <li>Over the quarter, the WAM of the portfolio extended to 343 days from 330 days at previous quarter-end.               <ul style="list-style-type: none"> <li>The rise in portfolio WAM can primarily be attributed to U.S. Treasury and agency reinvestments along with 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 14.5% (or \$865 million) invested in a combination of the Washington State LGIP, bank deposits, and repurchase agreements (overnight liquidity), an additional 3.7% 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 an increase in funds during the fourth quarter. On average, over the past four years, the County has experienced an average net cash inflow of \$392 million in quarters ended December 31st.</li> </ul>

**Maturity Distribution as of September 30, 2016**

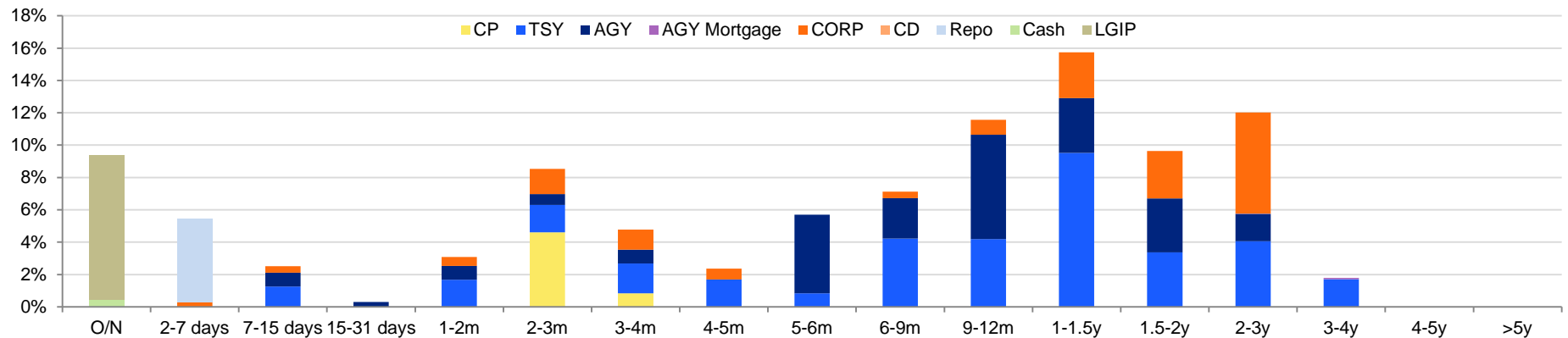


- Agency Mortgage maturities are calculated as average life. Average life data taken from Bloomberg Financial Markets
- Callable securities shown to their call date.
- All other security maturities are calculated as days to maturity. WA LGIP is considered to have a one day maturity.

# 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. For example, 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 September 30th, the duration of the County Investment Pool was 0.95 years, a modest increase from a duration of 0.89 years on June 30th. In contrast, over the past year, the Pool's duration has gradually been shifted shorter (2Q15 1.07 years, 3Q15 0.98 years, 4Q15 0.93 years, 1Q16 0.91 years, 2Q16 0.89 years), which reflects a defensive posture.               <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> <li>When comparing the weighted average duration of the aggregate portfolio to the WAM of the portfolio, it is observed that the duration (0.95 years) and the WAM (0.94 years) are virtually the same.</li> <li>This difference in duration and WAM has narrowed to near zero over the past several quarters (largely due to declining overall allocations to callable agencies). 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.</li> <li>Over the past several quarters, the County portfolio has shifted to a more defensive bias. Though the duration increased quarter over quarter, the defensive bias is still being employed as the duration ended the third quarter at 83% of the benchmark. 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 September 30, 2016**



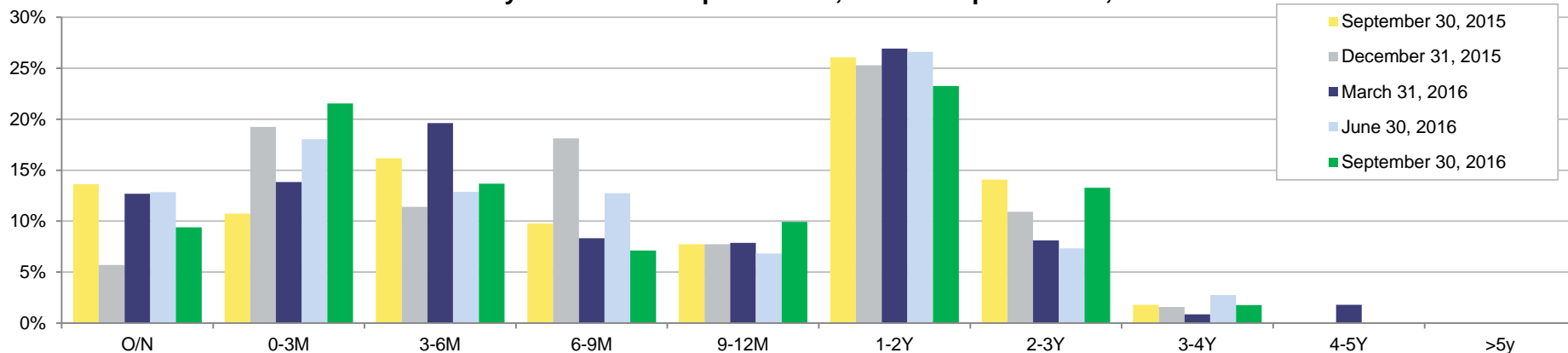
- Agency Mortgage durations are shown as effective duration taken from Bloomberg Financial Markets.
- Duration for Federal Agency Discount Notes and Repurchase Agreements are calculated as days to maturity. WA LGIP and bank deposits considered to have a one day duration.
- All other security durations 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:
  - Approximately 12 months ago, the County targeted tactical allocations to the very steep “2-3 Year” maturity range and over the past few quarters those securities have been held, rolling down the yield curve, and naturally shortening in duration to the “1-2 Year” maturity range. It appears the County is again targeting allocations in the “2-3 Year” portion of the yield curve, offsetting these purchases with an increase in the “0-3 Month” maturity range.
  - The County’s previous tactical allocations to the “3-4 Year” and “4-5 Year” maturity range benefited the portfolio. Over the 12-month period ending September 30, 2016, 1-5 Year Treasuries outperformed 1-3 Year Treasuries by approximately 63 basis points.
  - As of September 30, 2016, 35% and 37% of the portfolio is positioned in the 0 to 6 month and 1 to 3 year area of the curve, representing a balance of defensive duration posture and steeper yield curve positioning (maturities beyond 1 year).
    - The increase in allocations in the 0 to 6 month and 1 to 3 year maturity ranges, appear to be a result of continued purchases of new credit issues including high-quality commercial paper on the short-end and increasing allocations to corporate notes and U.S. Treasuries for longer securities.
    - Overnight allocations appeared to have decreased over the quarter. Removing excess liquidity from overnight investment vehicles and aligning short-term maturities to future cash flow dates helps to maximize interest earnings in the current relatively low, short-term interest rate environment and provides for opportunity to reinvest at potentially higher yields, as rates continue to rise.
- 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 December 31, the average net **inflow** to the Investment Pool was \$392 million.
  - Over the past four years, for the quarters ending March 31, the average net **outflow** to the Investment Pool was \$252 million.

Maturity Distribution September 30, 2015 to September 30, 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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