CMSBO REGIONAL MEETING:

Cash Management & Investing

December 14, 2018

Presented By:

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Regional Director

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Meeder Investment Management
Senior Vice President
## Agenda

I. Bank Analysis Statement
   - Brian Quinn, PFM Asset Management, LLC

II. Liquidity Management
    - Kristin Angel, Public Trust Advisors

III. Investment Opportunities
    - Jason Headings, Meeder Investment Management
Bank Analysis Statement Review
Historical Rates – 8 rate hikes but bank rates stay flat

Source: Bloomberg
# Earnings Credit – In store credit

## Bank ECR Math

Balance Required * ECR Rate * 365 days in year / 30 days  
$15,906,967 * .0035 ECR rate * 365 / 30 = $4,575

**IMPORTANT NOTE: EXCESS ECR DEFAULTS TO BANK**

## Interest Calculation

Average collected – Required Balance = Available Balance  
$16,410,566 - 13,806,592 = $2,603,974

Available Balance * Int Rate / 365 days in year / 30 days  
$2,603,974 * .0035 int rate / 365 / 30 = $749 interest

## Average Balance on Deposit

<table>
<thead>
<tr>
<th>Bank</th>
<th>Account Number</th>
<th>Balance Collected</th>
<th>Earnings Credit</th>
<th>Balance Required</th>
<th>Analyzed Charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1,826,703</td>
<td>0</td>
<td>2,214,889</td>
<td>637.16</td>
</tr>
<tr>
<td>503,599</td>
<td>144</td>
<td>1,477,554</td>
<td>0</td>
<td>429,900</td>
<td>123.67</td>
</tr>
<tr>
<td>15,906,967</td>
<td>4,575</td>
<td>7,857,545</td>
<td>0</td>
<td>2,260.39</td>
<td></td>
</tr>
</tbody>
</table>

**Average Negative Collected Balance:** 0.00  
**Average Positive Collected Balance:** 16,410,566.96  
**Investable Balance Available for Services:** 16,410,566.96

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### Opportunity Cost: Leaving Money at Bank

<table>
<thead>
<tr>
<th>Description</th>
<th>Current</th>
<th>Reduce Bank Balances</th>
<th>Invest Excess in Money Market</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Collected</td>
<td>$16,410,566</td>
<td>$4,410,566</td>
<td>$12,000,000</td>
<td>$16,410,566</td>
</tr>
<tr>
<td>Less: Balance Req</td>
<td>(13,806,592)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Available Balance</td>
<td>$2,603,974</td>
<td>$4,410,566</td>
<td>$12,000,000</td>
<td>$16,410,566</td>
</tr>
</tbody>
</table>

#### Yield / Earnings

<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th>Reduce Bank Balances</th>
<th>Invest Excess in Money Market</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings Credit</td>
<td>.35%</td>
<td>$3,972</td>
<td>$4,410,566</td>
<td>$16,410,566</td>
</tr>
<tr>
<td>+Interest Earned</td>
<td>.35%</td>
<td>749</td>
<td>.35%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Total Earnings</td>
<td>.35%</td>
<td>$4,721</td>
<td>$1,269</td>
<td>$19,726</td>
</tr>
<tr>
<td>Projected Annual</td>
<td>$57,439</td>
<td>$15,437</td>
<td>240,000</td>
<td>$255,437</td>
</tr>
<tr>
<td>IMPACT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Yield is less than 1% and A credit rating</td>
<td></td>
<td>Lower bank balances to offset charges</td>
<td>Difference in Yield is Substantial</td>
<td>Nearly $200k difference</td>
</tr>
</tbody>
</table>

**Summary of Benefits:**

- Increased Interest earnings of $198k annually & do not give up liquidity
- Reduce credit risk associated with single bank depository (Footnote 3 – uninsured deposit)
- Increase diversification through AAAm rated fund

**Note:** Interest Earned assumed to be invested at Fed Funds (proxy for Government Money Market). Fed Funds currently in 2.00-2.25% range as of 11/30/18.
Banking Optimization

**Strategies to Reduce Fees / Increase Efficiency**

- Reduce bank balances to minimize “Deposit Charge”.
- Utilize Money Market Fund for State Aid Depository – move money to bank as needed to cover payroll and payables.
- Based on Cash flows, invest available funds to increase return

**Utilize Bank for what they do best – transactions and data**

- Look for opportunities to become more efficient / enhance internal controls through bank services (positive pay, reconciliation services, data exports, etc.)
- Evaluate usage of banking services to determine which services could be eliminated or replaced with more inexpensive services
- Review bank analysis statement with banker at least annually to eliminate unnecessary services and creepage.
Cash Flow Analysis Leads to Prudent Investment Decisions

- Excess liquidity in an investment management program can be an opportunity cost
- Detailed cash flow analysis can help prudently define fund balances that can be invested in intermediate – to longer-term investments at potentially higher yields.

Sample Cash Flow Analysis
June 2017 through June 2020

### Overnight Liquidity
- 100% liquid
- Fully flexible
- Overnight

### Liquidity Surplus
- Laddered investments to known upcoming cash flows

### Core Reserves
- Intermediate and longer investments
- Potentially higher returns over time
- Employ active management tactics

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Liquidity Management
Liquidity Vehicle Options:

In addition to bank accounts, there are several liquidity vehicles available for schools:

- **Bank Sweep Accounts** – nightly sweep of balances above peg. Typically, have a fee associated with sweep and must ensure it qualifies under School Code

- **Government Money Market Fund** – comprised of school code compliant investments.

- **Local Government Investment Pool (LGIP)** – specifically structured to meet Michigan public acts.
Benefits of Investing in Liquidity Vehicles

Safety

• Many Liquidity Vehicles require that the portfolio is rated by a national recognized statistical rating organization (NRSRO).
  
  o For example, a ‘AAAm’ rating by S&P Global Ratings is the highest money market rating that can be obtained.

• Liquidity Vehicles are managed in a manner that complies with state legislation and/or requirements.
  
  o Liquidity Vehicles are typically managed by investment professionals, many of whom have extensive experience managing public funds in the state of Michigan.

• Investment policies govern which types of investments are permitted.
  
  o Investment policy guidelines strive to limit risky investments resulting in conservative investing.

• Liquidity Vehicles are typically annually audited by an independent accounting firm.
Benefits of Investing in Liquidity Vehicles

**Liquidity**

- Assets are professionally managed in order to safely and conservatively optimize yields while providing for maximum liquidity.

- Many Liquidity Vehicles offer same-day availability of funds.
  - Often times without additional penalties or fees.

- Local government investment pool managers have an understanding of Michigan specific cash flows, tax cycles, state and federal payments, etc. This knowledge allows for the portfolio’s best execution.
Benefits of Investing in Liquidity Vehicles

Yield

• Liquidity Vehicles offer economies of scale.
  o Even the smallest school district will earn the same interest as the largest county.

• Competitive yields often correlated to Fed interest rate raises.

• Interest is earned on a daily basis.

• Most LGIPs have very reasonable fees and yields are typically quoted net of fees.
Cash vs. Core
CASH VS. CORE

Year-end Balances

<table>
<thead>
<tr>
<th>Year</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>$12,000,000</td>
</tr>
<tr>
<td>2014</td>
<td>$14,000,000</td>
</tr>
<tr>
<td>2015</td>
<td>$14,000,000</td>
</tr>
<tr>
<td>2016</td>
<td>$16,000,000</td>
</tr>
<tr>
<td>2017</td>
<td>$18,000,000</td>
</tr>
</tbody>
</table>
CASH VS. CORE

Operating Funds

July August September October November December January February March April May June
CASH VS. CORE

Current

Cash
$8 million
Earning 2.00%

Core
$2 million
Earning 3.00%

Right-Sized

Cash
$2 million
Earning 2.00%

Core
$8 million
Earning 3.00%

Projected Additional Interest Income of $60,000
For the third time this year, the Committee voted to raise the fed funds target range to 2.00% - 2.25%.

The decision to raise at the September meeting was a unanimous decision in favor of the rate hike.

Inflation remains near 2 percent while longer-term inflation expectations are little changed.

“Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability.”

Effective in October, the monthly pace of shrinking the balance sheet hit the maximum of $50 billion per month.

“Gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity and strong labor market conditions.”
YIELD CURVE COMPARISON

Source: Bloomberg
INFLATION

Personal Consumption Expenditures (PCE)

Source: Bloomberg
WAGE INFLATION
US Average Hourly Earnings

Source: Bloomberg
INTEREST RATE OUTLOOK

US Overnight Interest Rate Swaps

Source: Bloomberg
INTEREST RATE OUTLOOK

FED Dot Plot

<table>
<thead>
<tr>
<th></th>
<th>2018 Estimate</th>
<th>2019 Estimate</th>
<th>2020 Estimate</th>
<th>2021 Estimate</th>
<th>Longer Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOMC Median Dots</td>
<td>2.38%</td>
<td>3.13%</td>
<td>3.38%</td>
<td>3.38%</td>
<td>3.00%</td>
</tr>
<tr>
<td>Federal Funds Futures</td>
<td>2.39%</td>
<td>2.94%</td>
<td>2.96%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Overnight Interest Rate Swaps</td>
<td>2.35%</td>
<td>2.83%</td>
<td>2.77%</td>
<td>2.66%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Federal Reserve
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