# Cash Flow Forecasting

# Why Is Cash Flow Forecasting Important?

# Small Example – Dining in Chicago

- GSA Rate is $93
  - Dinner: You want Deep Dish Pizza, House Salad, Bruschetta and a Coke – estimated cost: $65
  - Lunch: Hot Italian Beef Sandwich with Sweet Peppers, Fries and a drink – estimated Cost $20
  - Breakfast: You only have $8 left.  Hotel Breakfast or Doughnuts?

# Why is Cash Flow Forecasting So Important

- Ensure entity's liquidity of funds to meet payables needs
  - ✓ Avoid selling of investments to meet cash needs
- Be aware of receivables and payables
  - ✓ Early warning system of cash deficits or extra funds
- Avoid overdrafts!
  - ✓ Have all been there, but always important to avoid
- Be able to prepare for one time unique inflows and outflows
  - ✓ Know what's coming (e.g. Influx of ARPA funds, paying a legal settlement)
- Be able to invest appropriately
  - ✓ Investing strategies to meet liquidity needs
  - ✓ Making sure your money is working for you (limiting idle cash)

# Answer Four Simple Questions

- How much cash is available?
- When do you need cash?
- When will it become available?
- How long will it be available?

# Approach to Cash Flow Forecasting

- No need to think in budget years – what's happening today?
- Don't conflate a cash flow forecasting with fund balance
- Finding staff time to do this is difficult
  - ✓ Start and then it gets easier
- Yes, expenditures and revenues can be unpredictable but address that!
- Lack of information and communication can be addressed
  - ✓ Excellent opportunity to work with other departments/functions
  - ✓ Look to bank and other professionals who have the information you need
- Investment in Technology
  - ✓ Don't need anything fancy.  Vast majority of governments use EXCEL

# What is Missing When It is Not Done?

- Liquidity needs are not met/understood
- Entity could be too liquid
- Sale of investments at a loss to meet cash needs
- Interfund borrowing practices
- Missing out of investment opportunities

# Just DO IT!

**(ok but how do I do it?)**

# DISCUSSION QUESTION

- Does your entity do cash flow forecasting?
- Why or why not?
- Typical timeframe? (annual, monthly, weekly, daily, project, YES)

# How to Get Started

- Who is Involved?
  - ✓ Finance/treasury office
  - ✓ Budgeting office
  - ✓ Capital planning office
  - ✓ Other large departments where there are large payables and/or receivables
  - ✓ Investment adviser

- Outsourcing and Other Tools - Cash Flow Forecasting
  - ✓ Investment Adviser
  - ✓ Other outside professionals
  - ✓ ERP system
  - ✓ Cash flow programs

# Identify Revenues and Expenditures

- **Major revenue types**
  - Property tax
  - Sales tax
  - User fees
  - Bond proceeds
  - Non-recurring/Other:
    - Grants
    - Sale of assets

- **Major expenditure types**
  - Payroll and benefits
  - Operating expenses
  - Utilities/treatment charges
  - Debt service
  - Capital projects
  - Non-recurring/Other:
    - Land acquisitions
    - Legal settlements

# Know What's Coming

- Assumptions regarding how historical patterns will change due to current conditions
  - ✓ Labor negotiations
  - ✓ Changing benefit costs
  - ✓ Tax receipts

- Non-recurrent cash flows
  - ✓ Large purchases
  - ✓ Debt—new issuance and principal payments
  - ✓ Legal settlements

# Gathering Information - 101

- Collect the Information
  - ✓Annual budget
  - ✓General ledger
  - ✓Capital plan
  - ✓Investment reports
- Beginning Cash Balance
- Establish Cushion
  - ✓How to determine amount

# Gathering Information - 201

- Fine Tuning
  - ✓ Detailed financial information
    - Revenue streams
      - Routine
      - Seasonal
    - Expenses
      - Routine
      - Periodic/seasonal
  - ✓ Bank and pool statements
  - ✓ Review past budget and financial reports
  - ✓ Capital project spending projections
  - ✓ Talk with other departments to understand their needs
  - ✓ Investment snapshot – schedule of maturities and coupon payments

# Forecasting Receipts

- Identify 3-5 categories for major sources of revenue
- Compile historical data of actual monthly receipts
- Identify significant changes
- Identify non-recurring items from prior years and for coming year
- Develop analysis of monthly receipts as a percent of annual
- Adjust historical distribution for known differences

# Forecasting Disbursements

- Establish reasonable number of categories
- Compile historical data of actual monthly disbursements
- Identify significant changes
- Identify non-recurring items from prior years and for coming year
- Develop analysis of recurring monthly disbursements as a percent of annual
- Adjust historical distribution for known differences
  - ✓ E.g. Seasonal issues/parks

# Forecasting Disbursements

- **Examples of reasonable number of categories**
  - ✓ Payroll--biweekly
  - ✓ Treatment charges (e.g. utility, water, etc.) —monthly
  - ✓ Departmental non-payroll costs —biweekly (vendors)
  - ✓ Capital projects—variable
  - ✓ Debt service
  - ✓ Pension fund contributions

# Forecasting Non-Recurring Items

- **Look at non-recurring receipts**
  - ✓ Bond proceeds, sale of assets, etc.

- **Factor in non-recurring disbursements**
  - ✓ Capital projects, capital purchases

- **Work with engineers or project managers to develop estimates for capital projects**

- **Work with department heads for timing of capital purchases**

# Assemble Receipts and Disbursements Forecasts into a Cash Flow Forecast

- Beginning cash balance
- Monthly revenue (receipts) projections
- Monthly expenditure (disbursements) projections
- Ending cash balance

# Types of Cash Flow Forecasts

# Types of Forecasts

- What are YOUR needs?
- What are forecasts for?
  - ✓ Your own peace of mind
  - ✓ For the finance office
  - ✓ For others
  - ✓ For strategy purposes
- Rolling Annual (at least!!)
- Quarterly
- Monthly
- Weekly
- Daily
- Project Based
- Special Events in Receivables or Payables

# Types of Cash Flow Forecasts

- **Rolling Annual Forecast**
  - ✓ Estimates monthly cash position
  - ✓ Determines cash available for investments of more than 30 days
  - ✓ Provides a useful monthly overview for investment decision-making
  - ✓ Prepared for this fiscal year and next one to three fiscal years

# Annual Example

| | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|
| | | | | | |
| Beg. Balance: | $ 500 | $ 1,060 | $ 1,702 | $ 2,431 | $ 3,254 |
| | | | | | |
| Receipts: | | | | | |
| Property Tax | $ 7,820 | $ 8,055 | $ 8,296 | $ 8,545 | $ 8,801 |
| Sales Tax | $ 3,050 | $ 3,126 | $ 3,204 | $ 3,285 | $ 3,367 |
| Utility Billing | $ 4,400 | $ 4,620 | $ 4,851 | $ 5,094 | $ 5,348 |
| Other | $ 120 | $ 124 | $ 128 | $ 132 | $ 136 |
| Total | $15,390 | $15,925 | $16,479 | $17,055 | $17,652 |
| | | | | | |
| Disbursements: | | | | | |
| Payroll | $13,454 | $13,858 | $14,273 | $14,702 | $15,143 |
| Payables | $ 780 | $ 811 | $ 844 | $ 877 | $ 912 |
| Capital projects | $ 458 | $ 476 | $ 495 | $ 515 | $ 536 |
| Debt Service | $ 138 | $ 138 | $ 138 | $ 138 | $ 138 |
| Total | $14,830 | $15,283 | $15,750 | $16,232 | $16,729 |
| | | | | | |
| End Balance: | $ 1,060 | $ 1,702 | $ 2,431 | $ 3,254 | $ 4,177 |

# Types of Cash Flow Forecasts

- **Monthly forecast**
  - ✓Estimates weekly cash position
  - ✓Determines cash available for investments of less than 30 days
  - ✓Monitors accuracy of annual forecast

# Monthly Cash Flow Forecast

| | Jan | Feb | Mar | Apr | May | Jun | Total |
|---|---|---|---|---|---|---|---|
| **Beg. Balance:** | $500 | $2,585 | $3,044 | $2,401 | $1,669 | $1,226 | $500 |
| **Receipts:** | | | | | | | |
| Property tax | $2,775 | $975 | $50 | $10 | $50 | $50 | $3,910 |
| Sales tax | $250 | $375 | $200 | $200 | $250 | $250 | $1,525 |
| Utility billing | $300 | $300 | $300 | $300 | $500 | $500 | $2,200 |
| Other | $10 | $10 | $10 | $10 | $10 | $10 | $60 |
| Total | $3,335 | $1,660 | $560 | $520 | $810 | $810 | $7,695 |
| **Disbursements:** | | | | | | | |
| Payroll | $1,130 | $1,103 | $1,103 | $1,103 | $1,144 | $1,144 | $6,727 |
| Payables | $65 | $65 | $65 | $65 | $65 | $65 | $390 |
| Capital projects | $32 | $33 | $35 | $38 | $44 | $47 | $229 |
| Debt Service | $23 | $0 | $0 | $46 | $0 | $0 | $69 |
| Total | $1,250 | $1,201 | $1,203 | $1,252 | $1,253 | $1,256 | $7,415 |
| **End Balance:** | $2,585 | $3,044 | $2,401 | $1,669 | $1,226 | $780 | $780 |

# Types of Cash Flow Forecasts

- **Weekly forecast**
  - ✓ Estimates daily cash position
  - ✓ Determines cash available for investments of less than 7 days
  - ✓ Monitors accuracy of monthly forecast

# Weekly Forecast

| Date: | Jan 2-8 | Jan 9-15 | Jan 16-22 | Jan 23-29 | Total |
|---|---|---|---|---|---|
| Week: | 1 | 2 | 3 | 4 | |
| | | | | | |
| Beg. Balance: | $ 500 | $ 520 | $ 240 | $ 1,800 | $ 500 |
| | | | | | |
| Receipts: | | | | | |
| Property Tax | $ 10 | $ 40 | $ 1,570 | $ 1,155 | $2,775 |
| Sales Tax | $ 10 | $ 10 | $ 30 | $ 200 | $ 250 |
| Utility Billing | $ 10 | $ 250 | $ 30 | $ 10 | $ 300 |
| Other | $ 5 | $ - | $ - | $ 5 | $ 10 |
| Total | $ 35 | $ 300 | $ 1,630 | $ 1,370 | $3,335 |
| | | | | | |
| Disbursements: | | | | | |
| Payroll | $ - | $ 565 | $ - | $ 565 | $1,130 |
| Payables | $ 15 | $ 15 | $ 15 | $ 20 | $ 65 |
| Capital projects | $ - | $ - | $ 32 | $ - | $ 32 |
| Debt Service | $ - | $ - | $ 23 | $ - | $ 23 |
| Total | $ 15 | $ 580 | $ 70 | $ 585 | $1,250 |
| | | | | | |
| End Balance: | $ 520 | $ 240 | $ 1,800 | $ 2,585 | $2,585 |

| Jan 30-Feb 5 | Feb 6-13 | Feb 14-21 | Feb 22-28 | Total |
|---|---|---|---|---|
| 5 | 6 | 7 | 8 | |
| | | | | |
| $ 2,585 | $ 3,495 | $ 3,245 | $ 3,292 | $2,585 |
| | | | | |
| | | | | |
| $ 900 | $ 50 | $ 20 | $ 5 | $ 975 |
| $ 15 | $ 15 | $ 45 | $ 300 | $ 375 |
| $ 10 | $ 250 | $ 30 | $ 10 | $ 300 |
| $ - | $ - | $ - | $ 10 | $ 10 |
| $ 925 | $ 315 | $ 95 | $ 325 | $1,660 |
| | | | | |
| | | | | |
| $ - | $ 550 | $ - | $ 553 | $1,103 |
| $ 15 | $ 15 | $ 15 | $ 20 | $ 65 |
| $ - | $ - | $ 33 | $ - | $ 33 |
| $ - | $ - | $ - | $ - | $ - |
| $ 15 | $ 565 | $ 48 | $ 573 | $1,201 |
| | | | | |
| $ 3,495 | $ 3,245 | $ 3,292 | $ 3,044 | $3,044 |

# Types of Cash Flow Forecasts

- **Daily forecast**
  - ✓ Predicts available fund balances
  - ✓ Based on actual bank balances
  - ✓ Operational in nature

# Daily Forecast

| | 2-Jan | 3-Jan | 4-Jan | 5-Jan | 6-Jan | Total | 9-Jan | 10-Jan | 11-Jan | 12-Jan | 13-Jan | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Beg. Balance: | $500 | $501 | $506 | $511 | $515 | $500 | $520 | $ 530 | $ 542 | $ 564 | $ 773 | $ 520 |
| | | | | | | | | | | | | |
| Receipts: | | | | | | | | | | | | |
| Property Tax | $ - | $ - | $ - | $ 10 | $ - | $ 10 | $ - | $ - | $ - | $ 40 | $ - | $ 40 |
| Sales Tax | $ - | $ 2 | $ 2 | $ 4 | $ 2 | $ 10 | $ - | $ 2 | $ 2 | $ 4 | $ 2 | $ 10 |
| Utility Billing | $ - | $ 2 | $ 2 | $ 4 | $ 2 | $ 10 | $ 10 | $ 10 | $ 20 | $ 180 | $ 30 | $ 250 |
| Other | $ 1 | $ 1 | $ 1 | $ 1 | $ 1 | $ 5 | $ - | $ - | $ - | $ - | $ - | $ - |
| Total | $ 1 | $ 5 | $ 5 | $ 19 | $ 5 | $ 35 | $ 10 | $ 12 | $ 22 | $ 224 | $ 32 | $ 300 |
| | | | | | | | | | | | | |
| Disbursements: | | | | | | | | | | | | |
| Payroll | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 565 | $ 565 |
| Payables | $ - | $ - | $ - | $ 15 | $ - | $ 15 | $ - | $ - | $ - | $ 15 | $ - | $ 15 |
| Capital projects | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Debt Service | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Total | $ - | $ - | $ - | $ 15 | $ - | $ 15 | $ - | $ - | $ - | $ 15 | $ 565 | $ 580 |
| | | | | | | | | | | | | |
| End Balance: | $501 | $506 | $511 | $515 | $520 | $520 | $530 | $ 542 | $ 564 | $ 773 | $ 240 | $ 240 |

# Types of Cash Flow Forecasts

- **Project-based forecast**
  - ✓ Provides monthly data on status of capital projects
  - ✓ May require input from contractors or in-house project managers
  - ✓ Can be stand alone or be combined into consolidated cash forecast

# You DID IT!!!

(now what?)

# Determining Optimal Liquidity Position

- Daily, weekly, monthly needs
- Longer term six to twelve months projected net expenditures, or
- One year's annual budgeted expenditures, or percent of total portfolio
- Know thyself – multi year history of liquidity needs, risk tolerance
- With a "cushion" for the unknown

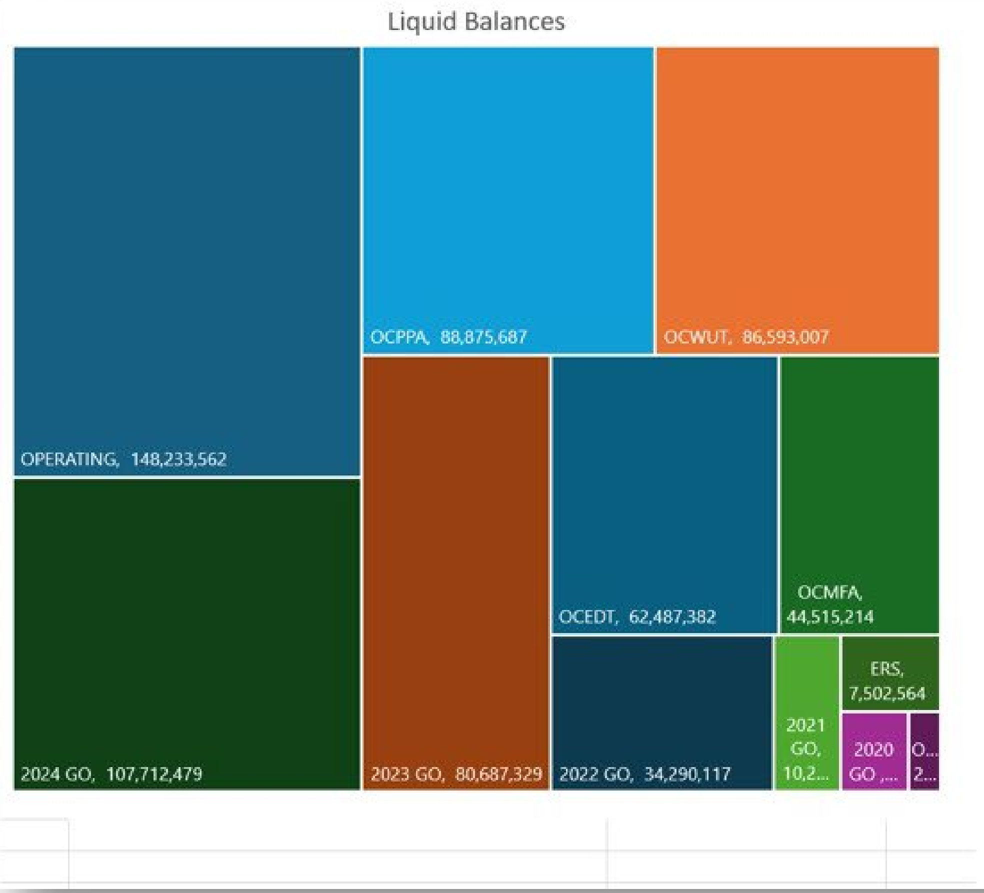
# Cash Flow Forecasts and Budgeting

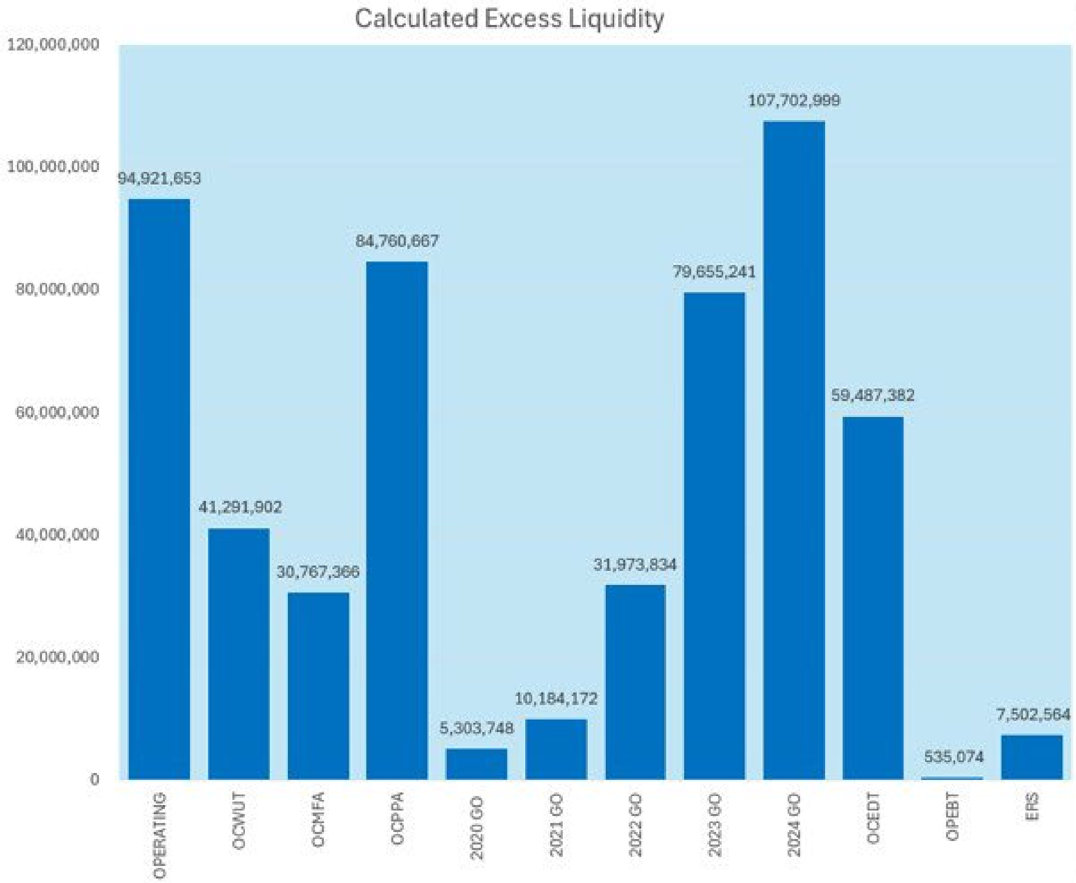
- Purpose and focus is similar, but different
- Complementary roles
- Interdependence
- Informed decision making
- Risk management

# OKC – Weekly Liquidity Analysis

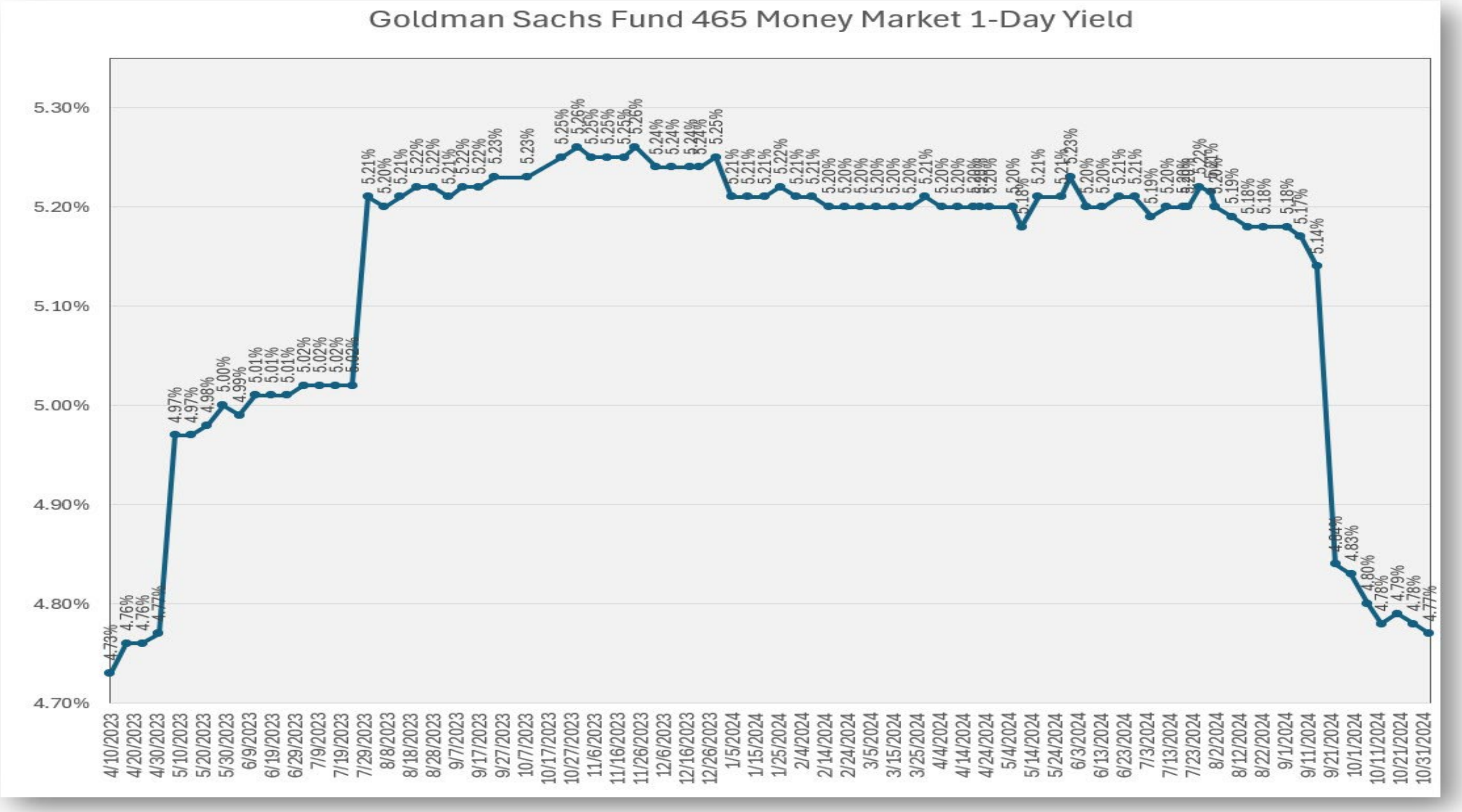
| Portfolio | Balance | Buffer | Excess liquidity | Status | Action |
|---|---|---|---|---|---|
| OPERATING | 148.2 | 53.3 | 94.9 | ✔ | |
| OCWUT | 86.6 | 45.3 | 41.3 | ✔ | |
| OCMFA | 44.5 | 13.7 | 30.8 | ✔ | |
| OCPPA | 88.9 | 4.1 | 84.8 | ✔ | |
| 2020 GO | 5.3 | 0.0 | 5.3 | ✔ | |
| 2021 GO | 10.3 | 0.1 | 10.2 | ✔ | I am separately providing Public Works with a detailed analysis for 2021 GO's liquidity position |
| 2022 GO | 34.3 | 2.3 | 32.0 | ✔ | |
| 2023 GO | 80.7 | 1.0 | 79.7 | ✔ | |
| 2024 GO | 107.7 | 0.0 | 107.7 | ✔ | |
| ERS | 7.5 | 0.0 | 7.5 | ✔ | |
| OCEDT | 62.5 | 3.0 | 59.5 | ✔ | |
| OPEBT | 2.5 | 1.5 | 0.5 | ✔ | |

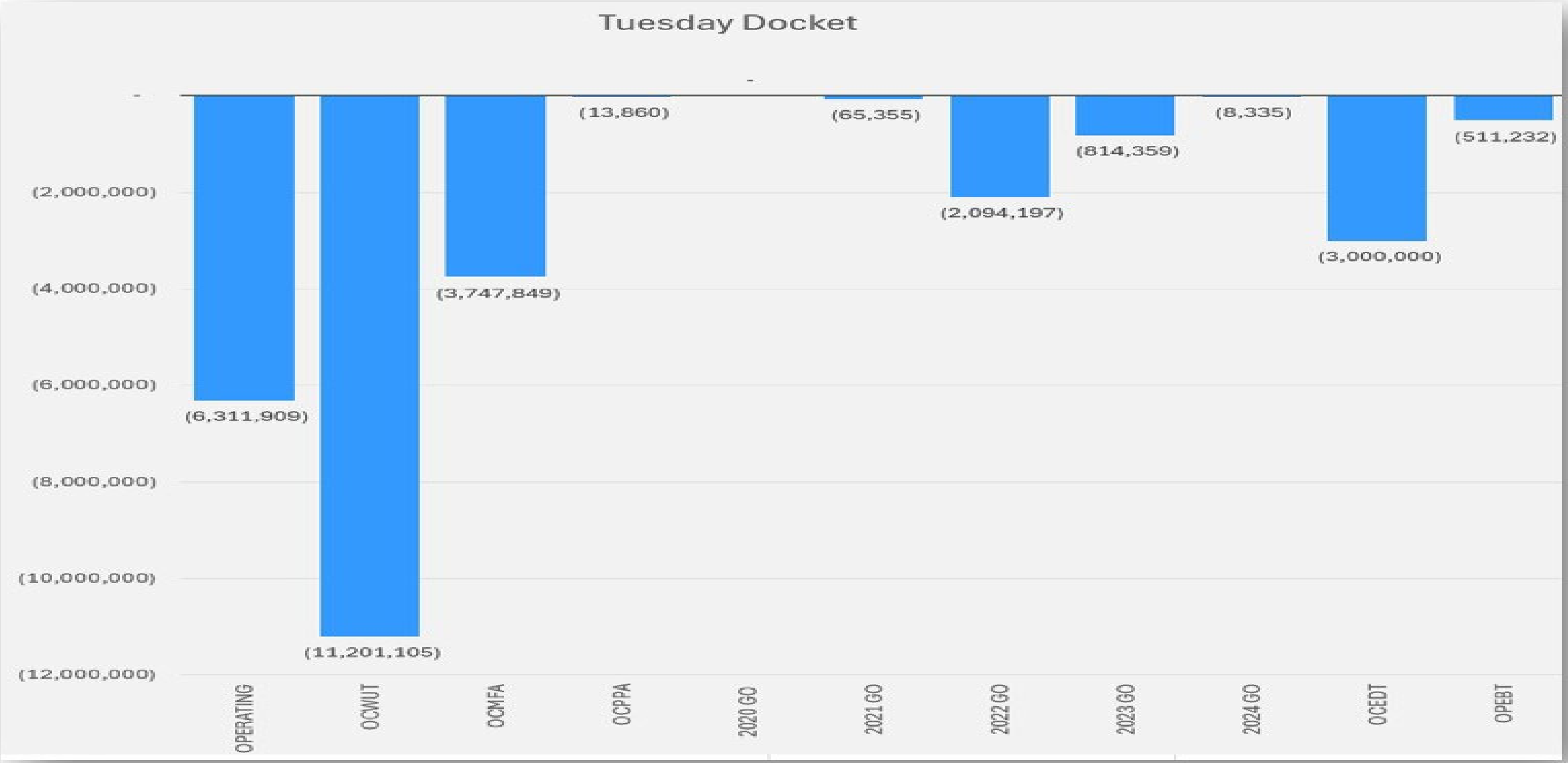
# OKC – Weekly Liquidity Analysis



# OKC – Weekly Liquidity Analysis





Tuesday Docket
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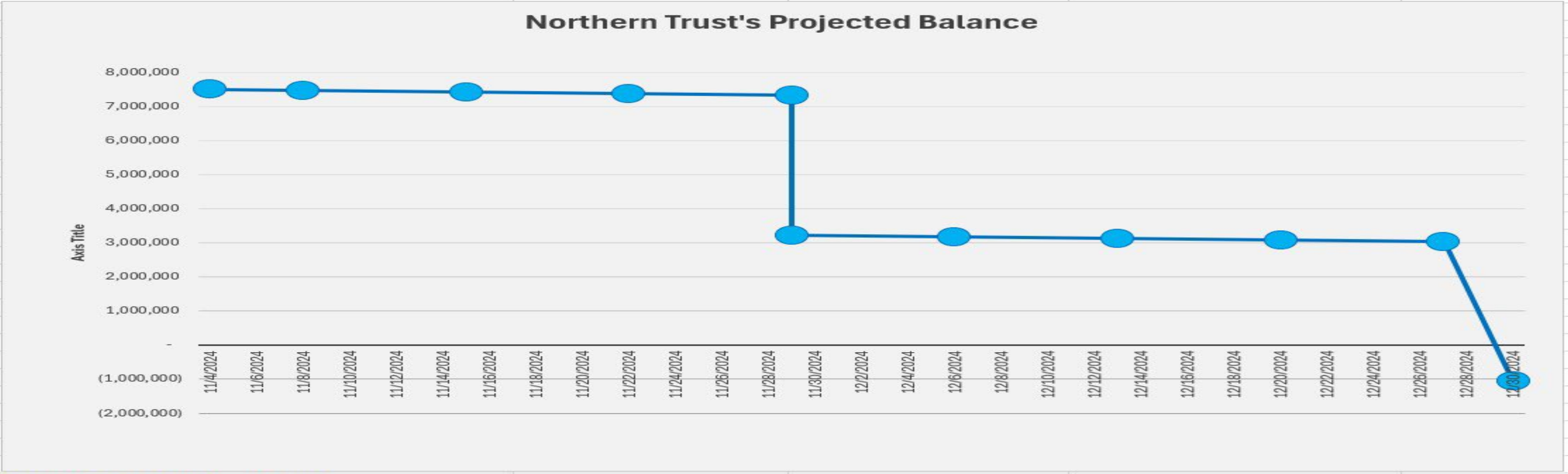
OPERATING
OCWUT
OCMFA
OCPPA
2020 GO
2021 GO
2022 GO
2023 GO
2024 GO
OCEDT
OPEBT

# OKC – Weekly Liquidity Analysis

**ERS LIQUIDITY ANALYSIS**

**ERS bank account balance at BOK:** 2,692,507

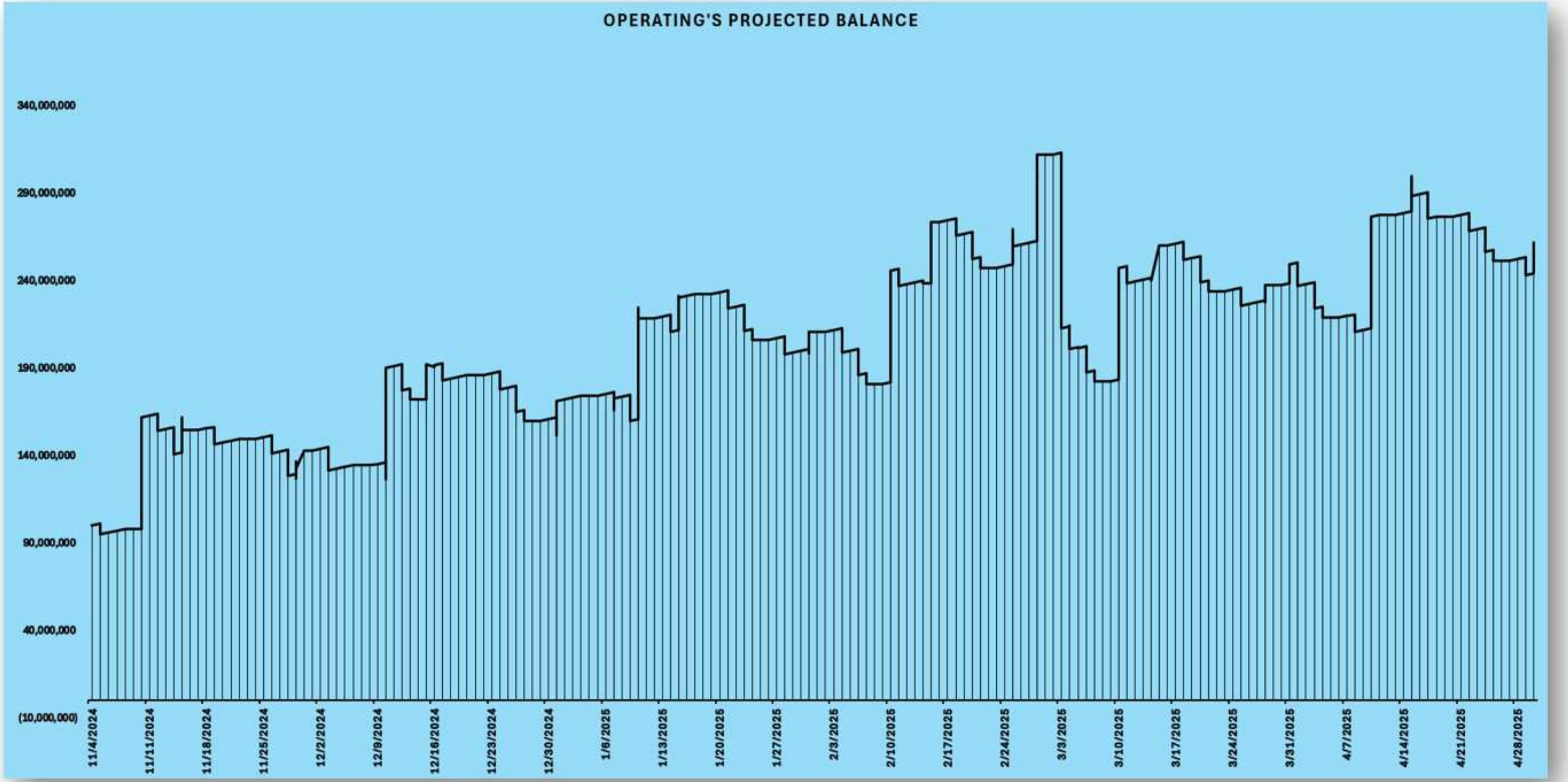
BOK ERS acct *****0114 → Northern Trst Master acct *****0152 → Northern Trst FFC Cash acct ****719 → Northern Trst Benefit Payment acct ****292




**Cash Balance in Northern Trust**

| | | | | |
|---|---|---|---|---|
| 11/4/2024 | Mon | NT Website Balance | | **7,502,564** |
| 11/8/2024 | Fri | Friday lump sum payments | (46,574) | 7,455,990 |
| 11/15/2024 | Fri | Friday lump sum payments | (46,574) | 7,409,416 |
| 11/22/2024 | Fri | Friday lump sum payments | (46,574) | 7,362,842 |
| 11/29/2024 | Fri | Friday lump sum payments | (46,574) | 7,316,267 |
| 11/29/2024 | Fri | EOM Pension Payments | (4,100,000) | 3,216,267 |
| 12/6/2024 | Fri | Friday lump sum payments | (46,574) | 3,169,693 |
| 12/13/2024 | Fri | Friday lump sum payments | (46,574) | 3,123,119 |
| 12/20/2024 | Fri | Friday lump sum payments | (46,574) | 3,076,545 |
| 12/27/2024 | Fri | Friday lump sum payments | (46,574) | 3,029,971 |
| 12/30/2024 | Mon | EOM Pension Payments | (4,100,000) | (1,070,029) |

# OKC – Weekly Liquidity Analysis



# Cash Flow Forecasts and Investing

- Know state laws and permissible investments and duration of investments
- Know entity's investment policy about allowable investments and duration limitations
- Know your entity's liquidity needs, to have a better sense of when funds are needed to assist with investment strategies
- Know entity's risk/diversification strategies
- KEY OBJECTIVE:  You never want to have to sell at a loss to meet liquidity needs!
- Matching cash flow forecasts with investment strategies is essential

- **ALWAYS APPLIES:  First – SAFETY; Second – LIQUIDITY; Third – YIELD**

# Cash Flow Forecasts and Investing

- Putting Funds to Work (Safely)
  - ✓Match liquidity needs
    - Laddering
  - ✓Limit idle cash
  - ✓Investing for various time horizons
    - Overnight
    - Short Term
    - Mid Range
    - Longer Term
  - ✓Know your investment options for each duration

# Recap/GFOA Resources

# KEY TAKEAWAYS

- Cash Flow Forecasting Allows Entity to Know When Funds are Needed to Maintain Necessary Liquidity at Different Points in Time
- Cash Flow Forecasting is NOT about budgeting or accounting
- Cash Flow Forecasting Can Identify Funds Available for Investing
- Have Investment Policy, Risk Profile and Diversification Strategies in Place
- Know Permissible Investments IN YOUR STATE
- JUST DO IT!
- Want to Learn More About Investing – Check GFOA's Investment Courses!

# GFOA BP: Cash Flow Analysis

- Perform ongoing cash flow forecasting on at least a 12-month rolling period
- Depending on needs and government size determine how often a forecast should be done
- Use conservative assumptions
- Perform ongoing cash flow analysis to
  - Ensure cash liquidity and limit idle cash
  - Recognize structural issues impacting cash position

# GFOA BP: Cash Flow Analysis

- Components of analysis should include:
  - Pooled cash portfolio of unrestricted operations
  - Consider historical information and projected financial activity
  - Compare actual cash flow to projections to assist with future projections
  - Make conservative cash receipts and disbursements assumptions
  - Monitor cash position DAILY to ensure sufficient liquidity
  - Select appropriate tool for cash flow analysis

# Review and Maintain Cash Flow Forecast

- Compare actual versus forecast
- Identify reasons for variances
- Adjust assumptions if warranted
- Follow up with department heads on capital project slippage
- Update database for accurate future projection
- Retain documentation for future reference
- Addressing unexpected issues including non-entity based factors
  - Influx of federal funds
  - Litigation

# Fraud Prevention and Internal Controls

# GFOA Advisory: Fraud Prevention in the Treasury Office

- FRAUD HAPPENS!
- Effective fraud prevention is the result of – internal controls, technology, and education/training.
- Limit exposure, reduce vulnerabilities and safeguard public assets.
- Know Federal (Reg E), state, and local laws regarding fraud
- Internal Fraud Examples
  - ✓ Stealing/mishandling currency
  - ✓ Mishandling checks
  - ✓ Misleading/mishandling invoicing
  - ✓ Mishandling deposits, reconciliation, and reporting
  - ✓ Corruption
  - ✓ Financial statement fraud
  - ✓ Misuse of p-cards and other payable accounts

# GFOA Advisory:
# Fraud Prevention in the Treasury Office

- External Fraud Examples
  - ✓ Counterfeit currency
  - ✓ Check manipulation
  - ✓ SIDE NOTE: CHECK FRAUD/STOLEN CHECKS = HUGE PROBLEM
  - ✓ Credit card fraud
  - ✓ ACH/wire transfer fraud using phishing, spearfishing, smishing, and/or impersonation of government or vendor executives
  - ✓ Manipulation of vendor information and invoices
  - ✓ Cyber threats to the entire government website that could impact the Treasury Office

# GFOA Advisory: Fraud Prevention in the Treasury Office

- General Recommendations
  - ✓ Know your state and local laws!
  - ✓ The tone at the top
  - ✓ Have well-structured fraud identification and reporting systems
  - ✓ Have clearly defined fraud policy given to all employees
  - ✓ Execute in house fraud training (more than once)
  - ✓ Determine who has authority to report fraud to authorities
  - ✓ Conduct internal audits to assess effectiveness of fraud controls
  - ✓ Ensure proper segregation of duties
  - ✓ Do not publicly disseminate banking/account information
  - ✓ Ensure account information and document storage and destruction policies are in place and performed
  - ✓ Have appropriate fraud mechanisms in place at times of crisis
  - ✓ Consider pre-emptive support services for employees

# GFOA Advisory: Fraud Prevention in the Treasury Office

- Banking Issues
  - ✓ Use filtering and blocking options on ALL accounts
  - ✓ Use banking services designed to detect and prevent fraud
    - Positive pay – payee positive pay - NOT reverse positive pay
    - Reconciliation tools
  - ✓ Reconcile bank accounts daily to identify fraud transactions
  - ✓ Check with banks within your jurisdiction at least annually to see where your tax ID number may be associated with unauthorized accounts
  - ✓ Consider consolidating accounts
  - ✓ Use secure channels when communicating with banks
  - ✓ Review signature cards and authority levels
  - ✓ Have financial institutions provide a quarterly listing by account of all approved signers
  - ✓ Use multi-factor identification for on-line banking services

# GFOA Advisory:
# Fraud Prevention in the Treasury Office

- ACH/Wire Transfers
  - ✓ Utilize ACH blocks and filters
  - ✓ Have authorized list who can execute these transactions
  - ✓ Require two party authorizations
  - ✓ Define when wires will be submitted and any limits
  - ✓ Daily reconciliations of all ACH and wires
  - ✓ Use the PHONE to call bank or vendor regarding any unexpected or suspect wire transfers

- P-Cards and Credit Cards
  - ✓ Have procedures in place for card usage and responsibilities
  - ✓ Institute audit policies and procedures
  - ✓ PCI compliance

# GFOA Advisory:
# Fraud Prevention in the Treasury Office

- Checks
  - ✓ Utilize electronic methods over paper!
  - ✓ Have a review process for checks over a certain amount
    - Reports to council or commission for approval
  - ✓ Use controlled disbursement accounts (CDA)
  - ✓ Maintain check stock in a secure location
  - ✓ Secure all signature plates, cards, etc.
  - ✓ Autonumbering checks through the financial accounting system
  - ✓ Use watermark/chemically sensitive paper for checks
  - ✓ Void undeposited checks after 6 months and remove positive pay from those checks
  - ✓ If outsourcing payables, make sure there are fraud prevention measures in place

# GFOA Advisory:
# Fraud Prevention in the Treasury Office

- Receivables
  - ✓ Have robust cash handling and credit card training for employees that includes chain of custody for cash between acceptance at government and the deposit at the bank
  - ✓ Train employees on detecting counterfeit currency (US Secret Service)
  - ✓ Train employees on detecting fraudulent checks
  - ✓ Use secure methods to deposit checks
  - ✓ Have up to date credit card processing infrastructure
    - **INCLUDING BEING PCI COMPLIANT**
  - ✓ NACHA compliance controls (for ACH payments)
  - ✓ Make sure online processor is secure

# Internal Controls

# Internal Controls

- Internal controls are designed to ensure assets are protected from loss, theft or misuse and should address the following areas:
  - ✓ Why fraud happens
  - ✓ Staff training
  - ✓ Control of collusion
  - ✓ Clear delegation of authority to subordinate staff members
  - ✓ Review and dual authorization of wire transfers
  - ✓ Written confirmation/documentation of investments and wire transfers
  - ✓ Separation of investment transaction authority from accounting and recordkeeping
  - ✓ Third-party safekeeping of assets

# Internal Controls

- Authorizations
  - ✓ Clear lines of authority
  - ✓ Level of authorizations spelled out in procedures
- Compensating Controls
  - ✓ Mandatory vacations
  - ✓ Rotating jobs
- Pre-Employment Screening (<u>know your state laws!</u>)
  - ✓ Check references and credentials
  - ✓ Strict screening for financial positions with bona fide security requirements
  - ✓ Criminal activity background check

# Internal Controls

- Describe the organizational structure and staff duties
  - ✓ Outline consequences for noncompliance
- Include governing statutes, regulations, policies, etc.
- Specify limitations of employee authority
- Detail procedures for all activities with flowcharts
- Define required documentation – forms and samples
- Include timelines for report preparation and distribution
- Outline backup and disaster recovery procedures
- Require regular reviews and updates

# Fraud Prevention: Working with Your Bank

- It is always important to have a strong, open line of communication with your banker(s) and other financial institution professionals.
- Ways they can assist with fraud matters include:
  - ✓ Positive pay services
  - ✓ Third party verification program
    - Early Warning/National Shared Database
  - ✓ Alerts and systems to prevent fraud
  - ✓ P2P (e.g., Zelle)
  - ✓ Notification of broader fraudulent matters (cybersecurity attacks, etc.)
- Include fraud prevention and notification matters in your Banking Services RFP!

# Internal Controls/Segregation of Duties - WD

- Program management – 5 person office
  - Cashier – Front window, drop box, mail
  - UB – Retail and E-Lockbox, online CC payments
  - Accounting Manager – Auto-debit and recurring CC
  - Analyst – Reviews daily reports, addresses discrepancies
  - Finance Director – Assists as needed, oversight of ongoing issues
- Smaller government issues
  - Segregation of duties
  - Ability/appetite to modernize systems
    - Cost prohibitive, unpopular, staffing
  - Access to resources
  - Knowledge of new programs/offerings

# Discussion

- Fraud Prevention: tips and concerns
- What about for Small Governments??

# Case Studies

# Vendor Fraud – KCMO Case Study

- ✓GFOA colleagues alerted me to issues with vendor fraud being experienced by other cities
  - City immediately created a policy around making changes to banking and other vendor information
- ✓City was warned of vendor fraud attempts from large construction contractor frequently used by the City
- ✓A few months later, a fax came in with a request to change banking info for this vendor
  - Despite the warnings, the employee didn't follow the written procedure
  - Red Flags!

# Vendor Fraud – KCMO Case Study

✓ Next invoice from that vendor was approved for payment and we sent over $1 million to a fraudulent account

- We found out very quickly (within days) because yet another warning came from the vendor about attempted fraud
  - This made the employee question the change she had recently made so she reviewed it and came forward

# Vendor Fraud – KCMO Case Study

- ✓ After the initial panic, we contacted the following:
  - Our bank – requested ACH reversal – they would do what they could but most likely the money was gone
  - City's Risk Manager to see if cyber insurance would cover us – it didn't
  - The Police Department who got us in touch with the FBI
    - FBI was already working the case due to other attempts and immediately froze the account
- ✓ Happy ending for the City – we got 100% of the money back
- ✓ Sad ending for the employee – she was terminated for failing to follow procedures

# Vendor Fraud – KCMO Case Study

- Lessons learned
  - ✓ We had one person doing too much
    - No review or approval of her actions related to changing vendor info
  - ✓ Policies and procedures only work if people follow them
  - ✓ Prompted a review of cyber insurance coverage
  - ✓ Learned who to contact
  - ✓ We got lucky…a perfect storm

# Internal P-Card Fraud

✓Internal Fraud Case Study:

- Buncombe County

LOCAL

**Ex-Buncombe manager Wanda Greene, son indicted: Embezzlement, wire fraud among charges**

Jennifer Bowman The Citizen-Times

Published 8:11 a.m. ET Apr. 5, 2018 | **Updated 2:23 p.m. ET Aug. 30, 2018**

# Ex-Buncombe Manager, son indicted

- ✓County Manager Wanda Greene charged with embezzlement and wire fraud
  - Also charged was her son, former county employee Michael Greene
- ✓County-issued credit cards misused
  - $200k in improper purchases over a decade
  - Also tied to a county commissioner
  - Personal purchases
  - Split transactions to avoid single transaction limit
  - Purchase of gift cards
- ✓Other improper spending

# Ex-Buncombe Manager, son indicted

- ✓ Purchases included:
  - Alcohol
  - Tires and installation
  - Memberships at Sam's Club
  - DVDs
  - Tickets to a show in NYC
  - Payments to Verizon for account charges
- ✓ Wanda Greene had two cards at one time and made photocopies of staff member cards

# Ex-Buncombe Manager, son indicted

- What went wrong?
  - ✓ Need a p-card policy including training on what to do/not do
  - ✓ No p-card approval policy – they approved their own transactions
    - Need at least one level of approval and two would be even better
  - ✓ Should a top administrator have their own card?
    - It's okay so long as the Board/Council/Commission directly approves the transactions
  - ✓ MCC code limits were missing
    - Won't stop everything but when combined with an approval layer, it should flag transactions
  - ✓ Cardholders shared their card numbers
    - Could mitigate with clear policies so that employees don't feel pressured to do something their boss ordered them to do
  - ✓ No regular audit by an independent person outside of the approval chain
  - ✓ No periodic review of transactions to look for split transactions violating the single transaction limit

# External Vendor Fraud

✓ External Fraud Case Study:

- Rock Island County, IL

ROCK ISLAND COUNTY

**Emails show how Rock Island County auditor's office duped by scammers for $115K**

Sarah Hayden Aug 26, 2021 Updated Feb 22, 2022 3

# Phishing Scam - Rock Island County

- Someone alleging to be a County contractor emailed County's Deputy Auditor requesting funds be wired to a new bank account
  - ✓ Email used Deputy Auditor's real name and contact information, as well as vendor's real name and contact information
  - ✓ Email included a forged letter from VP of Commercial Banking at Citizens Bank in Macomb, IL verifying the account and routing numbers
- Deputy Auditor makes ACH information changes herself based on documents attached in phishing email

# Phishing Scam – Rock Island County

- Scammers requested that any outstanding invoices be paid to new account
- Total of about $115,000 was paid to the fraudulent account
- Fraud was discovered when the real vendor contacted the County about missing invoices
- Deputy Auditor and Auditor both received votes of no confidence from County Board

# Phishing Scam – Rock Island County

- What went wrong?
  - ✓ Need internal controls for changing bank account information
    - Only one person was designated to make and submit changed vendor information for electronic payments
    - No one sought additional validation of changed electronic payment information, identity verification, etc.
    - Trusted attachments on an email ONLY. Did not complete an additional phone call or other communication touchpoint to determine if the change was legitimate.
    - Should have some lag time between changes to ACH information and payment issuance. The scammers in this case requested all invoices be redirected immediately.

# Emerging Trends and Technologies

# Contactless Payment

- Contactless payment utilizes near-field communication (NFC) to transmit encrypted credit card information to payment terminal
- More secure transaction that swiping credit cards but not additional transaction fee
- Does require a modern card terminal
- Can accept chip enabled credit cards, digital wallets (e.g., Apple Wallet, Google Wallet), and wearables
- Mobile terminals using cellular to take payments at offsite locations (parks, pool, events, etc.)

# Payment Apps

- Many consumers are used to using payment apps like PayPal, Zelle, Venmo, and CashApp
- On the receivables side, limited adoption as
  - Intended for Peer-2-Peer use P2P, not B2P
  - Limited reporting tools
  - Privacy concerns
  - Irreversible transaction


- On payment side, seeing some adoption with smaller payments (e.g., jury duty or poll worker) but still many of the same concerns as receivables

# QR Codes and Payment Portals

- Utilizing QR codes to direct patrons to payment portals
- Easily printed on envelopes, tickets, and invoices
- Use diligence when developing QR code as part of payment process for security concerns – work with payment provider if have one
- **RISK: QR codes are easy to replicate**

https://abc7.com/post/thieves-are-using-fake-qr-codes-parking-meters-scam-drivers-what-know-how-protect/15233420/

- Payment portals allow for easy, secure customer payments than can capture accounting information
- Ensure portal matches look and feel of municipality

# Interactive Voice Response (IVR)

- IVR payments allow customers to make payments over the phone without speaking to a representative

**Benefits**

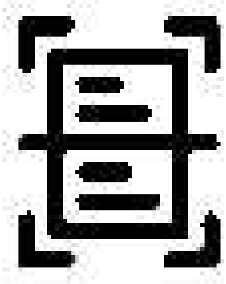
- 24 / 7 availability
- Long-term cost savings
- Increase security (as long as provider is PCI compliant)

**Risks**

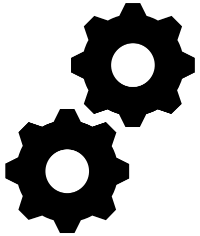
- Limited customer interaction
- "Misunderstanding" question and inaccurate responses
- Implementation costs can be high

# Optical Character Recognition (OCR) Invoices

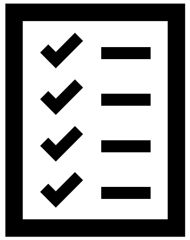
- Using AI and Machine Learning to extract data from supplier invoices to speed up the AP process
- Reduces manual entry, improves accuracy, and frees up employee time



Vendor can email invoice to generic inbox, systems scans document



System extracts and processes invoice information



Matches invoice to PO; AP begins review and payment processing

# Automated Bank Reconciliation

- Integration with ERP / accounting software and bank can reduce bank reconciliation process by 80%
- Matching system's accounting information and bank file (BAI2) to transactions
- Greatly reduces time to complete reconciliation process with reduction in errors
- Employees focus on exceptions and irregularities
- Assists with better understanding of cash position