

# CDIAC/CMTA Public Funds Investing

Session Six:  
Cash Flow Analysis for Portfolio Management  
Part One - Concepts

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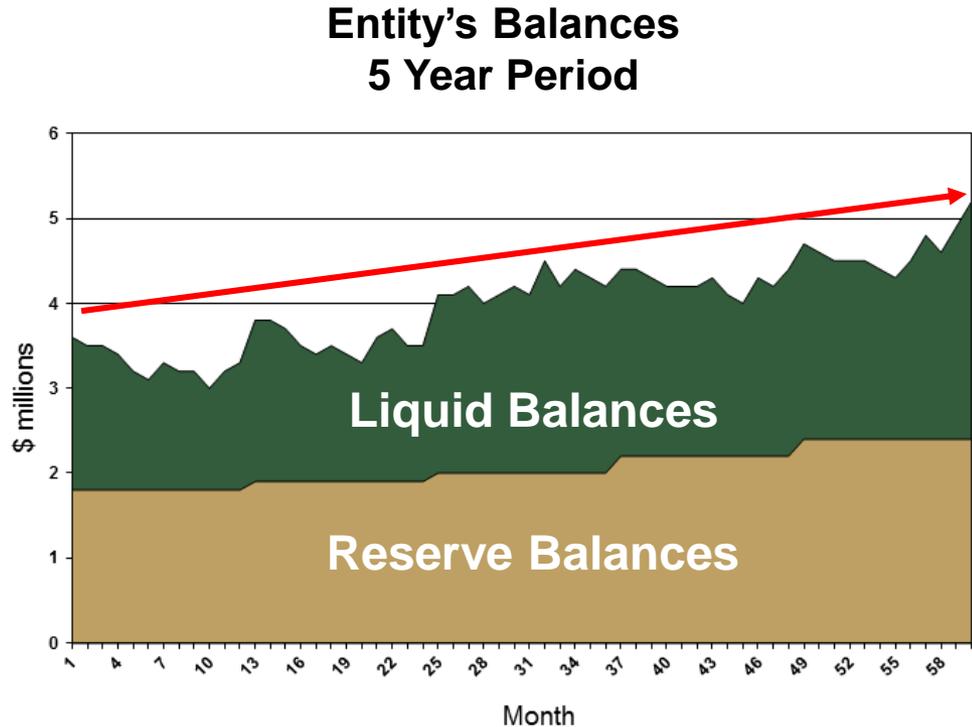
# What is a Cash Flow Forecast

- Projection of anticipated cash receipts
  
- Projection of anticipated cash disbursements
  
- To create an estimate of investable cash balances
  - Liquid funds
  - Reserve funds
  
- “Cash” is the operative word in “cash flow forecasting”.
  - It is not accruals or budgeted funds
  - Only cash is spendable or investable!



# Identify Liquid & Reserve Balances

- Total balances are trending higher
- But balances fluctuate throughout the year
- The “Liquid Balances” are established to meet cash needs
- The “Reserve Balances” are generally stable and available for longer-term more diversified investing





# Objectives of Cash Flow Forecasting

- Ensure sufficient liquidity for 6-12 month disbursements
  
- Improve investment earnings by
  - Matching sources and uses of funds
  - Investing reserve/core funds longer-term and more diversified
  - Managing investment risks
    - Liquidity risk
    - Market risk
  
- Identify Short-term Cash Deficits
  
- Warn of Impending Budget Problems



# Annual Cash Flow Forecasts

- 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



# Creating Annual Cash Flow Forecast

- Beginning balance of cash and investments
- Monthly revenue projections
- Monthly expenditure projections
- Projected net change
- Projected cumulative balance of cash and investments
- Schedule of current investments and coupon payments



# Identify Revenues and Expenditures

## ■ Major revenues

- Property tax
- Sales and use tax
- User fees
- Shared revenues
- Non-recurring
  - Bond proceeds
- Other

## ■ Major expenditures

- Payroll and benefits
- Operating expenses
- Debt service
- Capital projects
  - Draw-down schedule
- Non-recurring
- Other



# Sources of Information

- Historical Data from General Ledger
- Historical Data from Bank and Pool Statements
- Current Year Budget
- Capital Project Spending Projections
- Schedule of Investment Maturities and Coupon Payments



# Annual Cash Flow - Example

	Beg. Balance	Jan-15	Feb-15	Mar-15	Apr-15	May-15
<b>Liquid Fund Balances</b>	95,542,961	94,422,259	93,301,557	92,180,855	91,060,153	89,939,451
<b>Inflow</b>						
Sales Tax Collections		3,516,116	3,516,116	3,516,116	3,516,116	3,516,116
Property Tax Collections		10,507,259	10,507,259	10,507,259	10,507,259	10,507,259
Intergovernmental		10,264,623	10,264,623	10,264,623	10,264,623	10,264,623
Other Revenues		7,919,282	7,919,282	7,919,282	7,919,282	7,919,282
<b>Outflows</b>						
Personnel		(12,778,319)	(12,778,319)	(12,778,319)	(12,778,319)	(12,778,319)
Operating & Maintenance		(1,199,030)	(1,199,030)	(1,199,030)	(1,199,030)	(1,199,030)
Charges for Services		(11,597,717)	(11,597,717)	(11,597,717)	(11,597,717)	(11,597,717)
Debt Service		(1,093,706)	(1,093,706)	(1,093,706)	(1,093,706)	(1,093,706)
Other Expenses		(6,659,210)	(6,659,210)	(6,659,210)	(6,659,210)	(6,659,210)
<b>Actual/Projected Net Change</b>		<b>(1,120,702)</b>	<b>(1,120,702)</b>	<b>(1,120,702)</b>	<b>(1,120,702)</b>	<b>(1,120,702)</b>
<i>Projected Liquid Balance</i>		<i>94,422,259</i>	<i>93,301,557</i>	<i>92,180,855</i>	<i>91,060,153</i>	<i>89,939,451</i>
<i>Projected Invested Balance</i>		<i>141,565,000</i>	<i>141,565,000</i>	<i>141,565,000</i>	<i>141,565,000</i>	<i>141,565,000</i>
<b>Total Projected Balance</b>		<b>285,268,483</b>	<b>285,268,483</b>	<b>285,268,483</b>	<b>285,268,483</b>	<b>285,268,483</b>
<b>Actual Liquid Balance</b>		<b>85,862,465</b>	<b>203,231,573</b>	<b>124,216,038</b>	<b>201,625,430</b>	<b>150,181,434</b>
<b>Actual Invested Balance</b>		<b>141,565,000</b>	<b>146,645,000</b>	<b>146,645,000</b>	<b>146,645,000</b>	<b>149,645,000</b>
<b>Total Actual Balance</b>		<b>227,427,465</b>	<b>349,876,573</b>	<b>270,861,038</b>	<b>348,270,430</b>	<b>299,826,434</b>
<b>Difference</b>		<b>(57,841,018)</b>	<b>64,608,090</b>	<b>(14,407,445)</b>	<b>63,001,947</b>	<b>14,557,951</b>

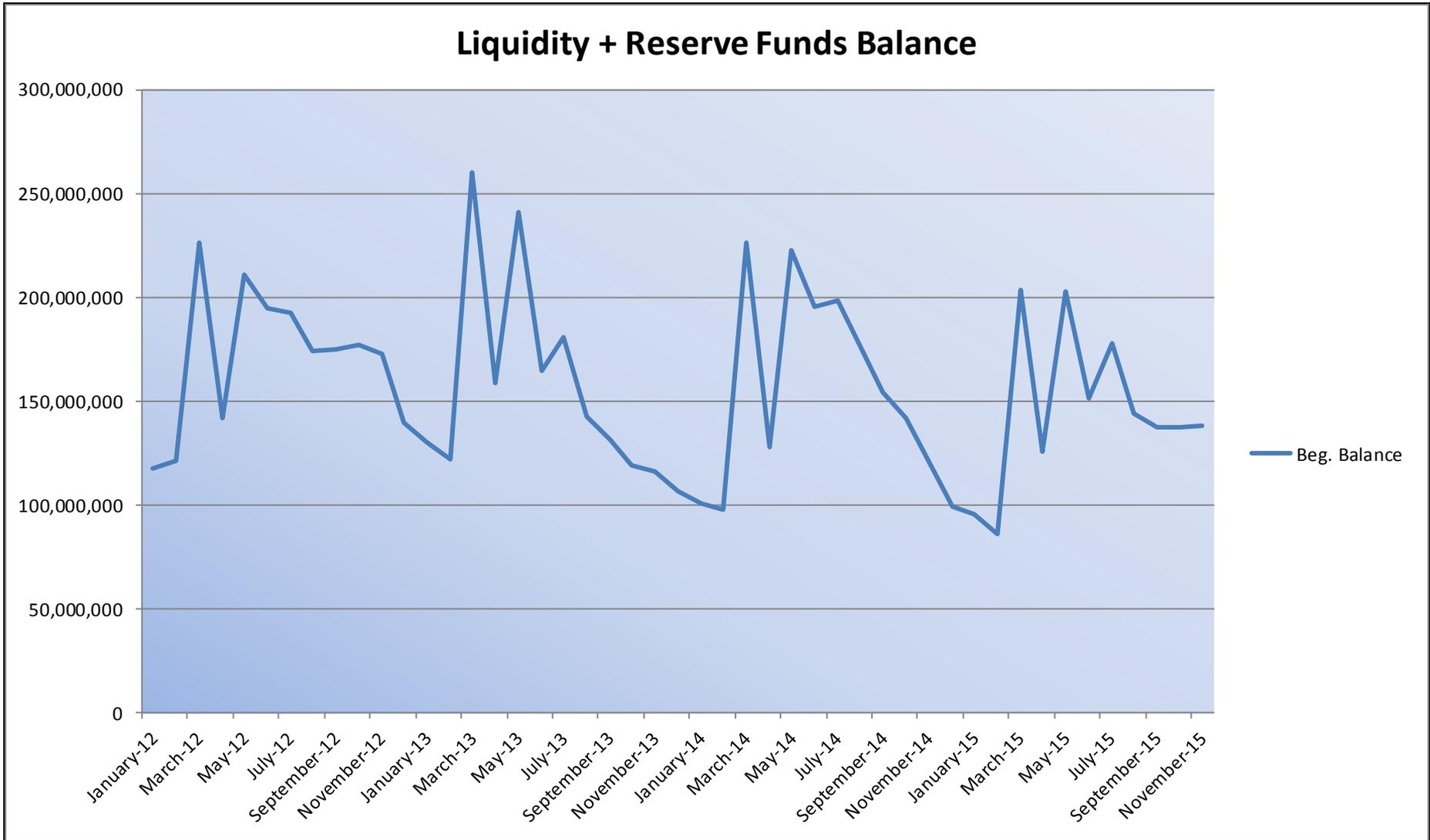


# Funds Balance Cash Flow

<b>Consolidated Cash Flow</b>				
<b>Funds Balance</b>				
<b>Month</b>	<b>Beg. Balance</b>	<b>Cash Inflows</b>	<b>Cash Outflows</b>	<b>Net Change</b>
January-15	95,542,961	243,572,384	-253,257,765	-9,685,381
February-15	85,857,580	143,962,217	-26,607,427	117,354,790
March-15	203,212,370	41,584,603	-119,098,784	-77,514,181
April-15	125,698,189	94,526,488	-17,116,990	77,409,497
May-15	203,107,686	33,277,738	-84,727,349	-51,449,611
June-15	151,658,075	102,278,132	-76,404,216	25,873,915
July-15	177,531,991	2,747,874	-36,416,262	-33,668,388
August-15	143,863,603	32,888,804	-39,493,932	-6,605,128
September-15	137,258,475	251,833,487	-251,697,780	135,707
October-15	137,394,182	242,834,825	-242,187,729	647,095
November-15	138,041,277	232,485,117	-239,719,807	-7,234,690
<b><u>For Period</u></b>				
Low Balance	\$85,857,580			
High Balance	\$259,994,231			
<b><u>Average Balance</u></b>				
Prior 12 Months	\$155,641,677			
Prior 36 Months	\$159,324,198			



# Graphing Balances Over Time





# Challenges to Developing Forecasts

- Systems
  - Limitations of computer systems for historical data or data management
  
- Physical structure
  - Locations of people
  
- Political
  - Elected officials agenda
  
- Inter-departmental communications
  - Departments not understanding importance of information



# 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