



## Effective Matching of Maturities to Cash Flow Requirements

By Perry E. James III

By matching investment maturities to its cash flow requirements, the City of Raleigh has been able to increase investment earnings while ensuring adequate liquidity for short-term needs.

Investing governmental cash assets carries the special responsibility of balancing the desire to maximize investment yields with the need to minimize risk. Government finance officers are often reminded that prudent investing encompasses three primary objectives, in order of decreasing importance: safety, liquidity, and yield. These objectives have assumed even greater significance now that many governments face the temptation to compensate for dwindling revenues with increased investment income.

In 1997, GFOA promulgated a recommended practice entitled “Maturities of Investments in a Portfolio.” Recognizing the inherent price volatility of longer maturities and the liquidity needs that all governments face in their day-to-day operations, GFOA recommended an overall investment strategy for state and local governments that matches investment maturities with anticipated cash flow requirements. Specifically, the practice recommends that governments not invest in securities maturing more than five years from the date of purchase, that they adopt weighted average maturity limitations, and that a portion of the portfolio be invested in readily available funds such as local government investment pools and money market funds.

### AN INVESTMENT PARTNERSHIP

Like many governments, the City of Raleigh, North Carolina, has done a good job of responsibly investing its money in compliance with the three objectives noted above. Until recently, however, the city had not been able to fine tune its

investment program to accurately match maturities with its future cash flows. Raleigh was finally able to address this challenge in 2001 when a public finance organization presented to finance staff a cash flow model it had developed as part of its investment consulting practice. By efficiently matching investments to daily net cash flow, the model enables governments to take advantage of the natural positive slope of the yield curve by extending the average life of the portfolio.

Raleigh retained this firm as its investment advisor and has since incorporated the cash flow model into the city’s enhanced investment program. The central feature of this program is the use of the model to target the dates when cash flow from investments is needed to meet the city’s expenditures. This model is part of an overall investment partnership between the city and its investment advisor. While the city is still the manager of the investment program, there is new emphasis on purchasing investments within the parameters of a detailed investment plan that is updated in a report presented to the city each quarter. The city follows the investment plan, makes the purchases called for in the plan, and submits to the investment advisor each week the results of investment activity and actual cash flows (both revenues and disbursements).

### CASH FLOW MODELING

The process of managing the cash flow model involves both a look backward and a look forward. Looking backward, the comparison of the actual receipts for the previous quarter to the cash flow projec-

tions provides feedback on the validity of previous assumptions and assists in mapping future projections. Looking forward, the city correlates projected cash receipts, projected cash disbursements, and maturing investments to determine new investment maturity requirements. While there are normally a few shorter-term gaps to fill with a new maturity, the majority of new investments are placed at the longer end of the yield curve.

Obviously, there is a great deal of uncertainty involved in projecting the cash flows that are built into the model. The city manages this uncertainty by ensuring that its portfolio includes an adequate amount of liquid investments that can be quickly cashed out to meet operating needs. The uncertainty of cash flow forecasting is moderated by the fact that like other governments, a large proportion of Raleigh's cash flows are regular and predictable.

At least once each year, the finance department performs a detailed review of changes in key projection amounts for the next year. During this review, the city provides the investment advisor with new budget amounts, new distribution dates for key intergovernmental receipts, projected issuance dates for authorized bonds, and any other information that could impact projected cash flows.

In developing the initial cash flow model with the investment advisor in 2001, the city built into the model two tiers of liquidity to provide needed capacity for handling unforeseen cash needs. Raleigh officials decided that these liquid resources should be managed outside the government. As such, the city invested \$10 million in a local government investment pool and \$25 million with a portfolio manager. By agreement with the portfolio manager, the target average investment maturity is six months, with

individual maturities permitted up to two years, on the condition that the city can withdraw funds as needed without penalty. Since Raleigh began using the cash flow model two years ago, the accuracy of the projections has been such that the city has managed its cash flow variances entirely within the \$10 million of first-tier funds in the investment pool.

The quarterly meetings between the city and its investment advisor provide an opportunity to review the status of the investment program, including targeted asset allocations, portfolio performance, actual versus projected cash flows, the performance of the external manager, dealer concentration, proposed investment purchases, and the daily forecast of receipts and disbursements. Based on this review, the investment advisor prepares a detailed investment plan for the city. The plan includes a "buy list" for the next quarter that provides a list, by date, of

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all projected cash flow needs that require an investment maturity.

The city has used several means to solicit investments that match specific maturity requirements identified in the buy list. Originally, the city sent potential brokers a formal bid solicitation requesting price bids for specific dates and instruments. While this worked well in many respects, ultimately it evolved into a more flexible process in which dealers now offer multiple maturities and the city's investment manager then matches them with the needs on the buy list. Competitive pricing is verified through communications with other dealers, and the independent investment advisor monitors the process to ensure that the city is receiving the best pricing available for its trades.

## CONCLUSION

Since the City of Raleigh moved to a formal program of matching investment maturities to cash flow requirements, the average maturity in the portfolio has gone up 25 percent and the city is consistently investing in maturities of a year or longer. This enhancement has enabled the city to increase investment earnings while minimizing overall risk exposure and ensuring adequate liquidity for short-term needs. Safety, liquidity, and yield need not be mutually exclusive priorities. Through a disciplined process that combines the expertise of city finance staff and an investment advisor, we have seen that these three objectives can be woven into an investment program that ensures that each is emphasized appropriately and consistently throughout the year. ■

PERRY E. JAMES III is finance director for the City of Raleigh, North Carolina, and a member of GFOA's Committee on Accounting, Auditing, and Financial Reporting.

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