City of Miami

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INDEPENDENT AUDITOR GENERAL

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September 11, 2015

Honorable Members of the City Commission
City of Miami
3500 Pan American Drive
Coconut Grove, FL 33133-5504

Re: Audit of the City's Investment Management and Reporting Practices
Audit No. 15-006

Executive Summary

We have completed an audit of the City's Investment Management and Reporting Practices and selected investment transactions, primarily covering the period January 1, 2010 through June 30, 2013, as well as selected transactions and procedures before and after the audit period. Our audit was requested by the City's Finance Committee based on its investigation of circumstances surrounding the purchase of certain bond investments that were sold at a loss to meet financial obligations.

Accordingly, our procedures included, but were not limited to, review of the City's Investment Policy, selected transactions during our scope period, industry best practices, and State Statutes addressing local government investment management. We also reviewed relevant sections of the City's Comprehensive Annual Financial Reports (CAFR) published during the audit period, as well as monthly financial reports issued by the City, interviewed key City personnel, obtained and reviewed contracts with relevant third parties, interviewed the City's external financial auditors and reviewed their work papers.

Based on our audit, we concluded that the primary conditions that led to the circumstance of the City having significant realized and unrealized losses in the composition of its investment portfolio was that the Investment Policy allowed up to 100% of the City's investments to be made in callable securities with maturities of up to five years, and the interest rate risk measurement and mitigation method utilized by the City did not adequately capture the risks associated with callable investments in the volatile interest rate environment that existed during the audit period.

Also, we concluded that during the audit period the City did not implement compensating controls required by the Investment Policy that included establishing a system of internal controls and written procedures, convening an Investment Committee, obtaining competitive bids of investment selections, and annually reviewing and updating the Investment Policy.

Based on the various tests performed, the following recommendations, if implemented, would improve the internal controls over the investment operations and lessen the risk for a recurrence of the events that prompted this investigation.

- Reduce maximum allowable portfolio concentration in callable bonds and restrict investments in callable bonds to three years maturity.
- Improve disclosure of investment types in the CAFR.
- Update the Investment Policy to specify an interest rate risk measurement method allowed by the Governmental Accounting Standards Boards.
- Enhance monthly financial reports to disclose maintenance of liquidity and changes in principal value.
- Implement improved controls that include dual approval of investment selections prior to cash disbursement and limit broker concentration.
- Establish internal controls and written investment procedures.
- Improve controls over the Emphasys treasury investment management software.
- Reconvene and enhance the Investment Committee.

We wish to express our appreciation for the cooperation and courtesies extended to us by all City employees and outside personnel while conducting the audit.

Sincerely,

Theodore P. Guba

Theodore P. Guba, CPA, CIA, CFE
Independent Auditor General
Office of the Independent Auditor General

cc: The Honorable Mayor Tomas Regalado
Daniel J. Alfonso, City Manager
Todd Hannon, City Clerk
Victoria Mendez, City Attorney, Office of the City Attorney
Fernando Casamayor, Assistant City Manager/Chief Financial Officer
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Alberto Parjus, Assistant City Manager
John Greco, Deputy City Attorney, Office of the City Attorney
Jose M. Fernandez, Director, Finance Department
Christopher Rose, Director, Office of Management and Budget
Robin Jones Jackson, Senior Assistant City Attorney, Office of the City Attorney
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City of Miami Finance Committee
Audit Documentation File

Audit conducted by: Robyn E. Sachs, CPA, CIA, CISA, CFE, CISSP
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Work papers reviewed by: Lewis Blake, CPA, CIA
Audit Manager

AUDIT OF THE CITY'S INVESTMENT MANAGEMENT AND REPORTING PRACTICES
JANUARY 1, 2010 THROUGH JUNE 30, 2013
Audit No. 15-006

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<u>SCOPE, OBJECTIVES, AND METHODOLOGY</u>

The scope of the audit was to review the City of Miami's Investment Policy, the Finance Department's compliance with the Policy, and to investigate the circumstances that resulted in the City concentrating its investment portfolio in long-maturity (four and five-year) callable Federal Agency bonds. The City purchased these bonds in its investment portfolio used to manage cash flow requirements for the ongoing operations of the City, including payroll, interest, and pension expenditures. The audit primarily covered the time period January 1, 2010 through June 30, 2013, and focused on the following objectives:

- To review the City's Investment Policy and verify that it complies with State of Florida Statutes and industry best practices.
- To evaluate and opine on the effectiveness and efficiency of the City's internal controls and oversight concerning investment management.
- To determine if the interest rate risk disclosures in the City's comprehensive annual financial report (CAFR) were adequate.
- To review and test the internal controls over the technological and computing environment used by the City to manage the investment function.

We conducted this performance audit in accordance with *Generally Accepted Government Auditing Standards*. Those standards require that we plan and perform the audit to obtain sufficient and appropriate evidence in order to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. The audit methodology included the following:

- Interviews and inquiries of relevant City personnel
- Reviews of policies and procedures in order to gain an understanding of the internal controls
- Meetings with external auditors and review of their work papers
- Communications with the City's main broker-dealer and financial advisors
- Observations of current practices and processing techniques
- Reviews of industry best practices and State of Florida Statutes
- Tests of applicable transactions and records
- Other audit procedures as deemed necessary

BACKGROUND

Investment Policy

The City's Finance Department is responsible for investment management activities, which should adhere to the City's Investment Policy.

The Investment Policy describes the City's investment objectives, and requirements for portfolio composition, oversight, competitive bidding, review, internal controls and written investment procedures, and reporting. Florida Statute 218.415 "Local government investment policies" and the Government Finance Officers Association articulate the guidelines for investment activities conducted by a unit of local government and the contents of an investment policy.

Investment Policy Objectives

The City's Investment Policy states that the foremost investment priority is the **safety of principal** of the funds contained in the City's investment portfolio. The Investment Policy requires that investment transactions keep capital losses to a minimum, whether they are from securities defaults or erosion of market value. For instance, bond investments must be purchased with reasonable assurance about the credit-worthiness of bond issuers and their ability to make timely principal and interest payments. Also, bond investments must be purchased realizing that long term investments are subject to market value decreases, or losses, as market interest rates increase; inversely, as interest rates decrease, the value of bond investments increase and, therefore, bond principal amounts remain relatively safe from capital losses.

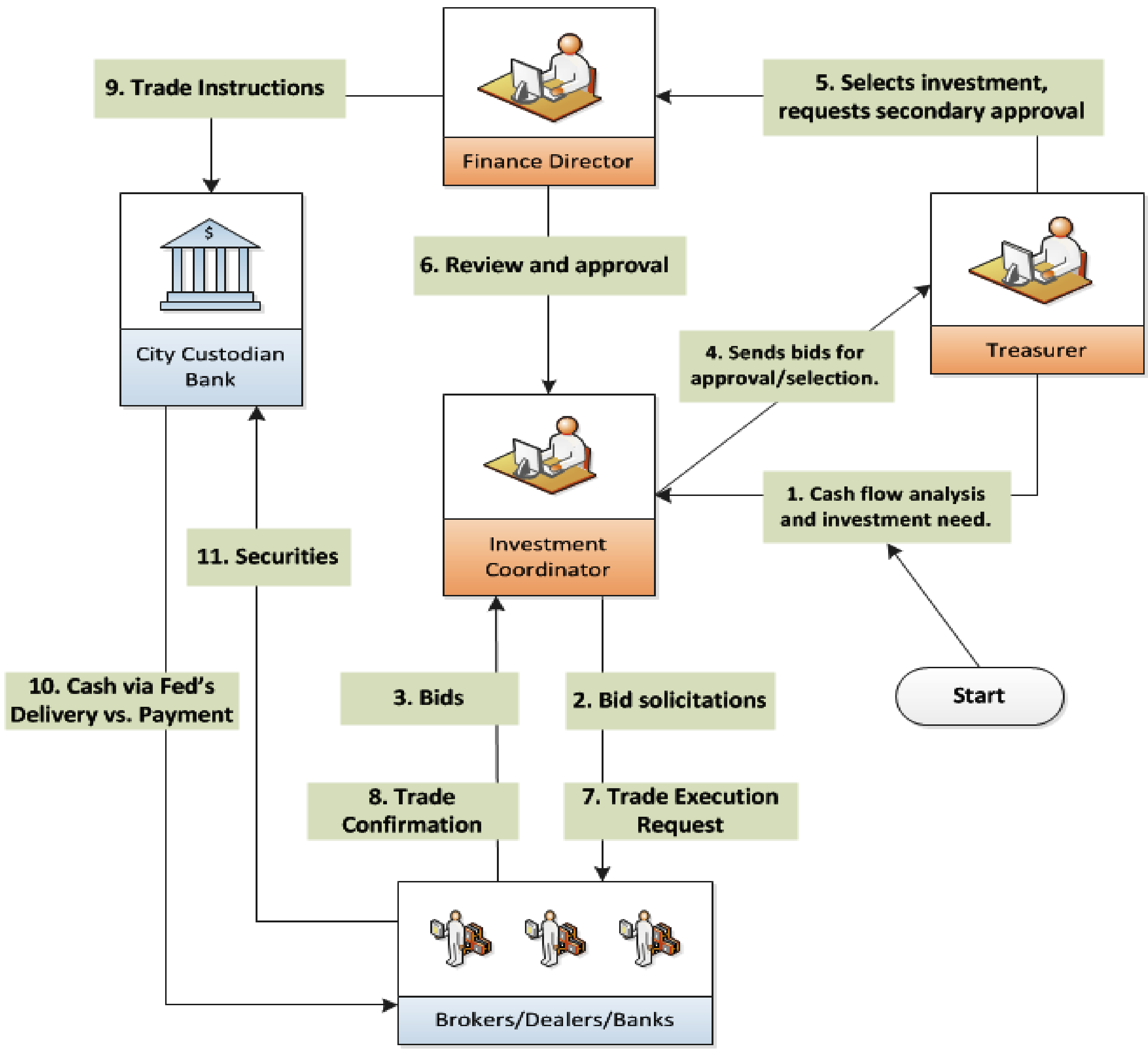
The second objective of the Investment Policy, **maintenance of liquidity**, states that the portfolio should be managed in such a manner that funds are available to meet reasonably anticipated cash flow requirements in an orderly manner. The liquidity management method utilized by the City is the "weighted average maturity" of the investments. Lastly, the investment portfolio should be designed with the objective of **attaining a market rate of return** throughout budgetary and economic cycles. The Policy expressly states that "return on investment is of least importance compared to the safety and liquidity objectives" previously described.

Investment Management Process

The Finance Department reports to the City's Chief Financial Officer, and is structured with a Finance Director, Treasurer, and Investment Coordinator. According to the Investment Policy, the Finance Director is responsible for providing oversight and direction in regard to the management of the investment program. Through our audit procedures, we ascertained that the Treasurer's role in investment management is to perform periodic cash flow analyses and document anticipated cash flow requirements. Based on the required cash flow, the Investment Coordinator facilitates the investment of funds in securities that comply with the aforementioned investment objectives by soliciting competitive bids from at least three independent broker-dealers. A broker-dealer is an individual or firm engaged in the businesses of effecting transactions in securities for the account of others for a commission (broker), or who acts as a principal in all transactions, buying and selling securities for their own account (dealer).

The Finance Director and Treasurer should review and approve all potential investments prior to purchase. The Investment Coordinator executes the trades with the broker-dealers who then send the City trade confirmations. Upon review of trade confirmations for accuracy, the City sends trade instructions to the City's custodian bank to exchange cash for the securities and to settle the trade via the Federal Reserve's Delivery versus Payment (DVP). DVP is a settlement procedure in which securities are delivered versus payment of cash, but only after cash has been received. Most security transactions are done DVP as protection for both the buyer and seller of securities. An overview of the investment selection process for the purchase of an investment is shown in Figure 1.

Figure 1: Overview of the Optimal Investment Purchase Process



Pursuant to the Investment Policy, the Finance Director is required to establish a system of internal controls and operational procedures that are in writing and made a part of the City's operational procedures. The internal controls should be designed to prevent losses of funds, which might arise from fraud, unauthorized investment transactions, errors and imprudent actions by employees, and misrepresentation by third parties.

Investment Reporting Requirements

The reporting requirements of the Investment Policy in effect during our audit period stated that the City should convene an Investment Committee comprised of the Finance Director, Assistant Finance Director, Treasurer, and Investment Coordinator as often as requested. Additionally, the Policy required the Finance Department to prepare quarterly and annual investment reports that disclose salient information about the investment portfolio, including a complete list of all invested funds, the maturity dates and market, book and par values of each investment and the portfolio, and investment performance compared to a benchmark. The Investment Policy defined a benchmark as a comparative base for measuring the performance or risk tolerance of the investment portfolio. A benchmark should represent a close correlation to the level of risk and the average duration of the portfolio's investments.

Investments should be reported at fair value (the price that would be received to sell an investment in an orderly transaction between market participants) in the CAFR using quoted market price or the best available estimate, according to the generally accepted accounting principles (GAAP) promulgated by the Governmental Accountings Standards Board (GASB). During our audit period, the fiscal year-end fair value for the City's investment portfolio and the balance of money market funds reported in the respective CAFRs were as follows:

Table 1: Portfolio, Investments, and Money Market Values by Fiscal Year

Fiscal Year End	Total Portfolio Value	Investments Fair Value	Money Market Fund
2010	$510,949,393	$483,855,657	$ 27,093,736
2011	$449,252,101	$424,968,913	$ 24,283,188
2012	$374,161,655	$347,130,950	$ 27,030,705
2013	$289,339,000	$267,482,000	$ 21,857,000

Source: Comprehensive Annual Financial Reports 2010-2013, City of Miami

In addition to presenting the investments at fair value, GASB standards require the City to disclose any assumptions about the timing of cash flows generated by the investments, including whether an investment is or is not assumed to be called. It should be noted that when interest rates fall, bond issuers would usually redeem (call) their outstanding bonds to refinance its debt at a lower interest rate so that lower interest payments may be made. Consequently, a bond investor, such as the City, would then have to reinvest the cash it received from the bond redemption.

Concerns of the City's Finance Committee

The City's Finance Committee conducted an investigation based on its concern about certain investment decisions that jeopardized the "safety of the principal" of the City's investment portfolio. It noted that from June 2012 to June 2013, the City invested substantially in callable bonds with maturities of four to five years. As of June 30, 2013, the City had 38 callable bonds in its investment portfolio, totaling $302,067,677 (amortized book value) of which 36 had maturities of four or five years from date of issue. Due to the long maturity, the fair value of these bonds were sensitive to changes in interest rates. In fact, on May 3, 2013, yields (i.e. market interest rates) in the bond market increased abruptly, which decreased the fair value of all of the City's callable bond investments.

As of June 30, 2013, the unrealized, or "paper" loss in the fair value of the City's bond investments was $6,008,858. In October 2013, the City realized a loss of $119,000 on the sale of $30 million of its investments in federal agency instruments. The City sold these instruments in order to save about $900,000 in interest expenditures related to a pension obligation; the net savings was $781,000, but the realized and unrealized losses indicated that the City's portfolio was not in compliance with the three year weighted average maturity requirement and maintenance of liquidity objectives stated in the Investment Policy.

On February 20, 2014, the Finance Committee published the results of its investigation which detailed its findings and recommendations. One of the recommendations was that the City Commission direct the City's Independent Auditor General to conduct an investigation of the facts and circumstances that led to the conditions of the City's bond investments, including interest rate risk disclosures, and investment processes. On March 7, 2014, the Chairman of the City's Finance Committee wrote a formal request to the Auditor General requesting that his Office conduct this audit.

AUDIT FINDINGS AND RECOMMENDATIONS

CONCLUSION:

Based on our audit, we concluded that the primary conditions that led to the circumstance of the City having significant realized and unrealized losses resulting from the composition of its investment portfolio was that the Investment Policy allowed up to 100% of the City's investments to be made in callable securities with maturities of up to five years, and the interest rate risk measurement and mitigation method utilized by the City did not adequately capture the risks associated with callable investments in a volatile interest rate environment.

Also, the City did not implement compensating controls required by the Investment Policy, which included establishing a system of internal controls and written procedures, convening an Investment Committee, obtaining competitive bids and dual approvals of investment selections, and annually reviewing and updating the Investment Policy.

Details of our findings and recommendations follow:

FINDING 1: REDUCE MAXIMUM ALLOWABLE PORTFOLIO CONCENTRATION IN CALLABALE BONDS AND RESTRICT INVESTMENTS IN CALLABLE BONDS TO THREE YEARS MATURITY

According to the 2007 Investment Policy which was in effect during our audit period, up to 100% of portfolio funds were permitted to be invested in callable bonds issued by Federal instrumentalities, with a maximum maturity of up to five years. In 2015, the Investment Policy was updated and the allowable portfolio concentration in five-year callable investments was decreased to 75%. Federal instrumentality debt securities are issued by United States Federal government sponsored agencies (issuers). For example, the Investment Policy permitted investments in debt issued by Federal Farm Credit Bank (FFCB), Federal Home Loan Bank or its City banks (FHLB), Federal National Mortgage Association (Fannie Mae), and Federal Home Loan Mortgage Corporation (Freddie Mac).

As of June 30, 2013, when the unrealized loss in callable bonds approximated $6 million, the City's total portfolio book value was $416,093,755, of which 72.6% ($302,067,377) was concentrated in callable federal agency instrumentalities with maximum maturities of five years at the time of purchase, and with average remaining time to maturity of 57-60 months, per issuer. Four-year maturity non-callable Federal Agency securities accounted for 1.16% ($4.85 million) of the portfolio, and the remaining 26.24% ($109,176,378) was comprised of investments in Commercial Paper. The concentration in Commercial Paper was within the 2007 Investment Policy's maximum of 35%. It should also be noted that portfolio concentration of 72.6% in five-year maturity callable Federal Agency securities was allowed under both the 2015 and 2007 Investment Policies.

The Investment Policy attempts to restrict over-concentration in long-term investments by limiting the overall weighted average duration of principal return for the portfolio to less than three years (36 months). Although the term "weighted average duration" is not defined in the Investment

Policy, to determine when the principal for callable investments will be returned, management must exercise judgment and make assumptions regarding the direction of interest rates to determine whether or not investments may be called prior to the maturity date. As such, in a falling interest rate environment, management may assume that investments would be called (and principal would be returned). Conversely, in times of rising interest rates, investments would not likely be called. As a result, the "weighted average duration" of a portfolio fluctuates depending on the direction of the interest rate environment at the time of calculation.

Because the City's portfolio was 72.6% concentrated in long-maturity callable securities, in a falling interest rate environment, the weighted average duration measurement would be in compliance with the Investment Policy's three-year overall weighted maturity limit on the overall portfolio. However, in a rising interest rate environment, when maturity dates were used in the calculation, the portfolio would be out of compliance with this Policy requirement. Callable securities have an element of redemption risk that is not captured by the weighted average duration of return of principal measurement in a volatile interest rate environment.

The overall weighted average length of time for returning principal of the City's investments is limited to three years in order to maintain liquidity (the timing of investment maturities to match cash flow requirements) and to minimize potential loss of principal due to changes in fair value caused by interest rate movements over time. When interest rates rise and callable debt securities are not redeemed by their issuer, the investment's maturity horizon could extend beyond the City's cash needs, and the fair value of the investment's principal falls. Non-callable long-maturity investments similarly decrease in fair value as interest rates rise. Decreases in fair value are unrealized or "paper" losses until the City needs to sell the investment, at which time they become realized or actual losses.

As of June 30, 2013, the City had an unrealized loss of $6,008,858 on its $306,917,377 portfolio of Federal Agency securities, which is an approximately 1.96% loss of principal. The risk of this potential loss was not captured by the "weighted average duration" measurement due to the call features of City's investments and their unpredictable length of time to return of principal due to volatility in the interest rate environment.

RECOMMENDATION 1: FINANCE DEPARTMENT

We recommend that the Investment Policy be updated to create an additional "Sector" within the "Permitted Investments" section for callable investments. The maximum allocation in callable investments should be limited to a percentage deemed appropriate by City Management, and the maximum maturity of callable investments should be no more than the weighted average duration to return of principal for the overall portfolio, which is currently three years.

- **Auditee Response:** We will update *Section X. A - Maturity and Liquidity Requirements – Maturity Guidelines* of the Investment Policy to include the following language: For all investments, including all callable investments, the maturity date, and under no circumstance the call date or any other early redemption date(s), shall be used for computation of the aggregate portfolio's weighted average maturity

- **Implementation Date:** Implemented in practice; Investment Policy will be updated by Fiscal Year 2016.

FINDING 2: IMPROVE DISCLOSURE OF INVESTMENT TYPES IN THE COMPREHENSIVE ANNUAL FINANCIAL REPORT

According to Governmental Accounting Standards Board (GASB) Statement 40 "Deposit and Investments Risk Disclosures", "interest rate information provides users of financial statements with disclosures about potential fair value losses from future changes in prevailing market interest rates." As a means of communicating interest rate risk, the GASB requires the City to utilize any of the following five approved methods to disclose interest rate risk in the Comprehensive Annual Financial Report (CAFR):

Table 2: Interest Rate Risk Disclosure Methods Permitted by the GASB

	Method Name	Description
1	**Weighted Average Maturity**	Expresses investment time horizons – the time when investments become due and payable – in years or months, weighted to reflect the dollar size of individual investments within an investment type.
2	**Specific Identification of Investments**	Presents a list of each investment, its amount, its maturity date, and any call options, but does not compute a disclosure measure.
3	**Duration**	A measure of a debt instrument's exposure to fair value changes arising from changing interest rates. It uses the present value of future cash flows, weighted for those cash flows as a percentage of the investment's full price.
4	**Simulation Model**	Estimates changes in an investment's or a portfolio's fair value, given hypothetical changes in interest rates. Various models or techniques may be used, such as "shock tests" or value-at-risk (VaR).
5	**Segmented Time Distribution**	Groups investment cash flows into sequential periods in tabular form.

Source: Auditor compilation of Governmental Accounting Standards Board Statement 40.

The City uses the "weighted average maturity" method to disclose the interest rate risk of its different "Investment Types." The GASB does not define "investment type" in Statement 40, but in its Implementation Guide, the GASB states that professional judgment should be used to select investment types based on facts and circumstances, and that "investments with significantly different risk profiles should not be aggregated into a single investment type."

According to the GASB, investment factors that form risk profiles include length of time to maturity, interest payment terms, and call features. In its Implementation Guidance, the GASB provides an example of how to identify different investment types and states that a ten-year note and an interest-only STRIP (Separate Trading of Registered Interest and Principal) investment, although both issued by the U.S. Treasury, have different risk profiles and should be classified as different investment types. A U.S. Treasury Note pays the investor a fixed rate of interest every six months until maturity while a U.S. Treasury STRIP is a fixed-income security sold at a significant discount to face value and offers no interest payments because it matures at par value.

In the CAFRs for fiscal years 2010-2014, the City presented its investment types by the name of the debt issuer, with the exception of presenting commercial paper and money market funds in aggregate. Presentation of investment types by the name of the debt issuer, not by risk profile as required by the GASB, does not provide adequate transparency and disclosure of the interest rate risk of the City's investments. The City presented the following investment types in the fiscal years 2010-2014 CAFRs:

- Federal National Mortgage Association (Fannie Mae)
- Federal Home Loan Mortgage Corporation (Freddie Mac)
- Federal Farm Credit Bank (FFCB)
- Federal Home Loan Bank (FHLB)
- Commercial Paper

During the audit period, the City purchased 91 discount notes with an unamortized book value of approximately $890 million from Fannie Mae, Freddie Mac, FFCB, and FHLB, which was 34% of the $2.648 billion total non-commercial paper investments purchased from these issuers. A discount note is a debt security of one year or less issued at a discount to its face value. The remaining 66% of the total included mainly long-maturity callable bonds.

By combining long-maturity bonds and discount notes into the same investment type, the City did not disclose its investment types according to risk profile as required by the GASB. Also, we reviewed CAFRs published by 12 other municipalities, and found that several municipalities presented callable securities and discount notes as separate investment types.

RECOMMENDATION 2: FINANCE DEPARTMENT

We recommend that the Finance Department improve its disclosure of investment types in the CAFR by classifying investments according to risk profile characteristics to supplement the disclosures by issuer. Callable securities have greater risks than other investment types allowed by the City, and management is required to make assumptions regarding whether or not the instrument will be called when calculating the weighted average maturity. Accordingly, we recommend that callable securities be listed as separate investment types in the CAFR. To supplement the weighted average maturity measurement, we also recommend that the City utilize the GASB's Specific Identification interest rate risk disclosure method for its callable investments.

- **Auditee Response:** We began utilizing the maturity date when computing and disclosing the weighted average maturity for all investment types and for the aggregate portfolio with the 2013 Comprehensive Annual Financial Report and will continue to follow this practice. Callable investments will not be subject to additional disclosure as a separate Investment Type because the weighted average maturity will be computed using the maturity date and not the call date.

- **Implementation Date:** Implemented.

<u>FINDING 3</u>: UPDATE THE CAFR AND INVESTMENT POLICY TO SPECIFY ONLY INTEREST RATE RISK MEASUREMENT METHODS ALLOWED BY THE GASB

The Governmental Accounting Standards Board (GASB) Statement No. 40, "Deposit and Investment Risk Disclosures" lists five allowable methods for interest rate risk measurement and disclosure, as shown in Table 2, page 8. The GASB permits management to choose a disclosure method that is most consistent with the manner in which the government manages its interest rate risk.

However, Section X, Maturity and Liquidity Requirements, paragraph A. "Maturity Guidelines", of the 2007 Investment Policy stated, "The overall weighted average duration of principal return for the portfolio shall be less than three (3) years." The term "weighted average duration" was not defined in the Investment Policy. The same section of the 2015 version of the Investment Policy stated "the maximum effective duration of the aggregate portfolio shall be three (3) years." But, the term "effective duration" was not defined in the 2015 Investment Policy and neither interest rate measurement method is allowable by the GASB.

Also, we noted that the 2013 and 2014 CAFRs utilized the term "weighted average duration" to disclose the overall portfolio's weighted average maturity, although it is not one of the GASB's approved methods. The 2010-2012 CAFRs did not disclose an interest rate risk measurement method for the overall portfolio, but in fiscal years 2010-2014, the CAFRs disclosed the "Weighted Average Maturity in Years" for the separate individual "Investment Types". We obtained and reviewed the support for the 2014 CAFR disclosures and determined that both measurements were computed using the GASB's "weighted average maturity" method.

As a result, when investment decision-makers reference the Investment Policy at the time of investment selection and purchase, investment risk may not be properly measured because the methods for controlling interest rate risk were not defined in the Investment Policy or allowed by the GASB.

<u>RECOMMENDATION 3</u>: FINANCE DEPARTMENT

To avoid confusion, we recommend that the Investment Policy be updated to specify an interest risk measurement method allowed by the Government Accounting Standards Board, and that the same method be applied in CAFR disclosures.

- **<u>Auditee Response</u>:** We will remove the term "maximum effective duration" and replace it with "weighted average maturity" in *<u>Section X. A - Maturity and Liquidity Requirements – Maturity Guidelines</u>* of the Investment Policy. We will amend the definition of "weighted average maturity" in *<u>Section XVIII. Glossary of Terms</u>* in the Investment Policy to include the following language: "Note: All investments are assumed to be held to maturity and no call dates or any other early redemption date(s) shall be used for the computation of weighted average maturity." In the notes to the Comprehensive Annual Financial Report (CAFR), we will replace the term "weighted average duration" with "weighted average maturity."

- **<u>Implementation Date</u>:** The Investment Policy will updated be during Fiscal Year 2016 and the fiscal year 2015 CAFR will reflect the new disclosure terminology.

<u>FINDING 4</u>: ENHANCE MONTHLY FINANCIAL REPORTS TO DISCLOSE CHANGES IN PRINCIPAL VALUE AND MAINTENANCE OF LIQUIDITY

In order to facilitate timely monitoring of investment activity and performance, the Monthly Financial Reports produced by the Finance Department should expressly disclose compliance with all three objectives of the Investment Policy: (1) Safety of Principal, (2) Maintenance of Liquidity and (3) Return on Investment.

The Investments Section of the Monthly Financial Reports emphasize the portfolio's Return on Investment and Investment Income instead of the higher-priority investment objective of Maintenance of Liquidity; and, unrealized losses were not disclosed. The Investments Section begins with a presentation of the yield on investments and several pages later, the book and market values of the City's investments are shown, but the difference between book and market value, which represents an unrealized gain (when market value exceeds book value) or unrealized loss (when market value is less than book value) is not disclosed.

As a result, a report reader cannot determine whether there are unrealized losses in the City's investment portfolio without having to manually calculate the unrealized gain or loss. For example, at the end of our audit period, the June 30, 2013 Monthly Financial Report did not disclose the $6,008,858 unrealized loss, and at the end of our fieldwork, the March 31, 2015 report did not disclose the unrealized investment principal loss of $698,312.

Also, compliance with the maintenance of liquidity objective is not disclosed in the monthly reports. During the course of our audit period, we found that the amount of income (yield) generated by the types of investments allowed by the Investment Policy decreased. As yields decreased, the City took on additional risk by investing in bonds that took longer time frames to mature with increased income. The average number of days to maturity of the investments purchased by the City increased from 866 (for $382 million of securities purchased) in 2010, to 1,009 (for $560 million purchased) in 2011, to 1,397 (for $625 million purchased) in 2012, and finally to 1,699 (for $190 million purchased) in the first six calendar months of 2013. From January 2010 to June 2013, the yield of five-year investments was significantly greater than the yield on two-year maturity investments, ranging from a spread of 155 basis points in February 2010, to 81 basis points in March 2012, and 105 basis points in 2013.

Although the amount of income generated by the City's investments was disclosed monthly, the unrealized gains and losses on the investments, and the weighted average maturity of the Investment Types and overall Portfolio was not disclosed. This information should be disclosed in the monthly reports because the sale of securities ahead of their maturity date to meet cash needs could result in realized losses that exceed any additional income earned by higher-risk longer maturity investments.

<u>RECOMMENDATION 4</u>: FINANCE DEPARTMENT

The Finance Department should update the format of the Monthly Financial Reports to expressly present the unrealized gain or loss of investment principal, in aggregate for the long and short-term portfolios and for each security, for the reporting period. Additionally, the weighted average maturity of the Investment Types and overall portfolio should be disclosed.

- **<u>Auditee Response</u>:** We will update the Monthly Financial Reports to disclose the unrealized gain or loss (the arithmetic difference between fair market value and book value) for the portfolio, investment types, and specific investments. We will also disclose the weighted average maturity for the aggregate portfolio, computed based on the maturity dates of the portfolio's underlying investments.

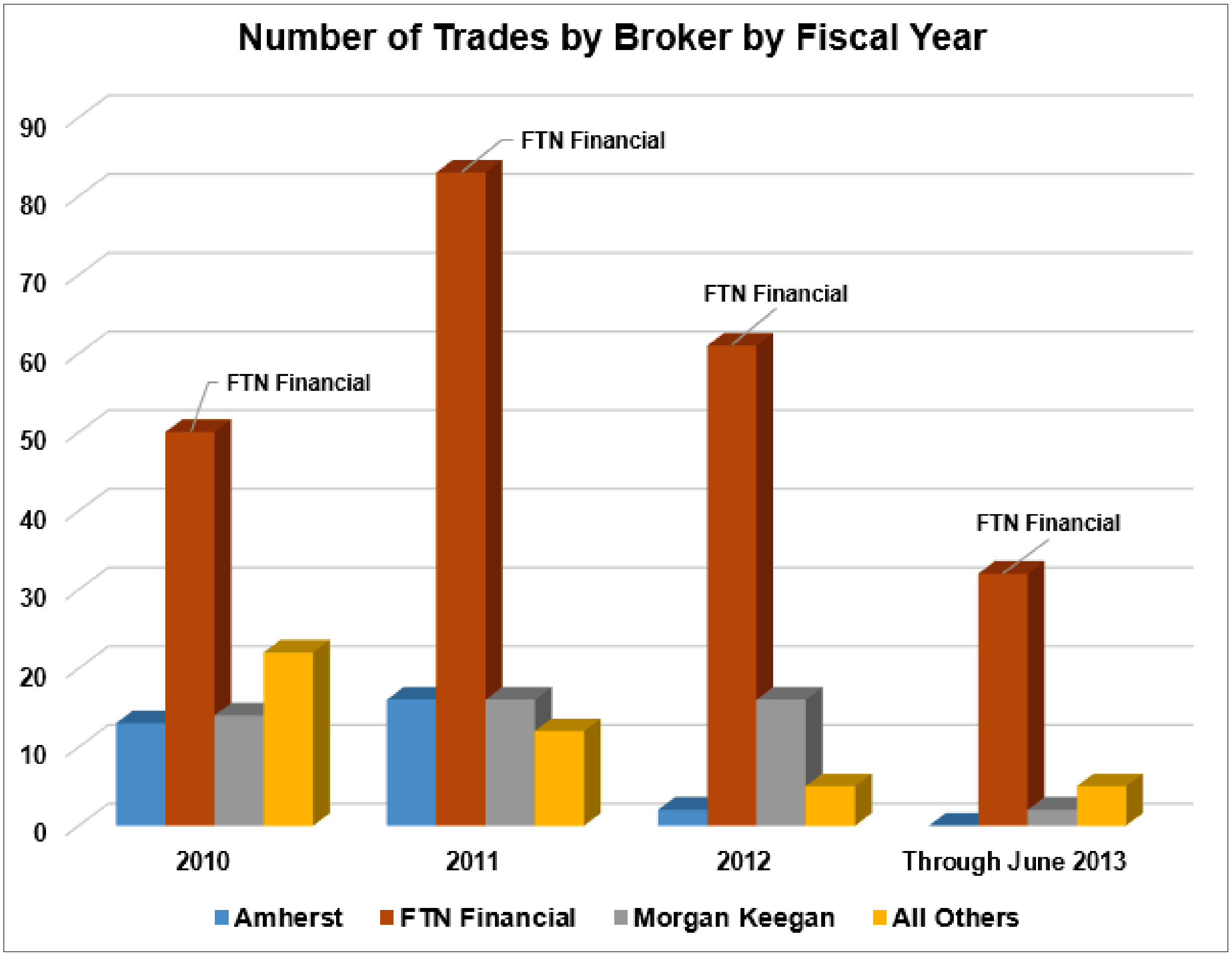
- **<u>Implementation Date</u>:** Will be implemented for the October 2015 Monthly Financial Report.

<u>FINDING 5</u>: REQUIRE DUAL APPROVAL OF INVESTMENT SELECTIONS PRIOR TO DISBURSING CASH AND LIMIT BROKER CONCENTRATION

We reviewed the investment transactions entered into by the City during the audit period, from January 1, 2010 through June 30, 2013 and found that the City disbursed cash of approximately \$6.515 billion dollars for the following: a) purchases of callable and fixed income bonds (\$1.76 billion); b) discount notes (\$890 million); c) Treasury instruments (\$755 million), and; d) commercial paper (\$3.11 billion). We requested from the Finance Department evidence that these purchases were approved by the Finance Director prior to purchase, but Finance indicated that approvals were either not obtained or evidence of approval was not retained. In most cases, it appeared that one person solicited, approved, and executed trades.

To locate evidence of investment approvals, we reviewed emails between the City and its external broker-dealers during the audit period, and found that only a small portion of the City's total trade activity was documented. Review of the available emails showed that investments were selected either by the Investment Coordinator or Treasurer without the Finance Director's review or approval prior to trade execution and subsequent disbursement of cash.

Further, we analyzed trade activity between the City and broker-dealers by reviewing investment details recorded in the software system used by the Finance Department's Treasury section. We found that the name of the broker-dealer who executed commercial paper investments was not recorded; instead, the debt issuer's name was recorded for the purpose of tracking investment concentration with one issuer of commercial paper. For the remaining investments in bonds, discount notes, and Treasury securities, we found that 226 of 349 (65%) trades were executed with one broker-dealer, FTN Financial or its subsidiary. The 226 trades represented \$2.44 billion of \$3.40 billion (72%) of City funds invested in non-commercial paper securities. We noted that the 2007 Investment Policy did not limit broker-dealer concentration or require diversification of the broker-dealers utilized by the City. The concentration of trade activity with FTN Financial is shown in the following chart:



Source: Auditor compiled chart from City of Miami Finance Department records.

Upon inquiry, Finance Department personnel stated investments were concentrated with FTN Financial because the City purchased most securities in the primary market at par value and the price would be the same regardless of the broker used to process the transaction. The Investment Policy requires the City to obtain three competitive bids for each purchase transaction except "when the transaction involves new issues or issues in the 'when issued' market." However, we determined that all bond investments were purchased through a broker-dealer, and only commercial paper was purchased directly from the debt issuer. When investments are purchased through a broker-dealer, the broker-dealer influences the price of the investment by including a fee, such as a sales commission, that is paid by the City to the broker-dealer.

The Finance Department could not produce evidence that competitive bids were requested or obtained for any securities purchased from any broker-dealer during the audit period. We selected a sample of investments purchased from FTN Financial and compared the amounts paid to the prices for market transactions logged by the Financial Industry Regulatory Authority (FINRA) and determined that the prices the City paid were comparable to the market prices recorded by FINRA.

However, by not obtaining three competitive bids for each investment purchase, as required by the Investment Policy, and by concentrating its investment activity with one broker-dealer, there is a risk that the City may not obtain competitive prices for its investments.

<u>RECOMMENDATION 5</u>: FINANCE DEPARTMENT

To establish adequate controls, we recommend that the City require dual approval of investment transactions before cash is disbursed.

As part of the dual approval requirement, a process should be implemented to ensure that:

- A cash flow requirement is established and documented.
- The types of investments identified as optimal are appropriate for the cash flow requirements, and satisfy the City's investment objectives in order of priority: (1) Safety of Principal, (2) Maintenance of Liquidity, and (3) Yield on Investment.
- The City solicits and receives written investment pricing bids from three competing broker-dealers.
- The rationale behind the investment selection is documented (i.e., lowest competitive price, or purchased directly from the debt issuer; satisfies the City's trading and investment objectives).
- The investment selection is approved by both the Finance Director and Treasurer, or their authorized designees.

We also recommend that the City update the Investment Policy to include the following:

- The minimum number of approved broker-dealers with whom the City may do business.
- A requirement that the name of the brokerage firm and broker-dealer executing each transaction be recorded by the City.

- **<u>Auditee Response</u>:** We implemented a process to document dual-approval of all investment purchases and sales prior to cash disbursement and trade execution consistent with the requirements noted in the audit recommendation. We are currently working to increase the number of qualified broker-dealers with whom the City conducts investment transactions; as part of this process have requested broker lists from nearby municipalities. Also, we have hired Public Finance Management (PFM) Asset Management, Inc. to make non-discretionary investment recommendations in our long-term (greater than one year) portfolio. We have verified that PFM has access to a deep pool of brokers and solicits at minimum three competing bids for all investments. We will ensure that broker name is recorded in the Emphasys system for all transactions.

- **<u>Implementation Date</u>:** During the first quarter of Fiscal Year 2016.

<u>FINDING 6</u>: ESTABLISH A SYSTEM OF INTERNAL CONTROLS AND WRITTEN INVESTMENT PROCEDURES

The City's Investment Policy requires the Finance Director to establish a system of internal controls and operational procedures that are in writing and made a part of the City's operational procedures. The internal controls should be designed to prevent losses of funds that might arise from fraud, violation of the Investment Policy, employee error, misrepresentation by third parties, and imprudent actions by employees. Also, the Government Finance Officers Association's

(GFOA) best practice guidelines state that a municipality's investment policy should include written investment procedures to document the daily responsibilities for individual employees. Finally, Florida Statute 218.415 states, "The unit of local government's officials responsible for making investment decisions or chief financial officer shall establish a system of internal controls which shall be in writing and made a part of the governmental entity's operational procedures."

We found that the City did not implement and document a system of internal controls over the investment function. As a result, we observed the following:

1. Errors and Omissions in Investment Recording: We compared City purchase and sales records with those from FTN Financial (the City's primary bond broker-dealer), and discovered that 176 investment transactions, valued at $1.546 billion, present in FTN's records had been recorded incompletely, incorrectly, or under a different broker in the City's Emphasys investment transaction recordkeeping system. Our review of the discrepancies showed that of the 176 transactions, 10 were bonds issued by a Federal Agency ($58 million), 26 were discount notes ($291 million), 11 were U.S. Treasury instruments ($170 million), and 129 were commercial paper ($1.027 billion). Upon audit inquiry, we were informed that the 176 transactions were either recorded under the name of an FTN Financial affiliate (61), recorded under the name of the debt issuer in lieu of attributing the trade to FTN Financial (109), recorded incorrectly (5), or recorded with "None" as the executing broker (1).

   City personnel stated that transactions were recorded in Emphasys under the name of the debt issuer, instead of the broker in order to keep track of investment concentration in one issuer to comply with the Investment Policy's limit of 5% concentration with one commercial paper issuer. However, according to reports produced from the Emphasys system by the Finance Department, there is a field for "Issuing Institution," which was left blank for all transactions recorded by the City.

2. Lack of Evidence that Executing Broker-Dealers were vetted by the City: The Investment Policy requires that each broker-dealer's representative is required to complete the City's "Investment Firm Certification Form" prior to the City conducting any business with the broker-dealer or its representative. However, the Finance Department was unable to produce any completed certification form, which is required by the Investment Policy to ensure that broker-dealers with whom the City conducts business have met the City's capital, financial, regulatory, and legal requirements as described in Section IX, Authorized Investment Institutions and Dealers of the Investment Policy.

3. No Annual Review and Update of the Investment Policy: Section XVII, Investment Policy Adoption of the City's 2007 Investment Policy states "The Director of Finance, Treasurer, and the Investment Committee shall review the policy annually and the City Commission shall approve any modification made hereto." Also, The Government Finance Officers Association (GFOA) establishes best practices for government investment policies and recommends that the Investment Policy be reviewed annually by a government entity's investment officials, be modified as needed, and be presented each year to the governing body for formal review and approval.

We found that the City's Investment Policy had not been reviewed and updated between August 2007 and early 2014. While our fieldwork was ongoing, the Finance Department, with input from the Finance Committee, reviewed and updated the Investment Policy. It was approved by the City Commission on February 26, 2015. During the period lacking review, the 2008 global financial crisis occurred, the City Commission passed resolutions to restrict investment in certain terrorist nations, and interest rates declined substantially.

4. Written investment procedures were not developed: During June 2013, the Finance Department developed a document entitled "Investment Narrative", which described the overall steps for purchasing an investment instrument for the City's investment portfolio. However, written procedures for the daily tasks for all City employees engaged in the investment function have not been developed.

RECOMMENDATION 6: FINANCE DEPARTMENT

A system of internal controls should be developed based on a risk assessment of the investment function. The risks and controls should be reviewed at least annually, and updated as needed. Detailed investment procedures should be written and include the steps for soliciting and documenting competitive bids, delivering and paying for purchases, recording transactions, selecting and managing the relationships with external service providers including broker-dealers and investment advisors, and obtaining approval before buy or sell decisions are consummated. Review of the investment procedures documents should be part of required training for all relevant personnel.

- **Auditee Response:** We will implement and document in writing the system of internal controls as described in the audit recommendation. We agree to review the risks and controls annually to ensure that investments are recorded accurately, the Investment Policy is up to date, all third parties involved in the investment management function are vetted by the City, the written procedures over all the processes in the investment management function are accurate and up to date, and that all affected employees receive adequate training and supervision.

- **Implementation Date:** During Fiscal Year 2016.

FINDING 7: IMPROVE CONTROLS OVER THE EMPHASYS SYSTEM

We reviewed controls over the Emphasys system, which is a vendor software program the Finance Department uses to record investment details and for financial reporting purposes.

As of the audit test date, the most current version of Emphasys was 11.1. However, we found that the City uses version 10.9.0, from 2011. According to Emphasys personnel, they offer technical support and training for the most recent version of the software. Between November 2010 and February 2015, the City paid Emphasys $30,313 for several annual renewals, but the Finance Department continued to use an unsupported version of the software, and no current employees have received formal training from Emphasys on the system. We reviewed the most recent contract between the City and Emphasys and noted that although the City did not upgrade the software, Treasury personnel stated that they utilized Emphasys's telephone support for its software version 10.9.0.

Also, Emphasys is installed locally, and only on the Investment Coordinator's computer. Consequently, the information contained in Emphasys is not readily available to other members of the Finance Department who may need access. Further, when another individual requires access to Emphasys, the Investment Coordinator's network username is required to access the program on the local machine. Sharing usernames and passwords among two or more individuals diminishes the accountability for actions performed, and increases the possibility that unauthorized activity may occur. We verified with Emphasys personnel that a networked version is available, which could efficiently provide access to all individuals who need it. We also found that the username belonging to the Investment Coordinator who retired from City employment in January 2011 was not disabled and was being used by the current personnel through our fieldwork in 2015.

The Investment Coordinator and Treasurer use the investment information recorded in Emphasys as part of the financial reporting process. However, the investment information is exported from Emphasys, and Excel spreadsheets are used to manually to adjust the information. Manual adjustments and Excel spreadsheets are prone to a higher likelihood of errors and lack of controls than using Emphasys alone, which limits changes and automatically produces an audit trail. Upon inquiry, we found that recent versions of Emphasys had improved reporting capability and customization compared to the version used by the City.

Further, the City's Emphasys configuration does not interface with the City's Oracle Enterprise Resource Planning (ERP) system, although Emphasys has capability to do so. The Finance Department stated that the investment management function was considered for inclusion in City's Oracle ERP system implementation, but the proposed solution did not meet the City's Treasury requirements.

RECOMMENDATION 7: FINANCE DEPARTMENT

The Finance Department should ensure that all appropriate Treasury staff are thoroughly trained and supervised on the investment recordkeeping system in use. In addition, the Finance Department should work with the City's Information Technology Department (ITD) to facilitate updates to Emphasys or incorporate an investment management function or interface into Oracle. Appropriate access controls should be implemented to eliminate sharing of usernames and to disable user accounts that are no longer required on a timely basis.

- **Auditee Response:** As part of the system of internal controls, we will provide training and supervision over all individuals involved with investment recordkeeping in Emphasys. We are initializing the search for a Treasury management software system that could potentially replace Emphasys and provide more robust capabilities over cash management and Treasury's role in financial reporting.

- **Implementation Date:** Recordkeeping Training: First quarter fiscal year (FY) 2016; Treasury management software: Evaluations will be conducted during FY 2016.

<u>FINDING 8</u>: RECONVENE AND ENHANCE THE INVESTMENT COMMITTEE

The 2015 Investment Policy, Section XVII. Reporting, subparagraph C. Investment Committee states the following:

> "The City shall have an investment committee comprised of the Finance Director, Assistant Finance Director, Treasurer, Budget Director or designee, Community Development Director or designee, and member of the Finance Committee as appointed by the Chair of the Finance Committee to report to this committee as often as requested. Reports shall be prepared and distributed to the committee quarterly."

According to the Investment Policy, the City's Chief Financial Officer (CFO) is not involved in the Investment Committee although the Finance Department reports to the CFO. Further, the Policy does not mention that the Committee should be cognizant of Sunshine Law requirements, such as posting a Sunshine Law meeting notice, recording meeting minutes, and completing sign-in sheet for all attendees.

As indicated above, the updated Investment Policy is vague as to what duties are required of the Investment Committee, and this lack of direction may lead to lack of compliance with the directive to convene the Committee.

We requested information on the July 2015 Investment Committee meeting and found that a sunshine meeting notice was placed in the Miami Today newspaper, but there was no sign-in or attendance sheet, and no meeting minutes were maintained.

<u>RECOMMENDATION 8</u>: FINANCE DEPARTMENT

We recommend that a formal Investment Committee charter be developed with the following attributes:

- Introduction
- Purpose of the Investment Committee
- Committee Membership
- Number of members
- Length of membership appointment term
- Designation of committee Chair
- Requirement that members have investment and business expertise and no conflicts of interest
- Organization
    - Meeting frequency
    - Written agendas, minutes, and reports
- Authority and Responsibilities
    - Description of investment, oversight, and administrative duties
- Compensation

As an alternative and to avoid redundancy, we recommend that management determine if the authority and responsibilities of the Investment Committee can be assigned to regularly scheduled meetings of an existing City committee to which investment information is already reported, (e.g. the Finance Committee). In that case, we recommend that this organizational structure be reflected in the charters of both committees.

- **Auditee Response:** We have found that reporting the same investment and financial information to both the Investment Committee and the Finance Committee is inefficient and redundant. We will ask that the City Administration consider formally incorporating the duties of the Investment Committee into the Finance Committee, via charter amendment or resolution.

- **Implementation Date:** The matter will be discussed with the Finance Committee during fiscal year 2016.