North Carolina Department of
State Treasurer

Independent Review and Evaluation of the North Carolina Retirement Systems

April 19, 2010

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INTRODUCTION

The North Carolina Department of State Treasurer ("NCDST") retained Ennis, Knupp & Associates, Inc. (EnnisKnupp) to conduct an independent review and evaluation ("Report") of multiple aspects of the investment program related to the North Carolina Retirement Systems ("NCRS"). EnnisKnupp, an independent consulting firm located in Chicago, Illinois, was selected through a competitive bidding process. The firm specializes in reviewing and structuring large institutional investment portfolios and governance frameworks. EnnisKnupp has extensive experience working with public funds.

The NCRS is a collective of the investment assets of six retirement funds and pensions systems, including the Teachers' and State Employees' Retirement System, the Consolidated Judicial Retirement System, the Firemen's and Rescue Workers' Pension Fund, the Local Governmental Employees' Retirement System, the Legislative Retirement System, and the North Carolina National Guard Pension Fund. In total, the NCRS investment portfolio represents $70.5 billion,[1] which is managed by the Investment Management Division ("IMD") utilizing both internal and external managers. Oversight responsibility is held by the Treasurer as the sole fiduciary. The Treasurer is supported by an Investment Advisory Committee ("IAC"), Chief of Staff, General Counsel, Chief Investment Officer ("CIO") of the NCRS, and others in fulfilling fiduciary duties.

PURPOSE

The purpose of this review was to complete an evaluation of the governance and investment practices of the NCRS in order to provide the Treasurer with recommendations for improvement. NCRS' governance, operations and investment practices were compared to both common industry standards and best practices. A "common industry standard" is a generally accepted way of doing business at other public funds. A "best practice" is an experience-tested or emerging optimal practice.

The best practice for an organization is determined by examining how a particular function is carried out and then assessing whether a different course of action or methodology would enhance the process. The optimal practice for one organization may not be appropriate for another. Each practice must be tailored to suit a particular organization. To appreciate the importance of best practices it is essential to understand the difference between a function merely being performed adequately and a function being performed in the most effective and efficient manner—the distinction is analogous to the difference between being good and being great.

To make this determination, EnnisKnupp relied upon a combination of sources, including acknowledged industry standards (e.g., ERISA, UPIA, UMPERSA, AICPA, IIA, CFA Institute, Stanford Law School),[2]

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[1] As indicated in the January 26, 2009 Pensions & Investments listing of the top 1000 pension funds.

[2] ERISA: Employee Retirement Income Security Act; UPIA: Uniform Prudent Investor Act; UMPERSA: Uniform Management of Public Employee Retirement Systems Act; AICPA: American Institute of Certified Public Accountants; IIA: Institute of Internal Auditors, CFA: Chartered Financial Analyst Institute: Centre for Financial Market Integrity Code of Conduct for Members of a Pension Scheme Governing Body; Stanford Law School: The Stanford Institutional Investors' Forum Committee on Fund Governance Best Practice Principles.

secondary research from reputable industry sources (e.g., NASRA, NCTR, DOL, SEC),[3] empirical facts gained from performing similar reviews of other public funds, independent research, and the extensive experience of our Fiduciary Services team and other consultants in the firm.

SCOPE OF WORK

The Scope of Work for this review covered the section topics ("Section") listed below:

- Section 1: Transparency, Accountability, and Ethics
- Section 2: Organizational Structure
- Section 3: Investment Policy and Asset Allocation
- Section 4: Investment Management Structure
- Section 5: Investment Performance Reporting
- Section 6: Due Diligence
- Section 7: Investment Related Activities
  - Brokerage and trading
  - Trust and custody arrangements
  - Securities lending
  - Investment accounting and operations

METHODOLOGY

This review was conducted from June 2009 to February 2010. The methodology we used to perform this review consisted of the following:

- Document review – We submitted a document request list to the NCDST and NCRS staffs, and they responded promptly. The reports, policies, statutes, and other documents we reviewed are listed in Appendix I.
- Interviews – After reviewing the materials referred to above, we interviewed the Treasurer; key NCDST staff members; and several service providers. We interviewed some individuals numerous times. The list of interviewees is also found in Appendix I.
- Findings – The pertinent facts relevant to the NCRS' portfolio structure, laws, internal policies, and actual practices were checked against documents and verified with staff and outside service providers.
- Analysis – The EnnisKnupp team of consultants met internally and held discussions with the NCDST's staff to discuss all aspects of the review. We debated issues, challenged assumptions, discussed alternatives, and brought the firm's best thinking to our analysis.
- Recommendations – The EnnisKnupp team discussed preliminary recommendations for each area under review to make sure they were consistent and could be implemented.
- Draft Report Sections – A draft of each Section of the Report was reviewed by all members of the EnnisKnupp team and facts were once again checked with the sources – NCDST staff and others.

[3] NASRA: National Association of State Retirement Administrators; NCTR: National Council on Teacher Retirement; DOL: Department of Labor; SEC: Securities and Exchange Commission.

- Overall Report Draft – A draft of all Sections, compiled together, was provided to NCDST for final feedback.
- Presentation of Final Report – Refinements were made to the draft and this final Report was delivered to the Treasurer on April 19, 2010.

REPORT ORGANIZATION

This Report contains the results of the independent review and evaluation and is supplemented by a summary of recommendations and two appendices. There is a separate Section for each topic included in the scope of work. In each Section, we provide background information to explain the importance of the topic under review, followed by our findings and analysis where we compare current practices and policies to best practices. Finally, we set forth our conclusions and make recommendations, if warranted. Recommendations state our independent advice about policy or practice improvements that NCDST should consider.

OVERALL CONCLUSION

After extensively examining the investment program of NCRS, we conclude that it is fundamentally sound and follows many practices that fall inline with common practices of other large institutional investors. We did, however, find room for enhancement in areas generally described as risk mitigation, transparency, organizational effectiveness, accountability, ethics, and documentation. We were favorably impressed by the Treasurer and staff's immediate response to our recommendations throughout the review. By the time our review concluded, the NCDST had adopted numerous policies and changes in its operations to conform to best practices.

We encourage NCDST to continue to address the remaining recommendations and either formally accept, modify, or reject them based upon what is in the best interest of NCRS.

Transparency, Accountability, and Ethics

Transparency, accountability, and ethics are fundamentals of "good governance." These principles are priorities of the Treasurer. For this reason, the Treasurer has devoted significant resources during her first year in office to create or enhance a number of policies and procedures. These efforts have resulted in the adoption of a placement agent policy, significant expansion of NCDST' ethics policies, and more focus on improving processes related to delegation of authority and internal controls.

The Placement Agent Policy approved by the Treasurer is very comprehensive and reflects many of the essential elements called for by best practices; however it could be enhanced to require disclosure of political contributions and gifts not covered by the NCDST prohibition, and a regular report of placement agent usage. We recommend posting this and other information about investment transactions on the NCDST website, which is an excellent social media tool that can be used to support transparency and accountability.

Documentation related to the processes used for procurement of investment-related services exists, but a formal policy has not been adopted and is something we recommend. We also recommend using a questionnaire as part of a service provider disclosure requirement in the procurement process and also for ongoing due diligence. Such a questionnaire solicits information that can be used to assess and mitigate potential conflicts of interest.

The Treasurer does not currently have adequate means to determine whether the actions of staff violate established laws or policies. No internal auditor, or distinct compliance or risk management program has been established. Best practices are for systematic internal controls to be in place, based on a thorough Department-wide assessment of risk. Establishing clear policies, compliance mechanisms, and an internal audit function is consistent with the Treasurer's stated goals of transparency, accountability, and ethics reform.

Organizational Structure

The organizational structure of an investment office can directly impact the success of an investment portfolio. While no single model is optimal for all organizations, having adequate resources, the ability to attract and retain qualified professionals, appropriate and clear assignments of responsibilities, and educational opportunities to enhance staff skill sets are of primary importance.

From our review of the NCRS organizational structure, we found a need to clarify roles, responsibilities, and reporting lines for various parties, including the Treasurer, IAC, and NCRS staff. We recommend that position descriptions be updated. NCRS is understaffed and would benefit from not only expediting the recruitment process for existing vacancies, but also determining what additional staff is needed. We believe additional staff is needed not only because of the size and complexity of the portfolio, but also because of the recommended policies, compliance practices, internal control, and documentation of due diligence that we have recommended.

The skill set of the staff is appropriate, but the academic assistance program could be improved. The salaries of the NCRS staff are benchmarked to the 75th percentile of large public fund salaries. The actual salaries of senior staff meet or are near this benchmark, but the actual salaries of staff members below the director level are not. Yet, many of the positions below the director level have significant investment responsibilities. Some have asset management functions. Consequently, the compensation plan should be reviewed and the incentive pay provisions related to deferment and/or forfeiture of pay should be clarified.

Investment Policy and Asset Allocation

A written investment policy statement is one of the most important governance documents of a public fund. The various policies currently followed by IMD staff, when taken together, contain many key elements of a best practice investment policy statement. In some ways the policies are redundant and have limited use to those staff who are responsible for more than one asset class. An improvement would be to have the investment policies reviewed in light of the recommendations made in this Report, updated where appropriate, and consolidated into one comprehensive investment policy statement for the Treasurer's consideration and formal approval. Further, a methodology to regularly monitor and report policy compliance to the Treasurer should be discussed.

The NCRS asset allocation has been established in a prudent manner, but a formal asset liability study has not been completed by an independent consultant. The asset classes included in the portfolio are commonly used asset classes and are appropriate given NCRS circumstances. The allocations to private equity and hedge funds, in particular, may warrant reconsideration to evaluate whether the allocations should be higher or lower. It may also benefit NCRS to separate private equity and hedge funds from the alternatives allocation as specified in the statute. The rebalancing policy appears complete and in conformance with best practices. Recently, however, the Total Fund's actual allocations have not consistently been within the allowable ranges set forth in the investment policies, indicating a possible deficiency in either the rebalancing mechanism or compliance procedures.

The asset allocation, more than anything else, determines the risk of the fund, and therefore incorporating risk-return analysis into an investment policy is a best practice. NCRS has done this and because of the focus on return volatility and diversification, the overall fund has performed well compared to its benchmarks.

Investment Management Structure

The investment management structure relates to the numbers and types of managers NCRS hires, the use of internal and external management, the degree to which passive management is used, and, to a large part, the investment management fees incurred. Evaluating the investment management structure on a formalized, routine basis is a best practice.

Within the NCRS equity portfolio, a relatively high number of managers are used because of a very traditional "style box" approach for the U.S. equities where one or more managers are hired for every major market segment (e.g., large cap growth, mid cap core, small cap value). The styles of the managers hired, as well as the size of their allocations, have resulted in a mid-cap stock bias. NCRS may benefit from considering a manager structure that reduces overlap and redundancy within the equity portfolio, and avoids overweighting a specific area of the market.

NCRS established a global equity allocation in 2007, which is reflective of best practices. Further reducing the overweight to U.S. equity and underweight to developed and emerging international markets would result in a more market neutral structure, which we believe is best.

The fixed income portfolio is governed by the Long-Term Investment Fund policy, which stipulates that the portfolio will be similar in quality, coupon, and other key characteristics to a custom benchmark. This portfolio is internally managed and has performed well compared to the benchmark. Going forward any changes in the portfolio would have to be appropriately supported by the expertise on staff, resources available internally, and an internal control environment that identifies, mitigates, and monitors risk.

The amount of internal management in the NCRS portfolio is similar to peers. By only using internal management for fixed income assets, NCRS is somewhat different from peers who often use internal management for equity index funds. While pursuing internal management in any area presents a certain set of risks and thus must be considered carefully, evaluating the merits of internal management in the publicly traded equity asset classes would benefit NCRS.

NCRS uses passive management to a lesser degree than do peers. The structure of the NCRS index fund portfolio is complex and redundant. A more streamlined approach to indexing may benefit NCRS and serve to eliminate misfit risk between the equity portfolio and the asset class benchmark.

The NCRS real estate portfolio is structured to serve as a return enhancement, inflation hedge, and diversification source for the Total Fund, which is in-line with three of the five investment objectives listed in the real estate investment policy. These return objectives compete with the goals of capital preservation and lowering overall portfolio volatility, which are also stated as portfolio objectives. It may be beneficial for NCRS to revisit and clarify the objectives for investing in real estate and the role it plays in the broader NCRS portfolio. In addition, NCRS uses a high number of real estate managers and underlying funds, which is stretching the resources of the current staff. Adding more separate accounts would not be advisable until the staff is increased to monitor such investments.

Overall, the private equity portfolio is broadly diversified in terms of geography and sub-allocations but vintage year exposures should be reevaluated. In addition, the portfolio would benefit from more direct investments, co-investments, and secondary funds. Increased use of these types of investments could serve to improve the risk and return characteristics of the portfolio and lower costs. However, these types of investments should only be added to the portfolio if the appropriate internal and external resources are added.

The hedge fund portfolio is very small and relatively undefined. There are potential benefits to investing in hedge funds, but there are also unique risks. Further analysis regarding the optimal use of hedge funds and documenting their use in the policy would benefit NCRS.

From an overall perspective, the investment management structure is generally in alignment with the investment policies. Moreover, NCRS has appropriate procedures in place to monitor the structure of the portfolio compared to the policy and address violations when or if they occur.

NCRS' equity manager fees are competitive and the fees for private equity, real estate, and hedge funds appear to be reasonable. Economies of scale have benefited NCRS. No external investment fees are associated with the fixed income portfolio because it is internally managed. This has represented significant fee savings for NCRS.

Investment Performance Reporting

Performance reporting is an essential tool for fiduciaries to use in determining success of an investment program. NCRS dedicates significant time and resources, both internal and external, to performance reporting. Overall, the performance reporting for the Total Fund and the individual asset classes is in-line with common practices, but could be improved. The Pension Fund Overview, the main performance report for NCRS, is being developed in a collaborative fashion. Currently it includes a reasonable amount of information, but best practices are for it to include additional information and the types of exhibits and analyses that the Treasurer needs to sufficiently oversee the entire investment program.

Alternative asset classes require specialized reporting, which NCRS has recognized. IMD staff relies heavily on the private equity and real estate consultants for assistance in generating performance reports for these asset classes, which is appropriate. Staff is responsible for the hedge fund performance reports. The main improvements that could be made to the alternative asset class performance reports are regarding the portfolios' risk, diversification, and performance compared to each asset classes' policy requirements.

If the rates of return in a performance report are not accurate, the document is worthless. Therefore, having a sound and accurate process in place to calculate rates of return is important. Based on the results of the spot check, it appears that NCRS' returns are calculated accurately.

Benchmarks allow for judgments to be made about performance and it is essential that they be reasonable and periodically reviewed. The NCRS Total Fund benchmark is appropriate. Further, most of the asset class benchmarks are also appropriate, with the exceptions of the benchmarks for the real estate and hedge fund portfolios, which we believe should be reevaluated. Most of the benchmarks for the individual equity managers are appropriate but a few should be analyzed to ensure they are the most suitable.

Due Diligence

Thorough due diligence procedures serve to mitigate risk and increase the likelihood of good performance. NCRS has a comprehensive due diligence checklist, which it follows for selecting public market investment managers. The NCRS manager selection process for private equity, real estate, and hedge funds is also adequate; however, the NCRS process of documenting meeting notes and reference calls is not in-line with best practices primarily because of a lack of time among the small staff and limited technology resources. Going forward additional staff and resources will be necessary to ensure that all investment opportunities and relevant concerns are identified, extensively evaluated, and adequately addressed. Staff is aware of this issue and is in the process of researching new software and infrastructure to compile, organize, and store diligence information in a central, secure location.

Due diligence relates not only to the initial selection of managers and investments but also to their ongoing monitoring. The IMD follows a very detailed, structured, and thorough monitoring process. For the private equity and real estate portfolios in particular, additional resources would help to ensure that ongoing monitoring is performed at the required level and frequency.

Monitoring entails verifying compliance with manager guidelines. Guidelines, which are the specific parameters in which a manager can invest, ought to strike a reasonable balance between risk controls and providing active managers enough latitude to implement their investment approach. The IMD establishes any restrictions, maximum allocations, and expectations for tracking error with manager guidelines, which is a best practice. Adding allowable active-risk ranges to the guidelines would further improve them. The investment managers' compliance with established guidelines is monitored appropriately.

Investment Related Activities

Miscellaneous investment related activities that also impact the success of an investment program include brokerage and trading, trust and custody of assets, securities lending, and key functions related to investment accounting and internal controls.

For the analysis of the effectiveness of brokerage and trading, NCRS uses a reputable outside cost analysis service, which is a best practice. While the methodology used to evaluate total trading costs is appropriate, the reports would be more useful if they measured costs against a broader universe and contained recommendations for improvements.

The Treasurer also has a "historically underutilized business" program which encourages investment managers to use certain qualified broker/dealers. One of these brokers had the lowest commission rates, and an attractive average market impact cost. This program is having a positive impact on the use of minority and women owned broker/dealers in the NCRS investment program.

Prudent trust and custody arrangements are also critical to a successful investment program. NCRS uses BNY Mellon, a top tier custodian in the industry with great capabilities to serve large, complex funds such as NCRS. One shortcoming we found with BYN Mellon relates to the management of the Short Term Investment Fund. The benchmarks, target ranges, and guidelines for the Short Term Investment Fund should be revised to conform to best practices. We further conclude that the overall fees for the services BNY Mellon provides are competitive when compared to fees paid by others for similar investment programs.

For securities lending, NCRS uses its custodian bank, BNY Mellon, which is typical of public funds. In addition, NCRS uses State Street as a third party lender. Using a third party lender that has specialized skills instead of defaulting to using the custodian bank as the only lender is something we frequently recommend. While both banks are leaders in the industry and extremely capable, we recommend that NCRS periodically review these providers to ensure that it is receiving the most value in the areas of technological continuity and consolidated reporting. We also recommend some improvements to reporting from the banks and to the Treasurer.

We reviewed the current investment accounting system and found that NCRS could improve by using a more sophisticated software system. We also found that to further the Treasurer's interest in accountability and risk mitigation, NCRS should shift the responsibility for performance calculation away from the investment staff, especially if the calculations are used as a basis for incentive compensation. This shift in responsibility ties into our other findings about the inadequate internal control framework, mentioned previously. We recommend enhanced, tested, and documented controls in accounting and cash management.

We reviewed the trade order management systems currently in use and found that NCRS has properly placed the responsibility for monitoring the risk exposures and running portfolio analytics with the portfolio management team. However, having a separate and distinct individual, such as a risk manager, to monitor portfolio risks and trade compliance would be a benefit to NCRS.

Finally, we reviewed the reconciliation process between the custodian bank and NCDST' accounting system. We found, based on the sample documentation provided, that the staff is performing a complete reconciliation of the bank's reports. The current procedure is designed to verify accuracy of the financial data presented in the financial statements. An in-depth internal audit of the reconciliation process to identify weaknesses would benefit NCRS.

ACKNOWLEDGEMENTS

EnnisKnupp thanks the NCDST, NCRS, and Financial Operations Division ("FOD") staffs and outside service providers for their time and effort in answering questions and providing materials for this review. We relied heavily upon them for information. We received prompt responses to our questions and requests. We especially want to note that the Treasurer, Chief of Staff, General Counsel, Interim Chief Investment Officer, Director for Administration and Operations, Director of Financial Operations, and Administrative Officer were very accommodating in meeting with us, participating in conference calls, verifying facts and current practices, and providing us work space at the NCDST Office.

DISCLAIMER

This independent review and evaluation was limited to those topics listed in the Report. This was not an all-encompassing review of the entire NCRS operations. This review provides reasonable assurance that the practices we reflected in our findings are accurate; however, this was not an investigation and should not be construed as an absolute guarantee that all practices meet fiduciary standards.

Our findings and recommendations were based upon information we received from others – such as the NCDST staff, investment consultants, and the custodian bank. We did not independently verify all facts; however, we did request that sources review the facts we relied upon for our analysis.

The opinions and recommendations expressed herein reflect our independent judgment. No one associated with NCDST attempted to unduly influence the scope, findings, analysis, conclusions, or recommendations expressed in this Report.

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INTRODUCTION

Clearly defined policies and processes are fundamental to good governance. Poor governance has been ranked as the principal barrier to excellence within an organization, followed by inadequate resources and lack of focus or a clear mission.[1] The need for good governance and the value it adds has received significant attention over the last decade. Many believe these findings are pertinent to the governance of all types of organizations, including public funds.

Transparency and accountability are tenets of good governance. Collectively, and individually, these principles aid fiduciaries in demonstrating their actions are consistent with their duties of loyalty and prudence. The duty of loyalty requires that a fiduciary act solely in the best interest of all the participants and beneficiaries, and for their exclusive benefit. The duty of prudence requires that a fiduciary must act with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims.

Transparency and accountability are synonymous with “open access.” The principles are not easily separated because both encompass many of the same actions. Both are critical in cultivating public trust in the decision-making process. Public funds that conduct business in open meetings, provide clear reporting of their decisions, and adopt written policies and control procedures are acting in a manner that promotes transparency and accountability. The absence of “open access” and failure to document an organization’s processes can convey the wrong message to employees about what is expected of them, and to the stakeholders and general public about how the public fund is managed.

Adherence to legal and ethical standards is also an essential characteristic of good governance. To develop and maintain the public trust, it is critical for public funds to establish and communicate an organizational culture that demands and demonstrates the highest ethical conduct. One way to demonstrate the existence of this type of culture is to adopt and adhere to a comprehensive ethics policy. The document should convey the organization’s core values and beliefs, prohibit impropriety, and demand integrity. It is important to understand that the best ethics policy will not prevent all unethical conduct; but, at a minimum, it should clearly express to the stakeholders and the general public what conduct is unacceptable, the process for detecting and preventing misconduct, and the consequences for violations.

When creating or regulating a public fund, legislators will typically prescribe some level of transparency and accountability in the form of open access, oversight, and reporting requirements. Open access to information is a means to apprise stakeholders and all interested parties of the public fund’s operations, policies, investment transactions and performance. This practice helps to mitigate the level of public mistrust that can result from a lack of information.

[1] Keith Ambachtsheer, Craig Boice, Don Ezra, and John McLaughlin, “Excellence Shortfall in Pension Fund Management: Anatomy of a Problem,” 1995 Working Paper, cited in Pension Fund Excellence (by Ambachtsheer and Ezra, Wiley, 1998), 18.

An up-to-date, user-friendly website is an excellent vehicle for disseminating information and heightening public awareness. Many public funds post key organizational documents on their website to foster transparency and accountability to the general public. Examples of key information often found on websites of public funds include: investment policies, quarterly investment performance reports, meeting agendas and minutes, information on the governance structure, calendar of upcoming meetings and events, governance manual,[2] procurements underway, and annual reports. Posting a "transactions report"[3] on the website is a recent trend as a way to enhance transparency. A transactions report informs the public of the investment actions taken by the public fund during the month, including the identification of new managers that have been selected, the allocation they received, and implementation of new investment vehicles, among other data points.

In addition to being used as a tool to provide information to the general public about an organization's business, websites are often used by public funds to communicate directly with stakeholders. Stakeholder specific information is often not available to the general public. Instead, access is password protected on second-level pages of the website.

The Treasurer has stated that the top priority of her administration is transparency, ethics, and accountability. EnnisKnupp approached this Section of the review with that objective as the goal.

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Transparency and Accountability
   A) Placement Agent Fee Disclosure
   B) Procurement
   C) Level of Delegation of Authority
   D) Internal Controls
II. Ethics
   A) Potential Conflicts of Interest in Use of Consultants
   B) Disclosure of the Investment Advisory Committee

[2] The governance manual is a compilation of information and policies, such as the mission statement, accountability chart, delegations of authority, strategic plan, code of conduct or ethics policy, and other various organizational policies.
[3] A transactions report identifies, by asset class, any managers that were hired or received an additional allocation, the amount of the allocation, whether a placement agent was used, and whether the firm was women or minority owned.

I. Transparency and Accountability

A) Placement Agent Fee Disclosure

Background

A placement agent is an individual or firm that is hired to act as an intermediary for purposes of assisting a company or general partner looking for investors. Research shows that the use of placement agents is common.

Placement agent services include: identifying prospects, facilitating meetings, and helping the company to navigate the approval process. Placement agents are generally compensated based on a percentage of the amount of committed capital. Compensation is typically between one and two percent of the commitment and is paid over an agreed upon period of time. It is the compensation structure that causes the placement agent's services to be subject to regulation by the United States Securities and Exchange Commission ("SEC") and the Financial Industry Regulatory Authority ("FINRA"). Placement agents also provide non-regulated services such as preparation of marketing materials and presentation skills training.

During the last year, the industry has suffered a series of corruption scandals. The unprecedented decline in the financial markets and the negative press regarding investigations of fraud, conflicts of interest, and pay-to-play have heightened the public's scrutiny of public funds. Some believe that three key factors contributed to the scandals: lack of transparency, insignificant accountability, and role of campaign contributions.

To address the problems, on or about May 2009, New York State Attorney General Andrew Cuomo developed a "Code of Conduct" that, among other things, bans the use of placement agents. On August 3, 2009, the SEC issued a proposed rule that would also ban the use of placement agents. A number of large, sophisticated public pension funds have provided comments cautioning the SEC of the detrimental effect that a ban on the use of placement agents could have on their ability to access sectors of the private equity markets.[4] A small number of states have enacted legislation regulating the use of placement agents.[5] Only a few public funds have adopted policies completely banning any investment in a fund that uses placement agents. Most of the public funds that have adopted placement agent policies require disclosure of certain prescribed information.

[4] Comments on Proposed Rule 206(4)-5. The following is a list of some of the pension funds that provided comments in opposition to the ban on the use of placement agents: California State Teachers' Retirement System ("CalSTRS"), Office of the Connecticut State Treasurer, State of Wisconsin Investment Board, Minnesota State Board of Investment, Maryland State Retirement and Pension System, Massachusetts Pension Reserves Investment Management Board, South Dakota Investment Council, Commonwealth Pennsylvania State Employees' Retirement System, the California Public Employees' Retirement System ("CalPERS"), and the Public Employees' Retirement Association of Colorado. The New York State Comptroller and the New York City Comptroller provided comments in support of the ban.

[5] Examples include California, New Mexico, and Illinois.

The use of a transaction report to identify investments where a placement agent was used or a political contribution was made is an effective transparency tool. It allows interested parties open access to information, such as the names of the companies that used the placement agents, the names of the placement agents, and whether either made political contributions to decision-makers. Proactively posting this information on the public funds websites' is consistent with best practices.

Findings and Analysis

Prior to September 1, 2009, the Treasurer had not adopted a written placement agent disclosure policy. However, the IMD tracked placement agents for private equity and real estate investments. The list created by the IMD indentifies the name of the fund, the date of the commitment, and whether a placement agent was used by the investment manager. If a placement agent was used, the name of the placement agent is identified. The list does not include other relevant information, such as the fees paid to the placement agent, whether the placement agent is registered, or whether the placement agent gave any political contributions or gifts to decision-makers.

The Treasurer recognized the importance of adopting a placement agent policy and made its development a priority deliverable. EnnisKnupp provided a sample placement agent policy to the NCDST on July 20, 2009 for the Treasurer's review and consideration. In developing the sample policy, information from various sources was considered. Models included the policies of a number of other public and private entities,[6] and the SEC's proposed rule banning the use of placement agents. In EnnisKnupp's opinion, placement agent usage by investment managers is acceptable when reputable agents have proper FINRA registration and can comply with eligibility disclosure requirements. As a result, a detailed disclosure regime, rather than a ban, was proposed. If the SEC's rule is adopted, EnnisKnupp advised the NCDST that language could be added to the placement agent policy creating conformity with any activities the SEC bans.

The sample placement agent policy provided by EnnisKnupp called for disclosure and documentation of the following information:

- Identity and domicile of all placement agents utilized by the fund manager (not just the ones involved in raising a particular system's commitment)
- Placement agent's broker-dealer (SEC, FINRA, or comparable entity) registration information
- Placement agent fee structure
- History and qualifications of the placement agent

[6] The following policies were considered: the *Public Pension Fund Reform Code* developed by New York Attorney General Andrew Cuomo; the Placement Agents Supplementary Code of Conduct, issued June 2009; the Credit Suisse Placement Agent Criteria; the evaluation and commentary developed by CalSTRS regarding California Assembly Bill 1584 entitled *The Placement Agent Disclosures and Post-employment Restrictions*, as amended June 18, 2009; *the New York State Common Retirement Fund Placement Agent Disclosure Policies and Procedures of the Office of the State Comptroller*, approved July 24, 2007 and amended April 21, 2009; CalPERS Statement of Policy for Disclosure of Placement Agent Fees, adopted May 11, 2009; and the (some of these titles are italicized and some are not. Please double check for consistency) Addendum to the Teachers Retirement System of Texas Investment Policy Statement, Political Contributions; Improper Influence; Placement Agents and Finders, effective July 1, 2009.

- Placement agent's length of employment by the fund manager
- Actual fee paid to the placement agent for the public fund's commitment
- Terms of the placement agent agreement
- Any anticipated investigations and any investigations for the past ten years by any federal, state, or local government agencies or regulatory bodies
- Direct or indirect relationships with the decision-makers responsible for the hiring of the investment firm
- Placement agent's status as a lobbyist with any state or federal government
- Political contributions or gifts made to the decision-makers by the placement agents
- Placement agent financial brokerage licenses (e.g., Series 7/63)

To reflect best practices, a public fund's placement agent policy is ideally part of a comprehensive ethics code of conduct. The Treasurer approved a Placement Agent Policy on September 29, 2009.[7] The Placement Agent Policy establishes eligibility criteria, requires disclosures, and provides remedies for violations. The Placement Agent Policy requires disclosure of most of the information identified above, but it is not part of a comprehensive compilation of policies and procedures regarding ethics and conflicts of interest. A compilation is an efficient and effective means of quickly accessing all relevant policies that have been adopted relating to a given subject matter. This practice helps to mitigate governance and implementation risk, and is consistent with best practices.

Once a policy has been adopted, a process is needed to address how the policy will be executed, including the implementation and monitoring process, the procedure for addressing concerns, and the individual(s) responsible for these functions. The following are suggested steps to include in a placement agent disclosure process:

- Providing a copy of the placement agent disclosure policy to the investment manager during preliminary due diligence
- Sending the investment manager specific placement agent disclosure requirements, including a form which clearly solicits the information needed to comply with the placement agent policy, any applicable laws, and any side letter provisions stating necessary disclosure requirements
- Completion of the questionnaire by the investment manager and submission to the staff and investment consultant
- Staff and investment consultant independently reviewing the responses and ensuring that the placement agent usage is in compliance with the policy and any applicable laws
- Discussion of any conflicts or issues of concerns
- Staff and investment consultant including questionnaire responses in due diligence reports for the CIO's review and approval, and ultimately, for the Treasurer's review and approval
- During legal review and side letter negotiations, staff, the investment consultant, and/or the general counsel (or designee) ensure that investment manager agrees to the appropriate side letter placement agent disclosure provisions

[7] The policy was subsequently amended and approved by the Treasurer on October 19, 2009.

- If an investment is approved, the staff and investment consultant independently record placement agent usage
- Staff and/or the investment consultant publish a report on placement agent usage
- Communicate the use of placement agents to stakeholder and the public

The NCRS' Placement Agent Policy establishes a notification and review process that includes many of the steps identified above.

The Placement Agent Policy is accessible on the NCDST website. This practice allows stakeholders and other interested parties to be aware of particulars concerning disclosure and eligibility requirements imposed on current investment managers and those seeking to do business with the NCDST that have elected to use a placement agent. The Placement Agent Policy does not require the NCDST to systematically communicate information to the public regarding investments where a placement agent was utilized, including placement agent compensation and any political contributions made by the placement agent.

Conclusion

Adoption and implementation of a written placement agent disclosure policy is consistent with the Treasurer's ethics and transparency reforms announced in March 2009. The Placement Agent Policy approved by the Treasurer is very comprehensive and reflects many of the essential elements called for by best practices. Transparency and accountability would be enhanced if the Placement Agent Policy also required disclosure of political contributions and gifts to decision-makers,[8] and an issuance of a detailed investment transactions report on the NCDST website.

A comprehensive website is an excellent tool, often used by public funds, to promote transparency and accountability. The website can be used for purposes of raising public awareness not only concerning the North Carolina Placement Agent Policy, but also regarding the NCDST's governance practices and investment activities. Yet, much of the key information (such as investment policies and guidelines, the latest investment performance reports for the NCRS, a list of the NCRS service providers) typically posted by other public funds was not found on the NCDST's website when EnnisKnupp began its review. Consistent with the Treasurer's transparency and accountability initiatives, the NCDST has started to post key documents on its website.

Recommendations:

1. Amend the Placement Agent Policy to require the disclosure of political contributions and gifts to decision-makers by those doing and seeking to do business with the NCDST.
2. Produce and post on the NCDST website an investment transactions report, including placement agent usage, compensation, and registration status, and political contributions or gifts given to decision-makers.

[8] The Treasurer has adopted a policy that bans gifts, but this policy does not apply to service providers seeking to do business.

3. Incorporate the Placement Agent Policy into a compilation of the NCDST ethics policies.
4. Implement and monitor the Placement Agent Policy.
5. Continue to post, and update as needed, key documents related to the governance and investment processes on the NCDST website.

B) Procurement

[Please note: Procurement is discussed in this Section in terms of transparency and accountability, and in Section 6 (6.I) in terms of the overall investment manager due diligence process.]

Background

For purposes of obtaining investment related services, the procurement process is referred to as the search and selection due diligence process. Public funds are frequently subject to state or local statutory procurement requirements. However, many are exempt, particularly for purposes of procuring investment related services. The exemption is needed to ensure that public fund fiduciaries have a level of independence sufficient to permit them to perform their duties effectively and efficiently.[9] Autonomy is appropriate because a fiduciary's decisions are subject to a strict legal standard much higher than is used for normal business conduct. These standards require that procurement decisions must be made prudently, solely in the interest of the beneficiaries and participants, and in accordance with applicable laws and governing documents.

The procurement process can give rise to a number of risks. Examples of some risks include conflicts of interest, inconsistent process, and lack of documentation. If the process is to be viewed as prudent and ethical, risks must be controlled. An organizational culture that values ethical conduct is less likely to be plagued by fraud and conflicts of interest. To determine whether conflicts exist, many public funds use a service provider disclosure questionnaire. This document is used initially as part of the investment procurement process and on an ongoing basis (typically as an annual filing requirement). The service provider disclosure questionnaire solicits information from the investment consultant(s) and investment managers regarding various subjects. The following is a list of the type of information usually requested:

- Sources of revenue and their percentage of overall revenue
- Any relationship(s) or strategic alliance(s) with an organization that sells services to institutional investors
- Non-routine inquiries or investigation by the SEC or any similar federal, state, or self regulatory body or organization; litigation concerning fiduciary responsibility or investment related matters; and insurance claims submitted related to errors and omissions or fiduciary liability
- Anything of value that was given, directly or indirectly, to any decision-maker or employee of the public fund
- Client and non-client directed brokerage

[9] See the note to Section 7 of the Uniform Management of Public Employee Retirement Systems Act (UMPERSA).

- Payments to service providers of the public fund

When procuring investment service providers, a systematic written process is needed. The process should be based on the following fundamentals:

- Clearly defined objectives
- Competitive and merit based standards, including:
  - Selection criteria, including minimum eligibility and any weightings, that are documented and fixed at the outset, prior to the announcement of the search of the process
  - An impartial evaluation process, where each eligible service provider is treated fairly and given due consideration
  - Advance identification of the individual(s) responsible for conducting the search and making the selection decision
  - Access to the same information over the same time period by all eligible service providers
  - Communication to all eligible service providers in the same manner and timeframe, with any limitations on communication clearly defined in advance and consistently applied (a communication blackout, "no contact" period is often used)
- Public notification

Clear documentation of the procurement process fosters transparency and accountability, and mitigates risk.

<u>Findings and Analysis</u>

It has been determined that the Treasurer is exempt from the State's procurement requirements,[10] and, therefore, has the ability to independently contract with service providers necessary for the administration of the investment program. It is EnnisKnupp's understanding that the Treasurer is authorized to exercise her procurement responsibilities without fiscal control from the Director of the Budget or the Department of Administration, except as set forth in N.C.Gen.Stat. §143-25 (2009). Fiduciary autonomy in the procurement process, as well as the budget process, is a best practice. Autonomy allows the Treasurer to perform her duties more effectively and efficiently, consistent with strict fiduciary standards along with legislative reporting and oversight.

The NCDST has adopted an extensive Purchasing Manual. This document covers numerous procurement related topics, including the bid solicitation process and the prohibition on gifts to certain employees. The procurement of investment related services (e.g., the search and selection process for investment service providers) is not addressed in the Purchasing Manual. The IMD has developed extensive documentation explaining the steps in the investment manager procurement process for several asset classes. The documentation uses schematic flow charts and narratives. The process

[10] N.C. Gen.Stat. 147-68(e) (2009), Article 3 and Article 3C of Chapter 143, and as interpreted by State of North Carolina, Department of Justice, Opinion of the Attorney General, Roy Cooper, December 12, 2002.

includes the use of a request for proposal ("RFP") and details qualitative and quantitative questionnaires.

While there is documentation of the process, the IMD does not have an approved procurement policy for investment related searches. Further, it cannot be demonstrated, based on current documentation, that the process is designed to promote transparency or accountability. For example, in advance of the search, the documentation does not provide for a "no contact" period,[11] public notification, or documentation of the specific evaluation criteria or the weightings of the criteria.

A service provider disclosure questionnaire is also not used by the IMD. The document was initially used in the industry as an investment consultant disclosure tool, but its value in detecting and mitigating potential conflicts of interest was quickly recognized. Now, there is a growing trend to use the questionnaire when procuring investment manager services. A service provider disclosure questionnaire solicits information regarding whether a prospective or current service provider has paid or received any type of remuneration or has any business dealings that could result in a conflict of interest (actual or perceived). EnnisKnupp provided a sample service provider disclosure form to the NCDST.

Conclusion

The IMD documentation for the procurement of investment related services has been generated, but enhancements are needed. Examples of potential areas of improvement include clearly defined search objectives, specific eligibility and evaluation criteria for each search, communication restrictions, conflicts disclosure, and use of mitigation plans. A service provider disclosure policy would also be a valuable addition to the manager selection process.

Establishing a formal procurement policy, improving documentation, and issuing notification to the public would aid in mitigating risk. It would also be more inline with the Treasurer's transparency, accountability, and ethics initiatives. Use of an open, competitive, and fair procurement process is a best practice.

Recommendations:

1. Develop and adopt a comprehensive written investment related services search and selection procurement policy that is designed to mitigate risk and foster transparency and accountability.
2. Adopt a no contact policy, as a component of the written investment related services search and selection procurement policy, restricting communications during the procurement process.

[11] It is a common practice for public funds to prohibit any communication or contact between a potential bidder and the agency upon the release of a RFP or Intent to Bid. Contact is allowed to obtain technical clarification, but only if directed to the individual identified in the solicitation document as the primary contact and only during the specified time. Incidental contact is generally permitted if it is exclusively social or clearly does not pertain to the subject of the procurement. Willful violations result in disqualification. Since the commencement of this review, a No Contact Policy, effective March 1, 2010, has been adopted by the NCDST.

3. Develop a service provider disclosure policy with a questionnaire as a component of the written investment related services search and selection procurement policy.

C) Level of Delegation of Authority

Background

Public pension fund fiduciaries are typically granted exclusive authority and control over fund assets, subject to applicable laws. Under common law a fiduciary could not delegate authority to another; however, this has changed. Public fund fiduciaries are allowed, and even encouraged, to delegate authority if it is prudent to do so and adequate safeguards are in place. Few governing fiduciaries have the expertise or experience to perform all the functions associated with managing a fund. Therefore, not delegating authority can result in a breach of fiduciary duty. Failing to effectively delegate can also be a problem.

When delegating authority, fiduciaries must exercise prudence. To accomplish this, a fiduciary must ensure the person or entity to which they are delegate has the necessary experience and skill. Further, the scope of the delegation must be clearly articulated, any fees must be reasonable, and the delegation must be consistent with applicable standards of law. To be consistent with best practices, delegations should be in writing and specifically acknowledged by the individual or entity to which authority has been allocated.

Delegation is not abdication. The governing fiduciaries (e.g., the board of trustees or sole fiduciary) retain ultimate responsibility, and have a duty to regularly monitor and evaluate performance in order to determine whether the delegation continues to be prudent. This oversight responsibility is a fundamental fiduciary duty that can never be delegated.

Findings and Analysis

The Treasurer is the sole fiduciary of the NCRS. Only three other states in the U.S. have a sole fiduciary model.[12] The Treasurer's investment authority is subject to statutorily defined limitations, commonly referred to as a "legal list."[13] Investment decisions, such as the development of the investment policy and asset allocation, must be consistent with statutorily defined limitations.

The Treasurer is subject to the oversight of the Joint Legislative Commission on Governmental Operations, the Chairs of the House of Representatives and Senate Appropriations Committees, the Chairs of the House of Representatives and Senate Finance Committees, and the Fiscal Research Division of the General Assembly. Each of these entities must be provided with a quarterly report concerning all investments and deposits made by and through the NCDST.[14]

[12] New York State, Connecticut, and Michigan.
[13] N.C. Gen.Stat. §147-69.2 and 147-69.3 (2009).
[14] N.C. Gen.Stat. §147-68(d) (2009).

The Treasurer's decisions regarding the selection of the CIO, ability to delegate authority, etc. are not limited by statute or subject to approval by another entity. In practice, the Treasurer has delegated significant authority to the CIO, including the day-to-day management and oversight of the investment program. The Treasurer has retained authority regarding modifications to investment policies, asset allocation, and selection and termination of investment managers, consultants, and the custodian bank. Regardless of the degree of delegation, the Treasurer remains ultimately responsible for the investment program and oversight of the CIO. The Treasurer must periodically review the delegation of investment authority to the CIO and determine whether it continues to be prudent. Otherwise, the Treasurer may become liable for any mismanagement by the CIO. In turn, the CIO must monitor the IMD staff. Prudence in monitoring the CIO and the CIO's monitoring of the IMD staff requires the periodic review of their performance. If inadequacies are found, appropriate action must be taken.

A consensus process is also useful to ensure there is a "meeting of the minds" regarding information reporting. The Treasurer receives numerous reports from staff regarding the performance of the investment program. However, it does not appear that the IMD fully understands the information needed by the Treasurer to efficiently fulfill her fiduciary duties and oversight function. As a result, there is a need to develop a report that provides key information desired by the Treasurer to support oversight of the performance and operations of the investment program..

<u>Conclusion</u>

A written statement of delegation should be produced that clearly defines what decision-making authority has been retained by the Treasurer and what has been delegated to the CIO. A similar document should be created for the other key IMD staff. The use of an accountability matrix, developed using a consensus approach, helps to clarify who has responsibility for what functions related to the investment program. [Delegation and the use of an accountability matrix are also addressed in Section 2 (2.1).]

Accountability and transparency are important in terms of reporting to the public at large and the concepts also apply internally. Compliance with rules, reporting, and disclosure by the IMD aid the Treasurer's ability to gain confidence in the capabilities of the IMD staff to carry out the administration of the investment program.

Recommendations:

1. Develop a written statement of delegation which clearly defines what authority has been retained by the Treasurer and what has been delegated to the CIO.
2. Develop a written state of delegation that clearly defines what authority has been retained by the CIO and what has been delegated and to whom.
3. Generating a reporting format, using a consensus approach, designed to respond to the specific questions and concerns of the Treasurer.

D) Internal Controls

[This Subsection of the Report addresses internal controls in terms of the overall investment program of the NCRS. Section 7 (7.IV.B) discusses internal controls with reference to the investment accounting function of the NCRS.]

Background

An effective system of internal controls provides management assurances that (1) goals are met; (2) operations are effective and efficient; (3) reporting is reliable; and (4) the organization is in compliance with application laws and policies. For stakeholders and the general public, demonstrating that a system of internal controls is in place conveys a level of comfort that the assets are safeguarded and accounted for properly.

EnnisKnupp believes that best practices for an internal control framework incorporate enterprise risk management ("ERM").[15] In 2004, ERM was established by the Committee of Sponsoring Organizations ("COSO"), an organization supported by five professional organizations dealing with controls, risk management, and fraud deterrence and widely recognized by the financial community. ERM expands on internal controls principles developed by COSO more than a decade earlier.

ERM consists of a number of interrelated components that are derived from the way management runs an enterprise and are integrated with the management process. Some of the leading elements for an internal control risk framework include:

- A control environment – An organizational culture of professional competence and ethical dedication
- Risk assessment – Identification and management of risks, based on the goals and objectives of the organization
- Risk analysis – Evaluation and prioritization of risks
- Control activities – Actions designed to detect and prevent risks[16]

A successful control environment is premised on staff's understanding of what is required and what it can do. To achieve a successful control environment, it is essential for a public fund to establish and communicate clear policies and procedures. Examples of critical policies include a thorough investment policy statement with objectives, asset allocation parameters, portfolio risk tolerances, and a comprehensive ethics code of conduct that defines prohibited activities, prescribes high ethical standards, and deters conflicts.

[15] The ERM framework calls for an enterprise view of risk. It adds strategic goals and objectives setting, identification of potential risk, and design of risk response to arrive at an integrated framework. For a more detailed discussion, see "*Enterprise Risk Management – Integrated Framework," Executive Summary*, September 2004, Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). www.coso.org/publications/ERM/COSO_ERM_Executive Summary.pdf.

[16] Based on recommendations provided by COSO.

The use of an internal auditor to assess the adequacy and effectiveness of an organization's system of internal controls is a best practice. An internal auditor provides independent, objective assurance and designs activities to add value and improve an organization's operations. The internal audit function also helps an organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, internal controls, and governance processes.[17] An internal auditor reports on conditions that pose a risk of loss, and identifies irregularities, fraud, and other acts that are subject to detection through the application of auditing procedures.

The annual financial audit is not a replacement for an internal audit function. Internal and external auditors have mutual interests, but there are major differences in their relationship to the organization, their objectives, and scope of work. Unlike the external auditors, the internal auditor is part of the organization and is concerned with all aspects of its operations, financial and non-financial. Additionally, an internal auditor's scope of work is generally more comprehensive and includes helping to ensure key business risks are managed appropriately and that the internal controls system is operating effectively. The role of the internal auditor does not include establishing the organization's "risk appetite," making decisions concerning risk responses, or being accountable for risk management. These functions are the responsibility of management, often addressed with the assistance of a risk manager.

A risk manager typically has more of a strategic focus that differs from the role of the internal auditor or compliance officer. Each job is different, but closely related. Moreover, the division of responsibilities for each is not standardized and often depends on the type of organization.[18]

Findings and Analysis

A public fund can face numerous potential risks which vary in the likelihood of occurrence and severity. They range from actual theft of assets, internal fraud, and corruption to non-compliance, inefficiency, and simple error. Any of these can result in loss of assets, failure to pay benefits in a timely manner, and damage to a system's reputation. A successful internal asset management function requires an ERM approach. The approach should include a proactive risk assessment and analysis that produces a well thought out system of controls. Proper identification and separation of functions is critical. For example, portfolio management (front office) should be separate from performance measurement and evaluation, and both should be separate from investment accounting and settlement (back office). There is an awareness of the need for an ERM approach at the NCDST, but it appears that neither sufficient time nor resources have been available to institute an ERM approach.

[17] National Institute of Internal Auditors' (IIA) description of internal auditing practices.
[18] Risk Principles and Asset Managers, February 25, 2008, prepared by the Buy Side Risk Manager Forum and Capital Market Risk Advisors.

Unlike many of the other large, complex public funds,[19] the NCDST does not have an internal auditor or an internal audit function responsible for reviewing controls and monitoring compliance. The need for an internal audit function is greater when the level of potential risk is greater. The internal audit function helps to mitigate risk by providing ongoing, in-depth evaluations regarding the effectiveness of internal controls, risk management, and governance processes.

The Director of Corporate Governance position was created within the IMD, but it was never filled. This position's description had elements of an internal audit function, risk manager, and corporate governance functions related to proxy voting. [See discussion regarding staff roles and position descriptions in Section 2 (2.II).] Many of the functions of the Director of Corporate Governance were operational in nature. To maintain independence and objectivity, the position responsible for the internal auditor function should not be assumed by any employee with operational responsibility. Based on the staff size and organizational complexity, particularly the extensive use of internal management, at least one full-time equivalent ("FTE") employee is needed for the IMD internal audit function.[20] During the interview process, we were informed that the Director of Corporate Governance position had been reclassified and combined with a legal position.

There is a growing trend for sophisticated investment organizations, like the IMD, to have a risk manager. The risk manager helps in the development and oversight of the investment risk management function. It does not appear that a risk assessment has been conducted nor is there an organized, dedicated risk management program.

There is also no designated compliance officer. A number of compliance functions appear to be allocated to three positions, the Administrative Officer, the Director for Administration and Operations, and the Operations Manager. The Administrative Officer is responsible for ensuring that economic interest statements are filed. The Director for Administration and Operations is responsible for administrative oversight and ensuring compliance with statutorily mandated reporting. The Operations Manager is responsible for investment activity compliance, including the back office functions that support the IMD's trading activity, such as record-keeping, trade confirmation, trade settlement, and applicable regulatory compliance. However, there is no centralized, systematic process in place to monitor whether the IMD staff has conflicts of interest or is engaging in unacceptable activities. EnnisKnupp believes these deficiencies are due to limited resources, rather than intentional disregard.

The development of systematic internal controls, based on investment and ethics policies and procedures, is a key component of ERM for a public fund. The SEC recently warned public funds and their employees that they are subject to the anti-fraud provisions of the federal securities laws and

[19] NASRA "Survey on Internal Audit Processes": 26 of the 29 respondents reported that have an internal audit function. 7 of the 26 outsourced the function. http://nasra.org/resources/internalauditprocessesresults.pdf. May 2004.

[20] Based on the Association of Public Pension Fund Auditors ("APPFA") survey that compared the ratio of total staff to internal auditing staff at a number of public funds. http://www.appfa.org/

related SEC rules,[21] and reminded those public funds that engage in investment management activities of "their obligation to comply with federal securities laws and the risks they undertake by operating without an adequate compliance program."[22] The SEC noted that the public fund, which was the subject of the investigation, did not have a compliance officer, the general counsel's duties did not include oversight of investment activities, and the investment staff did not understand federal securities laws generally and insider trading laws in particular.[23] The SEC concluded that "appropriate policies, procedures, and training" could have prevented the conduct.

The NCDST is working to develop a more comprehensive set of clearly defined policies and procedures, including an insider trading policy. A well designed insider trading policy that is properly followed creates an effective internal control. It provides a method to demonstrate that appropriate steps have been taken to prevent insider trading violations, and to assert a defense against liability under Sections 20A, 20(a), and 21A of the Securities Exchange Act of 1934.[24]

EnnisKnupp provided a sample insider and personal trading policy to the NCDST. The policy contained the following provisions, which we believe reflect best practices: (1) a prohibition against insider trading and front-running that applies to all employees of the public fund; (2) a requirement that all those covered by the policy must be specifically identified and notified of their reporting obligations; (3) the designation of a compliance officer who is responsible for reviewing and reporting on personal trading activity; (4) a pre-clearance process, requiring that covered persons cannot engage in certain personal securities transactions without seeking pre-approval and complying with established disclosure requirements; (5) identification of transactions that are exempt from the pre-clearance process; (6) a reporting and disclosure process, ideally on a quarterly basis, with an annual holdings report at year-end; (7) an acknowledgment requirement that all personal securities and related holdings have been reported; and (8) definitions of key terms, including the definition of material, non-public information.

Tracking and ensuring legal and policy compliance and disclosure of required information by all covered parties can be difficult. Some organizations use compliance software to assist them with this task. Software companies create regulatory compliance software for organizations based on their needs to track compliance with various regulations and disclosure requirements. The software can be designed to manage and organize data so that compliance officers can quickly access and generate

[21] Public pension funds are exempt from the requirements of the two federal laws that regulate investment managers, the Investment Company Act of 1940 and the Investment Advisers Act. Section 10(b) of the Exchange Act and Rule 10b 5 prohibit the purchase or sale of securities on the basis of material, non-public information in breach of a duty of trust or confidence. The prohibition covers "insiders." "Insiders: those who acquire the information in the context of a relationship of trust or confidence, and persons who are 'tippees' of either 'insiders' or persons who have misappropriated the information. In addition, controlling persons who fail to prevent insider trading may be subject to civil penalties under Section 21A of the Exchange Act.

[22] "Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The Retirement Systems of Alabama, issued March 6, 2008.

[23] Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The Retirement Systems of Alabama, issued March 6, 2008.

[24] Kelson, Mark J., Allen, David B., "Corporate compliance: Updating insider trading policies and procedures," *Insights: the Corporate & Securities Law Advisor*, Vol. 18, No. 3 (March 2004): 13–18.

reports against the data. The auditors can also access the software records to obtain proof that the organization is complying with legal and policy mandates. Additionally, it helps to reduce paperwork and increase efficiency.

Another source of guidance regarding acceptable behavior for investment professionals is the Chartered Financial Analyst ("CFA") Institute Code of Ethics and Standards of Professional Conduct ("CFA Code"). The CFA Code makes it clear that trading on insider information is always wrong. The CFA Code requires its members to act with integrity, competence, and dignity; to act in an ethical manner when dealing with the public, clients, prospects, employers, employees, and fellow members; to use reasonable care; and to exercise independent professional judgment. CFA Charterholders are required to provide their supervisors with the CFA Code, acknowledge their obligation to adhere to the standards and encourage others to adhere to the standards. Currently, three employees of the IMD are CFA Charterholders. The NCDST cannot rely on the CFA Charterholders to mitigate the risk that the IMD non-CFA Charterholders will misuse insider or confidential information. Non-CFA Charterholders are not subject to the CFA Code. Therefore, it is important for the NCDST to impose ethical obligations on the IMD staff through internal policy comparable to the obligations of the CFA Code.

The NCDST is clarifying its internal controls by developing ethics policies designed to communicate to staff restrictions and prohibitions on certain behavior. This practice helps to mitigate conflicts of interest. The State Government Ethics Act requires that the head of each State agency, in this case the Treasurer, make a "conscientious, good-faith effort to assist public servants within the agency…in monitoring their personal, financial, and professional affairs to avoid taking any action that results in a conflict of interest."[25] Under the State Government Ethics Act, a "public servant" is prohibited from using or disclosing non-public information gained in the course of performing their responsibilities to affect their own or another person's/entity's financial interest, and is prohibited from using or disclosing confidential information.[26] Each employee receives orientation and training that includes a review of the State Government Ethics Act and Personnel Manual. Public servants are required to file a Statement of Economic Interest form.[27] The Ethics Commission is required to publish on a quarterly basis the names and positions of all public servants subject to the State Government Ethics Act.[28] It is EnnisKnupp's understanding, based on past practice, that only four investment positions are covered, the Chief Investment Officer, and the three Investment Directors. As a result, it is important for the Treasurer to adopt an ethics policy that has much broader coverage.

Conclusion

A compliance program has not been established to control the risk of conflicts of interest or insider trading. Establishing clear policies and a compliance program that addresses unacceptable behavior

[25] N.C. Gen.Stat. § 138A-15 (2009).
[26] N.C. Gen.Stat. § 138A-34 (2009).
[27] N.C. Gen.Stat. § 138A-22 (2009).
[28] N.C. Gen.Stat. § 138A-11 (2009).

by those responsible for investment management and decision-making is consistent with the Treasurer's ethics and transparency reform initiative.

The NCDST does not have adequate means to determine whether the actions of the IMD staff are outside of federal or state laws or established policies. The SEC's warning to public pension funds should not be taken lightly. The absence of comprehensive policies and procedures specifically designed to mitigate the likelihood of conflicts or wrongdoing related to asset management functions places the NCDST at risk. The need is even more compelling because most of the investment staff are not subject to the State Government Ethics Act.

Recommendations:

1. Adopt an insider trading policy, applicable to all the NCDST staff and IAC members.
2. Consider adopting a personal trading policy applicable to the NCDST staff with access to material, non-public information.
3. Establish an internal audit function and hire an internal auditor.
4. Designate a compliance officer.
5. Adopt a clearly defined system of internal controls based on a comprehensive risk assessment of the investment program.
6. Institute a risk management program.
7. Consider establishing a risk manager function.
8. Adopt a code of ethics for the non-administrative IMD staff members, incorporating certain ethics policies that have already been adopted for the senior level IMD staff members and using the CFA Code as a model for any additional investment related ethics policies that may be needed.

II. Ethics

A) Potential Conflicts of Interest in Use of Consultants

Background

Conflicts of interest are inherent in the financial services industry. At consulting firms, the potential for conflicts are numerous as they have multiple lines of businesses that receive revenue from competing clients.

The issue of whether investment consultants can provide independent advice to a public fund when the consultants also provide services to investment managers seeking to do business with public funds has been debated for a number of years. Based on this potential conflict, firms came under significant pressure to disclose relationships and the amount of revenue received. In 2002, the Investment Management Consultants' Association ("IMCA") issued the Standards of Practice for Investment Management Consultants.[29] The goal was to promote ethical behavior among investment consultants. The standards require (1) full disclosure of conflicts of interest,[30] (2) full disclosure of all consulting services and (3) full disclosure of all compensation received and compensation paid in all forms, including all direct and indirect financial relationships between the consultant and investment managers, fund officials, beneficiaries, sponsors, and third-party affiliations.[31] The CFA Institute also requires conflict disclosures of consultants.

In December 2003, the issue of conflicts of interest in the investment consulting industry became the focus of an SEC examination. A report was issued in May 2005.[32] Following the issuance of the report, the SEC and United States Department of Labor ("DOL") jointly developed a list of ten questions for public funds to ask. The questions are designed to allow a public fund to assess potential conflicts. Now, many public funds have a service provider disclosure policy designed to solicit information comparable to questions developed by the SEC and DOL. A service provider policy typically requires investment consultants and investment managers to complete a detailed questionnaire, disclosing information about the services they provide, revenue sources, and conflicts (the "service provider disclosure questionnaire"). EnnisKnupp considers this disclosure to be a best practice.

Findings and Analysis

The IMD uses a real estate consultant and a private equity consultant. It does not use a traditional investment consultant. As noted earlier, the NCDST has not developed a policy for its investment

[29] Investment Management Consultants Association IIMCA"), Standards of Practice, July 2002.
[30] IMCA Standard 5b: A Consultant's Responsibility to Disclose Conflicts of Interest.
[31] IMCA Standard 1: Code of Professional Responsibility, Standard 2B: A Consultant's Responsibility to Disclose All Compensation; and Standard 3e: A Consultant's Responsibility to Disclose Third-Party Affiliations.
[32] Securities Exchange Commission, Office of Compliance Inspections and Examinations, "Staff Reporting Concerning Examinations of Select Pension Consultants," May 16, 2005. http://www.sec.gov/news/studies/pensionexamstudy.pdf.

consultants (or investment managers) that requires detailed disclosure of activities that could pose potential conflicts of interest.

The SEC requires investment managers and investment consultants (investment advisers) to file Form ADV. Form ADV has two parts. Part I contains information about the investment adviser, including the educational background of key personnel, certain information about the business that is conducted, and disciplinary history for the last ten years.[33] ADV Part II includes information on an investment adviser's services, fees, and investment strategies.[34] Investment advisers are required to provide ADV Part II to prospective clients prior to executing a service contract. Investment advisers must also annually offer ADV Part II to existing clients. Form ADV does not provide the same type of information requested in a service provider disclosure questionnaire. [Section 1 (1.I.B) addresses the type of information typically disclosed in a service provider disclosure questionnaire.] Prior to EnnisKnupp's review of the NCRS, the IMD did not have a service provider disclosure questionnaire.[35] ADV forms are provided to the IMD by all investment managers within the investment portfolio.

Conclusions

Relying on general laws, rather than adopting a specific policy, is not consistent with best practices. Adopting a policy that requires reporting and disclosure by its investment consultant(s) would allow the NCDST to monitor and assess the objectivity of the advice provided and mitigate the risk of potential conflicts of interest. A sample service provider disclosure questionnaire, designed to obtain information from investment consultants regarding matters that could pose potential conflicts, was provided to the NCDST by EnnisKnupp.

Recommendations:

1. Develop and implement a service provider disclosure policy and a disclosure questionnaire.
2. Require all the IMD staff to disclose conflicts of interest as part of a comprehensive ethics code of conduct.
3. Extend the Supplemental Ethics Policy and the Two-Year Revolving Policy to all the non-administrative IMD staff.

B) Disclosure of the Investment Advisory Committee

Background

A few state and local governments have statutorily created IACs, also known as investment advisory councils, to assist public fund fiduciaries in the administration of the investment program. An IAC is a source of investment expertise and guidance. Its members serve as a sounding board and cross

[33] Part I is filed electronically with the SEC. A copy of an investment adviser's Form ADV can be accessed on the Investment Adviser Public Disclosure ("IAPD") website.
[34] Part II is not required to be filed electronically.
[35] A service provider disclosure policy with a questionnaire was adopted effective March 1, 2010.

check on investment policy and practices. The states, like North Carolina, that use a sole fiduciary model, Connecticut, Michigan, and New York, require the appointment of an IAC. In these states, the role of the IAC ranges from consultative to oversight.[36]

There are a few non-sole fiduciary public funds that use an IAC. In some cases, use of an IAC is required, and, in others, it is discretionary. The role of the IAC at each of the non-sole fiduciary public funds is consultative. Examples include the Florida State Board of Administration,[37] the Virginia Retirement Systems,[38] the Minnesota State Board of Investments,[39] the Texas Employees Retirement System, the City of Portland, and certain city retirement systems in Washington State.[40]

Public members that are appointed to an IAC, virtually without exception, are statutorily required to have financial or investment expertise. The number of total IAC members that are required to have investment or financial expertise varies from public fund to public fund. Although the rationale supporting the requirement is understandable, the expertise of the public members makes it likely that they are investment professionals. Their involvement in investment activities gives rise to the potential for conflicts of interest. Disclosure deters and mitigates the risk of conflicts.

Disclosure of all matters that could reasonably be expected to impair independence and objectivity is consistent with best practice. Examples of information that may require disclosure include relationships with current service providers or those identified as part of a procurement process, criminal or disciplinary offenses that could pose reputational risk to the public fund, political contributions or gifts to decision-makers or others that could influence decisions, and matters where the member's involvement may reasonably be viewed as advancing their own personal interest.

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36 In New York State, the IAC has no power over investment decisions, but the Real Estate Advisory Committee (referenced in the statute as the Mortgage Advisory Committee) is legally empowered to disapprove a proposed "mortgage or real estate investment." (§423 of the New York State Retirement and Social Security Law). In Michigan, the IAC may, by majority vote, direct the sole fiduciary to dispose of a holding or, by unanimous vote, direct the sole trustee to make a specific investment. (MCL, Chapter 16, Section 16.191). In Connecticut, the IAC has approval authority regarding changes to the investment policy, asset allocation, and selection of the CIO.

37 The Florida statutes created the Investment Advisory Council to review the investments made by the staff of the fund and to make recommendations to the Trustees regarding investment policy, strategy, and procedures. The Council members must possess special knowledge, experience, and familiarity with financial investments and portfolio management.

38 The IAC supports and advises the Board in matters of investment policy, asset allocation, and manager selection. All IAC members must be investment experts and are selected by the Board and CIO.

39 All proposed investment policies are reviewed by the Investment Advisory Council before they are presented to the Board for action.

40 RCW 35.39.080 – city retirement systems that are established to provide retirement benefits for nonpublic safety employees.

Findings and Analysis

Like other sole fiduciaries, the Treasurer is required to appoint an IAC.[41] In 2009, the General Assembly expanded the size of and number of experts on the IAC. Of the seven IAC members, four are required to have experience relevant to the administration of a large diversified investment program. By statute, the role of the IAC is advisory, but its functions are not specified.

The statute makes it clear that the IAC members are not "public officers" and are not subject to the State Government Ethics Act. Therefore, the IAC members are not required to file a Statement of Economic Interest, disclosing personal financial information.

The NCDST has indicated that a code of ethics will be established for the IAC, using the New York State Common Retirement Fund's Code of Conduct as a model. The code of ethics will prescribe standards of conduct, including certain restrictions and prohibitions regarding the activities of the members.

Conclusions

The input and advice provided by the IAC members can influence the thinking and decisions of the Treasurer and the IMD. Disclosure is needed as a check on the reliability and objectivity of the information and guidance suggested by the IAC members. Imposing a conflicts disclosure requirement is consistent with best practices and the common practices of other public funds with IACs. Requiring disclosure by IAC members is also in harmony with the transparency and accountability initiative of the Treasurer.

Recommendation:

1. Develop and implement an IAC code of ethics, including a disclosure process that mitigates the risk of conflicts of interest.

[41] N.C. Gen. Stat. § 147-69.2(b1) (2009).

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INTRODUCTION

Sound organizational structure, clear roles, well-placed responsibilities, and adequate staffing are key elements for a successful investment program whether it is inside a pension fund, endowment, or foundation. Managing these key elements can be particularly challenging in the public sector when long-standing bureaucratic practices, budget deficits, compensation constraints, and competition for resources come into play. Despite these challenges, some public funds have managed to become “employers of choice” and establish exemplary investment programs where highly qualified and motivated investment professionals choose to work.

Surprisingly little attention is given to organizational issues and staffing at public funds until criticism from stakeholders or a serious fiduciary breach occurs because of the inattention. One of the best ways for fiduciaries to be effective and mitigate risk is to objectively evaluate organizational weaknesses; discuss alternative organizational designs; and establish roles, responsibilities, and requirements for staff in a thoughtful and deliberate way.

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Clarity of Responsibilities Among the Treasurer, IAC, and IMD
II. Staffing
III. Ability to Attract and Retain Investment Staff
IV. Compensation

I. Clarity of Responsibilities Among the Treasurer, IAC, and IMD

Background

The offices of state treasurers, like state investment boards and public retirement funds, are complex and highly visible organizations. Generally, they are charged with managing large pools of assets according to strict fiduciary standards. Given these standards, it is imperative that roles and responsibilities of those both inside and outside the organization are comprehensive enough to cover all essential functions and tightly coordinated to maintain efficient operations. A slight overlap in responsibilities is acceptable, but a gap in them creates operational risks.

Responsibilities for state treasurers are usually set forth in statutes in a general manner. Beyond that, administrative rules, organizational charts, internal policies, statements of delegation, written position descriptions, guidelines, procedures, and meeting minutes are used to more precisely define and assign responsibilities. The clear assignment and documentation of proper roles and responsibilities help fiduciaries mitigate risk.

Findings and Analysis

The North Carolina statutes[1] clearly state that the Treasurer has full powers as a fiduciary for the investable assets of the NCRS. Therefore, the Treasurer has the ultimate responsibility for not only benefits administration,[2] but also for the investment of the pension fund assets. At her discretion, the Treasurer may consult with the IAC and delegate certain functions to the IMD per the Total Fund Investment Policy ("Investment Policy"), dated October 2008. Such delegation is consistent with general trust law principles and the Prudent Investor Act.[3] The level of delegation of authority is discussed in Section 1 of this Report.

Some of the Treasurer's statutory investment related responsibilities include:[4]

- Establishing, maintaining, administering, managing, and operating within the NCDST one or more investment programs for the deposit and investment of assets
- Holding full powers as a fiduciary to purchase, sell, assign, transfer, lend, and dispose of any of the securities or investments
- Retaining the services of independent appraisers, auditors, actuaries, attorneys, investment counseling firms, statisticians, custodians, or other persons or firms possessing specialized skills or knowledge necessary for the proper administration of investment programs
- Preparing, as of the end of each fiscal year, a report on the financial condition of each investment program

[1] N.C. Gen. Stat. §147-69.3(e) (2009).
[2] N.C. Gen. Stat. §147-69.7(a)(2) (2009).
[3] Restatement (Third) of the Law of Trusts, §80 (Preliminary Draft No. 6, 2003); codified in Section 9 of the Uniform Prudent Investor Act (1994).
[4] N.C. Gen. Stat. §147-69 (2009).

- Acting solely in the interest of the participants and beneficiaries and for the exclusive purpose of providing benefits to participants and beneficiaries
- Incurring only costs that are appropriate and reasonable
- Operating in accordance with a good-faith interpretation of the law governing the NCRS
- Diversifying the investments of the NCRS as prudent
- Making reasonable effort to verify facts relevant to the investment and management of assets of the NCRS

Pursuant to the Investment Policy, the Treasurer's functions include:

- Approving the policies and any revisions, as prepared and recommended by the IMD
- Establishing the general strategy for achieving investment of the NCRS
- Approving investment opportunities as recommended by the IMD
- Approving portfolio management plans as recommended by the IMD
- Approving performance measurements as recommended by the IMD
- Approving retention of advisors, service providers, and investment managers as recommended by the IMD
- Monitoring adherence to policies
- Recommending statutory revisions

In actual practice, the Treasurer does not merely approve recommendations as presented by the IMD. She also reviews, analyzes, and evaluates the recommendations. In this regard, the Investment Policy is inaccurate and could be misleading.

The IAC is an entity, recognized in State law, to which the Treasurer must appoint seven members.[5] The Investment Policy states that the IAC is an advisory body that is to meet at least quarterly. The Investment Policy also states that the IAC is to be involved with establishing policy and strategy, reviewing projected returns, reviewing actual performance, and acting as a fiduciary. In actual practice, however, the IAC did not set policy. It only reviewed and commented on policy. Furthermore, it did not act as a fiduciary body because it had neither discretion nor control over the NCRS' assets.[6] Therefore, the explanation of the IAC's role in the Investment Policy was inaccurate. This inaccuracy may be confusing, but the statute is the controlling authority,[7] and defines the IAC's role as only advisory. Thus, the statute implies that the IAC members are not fiduciaries with decision-making authority.

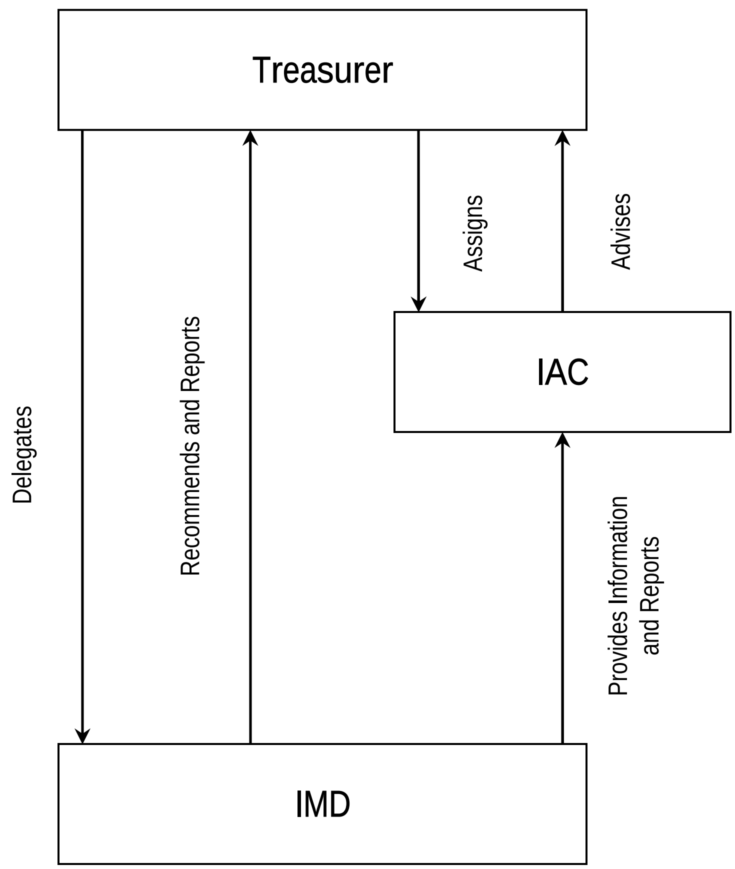
Best practices are for committees, such as the IAC, to operate under a written charter that outlines the committee's purpose, composition, responsibility, authority, etc. Currently, the NCDST is discussing an IAC charter with plans to formally adopt one early 2010.

[5] N.C. Gen. Stat. §147-69.2(b1) (2009).
[6] Investment Advisers Act of 1940, 15 U.S.C. § 80b (2009).
[7] N.C. Gen. Stat. §147-69.2(b1) (2009).

The IMD's responsibilities include overseeing the management of the investment program, developing guidelines, reviewing policies, preparing investment evaluations, researching portfolio holdings, making recommendations to the Treasurer regarding investment managers, monitoring and managing performance, reviewing custodian and other monitoring reports, and representing the Treasurer and the NCRS with respect to all investment related matters. These duties, while not contained in the statutes, are clearly set forth in the Investment Policy.

The flow chart below shows the working relationship among the Treasurer, IAC, and IMD based on our review of their functions. The Treasurer, as the sole fiduciary, delegates responsibilities to the IMD and looks to the IAC for advice (independent from the IMD) on specific issues as assigned to it. The IMD provides recommendations to the Treasurer on investment issues, implements the decisions made by the Treasurer, and reports on the status of the portfolio. The IMD also supports the IAC by providing it information and reporting relevant to the issues to which it is assigned to discuss. This relationship among the three parties is not clearly documented in the statutes, charters, or policies.

Chart 2.1 – Relationship Among the Treasurer, IAC, and IMD



When discussing roles and responsibilities among various parties and codifying them into governance documents, an accountability matrix is a useful tool. EnnisKnupp provided NCDST staff with a sample matrix for this purpose. Once responsibilities are thoroughly identified and vetted using this tool, then cogent and coherent policies can be written which clearly define each party's role and the reporting lines.

Having documentation of roles in place is a prudent way to ensure that responsibilities are uniformly understood by all, especially those that are to be held accountable for essential functions.

Conclusion

Beyond the statutory responsibility placed on the NCDST, the Treasurer has the discretion to establish the roles and responsibilities of the IAC, the IMD and other staff. The Treasurer has already taken significant steps to clarify responsibilities by undertaking this independent review, seeking statutory changes, creating an IAC charter, and reevaluating existing policies. Completing these activities will benefit the NCDST.

The current statutes and policies, including the Treasurer's Governance and Transparency Act and the Investment Policy, provide the foundation for identifying fiduciaries and establishing the responsibilities of the Treasurer and others. However, improvements could be made that would bring the internal documentation to a higher standard more inline with best practices.

Recommendations:

1. Identify all parties that play an essential role in the investment program (Treasurer, Deputies, advisors, IAC, IMD staff, FOD staff, State Auditor, investment consultants, etc.) to create a comprehensive organizational chart and clarify reporting lines.
2. Use an accountability matrix or a similar tool to list essential duties related to the investment program, and determine involvement of each party in the decision-making and reporting processes.
3. Modify existing policies to reflect any changes that are made to ensure the policies are accurate and consistent with statutes and other policies.
4. Meet with affected staff to explain any changes in responsibilities.
5. Provide a thorough explanation to the IAC members about the responsibilities of the Committee.

II. Staffing

Background

Staffing is the act of attracting, organizing, and retaining an adequate number of employees that possess the necessary skills which, collectively, allow an entity to accomplish its mission, goals, and objectives in an effective and efficient manner. Inadequate staffing exposes an organization to a variety of otherwise controllable risks, including fiduciary risk and implementation risk (both tactical and operational).

For governmental entities that manage and oversee the investment of pension assets, investment staff size can range from a percentage of one person's time to over 250 full-time employees. While commonly used to determine the appropriateness of staffing, making comparisons of staff size and skill sets between different entities based solely on asset size is overly simplistic and, therefore, ill-advised. For example, an entity with assets under internal management and with a complex portfolio would naturally need more staff with unique asset management skills than an entity that has no assets under internal management and has a relatively simple portfolio. Furthermore, staffing is impacted by the use of outside service providers, including consultants.

Whatever the staff size, good organizational design puts the right people in the right positions. While some redundancies in roles and responsibilities may be appropriate, a streamlined organization where staff members feel a deep sense of ownership works best. Accurate position descriptions specify what is required to do the job, and communicate clear messages to those who currently hold positions and to those applying for vacant positions. Position descriptions also help ensure that employees either have or acquire necessary knowledge and experience.

Findings and Analysis

Size and Sufficiency of Investment Staff

As of December 2009, the IMD had 21 staff members (including the interim CIO) and 5 vacancies.[8] Of the 21 staff members, 12 focus on asset management and 9 focus on research, operations, compliance, and administrative support. Based on the internal classification of staff, 18 are considered to be investment professionals. For a fund the size and complexity of the NCRS, EnnisKnupp would expect to see a significantly larger staff dedicated to asset management, even if the fund relied heavily on outside investment consultants. Given that the NCRS has used consultants to a minimal degree in the past, the existing staff size is barely adequate to fulfill all the duties required of prudent experts.

In 2008, EnnisKnupp surveyed large public funds and found that those with assets between $27 billion and $67 billion had investment offices with 8 to 50 investment professionals and an average of 23 staff

[8] The legal position (Attorney II) is not included in the IMD staff position count since it is our understanding that this position will primarily be used by the NCDST General Counsel.

members. For the subgroup of funds with internally managed assets, the staff size ranged from 12 to 50 with an average of 30 staff members. As expected, funds with internally managed assets were on the higher end of the spectrum and had larger investment staffs on average than funds without internal assets under management.

Even if the IMD was fully staffed with 26 positions (23 investment professionals[9] and 3 administrative positions), EnnisKnupp would still find the staff size to be a concern. Given the NCRS' overall size[10] of $70.5 billion and with a substantial allocation to internal management, along with a high number of private equity and real estate funds handled by the IMD staff, a staff size greater than the average of 30 is expected.

Recently three positions were eliminated from the IMD. Its staff size is a concern particularly because of the absence of a permanent CIO and Director of Alternatives, in addition to the other vacancies. Currently, the IMD's real estate unit only includes one Director and one Portfolio Manager to oversee and manage a portfolio of $6 billion with over 70 managers/funds. Additionally, the private equity unit has only one staff member, who is a Portfolio Manager. EnnisKnupp estimates that between 4 and 8 staff members are needed to oversee and manage a private equity portfolio of $3 billion with over 85 managers/funds. The NCDST is aware of this situation and is in the process of recruiting for the vacant positions.

he ability of the staff to handle the internal management of assets, the oversight of external managers, and address the necessary legal, compliance, information technology, internal control, and administrative matters is also a concern in light of the current staffing level. The IMD appears to be understaffed with a heavy workload, which exposes the organization to risks if proper due diligence and monitoring cannot be maintained. Being understaffed is also a problem when new procedures are to be implemented and existing practices are to be formalized or improved.

Skill Set of Investment Staff

In our 2008 survey, EnnisKnupp analyzed the degree to which professional investment staffs of public funds held advanced degrees or professional certifications (e.g., MBAs, CFAs, CAIAs, and CPAs).[11] We reported that a range of 45% to 100% of the peer group's professional staff (large public funds) held advanced degrees or professional certifications. The overall average for the peer group was 75%. Using the same criteria, 56% (10 of 18) of the IMD investment professionals hold advanced degrees or professional certifications.

The eligible IMD staff may take advantage of the NCDST Academic Assistance Program ("Program"). According to the October 2006 policy that pertains to this Program, the NCDST will reimburse for

[9] One of these 23 investment professional positions includes an internal controls and governance position.
[10] As indicated in the January 26, 2009 Pensions & Investments Listing of the Top 1000 pension funds. http://www.pionline.com.
[11] Master of Business Administration (MBA), Chartered Financial Analyst (CFA), Chartered Alternative Investment Analyst (CAIA), and Certified Public Accountant (CPA).

certain academic costs.[12] This Program covers tuition costs at the University of North Carolina institutions for one course per semester or quarter, up to 4 courses, 20 semester hours, or 32 quarter hours every fiscal year, whichever is less. It also covers other eligible institutions, including business schools, up to the maximum cost charged by the University of North Carolina institutions.

For academic programs that do not result in a degree, including CFA and CPA programs, a portion of the cost associated with the review courses and self-study packages is covered. No exam fee is reimbursed. A $600 career cap is imposed on costs and no reimbursement is made beyond that for each certification. The provisions in the Program are more restrictive and the maximum reimbursable amounts are lower than those of peers and far below those of large public funds with internal management of assets and alternative asset classes in their portfolios. It is common for these funds to also pay for annual dues.

Staff Roles and Position Descriptions

Based on EnnisKnupp's understanding from the position descriptions and organizational charts, the IMD staff consists of:

- A Chief Investment Officer
- Four Investment Directors (one for each asset class), who supervise one or more staff members dedicated to specific asset class management
- An Operations Manager,[13] whose function includes investment compliance and supervision of four staff members, each of whom is dedicated to one of the four asset classes
- A Research Manager, who supervises one other staff member and provides investment strategies and quantitative infrastructure support to the IMD
- A Director of Administration and Operations, whose function includes operational compliance and who supervises three others
- A Director of Corporate Governance, whose functions are proxy voting and risk management

In addition to the above mentioned staff, the IMD is supported by the FOD. It provides investment accounting services to the IMD, prepares the Comprehensive Annual Financial Report (CAFR), and aids in audits. [Section 7 (7.III) of this Report includes further discussion on the FOD's responsibilities.]

The CIO's role is to advise and represent the Treasurer on all aspects of investments, including asset allocation, investment policy, manager selection, and resource needs. The CIO also supervises the investment staff, ensures policies are properly implemented, and makes financial and market projections based on analysis of industry trends and knowledge, pursuant to the job description. The qualifications listed in the job description include an advanced degree in finance or related field with at least ten years of experience. While these responsibilities cover much of what would ordinarily be

[12] Excluding books, supplies, examination, graduation fees, and transportation.
[13] The classification proposed for this position, per the position description, is Assistant Director of Investment Operations.

expected of the role, the job description could be improved to reflect best practices. Inclusion of the CIO's relationship with the IAC and the FOD, responsibility for oversight of internal controls functions, and responsibility for developing and recommending policies would enhance the position description.

The role of the Director of Public Equity includes overseeing, evaluating, and managing public equity investments, monitoring compliance with relevant policies, understanding and applying the principles of Modern Portfolio Theory ("MPT"), calculating returns, conducting due diligence, and managing the unit's staff.

The position description for the Director of Fixed Income includes responsibility for the internally managed portfolio, understanding and applying related principles and theories, developing strategies, calculating returns, supervising the unit's staff, and maintaining all electronic trading platforms.

The Director of Alternatives' position description includes responsibility for overseeing the alternative investments unit, evaluating and managing risk for this asset class, ensuring compliance with related policies, overseeing investments and performance, conducting due diligence, and reviewing legal documents.

The Director of Real Estate's position description is comprehensive and similar to that of the Director of Alternatives. All four Investment Directors report to the CIO.

According to the position description for the Operations Manager, the position's primary function is to "provide operational, administrative, compliance, and risk management oversight of the Investment Management Division." Other functions include evaluating the adequacy of resources; working with the four Investment Directors to identify any investment compliance related issues; compiling and reviewing various reports; assisting in the search and engagement of equities managers; reviewing all contracts; ensuring compliance with all investment guidelines; monitoring and overseeing all cash flows; assisting with budgetary matters; working with the custodian bank to oversee the securities lending program; monitoring the trading and management of securities of the short-term investment portfolio; and providing oversight of Historically Underutilized Businesses ("HUB") initiatives.

The Operations Manager supervises one portfolio manager level position, which is currently vacant, and three analyst positions. The primary responsibility of the Operations Investment Analyst is "to provide oversight, enhance compliance, maintain databases, and monitor/process cash flows within the investment program." Each analyst is to create reports and maintain databases for the appropriate asset class; monitor benchmarks and guidelines; maintain records of compliance and other issues along with their resolution; assist with reporting (including performance) and compliance issues; and generate/record all investment trade tickets for the portfolio. Together, the Operations Manager and the four staff members are to fulfill compliance functions with regard to investment guidelines and policies, review and create various reports regarding performance and fees, ensure accuracy of reports, maintain databases for the IMD, and interface with the FOD and custodian bank. The Operations Manager reports directly to the CIO.

The primary function of the Research Manager is to design investment strategies, provide oversight, and enhance compliance with the investment program by creating a quantitative infrastructure using risk management and other risk modeling techniques. Other responsibilities include analyzing and evaluating characteristics and changes in the portfolio; designing, developing, and implementing quantitative models and infrastructure for investment programs; designing statistical tests, estimations, and computer based applications; researching data; ensuring accurate input for asset liability modeling; recommending investment opportunities within established guidelines; providing recommendations on business needs for hardware and software applications; programming language support; and working with IT staff and outside vendors on current and anticipated IT requirements and needs. The Information Analyst's position description is aligned with its supervisor's (Research Manager) position description. The Research Manager also reports to the CIO.

The Director for Administration and Operations is responsible for all personnel and budget matters, interacting with the FOD on annual audits and the CAFR, ensuring information flow and efficiency, assisting in policy development, supervising compliance to those policies, due diligence procedures and statutes, strategic planning, and identifying legislative and policy issues. The Director works with the CIO and Investment Directors, is a liaison with other staff and the FOD, and reports to the CIO.

The Director of Corporate Governance is to oversee the development, implementation, and ongoing maintenance of the Corporate Compliance process for the IMD. The key components of the Compliance Program include written policies and procedures that are in conformance with applicable laws, reviews of internal control systems, compliance review programs, and procedural checklists. Per the position description, "the control environment helps to ensure that the assets under the control of the NCDST are properly safeguarded against loss due to fraud, waste, abuse, or error." The position description references a risk management policy.[14] The detailed duties for this position include developing proxy voting policy, advising on proxy voting matters, and understanding, interpreting, and evaluating proxy and corporate actions. This position also reports directly to the CIO.

For some of the positions, especially those with any type of compliance responsibility, the desired credentials have included CFA, MBA, and/or Juris Doctorate ("JD"). The desired credentials could be expanded to include CPA, CIA, CISA, CFE, CGFM, and CIDA,[15] if they are relevant to the job duties.

Based on our review of the December 2009 IMD organizational chart, the Attorney II position was vacant. Our understanding is that this position is not part of the IMD, but is actually under the General Counsel. The Attorney II will serve as in-house counsel responsible for coordinating legal discussion, facilitating the entire legal process to complete execution of legal documents (contracts, partnership agreements, etc.), and serving as an in-house expert on legislation and laws governing the investment program.

[14] A risk management policy draft was provided to us, and this policy has not been adopted as of February 2010.
[15] Certified Public Accountant (CPA), Certified Internal Auditor (CIA), Certified Information Systems Auditor (CISA), Certified Fraud Examiner (CFE), Certified Government Financial Manager (CGFM), and Certified Investments and Derivatives Auditor (CIDA).

The position descriptions, when taken together, cover the investment management, policy development, contract review, database maintenance, compliance, control, and other essential duties of an investment office. The position descriptions basically contain adequate information and provide sufficient guidance for staff. However, the position descriptions do not address a common problem, the need for connectivity and information flow among the IMD units.

In practice, some of the functions in the position descriptions, such as those related to compliance, are not being fulfilled. Staff seems to lack a uniform understanding of their own duties and those of others in the IMD. Recently, there has been an effort to resolve this discrepancy between position descriptions and actual functions. For example, one recent IMD initiative includes building and maintaining a central database for all essential procedures of each unit.

Discrepancies between position descriptions and actual functions are partly due to the vacancies in the IMD for the past few years. These vacancies have contributed to deficient resources to perform all functions of the IMD. To compensate for the low staffing levels, the IMD's focus has been on carrying out direct asset management functions, rather than policy development, compliance, and other functions.

EnnisKnupp found some overlap in responsibilities of staff members, such as in the compliance area. This can be appropriate as long as it is managed correctly. If the overlap is intentional, each staff member's role should be clearly defined and communicated for duties that are shared.

Certain position descriptions will need to be modified as the NCRS portfolio evolves to include other types of investments such as inflation-protected investments and credit enhancement opportunities. Furthermore, when the permanent CIO is hired, one expects that reporting lines and position descriptions will be subject to more in-depth review and possible modification. Currently, the IMD organizational chart shows eight direct reports for the CIO. Best practices are for the CIO of an entity of NCRS' size with investment responsibility to have five or six direct reports.

Conclusion

The IMD staff size is small and critical positions are vacant. Even if the IMD is fully staffed with 26 positions, it will be significantly understaffed given the size and complexity of the portfolio and the internal management of assets. The skill set of the staff appears adequate with over half of the investment professionals holding advanced degrees or professional certifications. However, peer funds have a higher percentage of staff with such degrees and certifications. Having an academic assistance program is beneficial, but the NCDST Program is very limited and does not encourage the pursuit of advance degrees or certifications.

The position descriptions for the four Investment Directors and their direct reporting lines to the CIO are appropriate. Overall, the written position descriptions are adequate, but may not be accurate. Furthermore, the communication of the roles and responsibilities included in the position descriptions could be enhanced.

Recommendations:

1. Expedite the recruitment of the CIO and Director of Alternatives, and fill other key vacant positions.
2. Review and modify position descriptions to ensure they include all major functions and review the number of direct reports to the CIO, after the permanent CIO is hired.
3. Examine the staff size in light of the IMD workload, future expectations of staff, and use of outside consultants, after vacancies are filled and position descriptions are updated.
4. Consider improving the Academic Assistance Program to encourage the pursuit of advanced degrees and certifications for the IMD staff.
5. Communicate the essential elements of the position descriptions and the IMD organizational chart to eliminate the discrepancies between the descriptions and actual functions.
6. Ensure connectivity and information flow between all units of the IMD.

III. Ability to Attract and Retain Investment Staff

Background

In reviewing the top five drivers of turnover among various industries and jobs,[16] compensation does not place in the top five as a factor in turnover. It is usually eighth or ninth. When compensation is significantly uncompetitive, we would expect compensation to rank higher on the list.

The primary drivers of turnover are:

1. Lack of effective management
2. Wrong hiring decisions; skills and capabilities do not match with the job duties and expectations
3. Lack of opportunity for growth and advancement
4. Substandard equipment, tools, or resources
5. Lack of appreciation or positive reinforcement for efforts

Additionally, not all turnovers are negative. Sometimes a cultural or organizational structure shift requires some staff change in order to ensure that the optimal staff with the required qualifications and skill sets is in position to implement the new culture or organizational structure.

Findings and Analysis

According to information provided by the NCDST Human Resources Department, the IMD's average annual turnover rate for the three year period from January 2006 through December 2008 was 22.85%. These statistics include all departures (termination, transfer, death, retiree, etc.) from the IMD. With the 2009 departure of the CIO, the turnover rate for 2009 up to September[17] was near 20%.

In the private sector, the turnover rates at investment management firms and other types of investment or financial service organizations average 15% to 25%. Generally, turnover rates for public retirement funds average between 10% and 15% per year. Therefore, the IMD's average turnover rate is higher than expected and is a concern because of the difficultly the IMD has had recruiting for the vacant positions. The Director of Alternatives position has been vacant for over four years. In 2009, a candidate declined to take the position because of uncertainty around the compensation plan. The CIO position has been vacant for over six months, although the recruitment is expected to conclude soon. The other four positions have been vacant for over six months as well.

[16] Data gathered from World at Work and other data sources, including information from top compensation consulting firms.
[17] January 1, 2009 to September 21, 2009.

The five factors related to the top turnover drivers are discussed below in relation to the IMD. [Later in this Section (2.IV), compensation is addressed.]

Effective Management

To maintain effective management, having clear and defined reporting lines and expectations of staff is important. It is also critical to have a culture that fosters growth, encourages intellectual debates, provides access to management's time for advice, and allows for candid, constructive conversations. For the IMD, the CIO has the primary responsibility for establishing effective day-to-day operations, and, in ideal circumstances, is supported by the Chief of Staff and the Treasurer. In the recent past, the IMD's focus has been on investments, not effective management.

Currently, the CIO position is temporarily being filled by the Director of Retirement and we understand from staff that management has improved. The recruitment of a permanent CIO is an excellent opportunity for the NCDST to examine the management issues of the IMD, and hire a person who has exceptional management skills and an understanding of institutional investing.

Hiring Decisions

Hiring decisions are best handled by those who understand the true requirements of the open positions, in conjunction with those who can verify skills and experience of candidates. For this reason, it is imperative that the investment staff participate in the hiring process along with the human resource professionals. Currently, that is the case at the NCRS.

Key positions at the NCRS have been vacant for a long time, and it may be difficult to fill these positions in the near future without the use of outside executive recruiting firms. Recently, the NCDST received an Attorney General letter allowing the use of recruiting firms.

Opportunity for Growth and Advancement

Although the IMD has 26 positions, only 14 are directly focused on managing assets. The limited number of positions makes it difficult to offer many opportunities for hierarchical advancement. However, there are title promotions that allow for growth within individual positions (e.g., analyst to portfolio manager to senior portfolio manager) within the IMD. These promotions are meaningful since they are associated with higher salary ranges. We note that actual salary raises are only implemented when funds are available.

Equipment, Tools, and Resources

The lack of adequate equipment, tools, and resources has hampered many public funds in attracting and retaining professional investment staff. The IMD has access to a number of internal tools. In addition to internal tools, the IMD also has access to databases and research available through its consultants and investment managers.

But, EnnisKnupp believes that the staff could benefit from additional recommended investment technology.

For public equity and fixed income, the IMD uses Mellon Workbench, PSN manager database, Bloomberg, BondEdge, and Portfolio Works. Bloomberg provides significant analytical data necessary to make informed security selection decisions. The depth and breadth of these tools allow investors to conduct top-down and bottom-up analysis that are vital to managing portfolios. Several of EnnisKnupp's clients use secondary resources for supplementary information such as MSCI Barra, Zephyr Style Analysis, FactSet, and CompuStat. For fixed income management, Lehman Live, now under the ownership of Barclays, is useful for analyzing the composition of common benchmarks used in the institutional investor community. EnnisKnupp uses Lehman Live as well as Style Research and various other proprietary programs (customized analytical and reporting software, risk models, etc.).

The IMD staff has not been able to purchase quantitative tools such as Matlab, PerTrac, and hedge fund databases that would allow the staff to research direct investments in single manager hedge funds. Currently, the hedge fund portfolio is comprised of only a few funds. Going forward, if it is the intent of the IMD to build up the hedge fund portfolio, additional resources will be needed.

For the real estate portfolio, the IMD staff uses PPR (Property and Portfolio Research), allowing staff members to monitor real estate trends at a macro and micro level. Staff also has access to manager research such as quarterly outlooks and insights. The real estate unit uses Microsoft Office to enter information from their due diligence/monitoring efforts. This is a cumbersome, inefficient tool for the number of managers and investments that staff covers. The IMD is in the process of identifying a software system to better organize their due diligence, monitoring, and record-keeping processes.

For the private equity portfolio, the staff uses Venture Economics, Preqin, and Microsoft Office in completing due diligence, and uses Private I to a limited degree to track manager notes. Private I could be used more frequently by staff to document manager notes and investment research. While these tools are adequate, they do not meet best practices of having a variety of tools available. The IMD needs more tools and resources, such as magazine subscriptions to Buyouts Magazine, The Private Equity Analyst, and Dow Jones Factiva, which will enable the staff to perform more manager-specific diligence and gather industry data.

Appreciation or Positive Reinforcement for Efforts

Showing appreciation for the efforts of staff, while important, is not something many employers, including public funds, focus on. In creating a high performance workplace, recognition is a motivating factor that provides employees with increased job satisfaction and encouragement to perform their jobs more effectively. Staff recognition can be as simple as supervisors verbally complimenting those they manage to more formal employee recognition programs. Recognition programs can help to create a positive working environment that encourages employees to thrive. The IMD currently does not have such programs that recognize individual accomplishments.

Conclusion

EnnisKnupp concludes that the IMD has been able to recruit very talented and dedicated individuals. Currently however, staff vacancies are critical. Despite efforts by the Human Resources Department and the IMD, several key positions have gone unfilled for a significant period of time. Without the assistance of an executive recruiting firm, the positions will most likely remain vacant for many more months.

Even if all vacancies were filled, the staff size is small given the overall asset size, level of internal management, and complexity of the portfolio and when compared to peers across the country.

In addition, the IMD staff turnover rate is relatively high when compared to other public funds. When analyzing the biggest drivers of staff turnover, there is room for improvement in the IMD operations, particularly with respect to effective management, adequate tools and resources, and positive reinforcement.

Recommendations:

1. Conduct comprehensive exit interviews to determine and document causes for the high turnover rate.
2. Emphasize management skills when recruiting for the permanent CIO.
3. Evaluate the tools and other resources provided to the IMD staff, and ensure that they are up-to-date and adequate.
4. Expand staff's access to the tools used by the NCRS' consultants.
5. Develop ways to demonstrate appreciation or give positive reinforcement for individual efforts.

IV. Compensation

Background

Highly qualified investment professionals have options to work for corporate pension plans, endowments, foundations, or other financial institutions, including investment management firms. Public funds can almost never match the compensation levels of private sector entities for senior investment professionals. However, there has been a trend with large public retirement funds to evaluate the compensation levels of investment staff and obtain statutory authority to offer higher base salaries and incentive compensation in order to stay competitive.

In our experience, internal versus external management of assets is the greatest factor affecting pay levels, as would be expected due to the higher management responsibilities that come with actually having to buy and sell securities. Typically, the funds with the highest compensation have a higher portion of their assets managed internally.

Another factor that impacts investment staff pay is the size of the fund. Generally, the larger the fund, the higher the pay due to more sophisticated portfolios and larger staff to manage. Based upon EnnisKnupp's experience, larger funds are significantly more likely to offer bonuses in addition to base salary than smaller funds.

When comparing the private and public sectors, EnnisKnupp found greater discrepancies in investment staff pay at the senior levels than at the junior levels. Generally, the differences between private and public sector pay levels are due to the absence of bonuses or low bonuses in the public sector.

Other factors to consider when reviewing compensation are the geographic location of the job, market conditions (unemployment and labor availability), and the actual job responsibilities.

Findings and Analysis

The NCDST is aware of the importance of compensation as a factor in staff retention and recruitment. The NCDST hired a compensation consultant, McLagan, to conduct a compensation analysis of the IMD staff. Additionally, NCDST examined the compensation philosophies of some of its peer funds, and asked EnnisKnupp to review the incentive compensation targets for the IMD.

A North Carolina statute,[18] approved during the 2007-2008 Legislative session, authorized the Treasurer to establish a distinct compensation package (i.e., salaries and incentives) for the CIO and Investment Directors. The NCDST developed a compensation philosophy based on research. In

[18] "G.S. 135-96 Section 6 authorized the State Treasurer to establish compensation including incentive pay for the Chief Investment Officer and Investment Directors based on competitive compensation studies conducted by a nationally recognized firm specializing in public fund investment compensation. In accordance with S.L. 2008-132, the State Treasurer is authorized to establish the compensation package (i.e., salaries and incentives) for the CIO and Investment Directors."

accordance with best practice, this philosophy was documented in the Exempt Investment Professionals' Pay Plan ("Pay Plan") and noted as being effective as of July 2008. However, it is our understanding that the Pay Plan has not been formally approved by the current or prior Treasurer. The Pay Plan philosophy includes five objectives:

- Align compensation with long-term, superior investment performance
- Reinforce risk management priorities and standards
- Focus staff on the achievement of strategic initiatives that may not be reflected in shorter-term investment results
- Attract and motivate skilled investment staff by offering competitive compensation opportunities
- Retain senior investment professionals by mandatorily deferring a portion of earned incentive compensation on a tax deferred basis

The chart below shows the salary and incentive information for fiscal year 2008-2009 stated in the Pay Plan.

Table 2.1 – IMD Salary and Incentive Information for FY 2008-2009

Job Class	Minimum Salary	Midrange Salary	Maximum Salary	Minimum Incentive %	Target Incentive %	Maximum Incentive %	% of Actual Award Deferred *(Up to IRS Maximums)*
CIO	$272,000	$340,000	$408,000	0.00% (0X)	50% (1X)	100% (2X)	50%
Investment Director	$184,000	$230,000	$276,000	0.00% (0X)	40% (1X)	80% (2X)	50%

McLagan conducted a competitive compensation analysis in June 2008 (the McLagan Study). The peer group used for purposes of comparison included large public pension funds with more than a quarter of the assets under internal management. The salary for the CIO and the Investment Directors were benchmarked to the 75th percentile of the peer group. Based on this analysis, the base salaries of the CIO and the four Directors were increased.

The IMD organizational structure has changed since the development of the Pay Plan, and some titles have been eliminated, changed, or added. Overall, it appears the midrange and actual salaries for the CIO and Investment Directors are near the 75th percentile of the peer group. For the investment professionals below the Investment Director level, the maximum salaries allowable in the ranges are near the 75th percentile of the peer group. However, the actual salaries of these investment professionals are significantly below the 75th percentile noted in the McLagan Study.

The research conducted by the NCDST also supported an incentive program for the IMD staff. In addition to the CIO and the Investment Directors for the four asset classes, the Investment Operations

Director and Risk Management Director[19] are also listed in the Pay Plan as being eligible for incentive pay. To date, these two positions have not received incentive pay.

Incentive pay for the CIO is based on the Total Fund performance for 3 and 5 years, weighted equally. Incentive pay for Investment Directors is based on asset class (60%) and Total Fund performance for 3 and 5 years (40%). If implemented, it is unclear how the incentive pay is to be determined for the Investment Operations Director and Risk Management Director.

Although the incentive pay is calculated based on quantitative components, various qualitative components also affect payout. In order to receive the incentive pay, the eligible staff members have to receive an individual performance rating of “Meeting Expectations” and be in compliance with the State Code of Ethics.

For the CIO, the target incentive pay is 50% (1X target) of the CIO salary and capped at 100% of the CIO salary (2X target). The target incentive pay for the Investment Directors is 40% (1X target) of salary and capped at 80% (2X target) of salary.

Given that the NCRS is the 10th largest U.S. public retirement fund with a complex portfolio and with over a third of its assets under internal management, achievable compensation for the IMD staff would be expected to be in the top quartile. For this reason, we find the salary benchmark of 75th percentile for the CIO and Investment Directors to be appropriate. Furthermore, we believe the incentive pay targets to be reasonable.

EnnisKnupp notes that investment professionals below the Investment Director level are not eligible for incentive pay. While this is common practice among public funds, it may not be best practice for NCRS since some junior level staff members are responsible for the internal management of assets and play a significant role in the due diligence process.

The Treasurer understands the role compensation plays in retaining and recruiting investment staff, but is also sensitive to media attention and public perception. Unfortunately, the disappointing financial markets and recent negative investment returns occurred at the same time as the implementation of the base salary increases and incentive pay for the IMD staff.

The Treasurer is reevaluating the IMD’s compensation structure to ensure that it is appropriate for the environment in which the NCDST exists and not just within the peer group of large public funds.

[19] Risk Management Director position title no longer exists.

Although regular peer compensation comparisons are important since investment management professionals' compensations tend to swing with the rapid shifting economic and political environment, the following are five other factors[20] related to the public retirement industry to consider.

- *Negative performance returns*: Reduce, eliminate, or defer incentive payments when absolute returns are poor. NCDST currently has provisions related to incentive pay deferment only. "During periods of time when unusual circumstances or events impact the financial markets (e.g., if the absolute return of the total fund is negative in any fiscal year), the State Treasurer may postpone or delay the payment of the earned incentives until such time that the State Treasurer deems it prudent to release such payments." Given the recent negative market, many public funds are reevaluating their incentive pay structure to address years with negative absolute returns. The 2009 incentive pay for the IMD's eligible staff was not granted. Best practices are to clearly define the events that may trigger the forfeiture or deferment of incentive pay and when the deferred amount is to be paid.
- *Base salary and incentive pay balance*: Make compensation steadier by adjusting the base salary and reducing the maximum percentage possible for incentive pay. The NCDST increased the base salary of the investment staff last year and implemented a maximum incentive pay at 2X target.
- *Performance period*: Use multi-year performance evaluations for incentive pay so the reward is based on long-term performance, rather than short-term. The NCDST uses three and five year performance, which we believe to be appropriate for rewarding long-term evaluation. Negative or positive annual returns affect the incentive pay for staff for five years due to the incentive structure.
- *Implementation of compensation structure changes*: Implement changes to compensation structure after a formal policy change and advance communication to all those affected, and avoid retroactive changes. Per the Pay Plan, the Treasurer has the right to modify, terminate, and/or rescind any or all of the compensation schedules, provisions, policies, and procedures in the Pay Plan and any other supporting documents at any time. Additionally, the CIO has the authority, subject to Treasurer's approval, to change the specific portfolio targets at any time. Best practice is to have structured provisions that meet the organizational needs and are appropriate for the environment in which it functions. Having provisions that allow the terms to change mid-performance year may be detrimental to the staff morale. The NCDST may need a legal opinion regarding mid-year retroactive changes or changes to be made going forward after a reasonable notice to staff.
- *Transparency*: Although disclosing compensation structure along with the philosophy and decision-making process to the public in advance of implementation cannot eliminate negative media attention, it can reduce the likelihood of it and also provide the NCDST with a layer of defense against such attacks.

Most importantly, the compensation plan should reward the activities that the organization would like to promote. Incentive pay calculations need not be limited to investment returns. Some funds utilize strategic plan accomplishments and other general qualitative criteria, such as leadership, staff

[20] *Pay for Investment Performance in the Public Sector: Pension Fund Compensation*. August 2009. CBIZ Human Capital Services.

management, communications, and interaction with other fiduciaries, to calculate a portion of the incentive pay. The NCSDT recently developed a strategic plan with various goals, including one related to transparency and governance. The achievements of objectives under this goal and others can be tied to the CIO's and Directors' incentive calculations, along with other qualitative criteria, if the Treasurer deems it appropriate.

Conclusion

EnnisKnupp concludes that the NCRS used the services of a reputable compensation consulting firm, McLagan, to set the general parameters of the compensation program. The salaries set at the 75th percentile are appropriate for the IMD staff given the NCRS' asset size, complex portfolio, and assets under internal management. The actual salaries of the investment professionals below the Investment Director level are under the 75% percentile benchmark.

EnnisKnupp also believes including incentive pay for the CIO and Investment Directors is appropriate. The Pay Plan is fairly comprehensive, but it needs to be reevaluated to define the deferment and payout provisions and to ensure it is appropriate given the NCRS' environment.

Recommendations:

1. Review the actual salaries of the IMD staff members below the Investment Director level.
2. Review NCDST's Pay Plan for the IMD to ensure it is appropriate and includes sufficient details regarding deferment and other provisions impacting incentive pay.
3. Consider making all the IMD staff members who manage assets eligible for incentive pay.
4. Consider basing a portion of the incentive pay for the IMD staff on factors other than the investment returns, such as relevant strategic plan goals and other qualitative criteria.

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INTRODUCTION

An investment policy statement ("IPS") is fundamental to a retirement fund's governance framework. The IPS should provide clear direction and discipline regarding the structure and management of the investment program. Generally, an IPS reflects the investment goals and risk tolerance the fiduciary has determined to be optimal for the fund. An IPS should also delineate responsibilities and reporting lines among the key parties. The IPS component with the greatest impact on a fund is the asset allocation.

Establishing the asset allocation is the essential, strategic decision in determining the expected long-term rate of return and risk profile for an investment portfolio. This decision is rarely determined by anyone other than the highest level fiduciary. Typically, in the public sector, boards, as well as sole fiduciaries, set the asset allocation. It is established with the assistance and advice of actuaries, investment consultants, and professional investment staffs, consistent with legal constraints. An appropriate asset allocation takes into account the financial and actuarial characteristics and trends of the fund.

Asset class diversification is a fiduciary responsibility. Consequently, a discussion of the asset allocation should include the types of asset classes that are appropriate for the portfolio. Public retirement funds diversify their investments by asset type (stocks, bonds, real estate, etc.), and then further diversify within each asset class according to factors such as sector, credit quality, and geography. The introduction of a new asset class requires careful analysis and thoughtful planning before implementation. The analysis should take into account the expected return and standard deviation (risk) of possible portfolios. The new asset class should be incorporated within the context of the investment goals of the fiduciaries and liabilities of the fund.

Under Modern Portfolio Theory ("MPT"),[1] no investment is considered, per se, imprudent. An investment can be risky in isolation, and still be prudent if it fits within the context of the overall investment portfolio. Asset class correlations are a fundamental tenet of the MPT. For example, if one type of investment tends to increase in value during certain market conditions while another type of investment tends to decline, then the overall portfolio is strengthened and risk can be reduced by including both asset classes.

Best practices are for the fiduciary and staff to be educated on the risks and expected returns of various asset classes and their correlations before any new asset classes are introduced into the portfolio. In theory, the broadest opportunity set provides the greatest opportunity for success, but this is only true if the positive and negative aspects of various asset allocations are well understood. Because of the importance of the asset allocation decision, it is prudent for a fiduciary to document the decision-making process, maintain the materials that influenced the decision, and record the rationale for the decision in meeting minutes or memorandums.

[1] Markowitz, Harry, "Portfolio Selection," *Journal of Finance*, VII, No. 1 (March 1952). Markowitz received a Nobel Prize in Economics for his work on Modern Portfolio Theory.

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Investment Policy Statement
II. Asset Allocation
   A) Process and Rationale for Asset Allocation
   B) Appropriateness of Asset Classes
   C) Rebalancing
   D) Methods and Assumptions Used in Analyzing Risk

I. Investment Policy Statement

Background

The purpose of the IPS is to define the preferred investment philosophy and practices. In most jurisdictions, the law does not specifically require public funds or retirement systems to have a written IPS. Likewise, the Employee Retirement Income Security Act ("ERISA")[2] does not require private sector pension funds to have a written IPS. The United States Department of Labor ("DOL"), which oversees private sector plans, strongly encourages trustees to create and adopt such statements.

EnnisKnupp believes that having a well-crafted IPS is a best practice for all pension funds, both public and private. There is no uniform standard for the content and no absolute model to follow. However, public retirement industry organizations have provided guidance on this issue.[3] Based on our experience, an IPS should include the following:

- Reference to enabling law and the authority of the fiduciary
- Applicable standard of care (prudent expert or prudent investor)
- Mission and purpose
- Investment philosophy, including risk tolerance and diversification
- Investment goals and objectives
- Investment constraints
- Liquidity needs
- Roles and responsibilities of key parties (e.g., treasurer, relevant committees or advisory panels, staff, consultants, investment managers, and custodian) and any delegations of authority
- Long-term strategic asset allocation targets and allowable ranges
- Definitions and guidelines for each asset class, including prohibited or permissible investments and diversification mandates
- Rebalancing process and triggers
- Investment performance standards and benchmarks for each asset class and the total fund
- Investment manager due diligence, search and selection process
- Monitoring process for internally and externally managed portfolios
- Reporting requirements
- Various policies regarding fund assets and investment practices, including proxy voting, securities lending, securities litigation, brokerage, and other such programs

It is a common practice for public funds, including large public retirement systems and state investment boards, to have an IPS that does not address all of the areas identified above. Some public funds have extensive investment manager guidelines or detailed contract provisions to supplement policies, or they

[2] Employee Retirement Income Security Act, 29 USC § 1001-1461.
[3] See, for example, Government Finance Officers Association (GFOA) Committee on Retirement and Benefits Administration, "Investment Policy Checklist for Pension Fund Assets," May 2003, http://www.gfoa.org/downloads/PIPchecklist6.pdf.

may address various areas in separate operational type documents. The best practice is to have clear documentation of what is expected and who is responsible for meeting those expectations.

Findings and Analysis

NCRS has six main investment governance documents, each titled "Guidelines, Policies, and Procedures" that, when taken together, essentially constitute an IPS. These documents include: a Total Fund Policy, Publicly Traded Equity Policy, Real Estate Policy, Alternative Investments Policy, Long-Term Investment Fund ("LTIF") Policy, and Short-Term Investment Fund ("STIF") Policy. These six policies are collectively referenced in this Report as the "NCRS Policies."

EnnisKnupp reviewed the October 2008 drafts of the NCRS Policies. Since the 2008 documents were created, a Credit Strategies Policy has been drafted, which EnnisKnupp also reviewed. We were informed that the IMD operates pursuant to the NCRS Policies. However, the NCRS Policies have not been formally approved by the prior or current Treasurer. It is our understanding that once the CIO is in place, the IMD plans to finalize and seek approval of the NCRS Policies.

The table below provides a comparison of the NCRS Policies against EnnisKnupp's best practice checklist for a comprehensive IPS. Noted with a checkmark (✓) are those elements already included in the NCRS Policies. Also noted are those elements which need enhancement. Enhancements include in-depth documentation and clarification related to the specific subject. Best practices do not require that a standard phrase or specific language be included in an IPS, but they do require that the processes and definitions be clear and unambiguous to the readers and users of the IPS.

Table 3.1 – Checklist for a Comprehensive IPS

Best Practice Investment Policy Statement Subject Areas	
Introduction	**NCRS Policies**
Reference to state law creating the Fund with specific reference to investment related sections of the law	✓ Best practice
Reference to the Treasurer's right to have an investment advisory committee and to set policy	✓ Best practice
Description of intended beneficiaries of the fund (e.g., the fund is created for certain employees and their dependents)	Needs enhancement
Scope (e.g., limited in application to pension fund assets or may include other assets)	✓ Best practice
Statement of purpose	**NCRS Policies**
Description of the sole or fundamental purpose of the retirement fund	✓ Best practice
Language describing that the fiduciary must act in the sole interest of members and beneficiaries, and for the exclusive purpose of providing benefits	✓ Best practice
Listing of investment goals that could include:	**NCRS Policies**
Preserve the actuarial soundness of the fund in order to meet benefit obligations	✓ Best practice

Best Practice Investment Policy Statement Subject Areas	
Obtain a long-term rate of return (one or two market cycles), net-of-fees, equal to or in excess of the policy benchmark	✓ Best practice
Clarify how to manage investment risks	✓ Best practice
Establish risks that may be taken to achieve return goals	✓ Best practice
Define policy benchmark and asset allocation targets	✓ Best practice
Reference of the duty to incur only reasonable expenses	Needs enhancement
Identification of roles and responsibilities	**NCRS Policies**
Treasurer – general and investment related duties	✓ Best practice
Investment advisory committee – role to make recommendations or final decisions	✓ Best practice
Internal staff – general and investment related duties, reporting lines, and expectations, particularly among the senior investment related staff and others involved (e.g., legal counsel, internal auditor)	✓ Best practice
Investment consultants – duties, reporting lines, expectations regarding the frequency of communications, and acknowledgement of fiduciary responsibilities	✓ Best practice
Investment managers – duties, acknowledgement of fiduciary responsibilities, and frequency of communication (could incorporate contractual mandates)	✓ Best practice
Custodian bank – role as custodian or trustee and role regarding cash management, performance calculations, etc.	✓ Best practice
Description of other service providers' duties, such as securities lending and brokerage[4]	✓ Best practice
Asset allocation	**NCRS Policies**
Acknowledgement of its primary importance	✓ Best practice
Recognition of the allocation's purpose, such as to provide an optimal mix of investments to produce desired returns and meet current and future liabilities with minimal volatility	✓ Best practice
Description of frequency and methodology of asset liability modeling and allocation resetting	✓ Best practice
Minimum, maximum, and target allocation ranges	✓ Best practice
Standards regarding diversification, including limits to a single issuer, single asset class, economic sector, or country	Needs enhancement
Asset class guidelines and benchmarks	**NCRS Policies**
Definition of each asset class and rationale for inclusion in the portfolio	Needs enhancement
Rationale for selected benchmarks, who sets them, and how often they are revisited	Needs enhancement
Description of any prohibited investments (e.g., short selling, margin, and investments precluded by law or regulation)	✓ Best practice

[4] If and when other service providers are hired (such as for proxy voting, evaluating trading efficiency, and portfolio analytics), their roles and responsibilities should be included in the IPS.

Best Practice Investment Policy Statement Subject Areas	
Detailed overview of allowable credit risk in the portfolio (e.g., minimum credit rating for any fixed income investment as determined by a nationally recognized credit rating agency)	✓ Best practice
Rebalancing policy	**NCRS Policies**
Statement of the purpose of rebalancing (i.e., to ensure that the investment program adheres to its strategic asset allocation)	✓ Best practice
Description of the method used to rebalance (e.g., most cost effective manner, use of excess cash, index strategies as a source, or liquidation of over funded managers)	Needs enhancement
Frequency of the portfolio reviewed for rebalancing	✓ Best practice
Monitoring and reporting	**NCRS Policies**
Statement of purpose for monitoring and reporting (i.e., to ensure compliance with the IPS and applicable law, to manage risk, and to assess manager performance)	✓ Best practice
Description of quarterly reporting for both external managers and other external investment professionals (can include an outline of current strategy and investments, performance vs. benchmark, and portfolio composition relative to the asset allocation policy)	✓ Best practice
Purpose and scope of annual and more frequent reporting	Needs enhancement
Shareholder activities	**NCRS Policies**
Description of the proxy voting policy and how votes are cast and recorded	Needs enhancement
Statement of the circumstances under which the Treasurer will sign on to or initiate a shareholder proposal	Needs enhancement
Statement of how (or if) a focus list of underperforming companies is identified and what communication the Treasurer takes to engage companies in dialogue	✓ Best practice
Description of the process of opting in and out of shareholder class actions	Needs enhancement
Identification of core principles of corporate governance (board independence, CEO compensation, access to the proxy, audit committee, etc.)	Needs enhancement
Delegation	**NCRS Policies**
Statement of any delegations to the staff (could incorporate by reference the position descriptions for key senior staff members)	✓ Best practice
Alignment of the strategic plan with the annual plan for investments	✓ Best practice
Requirement to annually review IPS	Needs enhancement

The NCRS Policies thoroughly cover many areas commonly found in other best practice IPS documents. In particular, the NCRS Policies clearly address the standard of care, investment objectives, roles and responsibilities, risk tolerance and diversification. The NCRS Policies contain a description of the Total Fund benchmark and each asset class benchmark. The NCRS Policies do not include a rationale for the inclusion of allowable asset classes in the portfolio, which would lend additional transparency to the decision-making. The topic of rebalancing is documented, but could be enhanced by clarifying whether each asset class will be rebalanced to the target range or to the edge of the range. [Rebalancing is discussed later in this Section (3.II.C).]

Conclusion

The NCRS Policies have many of the key elements of best practices. While it is not imperative that all the NCRS Policies be consolidated into one comprehensive IPS, such a consolidation would eliminate some redundancies and may be more useful for those who have responsibility beyond one asset class and for those who want an overall understanding of the investment program. If the NCRS Policies are maintained as separate documents, care must be taken when the documents are revised to ensure consistency among them.

There were no material gaps between the stated operations of the NCRS as explained to EnnisKnupp by the staff and the requirements of the governing policies.

Recommendations:

1. Complete a review of the NCRS Policies and the enhancements noted in this Report, make modifications as necessary, and seek formal approval from the Treasurer.
2. Develop a systematic process to regularly monitor and report on policy compliance to the Treasurer.

II. Asset Allocation

A) Process and Rationale for Asset Allocation

Background

Asset allocation decisions are typically based upon either an asset allocation review or an asset liability study. An asset allocation review is an asset-only analysis based on MPT that provides guidance as to appropriate target allocations based on the risk/return characteristics of specified, defined asset classes and the risk tolerances of the decision-makers. Asset allocation review is an asset return optimization exercise focused on attaining the highest expected return for a given level of risk.

While an asset allocation review is a good tool for aligning a portfolio with a return goal, such a review generally does not take into consideration the liabilities of pension funds. An asset liability study models anticipated growth rates in liabilities and cash flows, based on a fund's specific benefit formulas and demographics. An asset liability study explores how different asset allocations affect funding status, contribution rates, and ability to pay benefits as they come due. By recognizing that the liabilities have certain characteristics and potentially change over time, a suitable asset allocation that is most likely to maintain or improve the funded status of the fund can be adopted. An asset liability study provides results that are truly customized to the fund's unique characteristics.

Best practices are to have asset liability studies performed every three to five years or when major modifications are made to the benefits offered by the fund. It is also a best practice for asset allocation reviews to be completed every one to three years, or in concert with the regular asset liability studies.

Findings and Analysis

The charts on the following page show NCRS' most recent shift in target asset allocations. As the charts indicate, the target allocations have changed since 2006. The most notable difference is the increased allocation to alternatives, real estate, and international equity, and the corresponding decreased allocation to U.S. equity.

Chart 3.1 - NCRS Asset Allocation Targets as of 2006

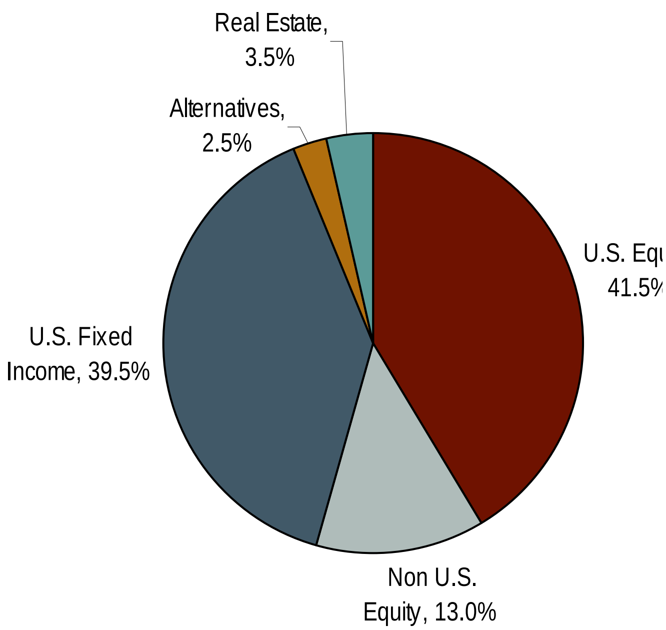
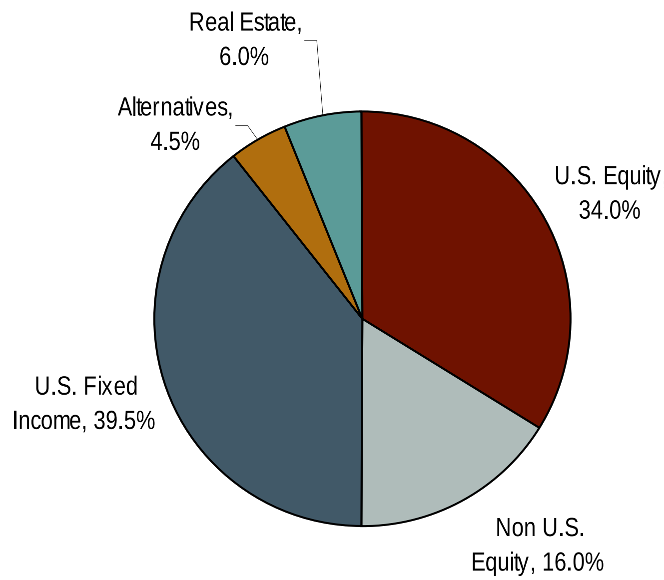


Chart 3.2 - NCRS Current Asset Allocation Targets



In 2005, Barclays Global Investors ("BGI"), which was acquired by BlackRock in late 2009 and now operates under Blackrock's name, conducted an asset-only optimization study for the NCRS. This study identified interim and long-term policy targets. The interim policy targets were adopted shortly after the 2005 study, with the expectation that the long-term targets would be achieved gradually over time. In 2008, BGI reviewed the progress toward achieving the long-term targets, which were incorporated into the October 2008 NCRS Policies. In 2009, BGI completed another asset allocation exercise.[5] The legacy BGI firm was a well-known institutional investment manager that offered passive investment strategies, actively managed strategies, transition management, and other investment services. The firm has deep resources in long duration investing. While not an actuarial firm, the legacy BGI organization has significant expertise and resources dedicated to analyzing liabilities.

Historically, BGI has not charged a distinct fee for these asset allocation reviews. However, as an investment manager for NCRS, BGI receives fees for investment management services. Going forward, following BGI's acquisition by BlackRock, it is EnnisKnupp's understanding that these types of reviews will no longer be completed without additional fees.

The 2008 and the 2009 reports were asset allocation studies, not asset liability studies. Although the 2008 report did not forecast liabilities, the analysis did take the nature of the liabilities into account,

[5] BGI report titled "Setting Pension Funding Goals," August 19, 2009.

including several different measures of liabilities (market growth rates, cash flows, and sensitivity to interest rates). The 2009 report included a forecasting and distribution of liabilities. Taken together, the reports provided a comprehensive overview and analysis of asset allocation and liabilities.
In the past, NCRS has not had a generalist investment consultant. Consequently, an investment consultant, in conjunction with an actuary, has not conducted a comprehensive and independent study of the assets and liabilities. As of the date of this report, an asset liability study is not planned for the near future.

Using the current asset allocation targets set forth in the NCRS Policies,[6] EnnisKnupp calculated an expected return and risk level for the portfolio. Based on this information, EnnisKnupp calculated NCRS' long-term expected return to be 6.7% with a risk level (volatility) of 11.2%.

Table 3.2 – Long-Term Expected Return and Risk Level

Expected Return and Risk Per EnnisKnupp Current Capital Markets Assumptions[7]			
Asset Class	NCRS Target Allocation	Expected Compounded Return	Expected Risk
U.S. Equity	34.0%	7.0%	17.1%
Non-U.S. Equity	16.0%	6.8%	19.7%
U.S. Fixed Income	39.5%	4.6%	6.6%
Cash	0.0%	3.0%	0.2%
Alternatives (Private Equity and Hedge Funds)	4.5%	9.2%	32.3%
Real Estate[8]	6.0%	5.8%	26.1%
Total Fund	100.0%	6.7%	11.2%
BGI Results[9]		6.8%	10.3%

The risk and return assumptions (the inputs) BGI used for each asset class shown in the table above appear reasonable and are comparable to those used by EnnisKnupp.[10] Consequently, the expected risk and return (the outputs) for the portfolio, as calculated by BGI, were only slightly different than those calculated by EnnisKnupp.

While we estimate that the NCRS Portfolio will earn a roughly 6.7% return, the uncertainty surrounding this expectation, based on historical volatility of asset classes, is quite large. The table on the following page illustrates the range of expected returns over the next 15 years, along with

[6] In late 2009 and early 2010 the inflation and credit portfolios were established for a combined 3% allocation in the portfolio. The NCRS Policies have not been updated to reflect this change. The inclusion of the inflation and credit portfolios will impact the expected risk and return of the portfolio, but only to a small degree given their relatively small allocations at the Total Fund level.
[7] EnnisKnupp Assumptions as of January 2010.
[8] Compounded return and risk assumptions for real estate are for a portfolio including 40% core, 30% value added, and 30% opportunistic. EnnisKnupp's return and risk assumptions for core are 6.0% and 12.3%, respectively. For value added, they are 5.0% and 27.9%, respectively. For opportunistic, they are 3.6% and 42.7%, respectively.
[9] BGI report titled "Setting Pension Funding Goals," August 19, 2009.
[10] We did not review BGI's risk and return assumptions for the credit and inflation portfolios.

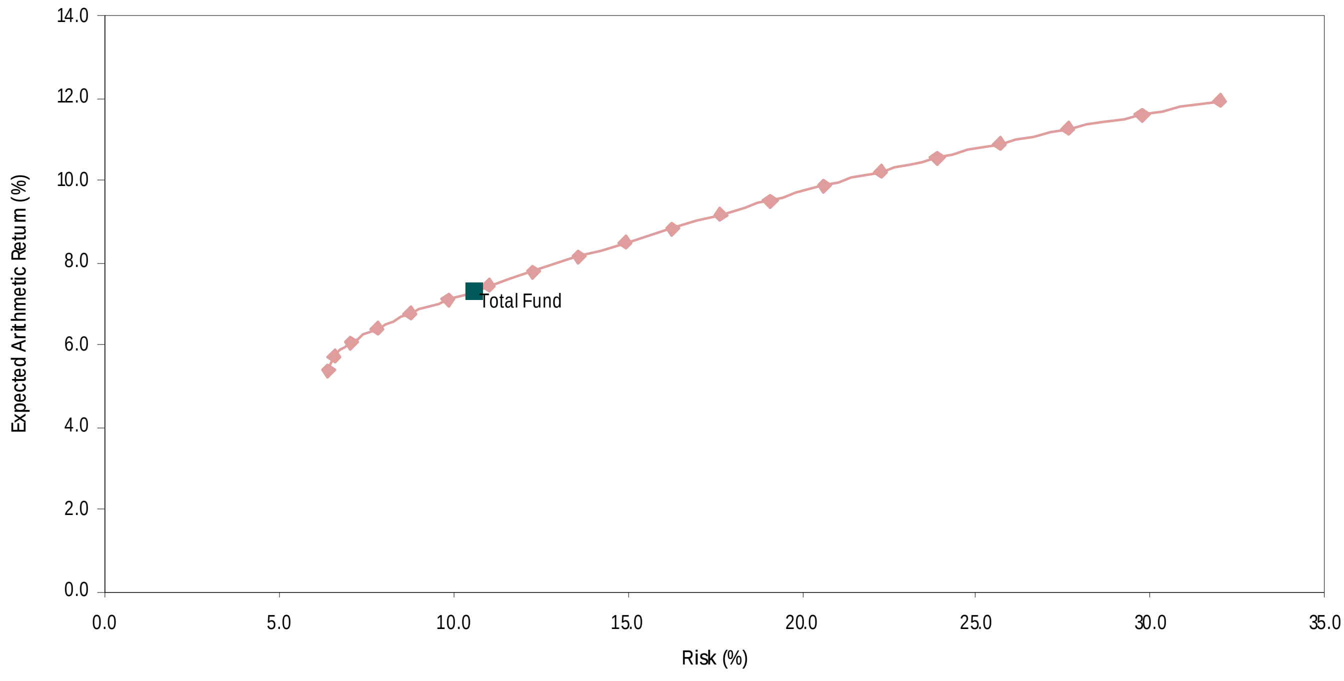
probabilities of achieving these returns. The 6.7% expected return may be improved if there is outperformance earned by active managers.

Table 3.3 – Range of Expected Returns

Percentile Probability	Expected Returns
5.0%	11.6%
25.0%	8.7%
50.0%	6.7%
75.0%	4.8%
95.0%	2.1%

The rationale behind most asset allocation decisions is to decide upon a policy that is "efficient." An efficient portfolio is one that offers either the highest return potential for a specified level or risk, or the lowest risk for a specified level of return. These different risk and return scenarios represent an "efficient frontier." The graph below indicates that the NCRS' asset allocation policy is on the efficient frontier.

Graph 3.1 - Efficient Frontier Comparison



The Treasurer annually reviews the asset allocation with staff to determine if it is still inline with the expectations for returns and tolerance for risk. The Total Fund Policy calls for the asset allocation model to be reviewed annually to "determine if it is necessary to change ranges or targets." At quarterly meetings, the Treasurer reviews the actual allocations for each asset class in comparison to the set target allocations, which is a best practice.

The NCRS is well funded. The 2007 actuarial valuation[11] indicated a funded ratio of 104.7%. For some institutional investors, a strong actuarial position leads to a lower risk (lower equity) allocation, but for others a strong actuarial position would provide an opportunity to take on more risk. The different views are dependent on the contribution rates and the role that the capital appreciation of equity is expected to play in paying for future benefit accruals.

The investment objectives, as stated in the Total Fund Policy, correspond to the fiduciary's risk tolerance. The investment objectives include achieving "the maximum amount of return given a certain level of risk" and ensuring the sufficiency and security of funds to meet liabilities. Preserving sufficient liquidity and exceeding the actuarial assumption (currently 7.25%) are also objectives. These types of investment objectives indicate that an asset allocation that includes equity and fixed income exposure, and higher returning alternatives (private equity), as does the NCRS Portfolio, would be in line with the objectives and risk tolerance of the fiduciary.

Conclusions

The asset allocation for NCRS has been established in an appropriate manner. Staff makes recommendations and the IAC offers advice to the Treasurer about asset allocation. The Treasurer makes the final decision. An asset liability study has not been completed, but several asset allocation studies have been performed that include an analysis of NCRS' liabilities. In the past, the asset allocation studies were completed by an investment manager of the Fund, which could present an appearance of a conflict of interest.

The asset allocation set on the discussions and analysis has resulted in an efficient portfolio on the basis of expected return and risk.

Recommendations:

1. Adopt a policy that requires an asset liability study be conducted every five years or when major changes in the benefits structure are planned.
2. Ensure the next asset liability study is conducted by an independent investment consultant, working in conjunction with an actuary.
3. Continue annual reviews of the asset allocation.

B) Appropriateness of Asset Classes

Background

Asset class diversification is a crucial fiduciary responsibility and essential to risk management. Thus, investing in the different asset classes requires thoughtful planning and implementation. In order to

[11] Buck Consultants Report of the 65th Annual Valuation of the Teachers' and State Employees' Retirement System of North Carolina as of December 31, 2007.

achieve appropriate diversification, a program must have an organized and customized approach to investment selection.

A program that follows best practices will have a broad range of asset classes, leveraging internal and external resources to generate ideas. Decisions to include different asset classes should be made by the highest level fiduciaries with input from the staff and consultants. Before decisions are made, it is best if advanced education about the risks and expected returns of a contemplated investment is provided to the fiduciaries. Discussions of the positive and negative aspects, and the rationale in support of a new asset class should be documented in meeting minutes and maintained with any written materials that influenced the fiduciary's decision.

Findings & Analysis

The NCRS Policies identify the allowable asset classes and define them as follows:[12]

- Fixed Income: Investment grade securities that substantially match the quality, coupon, maturity structure, and duration characteristics of the Custom Fixed Income Benchmark.
- Publicly Traded Equity: Publicly traded equities domiciled in the U.S and/or outside of the U.S. large cap, mid cap, and small stocks are all allowable.
- Real Estate: Public and private real estate equity, first mortgages, mezzanine debt, and timber investments. Private real estate can include core, value-added, and opportunistic investments.
- Alternative Investments: Private equity including venture capital, buyouts, growth equity, and special situations. Alternative investments may also include hedge fund–of-funds, with investment in convertible arbitrage, distressed securities, equity market neutral, event driven, macro, merger arbitrage, relative value arbitrage, commodity, currency and sector/country strategies.

These asset classes are comparable to those used by other sophisticated institutional investors. While a comparison to similar institutional investors should not drive policy decisions, it is one method to assess whether the results of asset allocation process were reasonable and consistent with the fiduciary duty of prudence. On the following page is a comparison of the current NCRS target asset allocations to three surveys: (1) the average public fund allocations as reported in Greenwich Associates' 2008 survey of 328 public funds (defined benefit assets only); (2) the median asset allocation as reported in the 2009 Wilshire Report on State Retirement Systems; and (3) the Council of Institutional Investors 2009 Asset Allocation Survey of 40 public funds.

[12] N.C. General Statute 147-69.2(b) governs the securities that are eligible for purchase in all asset classes.

Table 3.4 – NCRS Allocation Comparison to Other Institutional Investors[13]

Asset Class	NCRS Target Allocation[14]	2008 Greenwich Average[15]	2009 Wilshire Average[16]	2009 Council of Institutional Investors Median[17]
U.S. Equity	34.0%	36.5%	38.1%	28.6%
Non-U.S. Equity	16.0%	19.7%	18.8%	17.6%
Total Equity	50.0%	56.2%	56.9%	46.2%
Fixed Income	39.5%	27.2%	27.6%	29.3%
Cash/Other	--	2.0%	--	2.2%
Total Fixed Income	39.5%	29.2%	27.6%	31.5%
Private Equity	3.5%	6.6%	5.6%	8.5%
Hedge Funds	1.0%	1.7%	--[18]	2.2%
Real Estate	6.0%	7.3%	5.9%	8.3%
Other	--	--	4.0%	3.4%
Total Fund	100%	100%	100%	100%

It is important to note that the survey information represents actual allocations as opposed to policy targets. Compared to all three surveys, NCRS has a higher allocation to fixed income and a lower allocation to private equity, indicating a more conservative position. NCRS' allocation increase over the past two years in the real estate and alternatives portfolios has been funded from the public equity portfolios.

Public funds have been investing in private equity for many years, however, there are special risks associated with private equity. For investors who understand the risks and can tolerate illiquidity for a portion of the portfolio, private equity serves as an appropriate part of a diversified portfolio and can provide a boost to overall returns. Therefore, it may be worthwhile for NCRS to consider whether a higher allocation to private equity is appropriate.

NCRS' policy allocation to hedge funds is similar to, but slightly lower than that of its peers. At only 1% of the portfolio, this allocation will have a small impact on the Total Fund's performance and diversification. Given the complexities and risks of the hedge fund asset class, it may be worthwhile to evaluate its intended role within the Total Fund. If it is anticipated that the hedge fund portfolio should not represent more than 1% of the Fund, the resources dedicated to the oversight and monitoring of that portfolio may be better utilized within another area of the portfolio.

[13] Columns may not add to 100% due to rounding.
[14] Target asset allocation as indicated in the October 2008 draft NCRS Policies.
[15] Greenwich Associates Market Dynamics Survey.
[16] 2009 Wilshire Report on State Retirement Systems: Funding Levels and Asset Allocation. March 3, 2009.
[17] Council of Institutional Investors Asset Allocation Survey 2009
[18] The Wilshire Report did not breakout hedge funds; allocations to hedge funds are included in "Other".

Conclusion

The asset classes included in the NCRS Portfolio are commonly used asset classes and are appropriate given NCRS' circumstances. The target allocations for alternative investments (private equity and hedge funds) may warrant additional discussion and evaluation to ensure they are set at levels most appropriate for the Fund.

Recommendations:

1. Ensure the merits of each asset class are fully evaluated by the IMD and the Treasurer, and that supporting documentation for decisions for allocation changes is maintained.
2. Consider whether a higher allocation to private equity is appropriate for NCRS.
3. Evaluate the intended role of hedge funds within the NCRS Portfolio, and reconsider whether the 1% policy allocation is most appropriate for the NCRS.

C) Rebalancing

Background

Rebalancing is the process by which the investment program stays true to its strategic allocations and resulting risk and return characteristics as determined by the asset allocation decision. Due to continuous market movements, specific target allocations to an asset class are difficult to maintain. As a result, it is common for allowable "ranges," as opposed to rigid allocation percentages, for asset class exposures to be part of the asset allocation policy.

Movement from one asset class to another in order to maintain the strategic positioning of the portfolio within allowable ranges can be a challenge, as was the case for institutional investors in 2007 and 2008 when many markets with in flux and illiquid. Additionally, efficiency and cost should be considered when rebalancing an investment portfolio. These concerns are underscored when non-publicly traded asset classes, such as real estate and private equity, are considered.

A rebalancing policy defines the frequency of review, the allowable difference from asset class target allocations (ranges), any requests required to initiate investment activity, and reporting upon completion of (or inability to complete) the appropriate investment activity.

Findings and Analysis

The table on the following page shows NCRS' allocation ranges. These ranges are expected to be formally approved when the NCRS Policies are finalized.

Table 3.5 – NCRS' Allocation Ranges

Asset Class	NCRS Policies Minimum	NCRS Policies Maximum	NCRS Current Target[19]	NCRS Current Allocation[20]
Publicly Traded Equity	45%	55%	50%	47%
• *U.S. Equity*	--	--	*34%*	*33%*
• *Non U.S. Equity*	*12%*	*20%*	*16%*	*14.5%*
Fixed Income	35%	44%	39.5%	42%
Real Estate	5%	7%	6%	5%
Alternatives	3.5%	5.0%	4.5%	6%

Rebalancing to specific targets will result in a lower benchmark risk than does rebalancing to the edge of the range because the resulting actual allocations will closely match the policy targets. Benchmark risk is defined as tracking error or standard deviation of the difference between actual fund performance and the policy benchmark performance. On the other hand, rebalancing to the specific target typically incurs a higher cost than rebalancing to the edge of the range.

Standard institutional practice, and EnnisKnupp's recommendation, is to rebalance when actual allocations deviate materially from target allocations, rather than rebalancing at specified time intervals. EnnisKnupp considers a +/-5% allocation deviation from the target as material.

Actual allocations should be examined monthly or quarterly for rebalancing purposes. Special consideration needs to be given to illiquid asset classes where rebalancing is not possible or is very costly. Our analysis of 10,000 randomly generated simulated observations from distributions built using our capital markets expectations indicates that in cases when managers must buy and sell securities in order to rebalance, it is best to do so only to the edge of the range. This superior risk/cost control outcome assumes that actual securities are being bought and sold during the rebalancing procedure (i.e., separate account managers are being instructed to buy/sell securities to effect the rebalance). In cases where a free trade may exist with an index fund manager or the cost of buying/selling shares of a commingled fund or mutual fund is the same, no matter the dollar amount, rebalancing back to the policy target is appropriate.

The NCRS Policies state that "natural" cash flows will be used for rebalancing purposes, which is a good practice. Additionally, the NCRS Policies indicate that the IMD staff will determine whether rebalancing is required on at least a quarterly basis. The IMD staff monitors the portfolio to ensure it is within allocation ranges at its fully invested amount.

EnnisKnupp reviewed the Fund's quarter-end actual allocations to each asset class since the beginning of 2006.[21] Of the 13 periods reviewed, the actual allocation to one or more asset class

[19] Per October 2008 draft NCRS Policies.
[20] Current allocation percentages per 2Q09 Pension Fund Overview.
[21] NCRS quarterly asset allocation reports from 3/31/2006 to 3/31/2009.

exceeded the allowable range four times (30% of observations). Most recently, the Fund has been overweight and outside of the allowable range to fixed income and alternatives.

Conclusion

The NCRS Policies contain targets as well as minimum and maximum positions, specifies the party responsible (IMD), establishes the frequency (at least quarterly), and allows for flexibility in executing rebalancing activities to account for market conditions. The NCRS Policies also comment on the use of cash flows to assist in maintaining the asset allocation. The provisions appear complete and in conformance with best practices. Recently, actual rebalancing has not always been implemented in accordance with NCRS Policies.

Recommendations:
1. Clarify whether rebalancing is intended to bring the Fund to the policy target or the edge of the range.
2. Review the reasons for the Fund's asset allocation exceeding the allowable ranges for several quarters over the last three years, and enhance policy compliance procedures, if warranted.

D) Methods and Assumptions Used in Analyzing Risk

Background

The risk tolerances of public funds are influenced by their liabilities that are set in law. Investment goals should tie directly to the risk tolerance of the fiduciaries. A higher tolerance for risk allows for higher return goals, just as a lower tolerance for risk would result in lower return goals. When investment returns are strong, fiduciaries often do not focus on investment goals and risk tolerances. However, as have been recently experienced, difficult markets highlight the importance of these two issues. Many fiduciaries have taken a fresh look at their risk tolerances and corresponding investment goals. For example, more than half the respondents to a recent Greenwich Associates Survey[22] have reviewed or changed their policies in the last 12 months. Cutting volatility and boosting predictability appeared to be the primary goals.

A developing trend in managing large, multi-manager portfolios in the public sector is to specify acceptable levels of active-risk through a risk budgeting tool. Risk budgeting establishes active-risk targets or ranges for each asset class and the Total Fund. Active-risk is a statistical measure of risk that an active manager assumes relative to the benchmark it seeks to beat. It represents the potential return differential between a manager's return and its benchmark, and is the quantitative representation of the latitude that the manager has in attempting to add excess return.

[22] Greenwich Associates Market Pulse survey of 152 institutions with assets under management greater than $1 billion. Among those participating in the survey, 97 were corporate pension funds, 34 were public funds, and 21 were endowments.

Risk budgets typically specify a cap or range of risk that is allowed for each major publicly-traded asset class as well as for the Total Fund. However, risk budgeting should never be done in isolation. In periods when the market's volatility is higher than normal (as was the case over the last two years), active-risk will also be high. As active-risk is linked to the market, risk budgeting should take this link into account and any caps or ranges should be reflective of the changing levels of risk in the market.

Findings and Analysis

NCRS' risk/return management is addressed in the NCRS Policies, which stipulate that ranges and targets with respect to risk and return exposures will be reviewed at least annually. Moreover, the risk and return exposures, per the NCRS Policies, are to be verified by a third party. Annual review and independent verifications of risk and return are best practices.

General volatility levels for each asset class (low, moderate, or high) are identified in the NCRS Policies. They call for risk to be measured through standard deviation and tracking error relative to the appropriate benchmarks, which are commonly used and appropriate measures of risk.

An alternative approach would be to set more specific allowable active-risk targets or ranges for each asset class and the Total Fund through a risk budgeting tool. A risk budget may assist the Treasurer, IAC, and staff to monitor the level of risk each manager brings and to evaluate whether that level of risk is reasonable.

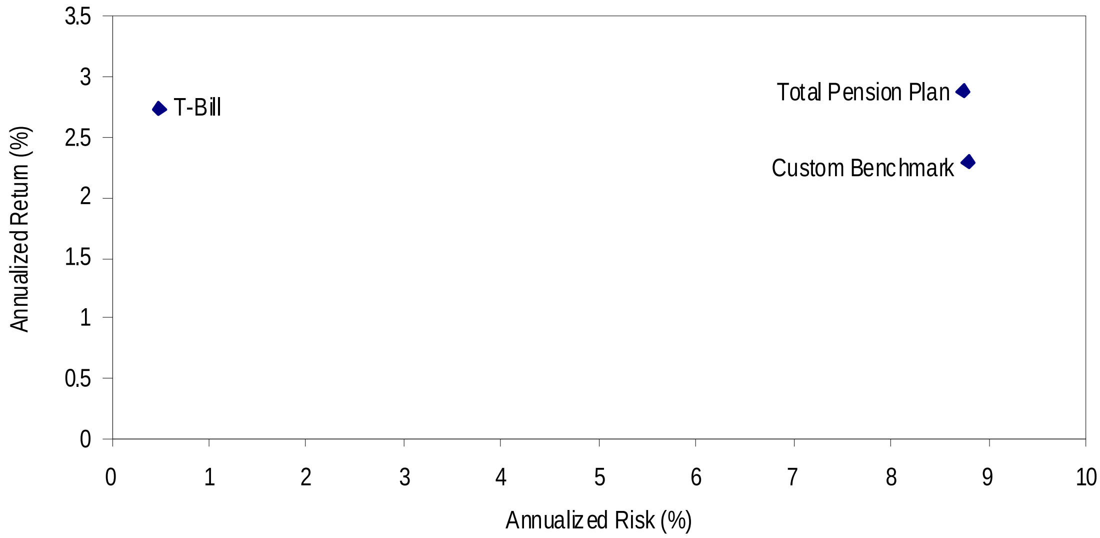
Diversification is also specified as a guideline for risk management. As such, the IMD is called upon to consider diversification when considering new investments and when rebalancing. These are appropriate risk management guidelines.

The NCRS Policies further identify certain quantitative and qualitative levels of risk that the Fund is able to tolerate while achieving its return objectives, including:

- Prudent levels of short-term and long-term volatility
- Appropriate levels of downside risk
- Variances in the asset allocation structure of the Fund relative to the broad financial markets and peer groups
- Certain levels of short-term underperformance by investment managers

These are all relevant and reasonable risk factors that allow the IMD and the Treasurer to structure and monitor the portfolio in an appropriate manner. The graph on the following page shows the risk/return characteristics of the Total Fund compared to the Custom Total Fund Benchmark. As shown, a higher return at a similar level of risk compared to the benchmark has been earned by the NCRS, which is a positive result.

Graph 3.2 - Risk/Return
10 Years Ending 3/31/2009



Conclusion

By incorporating risk/return management into the NCRS Policies, the IMD is meeting best practices. The focus on return volatility and diversification is reasonable. Furthermore, identifying specific risk tolerances of the Fund is a best practice, one that many other funds have not done. The risk and return characteristics of the NCRS Total Fund have been superior to those of the benchmark over the trailing ten-year period (more return for a similar level of risk).

Recommendation:

1. Consider using risk budgeting to determine and monitor risk within the NCRS Portfolio.

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INTRODUCTION

Determining the investment management structure is an important function for fiduciaries of public funds. Decisions regarding the structure of an institutional investment program require careful thought and unbiased advice from experts on staff and qualified consultants. Sometimes, investment management decisions are delegated to staff or outside service providers. When this responsibility is delegated, it must be done in a prudent manner. The highest fiduciary must periodically monitor whether the delegation of responsibilities remains appropriate.

The investment management structure directly affects investment management expenses and related fees incurred by the fund. Fees and expenses take away from the assets available to meet liabilities. Ensuring fees are reasonable is an important fiduciary duty. Generally, passive management is less expensive than active management and internal management is less expensive than external management. Additionally, larger allocations of assets to a manager will usually reduce expenses if certain thresholds are met. Investments in alternative asset classes typically have higher fee structures than those in the traditional asset classes. However, expenses alone should not drive all decisions. Although fees always warrant attention, the least expensive structure is not necessarily the most optimal.

The structure must be in alignment with the investment policy and be monitored for compliance. Attention should be paid to the resulting portfolio characteristics when the individual managers are aggregated. Structural biases toward certain segments of the market can result in unintended misfit risk between the portfolio and its benchmark. It can also result in additional risk.

SCOPE OF REVIEW

In this section of the Report we focus on the following areas:

I. Investment Management Structure
    A) Number and Types of Managers
    B) Internal and External Management
    C) Active and Passive Management
    D) Non-Traditional Investment Practices
    E) Structure Compared to Investment Policy
II. Investment Management Fees

I. Investment Management Structure

A) Number and Types of Managers

Background

No universal "right" answer exists for the number and types of managers to use for a portfolio. Fewer managers result in larger allocations, on the whole, while more managers result in smaller allocations.

Having a large number of managers with small allocations may result in a portfolio structure that is characterized as "closet indexing," which is not an optimal structure. It refers to having active managers that, when aggregated into one portfolio, essentially offset an individual manager's active bets (over or underweights to stocks or sectors). This is an expensive way to gain market-like exposure, since active management fees are paid for index-like exposure.

The types of and allocations to managers selected are dependent on several factors, including the desired level of passive management, the tolerance for risk, the ability to identify highly skilled managers, and the overall investment philosophy of the fiduciaries. If costs are a concern then passive managers may be more attractive. A low tolerance for risk would indicate higher allocations to managers with lower expected volatility, and smaller allocations to managers with higher expected volatility. Managers in which the fiduciary has a high degree of confidence in their skill level may warrant larger allocations. Above all else, the decision about the number and types of managers should be made through a prudent process.

Findings and Analysis

The table below lists the number of external managers used within the NCRS investment program across the different asset classes. Some managers have multiple accounts with the NCRS. Each account is counted separately.

Table 4.1 – Number of External Managers Used

Asset Class	Number of External Managers/Funds *As of September 30, 2009*
Domestic Equity	27
International Equity	15
Global Equity	3
Fixed Income	0[1]
Real Estate	72
Private Equity	99
Hedge Strategies	6

[1] NCRS classifies AG Opportunity C, AG Opportunity R, and Campbell Timber Fund III as "non-core fixed income." For our analysis, however, we classify them as real estate managers.

On the following pages, we comment on the public markets securities portfolios. The private markets portfolios are addressed in section D, “Non-Traditional Investment Practices.”

Equity Portfolio Structure

The NCRS U.S. equity portfolio has a relatively high number of managers, which has resulted from the very traditional “style box” manager structure. This is an approach where one or more managers are used in each of the nine major market styles. The NCRS manager structure is illustrated in the exhibit below.

Table 4.2 – U.S. Equity Style Exposures in the NCRS Portfolio

	Value	Core	Growth
Large Cap	• Alliance • Hotckhis	• Evergreen • Wellington Tech • Relational • BOA Passive • Evergreen Passive • First Citizens Passive • Piedmont	• Wellington • BGI Alpha Tilts • Sands • Turner
Mid Cap	• Hotchkis	• BOA Passive • Evergreen Passive • Wellington	• TimesSquare Focused • TimesSquare Growth
Small Cap	• Numeric • Sterlings • Earnest	• SSGA Passive	• Numeric • Brown • Wellington Biotech • Turner Micro

While a style box manager structure is very common and followed by many institutional investors, it has faults. The most common of which is the previously mentioned closet indexing, which results as each active manager offsets the active management decisions of the other managers. The differing styles of the managers provide for some level of diversification to protect from adverse manager-specific performance, but the overlaps create a redundancy in the manager structure. In essence, there are many managers that are fulfilling the same role.

The Total NCRS U.S. equity portfolio has a slight bias toward mid-cap stocks, as illustrated in the graphs on the following page. In Graph 4.1,[2] Total U.S. Equity plots below the Wilshire 5000 on the vertical axis. There is no evident bias toward growth or value stocks. Graph 4.2 illustrates an overweight to medium value and medium growth.

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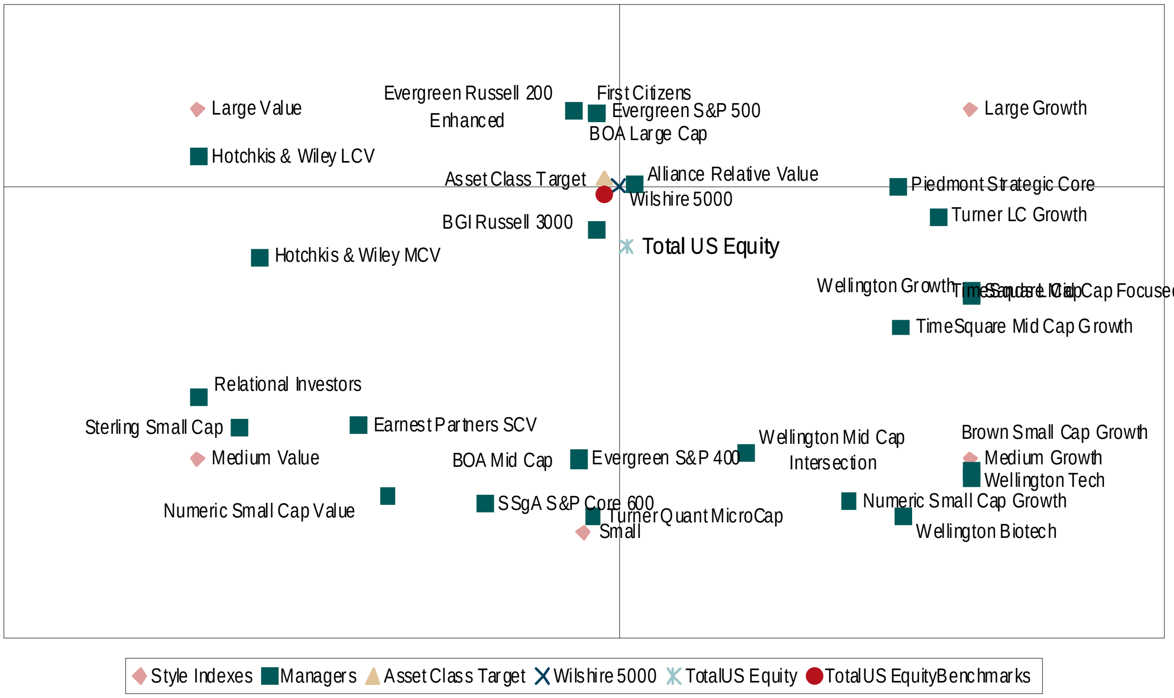
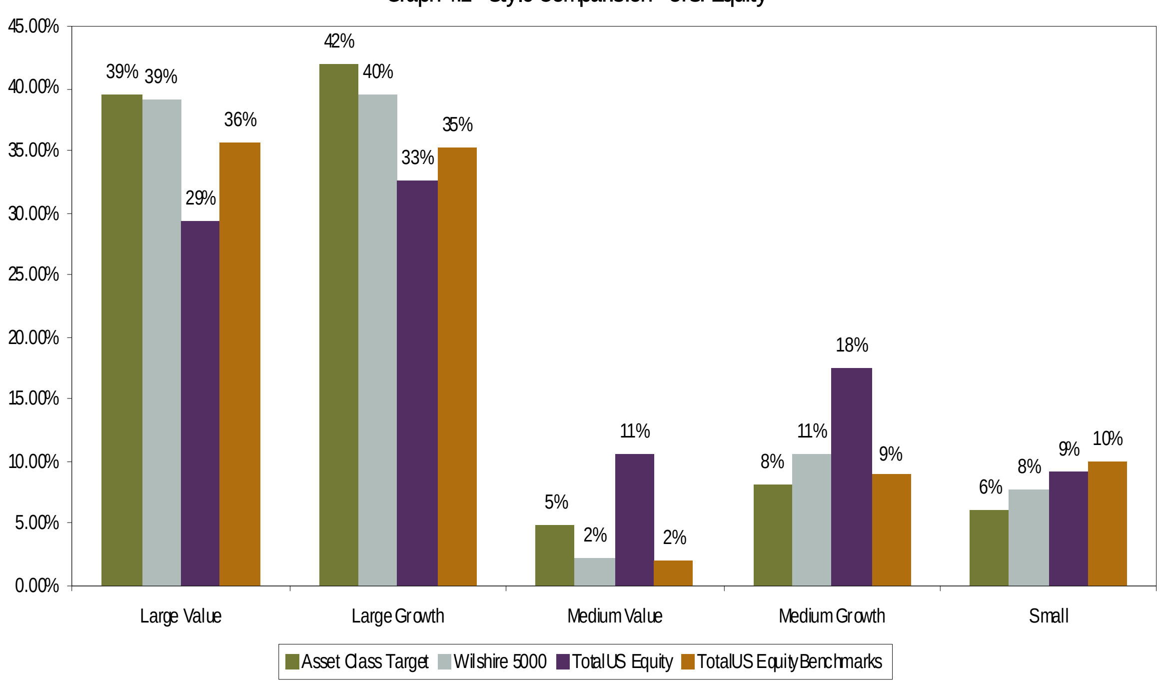
[2] Style graphs are return-based analysis as of 3/31/2009.

Graph 4.1 - Effective Style Map - U.S. Equity



Graph 4.2 - Style Comparision - U.S. Equity



The NCRS initiated global equity mandates in 2007. Investing on a global basis is a best practice. The economic argument for investing on a global basis is compelling. The distinction between U.S.-based and international companies is becoming less important from an investment perspective. Also, the definition of what is a U.S. versus a non-U.S. company is becoming increasingly unclear, with non-U.S. companies having operations in the U.S. and vice-versa. Many companies domiciled in the U.S. derive a significant portion of their revenues overseas just as many large non-U.S. companies receive a large portion of their revenues from U.S. sales.

Given a clean slate, the best way to view equity investing is to think of global equity as an asset class, where U.S. and non-U.S. equity are "market segments" under the global equity umbrella. Following Modern Portfolio Theory, the most efficient total equity portfolio holds U.S. and non-U.S. equity in proportions approximating marketplace availability and eliminates the "home country bias" present in most institutional portfolios, including the NCRS portfolio. Currently, non-U.S. equity markets make up more than half of the world market capitalization, but U.S. institutional investors, on average, allocate only 30% of their equity assets to non-U.S. stocks.

The exhibits below compare the allocations among the NCRS' equity sectors as of 6/30/2009 to those in the MSCI All-Country World Index.

Chart 4.1 - NCRS Allocations

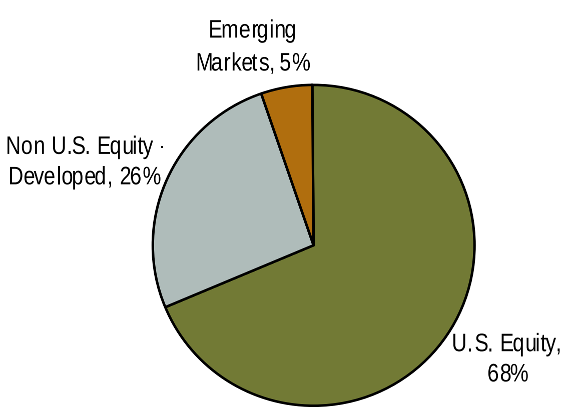
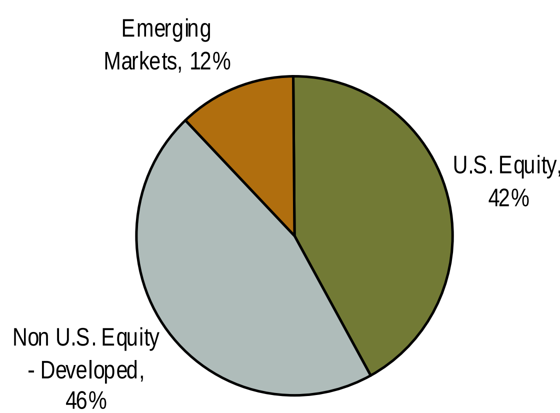


Chart 4.2 - MSCI All-Country World Index Allocations



The MSCI Index represents a neutral approach to equity markets. The comparison indicates two allocation tilts for the NCRS. The first is a bias to the U.S. relative to other developed markets and the second a lower allocation to equities in emerging markets.

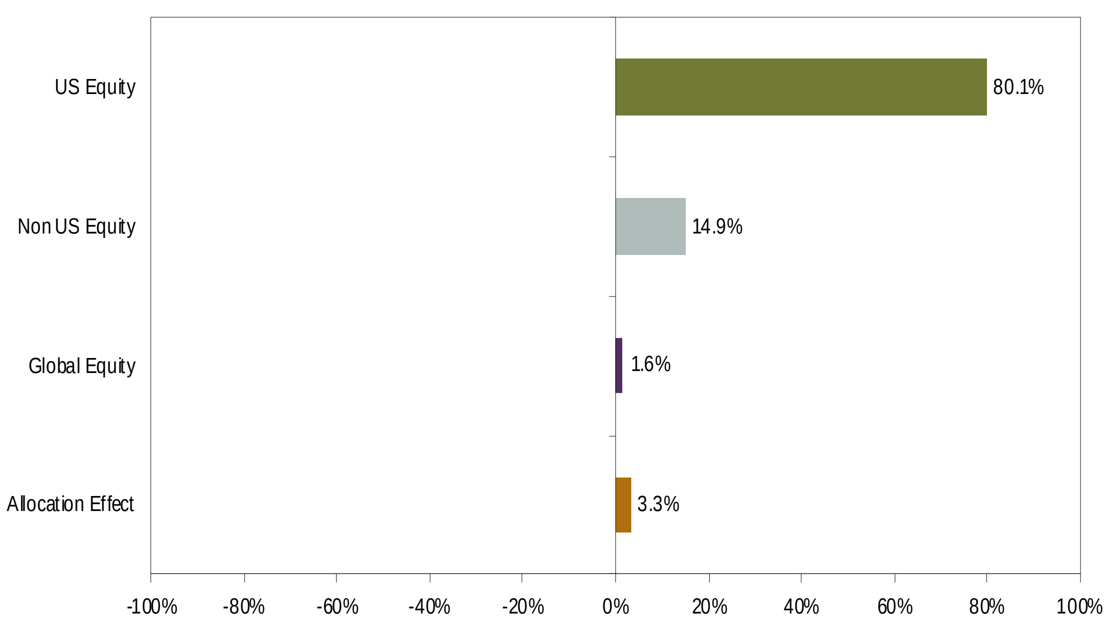
A modern approach to international stock market diversification is to adhere to market weights in the absence of a market outlook regarding over- or under-valuation of one or more of the sectors. This would result in weights to the U.S. and non-U.S. markets approximately equal to those in the Index as a matter of policy. The NCRS' home-country bias is difficult to justify in theory or by empirical evidence, but is common among public fund portfolios.

Currently, all of the NCRS public equity manager accounts have an allocation of 4% or below, with most having less than 2% of the Total Fund's assets. Several managers have multiple accounts and when the allocations to each account managed for the NCRS are combined, they represent a greater portion of the NCRS' total assets. Wellington, which manages five different accounts for the NCRS, has a combined allocation of 7% of the Total Fund, the largest of any manager. On a relative basis, this allocation size is not large enough to warrant concern, as long as the confidence in Wellington's skill is high.

One important factor to keep in mind related to manager structure and allocation size is active-risk. Active-risk is a statistical measure of the risk that an active manager assumes relative to the benchmark it seeks to outperform. It represents the potential return differential between a manager's return and its benchmark, and is the quantitative representation of the latitude that the manager has in attempting to add excess return. It is very important to be cognizant of the level of active-risk that each manager is bringing into the portfolio. Risk budgeting, which is a developing trend in large, multi-manager portfolios in the public sector, would allow the IMD to monitor manager, asset class, and Total Fund levels of active-risk. Risk budgeting was discussed in greater detail in the Investment Policy and Asset Allocation section of this Report.

The NCRS equity portfolio was analyzed in EnnisKnupp's risk budgeting model. The results indicated that the U.S. equity portfolio was the primary source of active-risk in the aggregated public equity portfolio. The U.S. equity portfolio represents 68% of the policy's dollar allocation, but 80% of the risk. This may be a result of a high degree of confidence in the managers utilized within the U.S. equity portfolio, or it may be an unintended result. Each manager's and asset class' contribution of active-risk should be intentional and monitored.

Graph 4.3 - Total Contribution to Active Risk



The IMD staff reviews the structure of the equity portfolio on a quarterly basis. That review is mainly focused on performance and sector allocations (e.g., health care, industrials, technology). The NCRS would benefit from periodically completing an equity structure review so that the Treasurer and staff could critically assess the number and types of managers utilized, analyze the home country bias, and examine the pros and cons of alternative approaches.

Fixed Income Portfolio Structure

The fixed income portfolio is managed internally, and is structured to have exposure to four market segments: government bonds, corporate bonds, mortgages, and cash. The portfolio's structure is governed by the Long-Term Investment Fund policy, which stipulates that the portfolio will include "investment grade securities that substantially match the quality, coupon, maturity, and duration characteristics of the Custom Fixed Income Benchmark."[3] The policy, in accordance with the statutory requirement,[4] prohibits purchasing below-investment grade securities for the portfolio.

An important question to consider when structuring the fixed income portfolio is the appropriate level of risk. Institutional investors generally structure their fixed income portfolios to accomplish one of two goals: return enhancement or volatility reduction. The return-enhancement approach can be accomplished with either a "core" or "core plus" approach. In a core approach, investments are made in the major segments of the bond market (government, corporate, mortgages, and asset backed securities). A core plus approach also invests in additional segments of the bond market, including high yield (corporate bonds that feature non-investment grade credit ratings of BB/Ba or below), emerging market debt, and non-dollar bonds. To accomplish volatility reduction, the structure consists mainly of U.S. Treasury and other low-risk, low-volatility investments.

The current Long-Term Investment Fund structure is geared for return-enhancement and aligns with the core approach, with exposure to mortgages and corporate bonds. For those public pension fund investors that are able to pursue a core plus approach, non-U.S. bonds and below-investment grade corporate debt can be reasonable and prudent investments. The NCRS is not able to use a typical core plus approach for the Long-Term Investment Fund due to the statutory restriction against purchasing non-U.S. denominated issues or high yield bonds. It is important to note that high yield bonds are allowed within the newly established "credit bucket."[5]

Some public funds that have been restrained by statute or administrative regulation from purchasing high yield bonds have sought relief from this prohibition so that they could pursue a core plus approach. The fixed income asset class has evolved dramatically over the past 15 years to the point where the high yield market represents an accepted and routinely-used source of financing for many companies. Managers that opportunistically invest in this and other "non-core" areas must have the

[3] North Carolina Department of State Treasurer Investment Management Division Guidelines, Policies, and Procedures, Long-Term Investment Fund, July 2008. The Custom Fixed Income Benchmark is currently 40% Merrill Lynch Government 5+ Year, 35% Merrill Lynch Corporate, 25% Merrill Lynch Mortgage Master.
[4] North Carolina Statute 147-69.2(b)(4)
[5] The "credit bucket" funding began in late-2009.

resources to be able to effectively include them in a portfolio. The resulting portfolios can be significantly different from the investment grade bond market. They may have higher return potential and increased diversification levels, but with a corresponding higher level of risk.

Investments in certain segments of the bond market, notably mortgages and high yield require investors to have specialized expertise and adequate resources. Whether internally or externally managed, periodic reviews of expertise and resources are necessary.

In addition to sector allocations and quality-ratings, maturity is an important component of risk and return for a fixed income portfolio. Investment theory is that the longer the maturity of a specific security, the greater the risk and corresponding yield because of greater uncertainty. We favor structuring a bond portfolio's maturity in light of the pension plan's liability stream. The NCRS evaluated the liability of the pension plan and determined that a maturity longer than the Barclays Capital Aggregate Bond Index was necessary. Thus the portfolio and its custom benchmark were constructed to have durations of approximately 6 to 7 years.

The structure of the fixed income portfolio is monitored daily by the IMD staff. Sector and quality allocations are monitored and reported quarterly to the Treasurer. While monitoring the current structure is an important exercise, it is also important to periodically review the current structure of the portfolio in order to ensure it remains appropriate and assess alternative structures. The NCRS would benefit from a complete structure review, including an evaluation of the current target allocations, the continued appropriateness of the statutory and policy exclusion of high yield, and an analysis of the liability stream. Given that the Long-Term Investment Fund is internally managed, any changes to it would be predicated on IMD having the right staff expertise, available analytical and trading resources, and an internal control environment that identifies, mitigates, and monitors risk.

Conclusion

The NCRS equity portfolio is broadly diversified, but has a bias toward mid cap stocks. The number of managers is on the high side and introduces some redundancy and complexity within the portfolio. The NCRS is meeting best practice by having a global equity allocation, but a home-country bias still exists.

The NCRS fixed income portfolio is also fairly well diversified but by statute, the NCRS is currently prohibited from purchasing below investment grade bonds for the Long-Term Investment Fund. This statutory prohibition essentially constrains efforts to be fully diversified and to enhance returns..

Thorough equity and fixed income structure reviews and a risk budgeting exercise will assist the Treasurer in indentifying whether any changes to the management structure are warranted.

Recommendations:

1. Complete an equity structure review that evaluates the number and types of managers, as well as any style or market segment biases in the portfolio.
2. Complete a fixed income structure review that evaluates the portfolio structure from an allocation, quality, and liability-sensitivity stand point.

   [Recommendations related to risk budgeting were included in the Investment Policy and Asset Allocation section of this Report.]

B) Internal and External Management

Background

Managing assets in-house typically has a cost advantage compared to external management. The cost advantage, however, is only meaningful if performance is not sacrificed. Therefore, potential cost savings should not drive the decision to manage assets in-house. The ability to consistently and safely achieve an appropriate return net-of-expenses should drive the decisions about whether to maintain management responsibilities in-house. To be successful, internal management requires not only an adequate number of expert portfolio managers but also sufficient support from investment operations and accounting.

Risks are increased when managing assets in-house, but they can be mitigated. The most important risks are associated with the attraction and retention of qualified staff, existence of strong internal controls, adherence to strict trading policies, and regular monitoring by an external auditor. It is also best for staff members that manage assets internally to adhere to a strict code of ethics and personal trading policy.

Best practices are for internal portfolios to be held to the same standards (performance, trading efficiency, and operational risks) as externally managed portfolios. Further, the internal portfolios should be consistently monitored and independently evaluated.

Findings and Analysis

NCRS has a substantial allocation to internal management. Approximately 37% of Total Fund assets, representing over $24 billion of fixed income assets, are managed in-house in the Long-Term Investment Fund. This level of internal management is comparable to some industry statistics that state, on-average, public pension funds with over $20 billion have approximately 33% of assets internally managed.[6]

The Long-Term Investment Portfolio Composite has outperformed its benchmarks, net-of-fees, over the three-, five- and ten-year periods on an annualized basis.

[6] RV Kuhns Public Fund Universe Analysis, December 31, 2008.

Five professionals on the investment staff are responsible for the day-to-day management of the internal account. The Director of Fixed Income and the two portfolio managers are supported by two credit analysts. The qualifications and resources of staff are discussed in greater detail in the Organizational Structure section of this Report.

Many large public funds that manage assets internally also do so for U.S. equity index funds. The IMD does not currently use internal management in this area. The external index funds used by the NCRS have low expense ratios, ranging from 1 basis point to 4 basis points so the reduction in total management fees, if any, would be small if any portion of these assets were moved in-house. However, given the asset size, the dollar savings could be notable. As previously mentioned, an increase to the level of internal asset management requires careful thought and close attention to potential risks.

Conclusion

The amount of internal management in the NCRS portfolio is similar to peer funds. The internally managed fixed income assets have performed well compared to benchmarks. By only using internal management for fixed income assets, the NCRS is somewhat different than peers who often use internal management for equity index funds.

Recommendations:

1. Ensure that the IMD and Treasurer periodically review whether the use and amount of internal management remains appropriate for the Fund.
2. Evaluate the costs and benefits of managing one or more of the U.S. equity index funds internally.

   [See the recommendations related to staffing and resources in the Organizational Structure section of this Report.]

C) Active and Passive Management

Background

The vast majority of large public funds use both active and passive management. Compelling research indicates that active management is difficult. Active management is most successful where market efficiency is relatively low and investment skill of the managers is extra-ordinarily high.

The odds of successfully implementing an active management strategy are increased when there is low turnover among the decision-making group, a sound process for selecting (and firing) active managers, investment managers with exceptional skill are hired, and a long-term perspective is maintained.

Within an equity portfolio, a substantial allocation to index funds serves to anchor the portfolio to the asset class benchmark. The case for passive management is strengthened by the highly efficient nature of the U.S. and non-U.S. stock markets. Information on publicly-traded companies flows freely and it is difficult for one investor to have a material advantage over another. Also, broadly representative and investable market indices are available. Finally, the cost differential between active and passive managers is significant, and since active managers have not consistently beaten the market averages after considering all costs, a diversified, low-cost investment approach is a compelling.

Within the fixed income markets, institutional investors use a predominately active approach. The benefit of active management over passive management in the fixed markets had historically been that available fixed income indices were not sufficiently broad, nor did they accurately track the overall bond market. Instead, they tended to only capture a segment of the bond market. As a result, active managers could improve the efficiency of their portfolios by opportunistically allocating to non-U.S. bonds, high yield bonds, emerging market bonds, convertible bonds, and floating rate bonds, among others.

More and better passive index funds have become available in the fixed income markets that allow access to these same bond market betas, therefore reducing the need to pay active management fees for submarket exposures. While the fee differential between active and passive fixed income managers is much smaller than in equity markets, this evolution has made passive fixed income a more appropriate consideration today than several years ago.

Findings and Analysis

Across all asset classes, approximately 12% or $6.8 billion of the NCRS Total Fund is invested passively. This amount is lower than average. One industry statistic states that on-average, public pension funds with over $20 billion have approximately 22% invested passively.[7] Another industry survey cites similar statistics, indicating 26% of public pension fund assets are invested passively.[8] All of the NCRS' index fund exposure is in public equities.

The NCRS has been investing passively for over ten years. Since that time, the IMD and staff periodically revaluate the allocation and use of passive management by asset class. The table on the following page lists the index fund managers used by NCRS, as well as the type of mandates employed.

[7] RV Kuhns Public Fund Universe Analysis, December 31, 2008.
[8] Greenwich Associates 2008 Market Dynamics Survey. Dollar Weighted Asset Mix of 328 Public Funds.

Table 4.3 – Index Fund Managers and Mandates Used by NCRS

Manager	Mandate
Evergreen	S&P 500 Mid Cap (S&P 400)
Bank of America	S&P 500 Mid Cap (S&P 400)
First Citizens	S&P 500
State Street Global Advisors	Small Cap (S&P 600)
Barclays Global Investors	EAFE Index Emerging Markets Frontier Markets

It is somewhat unusual to invest in three different index funds to gain passive exposure to the S&P 500 Index. While such an approach may limit organizational risk exposure to an individual manager, it also dilutes economies of scale. Typically, larger mandates in an index fund achieve more competitive pricing. We acknowledge the fees for each of these three funds are low (2 to 3 basis points). However, investing all the S&P 500 assets in the lowest cost provider would serve to lower the overall fee. Additionally, the larger mandate size may qualify the NCRS for an even more competitive fee schedule. Some large public funds are able to negotiate fees below 2 basis points for index funds.

NCRS has also divided its index fund exposure by capitalization (large, medium, and small cap). This approach allows the NCRS to offset any style-allocations that result in the portfolio due to the specific active managers hired. It also introduces some level of complexity. An alternative approach would be to invest passively in a broad market index fund, such as a Russell 3000 Index Fund or a DJ U.S. Total Stock Market Index Fund. This approach could potentially represent a cost savings to NCRS, and allow for simplified access to broad, diversified exposure to the full opportunity set of the U.S. stock market.

<u>Conclusion</u>

NCRS uses passive management to a lesser degree than do peer funds. An index allocation can serve to “anchor” the portfolio to a benchmark. Furthermore, research and evidence supports a material allocation to index funds.
The structure of the NCRS index fund portfolio is complex and redundant. A more streamlined approach to indexing may benefit NCRS and serve to eliminate misfit risk between the equity portfolio and the asset class benchmark.

Recommendations:

1. Evaluate whether an increased allocation to index funds would benefit the portfolio.
2. Reevaluate the merits of investing in three managers to gain exposure to the S&P 500 Index.

3. Consider the pros and cons of investing in a broad market index fund as opposed to different capitalization segments of the market.
4. Ensure that the allocation to passive management in each asset class is reviewed and adjusted, if deemed appropriate, on a periodic basis.

D) Non-Traditional Investment Practices

Background

For a myriad of reasons, institutional investors must treat alternative investments with particular care when establishing the investment management structure. The investments are extremely labor intensive, affording only those investors with exceptional skill an opportunity to successfully exploit the market. The strategies require time to unfold, meaning that relative to public equities, the success or failure of an investment is not quickly discernable. Liquidity is uncertain due to the nature of the underlying assets. The potential risk of large loss is high, especially when leverage is employed. Finally, the transaction costs are high when compared to other asset classes.

Justifiably, the alternative portfolio should be, to the extent possible, insulated from institutional requirements for liquidity and the application of rigid allocation guidelines. Public funds that invest in alternative asset classes typically have experts on staff or retain specialty investment consultants to assist with the formation, oversight and monitoring of such programs.

Real Estate Manager Structure

Findings and Analysis

The NCRS IMD has developed a policy statement specific to the real estate portfolio, which is a best practice. It is evidence of a thoughtful, analytical approach to structuring the real estate portfolio. In our experience, institutions invest in real estate if they are able to accommodate the:

- Potential illiquidity associated with the asset class
- Moderate to higher risk profile of the asset class
- Benchmark ambiguity of the asset class
- Time and resources required to manage the investments

NCRS, as a large long-term institutional investor, can accommodate the potential illiquidity, risk profile, and benchmark ambiguity of the asset class. The time and resources required to manage real estate investments are discussed in the Organizational Structure and Due Diligence sections of this Report.

Public pension plans typically invest in the real estate for current income and appreciation, as an inflation hedge, for diversification, and for the enhancements of returns. The NCRS' real estate investment policy states that its real estate investments are to be used to achieve the following objectives: portfolio diversification, capital preservation, attractive returns, portfolio volatility reduction, and an inflation hedge.

The portfolio structure adopted by NCRS positions the portfolio to be a source of diversification and allows for opportunity to achieve attractive returns. Achieving capital preservation, lowering portfolio volatility, and serving as an inflation hedge are objectives typically associated with low risk, core investments. NCRS has a substantial policy allocation to core (40%), but also includes a material allocation (60%) to non-core investments.

Non-core investments, often called “value added” and “opportunistic,” typically have higher return expectations coupled with higher levels of leverage and risk. Preservation of capital and volatility reduction are not typically investment objectives associated with non-core investments.

Given that the majority of the NCRS real estate portfolio is to be invested in non-core investments, additional risk parameters have been established to help ensure that the total portfolio maintains a reasonable level of risk. Per policy, the total leverage within the portfolio shall not exceed 55%. This level of leverage is similar to, but somewhat higher than the level of leverage typically used within core investments. Core real estate investments typically have leverage levels that range up to 30% or 40% of the portfolio.

Other institutional investors with similar goals have set higher targets and allowable ranges for core real estate than those observed in the NCRS policy. The current target to core real estate is 40%, with a minimum of 20% and a maximum of 60%. Based on Kingsley Associates’ survey of institutional investors at the end of 2008, the typical real estate program structure across institutional investors focuses on core real estate as evidenced by an allocation of at least 50%.

While policy decisions should not be made based on peer averages, fiduciaries should be aware of common practices. There may be very good reasons that a specific portfolio does not mirror the average. NCRS is planning an additional $400 million commitment to a core real estate separate account, which will increase the current allocation to core.

Best practices dictate that a real estate portfolio be thoughtfully considered and designed and have clear, established guidelines and targets set in the policy that will mitigate risk and guide manager structure. NCRS has met best practices by having a real estate policy that addresses structure requirements and serves as a roadmap during the portfolio construction process.
Below are elements of a portfolio’s structure that under best practices are addressed. We note that all but one are currently addressed by the NCRS policy.

- Permissible investments
- Manager and individual investment exposure
- Property type
- Leverage

- Life cycle[9] *(not addressed in the NCRS policy)*
- Liquidity
- Geography
- Pacing

The policy currently establishes a 50% maximum limitation to one manager, which is very high. Generally, an allocation to one manager of greater than 20% may introduce a level of concentration and organizational risk to a portfolio. In practice, the NCRS' actual portfolio structure has not neared the 50% allocation limit. The portfolio is diversified by manager with the largest concentration to Morgan Stanley at approximately 25%.[10] As the portfolio matures, and additional allocations are funded, Morgan Stanley's allocation as a percent of assets will likely decrease.

Furthermore, there are no policy diversification requirements in terms of permissible investments within the portfolio investment structure, beyond a limit of 10% of the portfolio's assets in one investment. This is understandable as NCRS invests in commingled funds and therefore cannot control where assets are individually deployed. Guidelines that target diversification in terms of exposure to equity, first mortgage debt, mezzanine, and preferred equity in the portfolio could help to ensure diversification. Such guidelines can be tied to due diligence, which leads to a general understanding of how managers under consideration will invest capital.

The policy's liquidity guideline stipulates that 20% to 60% of the portfolio be invested in moderately liquid investments. The policy defines "moderately liquid" as investments that offer investors quarterly liquidation. The resulting portfolio structure includes commingled core funds, which typically have a reasonable amount of liquidity. Because of market conditions, however, a withdrawal queue has formed for each commingled core fund in the portfolio. This has somewhat constrained the portfolio's liquidity, even though the structure was designed to meet the liquidity requirements stated in the policy. Liquidity will likely return to normal when the withdrawal queues of the individual funds are satisfied. NCRS is not unique in this situation as other investors are subject to the same liquidity constraints in today's market.

The portfolio structure is comprised of well-known, institutional real estate investment and timber managers. As of September 2009, the NCRS real estate portfolio has 36 real estate managers with 68 commingled funds and four separate accounts. This number of managers requires a significant amount of resources to ensure adequate monitoring. As previously discussed, the NCRS' staffing resources are strained.

The target allocation to real estate was established in 2005, and as expected has considerable vintage 2005 to 2008 year concentration. Vintage year concentration risk can negatively impact a portfolio's performance if there is overexposure to poor performing vintage years. Many funds with

[9] Life cycle refers to the leasing phase of the property, for example, development, lease-up, or stabilized.
[10] The allocation to Morgan Stanley is split between two different divisions within the organization, which IMD considers to be two different managers.

2005 to 2008 vintage years invested at the top of the real estate market and are facing challenges that are negatively affecting performance. This is common across the industry and not unique to NCRS. The concentration will be diluted as additional investments are made within the asset class in accordance with the pacing model.

Another way to address vintage year concentration is by investing in secondary funds or re-positioning the portfolio by selling selected investments on the secondary market. Selling certain investments could also reduce the number of managers and/or exposure to underperforming funds. Typically, selling existing investments on the secondary market results is at a discount, so this action should only be taken if a cost-benefit analysis determines it is in the best long-term interest of the portfolio. Selling 2008 vintage year funds in particular could be very difficult in today’s market.

NCRS has approximately $2.2 billion invested in timber and it is divided between two different asset classes: real estate and fixed income. The rationale for the timber investment being classified as fixed income, is its mature return profile and consistent income stream. In our experience, many investors will include timber in their real estate portfolio if it is not included in real assets or natural resources allocations. IMD staff indicated that in the future, the timber investments will be moved to an “inflation bucket” allocation within the Fund. The investment policy should clearly outline the role that timber plays in the real estate portfolio as well as guidelines for investing in the asset class. The NCRS policy does not presently do this.

Conclusion

The NCRS real estate portfolio, due to its allocations in core (lower risk) and non-core (higher-risk) investments, has competing investment objectives of return enhancement and volatility reduction. The material allocation to non-core also results in higher risk, which NCRS has mitigated by placing a limitation on the maximum allowed amount of leverage in the portfolio. The bias toward non-core investments in order to achieve return enhancement and additional diversification is appropriate as long as it is monitored and supported by the investment policy.

The NCRS uses many managers and underlying funds within its real estate portfolio, which requires significant staffing support and resources. The addition of new separate accounts would not be advisable until internal resources are increased to monitor such investments. The actual investment structure has resulted in reasonably sized allocations to individual managers. However, the large allocations that are allowable per policy are not best practice.

The portfolio has a degree of vintage year concentration. The NCRS would benefit from adhering to a detailed pacing model, or considering other methods to reduce this concentration. The policy needs to be amended to address the role of timber. All timber investments, regardless of return profile, belong in the real estate portfolio or an inflation hedge bucket.

Recommendations:

1. Revisit the policy and clarify the objectives for investing in real estate and the role it plays in the broader NCRS portfolio.
2. Evaluate whether the manager concentration limitation in the real estate policy should be reduced.
3. Consider the benefits of establishing additional diversification targets related to exposure to equity, first mortgage debt, mezzanine, and preferred equity.
4. Ensure an appropriate pacing model is used in funding the real estate allocation.
5. Consider investing in secondaries with vintage years outside of 2005 to 2008 to reduce the current vintage year concentration risk.
6. Address the role that timber plays in the real estate portfolio and define guidelines for it.
7. Re-classify timber as part of the real estate allocation or the inflation bucket.

Private Equity Manager Structure

Findings and Analysis

The NCRS private equity portfolio includes 99 investments. Although this number of investments is high, it is within a reasonable range given the NCRS asset size. The NCRS investment program is structured to invest in fund-of-funds, direct funds, and direct co-investments. Currently, co-investments are only a limited part of the portfolio. If the program is able to build both internal and external resources (as discussed in more detail in the Organizational Structure section of the Report), it may be possible to decrease exposure to fund-of-funds and increase exposure to direct funds, co-investments, and secondaries. This may be a more cost-effective structure for the program in light of fund-of-funds' double layering of management fees. One drawback to this type of structure, however, is the challenge that some public funds encounter due to public records and Freedom of Information Act ("FOIA") requirements. Some managers do not want their strategies revealed to outsiders.

The program has achieved exposure to a broad range of geographies and industries. The portfolio has over 70% of its exposure to domestic private equity investments with the balance of the portfolio invested in geographies across Europe and Asia. Additionally, the portfolio's exposure is broadly diversified across a variety of industries such as healthcare, technology, consumer products, and energy.

Furthermore, the program is diversified across the various fund types within the broader opportunity set of private equity, including buyout, venture capital, growth equity, and special situations. As for vintage year diversification, at the end of Q1 2009, NCRS had the following vintage year concentrations: 2005 (10.6%), 2006 (24.0%), 2007 (18.1%), and 2008 (35.7%).

Conclusion

Overall, the private equity program structure is broadly diversified in terms of geography and sub-allocations. The structure may benefit from additional utilization of direct investments, co-investments, and secondary funds if this is feasible given public records and FOIA requirements. Increased use of these types of investments is dependent upon establishing an appropriate level of organizational resources. It would also result in a lower-cost structure for NCRS.

The program is slightly overweight to the 2005 to 2008 vintage years, which resulted as the policy allocation was expanded and staff took steps to implement private equity investment goals during those vintage years. NCRS may benefit from exploring ways to further balance vintage year exposure, either by reducing exposure to certain vintage years or increasing exposure to underrepresented vintage years. Increasing exposure to strategies such as secondaries can also enhance vintage year exposure retroactively and offset some j-curve[11] effects resulting from upcoming capital call activity.

Lastly, updating and modifying, as appropriate, the pacing schedule would be beneficial. More advanced cash flow pacing analytics will ensure the program will continue to grow steadily, while maintaining optimal sub-asset class and vintage year exposures.

Recommendations:

1. Further evaluate the private equity program's diversification across vintage years.
2. Rework and potentially scale back private equity cash flow pacing so that the program regains and maintains targeted private equity allocation levels in light of anticipated program growth.
3. Evaluate greater utilization of direct funds, secondary funds/investments, and co-investments within the private equity program with the goal of reducing management fees.

Hedge Fund Manager Structure

Findings and Analysis

The NCRS initiated hedge fund investments in 2002. Since then, momentum has slowed because the Alternative Investments program emphasized private equity investments. Currently there are six investments in fund-of-funds. These investments are with managers that allocate assets to a large number of underlying hedge fund managers covering a variety of trading styles. Four of the six investments are either in liquidation or expected to be redeemed over the next few years. These liquidations are the result of market related issues.

From a structure perspective, fund-of-funds often result in higher fees. A cost/ benefit analysis would be useful in determining the feasibility of investing directly in hedge funds rather than through fund-of-

[11] The J-curve effect is when the return for an investment is negative in its early stages due mainly to fees and expenses, but improves as the investment matures and becomes more stable.

funds. We acknowledge, however, given NCRS current internal resources, investing directly may not be prudent as it is a much more resource and time intensive endeavor than investing in fund-of-funds.

While only two fund-of-funds investments remain, we are not aware of any analysis undertaken to determine the degree of overlapping hedge fund managers employed by the program.

Conclusion

The hedge fund program is very small and relatively undefined. Further analysis regarding the optimal structure for the hedge fund program, and documenting it in the NCRS' policies would benefit the NCRS.

Recommendations:

1. Define and document the desired structure for the hedge fund program, including an evaluation of whether a direct allocation to hedge funds (as opposed to fund-of-funds) would be beneficial.
2. Consider completing an analysis of the overlap between the hedge fund managers in the portfolio.

   [See our recommendation in the Investment Policy and Asset Allocation Section of this Report regarding re-evaluating the overall allocation to hedge funds.]

E) Structure Compared to Investment Policy

Background

If a policy is well reasoned and established to prudently guide the portfolio decisions, it is important for the policy to be followed. If it is not, unintended risk may be introduced into the portfolio. In conformance with best practices, a policy will stipulate allocation ranges, any prohibited investments, certain diversification requirements, and other comparable issues. The investment policy statement may or may not go into detail regarding the number and types of managers. Regardless of the comprehensiveness of a policy, the structure of an investment program should not violate any of the parameters outlined by the investment policy statement.

The fiduciaries and staffs of public funds should periodically monitor and document compliance with the investment policy when new investments are made. Doing so is an important part of a prudent oversight process. If the policy is violated, corrective action should be taken as soon as feasible.

Findings and Analysis

On the following pages we provide our findings related to how the actual portfolio compares with the requirements as noted in the NCRS' Policies.

Table 4.4 – Actual Portfolio Compared with Policy Requirements

Policy Requirement	Actual Practice[12]
Total Fund Statement of Investment Policy:	
Preserve sufficient liquidity to meet all reasonably anticipated operational needs	Actual structure reflects policy
Large-cap equity target of 25% (minimum of 20% and maximum of 30%)	Actual structure reflects policy
Mid-cap equity target of 5.5% (minimum of 4% and maximum of 8%)	Actual structure reflects policy
Small-cap equity target of 3.5% (minimum of 2% and maximum of 6%)	Actual structure reflects policy
International equity target of 16% (minimum of 12% and maximum of 20%)	Actual structure reflects policy
Fixed income target allocation of 39.5% (minimum of 35% and maximum of 44%)	Actual structure reflects policy
Real estate target allocation of 6% (minimum of 5% and maximum of 7%)	Actual structure reflects policy
Alternatives target allocation of 4.5% (minimum of 3.5% and maximum of 5%)	Actual structure reflects policy
Monitoring of, and divestment from, certain companies with business operations in Sudan, as required by the Sudan (Darfur) Divestment Act, N.C. Gen. Stat. 147-86.41 et seq	Based on information provided to custodian, actual structure reflects policy[13]
Restriction on holding companies that engage in "pay day lending"	Actual structure reflects policy[14]
Publicly Traded Equity Investment Policy	
Publicly traded equity allocation target of 50% (minimum of 45% and maximum of 55%)	Actual structure reflects policy
No investment manager shall manage more than 50% of the equity portfolio (unless approved by the Treasurer)	Actual structure reflects policy
No investment shall exceed 10% of the equity portfolio	Actual structure reflects policy[15]
Passive management will be used in efficient market sectors	Passive management is used, however, the decision regarding the amount of passive management, and the use in additional asset classes should be periodically reviewed

[12] Findings as of 6/30/09 (or otherwise noted).
[13] Per staff's attestation.
[14] Per staff's attestation.
[15] Per staff's attestation.

Policy Requirement	Actual Practice[12]
Active managers shall be used when the IMD staff identifies managers with skill	Actual structure reflects policy
Long Term Investment Fund Investment Policy	
Investments shall primarily consist of: Treasury bills, notes, and bonds; investment grade bonds; mortgage pass through securities; and agency debt	Actual structure reflects policy
Provide a source of liquidity to the pension fund	Actual structure reflects policy
Investment grade securities will substantially match the quality, coupon, maturity structure, and duration characteristics of the Custom Fixed Income Benchmark[16]	Actual structure reflects policy
No-sub investment grade securities shall be purchased	Actual structure reflects policy, the portfolio includes a small amount of high yield bonds, which were investment-grade when purchased but subsequently downgraded
Sector weights shall be within +/- 5% of those of the Custom Fixed Income Benchmark	Actual structure reflects policy [17]
Individual securities are generally limited to less than 5% of the LTIF (except Treasuries)	Actual structure reflects policy[18]
Derivatives may not be purchased or held	Actual structure reflects policy[19]
Weighted average duration is expected to be approximately 5 to 10 years	Actual structure reflects policy
Tracking error relative to the Custom Fixed Income Benchmark is expected to be below 50 basis points on an annualized basis over a full market cycle	Actual structure reflects policy
Real Estate Investment Policy	
Real estate investments can include; 1) private equity real estate, 2) private debt, and 3) REITs and REOCs	Actual structure reflects policy
Investments may either be direct or indirect	Actual structure reflects policy
A core plus level of return is targeted	Actual structure reflects policy
Invest in real estate assets offering a reasonable hedge against inflation	Actual structure reflects policy

[16] Currently 40% Merrill Lynch Government 5+ Year, 35% Merrill Lynch Corporate, 25% Merrill Lynch Mortgage Master.
[17] Per staff's attestation.
[18] Per staff's attestation.
[19] Per staff's attestation.

Policy Requirement	Actual Practice[12]
Public real estate has a 20% target of the total real estate allocation (0% minimum and 50% maximum)	Actual structure reflects policy
Private real estate has an 80% target of the total real estate allocation (50% minimum and 100% maximum)	Actual structure reflects policy
Of the private real estate allocation core is targeted to be 40% (20% minimum and 60% maximum), value is targeted to be 30% (15% minimum and 45% maximum), and opportunistic is targeted to be 30% (15% minimum and 45% maximum)	Actual structure reflects policy
Various investment vehicles will be utilized so that risk is mitigated	Actual structure reflects policy
A minimum of 60% of the real estate portfolio will be invested in opportunities within the U.S. and a maximum of 30% will be invested in non-U.S. regions	Actual structure reflects policy
Within the U.S. domiciled investments, geographic diversity will be maintained within the following ranges: • West 20 – 45% • East 20 – 40% • South 15 – 35% • Midwest 10 – 25%	Actual structure reflects policy[20]
Investments will be diversified by property type within the following ranges: • Office 10 – 45% • Retail 10- 40% • Industrial 10 – 40% • Residential 10 – 40% • Hotel 0 – 15% • Other 0 – 20%	Industrial allocation is currently outside the allowable range (7%),[21] all other property type allocations are within the specified ranges

[20] Per Real Estate Investment Review, September 2008.
[21] Per September 2, 2009 Real Estate Portfolio Review.

Policy Requirement	Actual Practice[22]
The average investment holding period will be 8 years	Actual structure generally reflects policy
On an individual commingled or separate account investment basis, leverage shall not exceed 75% (except by permission of the Treasurer)	Actual structure generally reflects policy
The leverage in the total real estate portfolio will not exceed 55%	Actual structure reflects policy[23]
Liquid and moderately liquid investments will be 30% of the portfolio	Structure was intended to reflect policy, but market events have impacted liquidity levels
No GP/investment manager shall manager hold more than 50% of the real estate portfolio's assets (except by permission of the Treasurer)	Actual structure reflects policy
No investment shall exceed 10% of the real estate portfolio	Actual structure reflects policy
Alternative Investment Policy:	
The portfolio will be invested in private equity and hedge fund strategies	Actual structure reflects policy
Private equity investments shall be invested in sub-categories according to the following targets: • 50% buyouts (40% minimum and 60% maximum • 10% growth equity (5% minimum and 15% maximum) • 20% venture (10% minimum and 25% maximum) • 20% special situations (5% minimum and 35% maximum)	Actual structure generally reflect policy
Hedge fund investments will be in fund-of-funds only	Actual structure reflects policy
Investment vehicles in the private equity portfolio can include U.S. and non-U.S. direct limited partnership investments, fund-of-funds, or co-investments within allowable ranges	Actual structure reflects policy
Private equity investments may be in primary or secondary funds	Actual structure reflects policy

[22] Findings as of 6/30/09 (or otherwise noted).
[23] Per Courtland report.

Policy Requirement	Actual Practice[22]
The average holding period for the private equity portfolio will be approximately 8 – 12 years	Actual structure reflects policy.
Generally, alternative investments will represent less than 30% of a given sub-category (at the time of investment)	Actual structure reflects policy

Policy compliance is a moving target. Allocations and manager structure can be in compliance with policy guidelines at a specific point in time, and out of compliance the following month or quarter. As such, on-going monthly monitoring is essential.

Conclusion

The investment management structure is generally in alignment with the investment policy statements. Moreover, the IMD has appropriate procedures in place to monitor the structure of the portfolio compared to the policy and address violations when or if they occur.

Recommendations: None

II. Investment Management Fees

Background

The performance of managed funds suffers dollar for dollar as a result of management fees. Recent research finds that there is a negative relationship between fees and before-fee performance.[24] Accordingly, differentials in management fees are assumed to translate directly to differentials in net return. While it is important for fiduciaries to monitor the fees within a portfolio, fiduciaries are not required to use managers with the lowest fees. As long as the fees are reasonable, the fiduciaries meet their duty of prudence.

Findings and Analysis

NCRS uses internal and external investment management, which is a common approach for public funds, particularly for those of comparable size. In the table below, we show each external public equity manager's fee in comparison to an appropriate universe. The result of the comparison is indicated by the rank. A rank of 1 is the best (meaning the manager has a low fee compared to average). We have shaded the six managers that have higher than average fees. IMD staff has spent considerable time reviewing and negotiating fees and has achieved very favorable pricing for the majority of its external public equity managers.

Table 4.5 – NC Manager Fee Comparison

NCRS Manager Fee Comparison *(Fees in basis points)*			
	NCRS Fee[25]	Average Fee[26]	Rank
Alliance ACWI X-U.S. Growth	10	66.4	1
Alliance Emerging	9	89.1	1
Alliance Relative Value	6	53.5	1
Baillie Gifford EAFE Growth	33	66.4	1
Baillie Gifford Emerging	58	89.1	3
Bank America Large Cap 500 Index	2	12.5	1
Bank America Mid Cap 400	4	7.7	6
BGI EAFE Fund	0	21.7	1
BGI Non U.S. Equity	40	58.5	7
BGI Russell 3000 Alpha Tilts	33	33.2	50
Brown Small Cap Growth	53	82.6	1

[24] Journal of Finance. Volume 64: Issue 5, October 2009. "Price and Performance in the Mutual Fund Industry."
[25] Manager fees per NCDST Public Equity Fee Reconciliation as of 6/30/2009. We have not independently verified the fees reported by NCDST.
[26] Average fee in an eVestment universe of similar strategies and mandate size.

NCRS Manager Fee Comparison *(Fees in basis points)*			
	NCRS Fee[25]	Average Fee[26]	Rank
Capital Guardian ACWI X-U.S.	34	66.4	1
EARNEST Partners Small Cap Value	54	82.6	2
Evergreen 400	3	7.7	1
Evergreen Russell 200 Enhanced	7	33.2	1
Evergreen S&P 500 Passive	3	12.5	1
First Citizens S&P 500 Passive	3	12.5	1
GMO International Active	22	63.8	1
Hotchkis & Wiley Large Cap Value	30	53.5	1
Hotchkis and Wiley Mid Cap Value	52	65.2	15
Invesco EAFE Core	35	63.2	4
Longview Global Equities	75	67.3	71
Mondarian EAFE Value	31	63.8	1
Numeric Small Cap Growth	96	82.6	83
Numeric Small Cap Value	91	82.6	69
Oechsle EAFE Growth	45	66.4	1
Piedmont Strategic Core	18	53.6	1
Relational Investors Large Cap	84	53.6	96
Sands Large Cap Growth	50	56.4	33
State Street S&P 600 Core	5	9.3	3
Sterling Small Cap Value	50	82.6	1
TimesSquare Mid Cap Focused	63	68.3	35
TimesSquare Mid Cap Growth	68	67.3	57
Turner Large Cap Growth	65	56.4	81
Turner Quant MicroCap	89	115.6	17
Walter Scott EAFE/International	37	66.4	1
Wellington Biotechnology	39	87.3	1
Wellington Growth	35	56.4	3
Wellington International	25	63.2	1
Wellington Mid Cap Intersection	32	37.4	22
Wellington Technical Equity	73	87.3	24

The majority of the NCRS' individual managers have fees that are significantly lower than the average fee for comparable managers. All but six managers rank above median in terms of competitive fees (meaning all but six managers have lower than average fees). Several of the NCRS managers rank in the top quartile of their respective fee universes (meaning their fees are very low compared to fees charged by other managers for a similar mandate). Fees are only one of many factors to consider when evaluating a manager.

Real Estate

We reviewed the fee structures of the real estate managers. Overall, the fees and terms appear reasonable. Best practices suggest performing a spot check with deeper analysis to ensure that fees paid match agreed-upon terms and conditions.

Private Equity

We reviewed the fees paid to the private equity general partners along with the hurdle rates and carried interest compensation. Overall, the fees and terms appear standard. Best practices suggest performing a spot check with deeper analysis to ensure that fees paid match agreed-upon terms and conditions.

Hedge Funds

While funds of hedge funds are highly diversified investments, the investor is required to pay fees to both the underlying hedge fund manager and the fund-of-funds manager. This additional layer of fees is likely to exceed 1% per year, or approximately $6 million. Overall, the fees and terms for the existing hedge fund investments appear reasonable.

<u>Conclusion</u>

The NCRS equity manager fees are competitive. Economies of scale have benefited the NCRS in its fee negotiations. No external investment manager fees are associated with the internally managed Long Term Investment Fund. Internal management has represented fee savings for the NCRS. The alternative investments appear to have reasonable fees. It would benefit the NCRS to ensure alternative equity managers pay fees in conformance with their negotiated fee schedules. Also, tracking the “second layer” of fees within the hedge fund program would be beneficial.

Recommendations:

1. Continue to ensure fees paid to alternative managers are in compliance with agreed upon terms and conditions.
2. Enhance tracking activities to include all the fees paid to fund-of-funds managers.

INTRODUCTION

The duty of prudence allows a fiduciary to delegate investment management decisions regarding the purchase and sale of securities. Delegation of investment management decisions does not absolve a fiduciary from its responsibility for ongoing oversight, regular monitoring, benchmarking, and reporting of performance. Failure to monitor and take action, when warranted, can produce fiduciary risk comparable to that resulting from imprudent due diligence in hiring investment managers.

Independent analysis of portfolio performance provided in quarterly and annual written investment performance reports are essential tools used in the oversight process. Reports should be clear, concise, and consistent, and enable a fiduciary and other interested parties to evaluate the performance of the investment program. Reports should evaluate: how performance compares to stated objectives; whether risk-adjusted returns are inline with established expectations; and whether the portfolios are in compliance with established policies.

It is a best practice for investment performance to be calculated by an independent party and reported quarterly, and for performance reports to be presented verbally at meetings where questions can be asked and answered. It is common practice for an investment consultant to assist in the investment performance oversight process. The level of an investment consultant's participation in performance reporting is often determined by the staff's level of expertise and available resources.

Investment performance reports should contain sufficient detail to convey whether asset class portfolios are within their guidelines and whether the investment managers are abiding by the mandates given to them (usually contained in their contracts). Performance reports should also allow for an accurate determination of whether investments are meeting or exceeding benchmarks. Benchmarks are the measures against which the performance of each manager, asset class, and the total portfolio are compared to determine the success of an investment program.

Benchmarks must be set carefully. If benchmarks are unrealistic, the fiduciaries who govern the fund will not be able to ascertain whether the implementation of the investment policy has been effective. In addition, rates of return used in benchmarking must be calculated accurately and in a timely manner. Otherwise, the value of the performance measurement could be compromised.

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Content and Frequency of Performance Reports
II. Return Calculations
III. Performance Benchmarks

I. Content and Frequency of Performance Reports

Background

Performance reports provide the information necessary for a fiduciary to assess the strengths and weaknesses of the investment program, identify issues, and make decisions regarding manager retention and termination, portfolio strategy, and investment structure. Performance reports also assist a fiduciary in determining whether portfolios are in compliance with established policies.

The report should contain an appropriate level of detail. Too much information may obscure the issues, while too little information may render the report meaningless. Investment program successes and deficiencies should be kept in the forefront. Report content should evolve as new investment issues emerge and the concerns of the fiduciary change.

The custody bank is an independent source of much of the data that should be used to compile performance reports. When internal management is used, the need for independent calculation of performance becomes imperative.

The frequency of performance reporting is driven by the “need-to-know.” The industry standard for performance reporting is quarterly. More frequent reporting to an oversight body is uncommon and is unnecessary. For purposes of an oversight body, more frequent reporting increases expense and takes time away from other issues. However, this is not the case for those responsible for day–to-day administration (i.e., the investment staff). More frequent reporting enhances the ability of the staff to monitor compliance and mitigate risk. Therefore, monthly performance monitoring should be confined to the purview of the investment staff.

Findings and Analysis

The NCRS performance summaries are produced monthly and the Pension Fund Overview is generated quarterly. EnnisKnupp reviewed the performance summaries for each month in 2008, as well as for July 2009. EnnisKnupp also reviewed the Pension Fund Overview for the quarter ending June 2009, and several IAC quarterly reviews. The reports are produced by the IMD.

The performance summaries are provided to the Treasurer every month. The Pension Fund Overview, which was first developed by staff for the quarter ending June 2009, is provided to the Treasurer quarterly. Historically, the Treasurer and the IAC have received a quarterly review of the portfolio approximately one week prior to the IAC meetings. Unless there are concerns about investment managers or major shifts in the financial markets have occurred, quarterly reporting is acceptable for the Treasurer and the IAC.

The CIO and asset class Directors spend approximately two to three hours at the IAC meetings presenting the quarterly review. During these meetings, the Treasurer, the IMD staff, and the IAC have an opportunity to ask questions and discuss issues as a group. When there are questions or concerns, or significant market events, more time is spent on investment results. Engaging in an open deliberative process such as the NCDST's is a best practice. It is important for the performance discussions to be unbiased, whether facilitated by staff or an external investment consultant. It is also important for experts, internal or external, to opine on the numbers and interpret them for the fiduciaries. The instance where there may be a perceived conflict of interest is where the professionals responsible for the management of the portfolio are the only parties interpreting the results.

Although the prior quarterly reviews were not standardized in format, they did include basic performance reporting information, including asset allocation and market results. The newly developed Pension Fund Overview report provides more detailed information. It will be further refined as the Treasurer and the newly constituted IAC give feedback about what information is most helpful. This will allow the Treasurer and the IAC members to agree upon what is needed to address their questions.

EnnisKnupp believes the items listed in the table below provide valuable information and are useful to include in investment performance reports of public funds. A check symbol (✓) indicates those items that are included in the NCRS Pension Fund Overview reports. EnnisKnupp's analysis focused on this document because it is to become a standardized report that will be used to convey information to the Treasurer and the IAC.

Table 5.1 – Total Fund Performance Reports

Best Practice Elements Included in Performance Reports	Included in NCRS Performance Reports
Overview	
Executive summary	✓ Yes
Market information	
Capital markets review	✓ Limited
Return detail of markets	No
Historical asset class summary	No
Asset allocation information	
Asset allocation summary	✓ Yes
Asset class over/underweight versus policy	✓
Change in asset allocation over the period	No
Asset allocation versus peers	No
Asset allocation by manager (% and dollars)	✓ (dollars only)
Total fund and asset class performance	
Net-of-fee performance	✓ Yes
Trailing period returns (including since inception)	✓ (no since inception)
Annual period returns	No
Annualized risk/return exhibits	✓ Yes
Performance versus peers	No

Best Practice Elements Included in Performance Reports	Included in NCRS Performance Reports
Ratio of cumulative wealth graphs	No
Asset class sector allocation (versus benchmark)	✓ Yes
Attribution analysis	✓ Yes
Manager performance	
Performance shown net of fee	✓ Yes
Trailing period returns (including since inception)	✓ (no since inception)
Annual period returns	No
Performance versus peers	No
Ratio of cumulative wealth graphs	✓ Yes
Annualized risk/return exhibits for each manager	No
Manager sector allocation (versus benchmark)	No
Manager sector performance (versus benchmark)	No
Manager characteristics (versus benchmark)	No
Manager peer group scattergram	No
Manager up/down markets chart	No
Manager country/region allocations (versus benchmark)	No
Manager investment philosophy/strategy	No
Manager performance commentary	No
Attestation of manager guideline compliance[1]	No
Appendix	
Definitions and benchmark descriptions	✓ Yes
Summary of investment policy and objectives	No

The Pension Fund Overview report has many good features. Notably, it includes asset allocation information for the Total Fund and the asset classes, risk/return exhibits, and attribution analysis. Performance is shown net-of-fees, which is a best practice. The Pension Fund Overview does not include detailed manager level information, which may not be necessary if the Treasurer and the IAC are not reviewing manager results. The Treasurer and the IMD should evaluate whether the additional items noted in the table would be useful to include in the performance report.

Beyond the Pension Fund Overview and monthly performance summaries, NCRS also has additional reporting specific to the alternatives portfolios. On the following page, EnnisKnupp describes and comments on the specialized reporting for private equity, real estate, and hedge funds.

[1] If manager compliance is monitored and reported via a separate report, it may not be necessary to include it in a performance report.

Private Equity Reporting

The IMD presents private equity quarterly performance reports, which are based on the Credit Suisse reports, to address the Treasurer's and the IAC's questions. A key purpose of this type of quarterly reporting is to enable the Treasurer to regularly monitor whether the actual private equity investments and the program design matches the expectations and goals set out in the October 2008 Alternative Investment Policy (one of the six documents that compose the NCRS Policies).

The private equity performance reports include strategy and sub-sector allocations. The targets and allowable ranges do not however tie to the Alternative Investment Policy. This indicates that either the Alternative Investment Policy is outdated or the IMD is not operating in compliance with the Policy. Neither scenario is favorable. Private equity monitoring would be improved by better tracking compliance with the stated Alternative Investment Policy. The current Credit Suisse report has some information about compliance with investment targets, but the stated targets in the Credit Suisse reports differ from those stated in the Alternative Investment Policy. Further, it is the role of the IMD staff, in conjunction with another party, to monitor policy compliance since Credit Suisse's contract focuses on performance reporting and back office functions.

The terminology and classifications referenced in the private equity quarterly performance reports are incongruent with those used in the Alternative Investment Policy. It would improve accountability and compliance monitoring if the documents were more consistent and more detailed. The easiest way for the IMD to accomplish this is to augment its reporting contract with Credit Suisse (or hire another consultant) to include fund-by-fund updates, investment policy compliance monitoring, and annual meeting coverage unless or until the IMD adds more staff in the private equity unit.

Private equity performance is accessed from Credit Suisse's online performance database, and is reported in the quarterly performance reports. Additional descriptive information about the portfolio is also included in the quarterly performance reports. The Credit Suisse report differs from the quarterly performance reports in that it contains more detailed information regarding commitments and funds. Table 5.2 on the following page compares the Credit Suisse document against what EnnisKnupp believes to be best practice elements of a detailed performance report. A check symbol (✓) indicates those items that are included in the Credit Suisse reports.

Table 5.2 – Private Equity Performance Reports

Best Practice Elements Included in Private Equity Performance Reports	Included in Credit Suisse Performance Reports
Market Overview	
Private equity market information and industry outlook	✓ Yes
High Level Portfolio Discussion	
Number of commitments and market value	✓ Yes
Discussion of portfolio weights by sub-strategy	✓ Yes
Discussion of portfolio returns (net IRR[2] and net multiple) by sub-strategy	✓ Yes
Portfolio Data Tables	
Portfolio IRR and net multiple by sub-strategy	✓ Yes
Portfolio IRR and net multiple by vintage year	✓ Yes
Portfolio summary by commitments, capital called, distributions and remaining commitments	✓ Yes
Valuation summary and comparison of previous quarter	✓ Yes
Schedule of largest public and private investment performance and exposure	✓ Yes
Fund level information including vintage year, fund size, commitment, cash flow information, distributions, reported value, net multiple, NAV,[3] and net IRR	✓ Yes
Portfolio Composition	
Overall commitment composition by sub-strategy, fund type, geographic concentration, vintage year, and industry sector	✓ Yes
Portfolio companies (by cost) by geography and industry sector	✓ Yes
Largest portfolio companies (by cost) by geography and industry sector	✓ Yes
Fund fee schedule	No
Detailed fund level activity (investments and organizational changes)	No
Quarterly manager investment guideline compliance[4]	Limited
Additional Useful Items	
Performance benchmarking and description	No

The Credit Suisse reports provide the IMD staff with useful data and compare well to best practices for back office reporting. The reports would be enhanced if Credit Suisse included detailed performance benchmarking, policy compliance information that tied to the Alternative Investments Policy, and fee information.

[2] Internal rate of return.
[3] Net asset value.
[4] If compliance is monitored in a separate report, it is not necessary to include it in performance reports.

Real Estate Reporting

The NCRS real estate investment consultant is Courtland Partners ("Courtland"). The IMD staff relies on Courtland and Credit Suisse to compile performance and compliance information for the real estate portfolio. The information is reported as part of the quarterly review.

The content of the real estate performance reports is defined in the Real Estate Policy, one of the six policies that compose the NCRS Policies. The table below compares the NCRS real estate performance reports against what EnnisKnupp believes to be best practice elements of a detailed real estate performance report. A check symbol (✓) indicates those items that are included in the Courtland performance reports.

Table 5.3 – Real Estate Performance Reports

Best Practice Elements Included in Real Estate Performance Reports	Included in Courtland Performance Reports
Overview	
Executive summary	✓ Limited
Market Overview	
Private and public capital market observations	✓ Limited
Detailed return information	No
Total Fund Results	
Total portfolio performance versus benchmark	✓ Yes
Total portfolio performance versus peers	✓ Yes
Attribution (total fund)	No
Total portfolio geographic exposures	✓ Yes
Net-of-fee performance	✓ Yes
Quarterly policy compliance	No
Fees (total fund level)	No
Annual pacing updates (total fund)	✓ Yes
Quarterly pacing progress (total fund)	No
Manager Results	
Manager performance by style	✓ Yes
Manager risk analysis	No
Individual manager overview	No
Fees (for each manager)	No
Quarterly manager investment guideline compliance[5]	No
Appendix	
Benchmark descriptions	✓ Yes
Policy and objectives information	✓ Yes

[5] If compliance is monitored in a separate report, it is not necessary to include it in performance reports.

Including all of the elements listed in Table 5.3 for all the individual managers would result in a very long performance report, which would not be useful for the staff or the Treasurer. Selecting those elements that would be most useful to the Treasurer in monitoring the overall performance, risk, and compliance with the stated policy would be most useful.

EnnisKnupp found the real estate performance reports to be compliant with the requirements in the Real Estate Policy with one exception. Compliance with each of the risk factors described in the Policy is not reported to the CIO and the Treasurer each quarter. Instead, this compliance information is reported annually as part of the strategic review. Modifying the performance report (or a separate compliance report) to include compliance information would more consistent with best practices.

Hedge Fund Reporting

The quarterly performance reports for the hedge fund portfolio are very good. The documents are produced by the IMD staff and give detail on the hedge fund industry as well as high level and detailed data on the NCRS hedge fund investment program. Table 5.4 on the following page compares the NCRS hedge fund performance report against what EnnisKnupp believes to be best practice elements of a detailed hedge fund performance report. A check symbol (✓) indicates those items that are included in the NCRS hedge fund performance report.

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Table 5.4 – Hedge Fund Performance Reports

Best Practice Elements Included in a Hedge Fund Performance Report	Included in NCRS Hedge Fund Performance Report
Overview	
Executive summary	✓ Yes
Market overview	
Industry outlook and trends	✓ Limited
Detailed return information	No
Total fund results	
Total portfolio performance versus benchmark	✓ Yes
Total portfolio performance versus peers	✓ Yes
Total portfolio risk analysis	No
Strategy allocation	✓ Yes
Attribution	✓ Yes
Alpha/Beta exposures	No
Net-of-fee performance	✓ Yes
Quarterly policy compliance	No
Fees (total fund level)	No
Fund-of-fund results	
Fund-of-fund performance	✓ Yes
Manager risk analysis	✓ Yes
Individual manager overview	No
Fees (for each manager)[6]	No
Quarterly manager investment guideline compliance[7]	No
Appendix	
Benchmark descriptions	✓ Yes
Policy and objectives information	No

The NCRS hedge fund performance report provides the fiduciary useful information on hedge fund performance and allocation. Attribution is also included, which is a best practice. Fund-of-fund performance and manager risk analysis are also good features of the reports. All performance is shown net-of-fees, which is a best practice. Some performance reporting elements that are not included are market return information, total portfolio risk analysis, and fee information (refer to the above table for other elements that could be included in the performance report that are not currently included).

[6] Hedge fund manager fees are reviewed and reported annually.
[7] If compliance is monitored in a separate report, it is not necessary to include it in performance reports.

Conclusion

The newly developed Pension Fund Overview reports provide a reasonable amount of information. However, the reports are not as comprehensive as those of many other public funds. While it is not necessary for all of the elements listed in Table 5.1 to be included in performance reports, it is a best practice to include those elements that assist the fiduciary in its oversight responsibilities. Often, public pension funds rely upon an investment consultant to provide performance reports that contain many of the needed elements.

For private equity, a quarterly report benchmarking the investment program's performance, diversification, and risk factors against the approved investment policy would be a valuable oversight tool for the Treasurer and the IAC. This is partially in place, but could be enhanced.

The real estate program's quarterly performance report provides useful data, with one exception, related to compliance with the Policy requirements. EnnisKnupp believes additional value would be gained from including a section highlighting areas where the program is in or out of compliance with its stated investment policy. Additional detail on the portfolio investments and how they fit within the program from a diversification standpoint would enhance the value of the report.

The hedge fund reporting is comprehensive and provides the staff, IAC, and Treasurer an appropriate level of information.

For all three alternatives asset classes, the staff and Treasurer may want to review Tables 5.2, 5.3 and 5.4 in this Section of the Report to determine if additional elements would be useful.

Recommendations:
1. Evaluate whether any additional elements should be added to the Pension Fund Overview or any of the asset class performance reports (private equity, real estate, and hedge funds).
2. Consider adding more detail to the private equity performance reports on the portfolio investments, including detailed performance benchmarking, fee schedules, and commentary on how investments fit within the program from a diversification standpoint.
3. Consider augmenting the reporting contract of the private equity investment consultant (or hire another consultant) to include fund-by-fund updates, monitor investment policy compliance, and report on annual meetings.
4. Ensure the sub-asset class classifications in the Alternative Investments Policy and the private equity performance reports match so that compliance can more easily be monitored.
5. Ensure Credit Suisse has the most up-to-date Alternative Investments Policy information so that it can be referenced and analyzed in its report.
6. Report quarterly compliance in the real estate portfolio with each of the risk factors described in the NCRS Policies.

II. Return Calculations

Background

A sound method should be used to calculate the rates of return for the portfolio. Doing so benefits the fiduciaries and the staffs of public funds, and provides reassurance to external parties interested in the success of the investment program. With today's high level of scrutiny of public retirement funds, it is important to establish and adhere to best practices regarding performance calculation.

Comparing and accurately analyzing investment performance has become increasingly difficult as the number of investment firms and the amount of assets under management have grown increasingly global in nature. To address this problem, the CFA Institute created and published the Global Investment Performance Standards ("GIPS") to provide a worldwide acceptable method for calculating and presenting performance data with appropriate disclosures.[8]

The GIPS are ethical and voluntary standards that provide a framework for calculation and presentation of the performance history of an investment management firm. A manager must follow all (not some) of the GIPS in order to claim that it is GIPS compliant. An investment manager must claim that it is GIPS compliant on a firmwide basis (not on a composite or strategy).

Once the firm has implemented the requirements and confirmed that all policies and procedures are being followed consistently, the firm can become verified. Verification comes from a third party specialist who reviews whether the entity has complied with all of the GIPS requirements. Most institutional investment managers have become, or are moving toward becoming, GIPS compliant. Public funds striving to meet best practices should calculate performance in a manner that is consistent with the GIPS standards, and inquire as to whether the managers they evaluate are GIPS compliant.

Findings and Analysis

NCRS utilizes its custodian, Bank of New York Mellon ("BNY Mellon"), for performance calculation and accounting services. BNY Mellon is responsible for conducting reconciliations of market values and performance calculations with those reported by the managers. If returns or market values are outside of an allowable range, BNY Mellon will initiate reconciliation steps. All performance is calculated net-of-fees. Once performance is final, the IMD uses BNY Mellon's Workbench system to run performance numbers and generate performance reports for public market assets.

EnnisKnupp performed a "spot check" to verify the return calculations of public markets equity managers reported in the IMD staff performance reports for the 2008 calendar year. In order to recalculate monthly performance for all the equity managers, EnnisKnupp used market value and cash flow information compiled by the IMD staff and BNY Mellon.

8 CFA Institute, Global Investment Performance Standards, 2010, http://www.gipsstandards.org.

EnnisKnupp used a time weighted rate of return, commonly known as the Modified Dietz Method. This calculation measures the investment performance of a pool of assets, removing the impact of cash flows. Generally, EnnisKnupp's returns were consistent with those calculated by BNY Mellon. On a monthly basis, there were 12 occurrences when EnnisKnupp calculated a return that was more than +/-10 basis points from those calculated by BNY Mellon. On a quarterly basis, there were seven occurrences when a quarterly return we calculated was more than +/-10 basis points from those calculated by BNY Mellon. Typically, 10 basis points is considered an acceptable tolerance for discrepancies. Anything greater than 10 basis points would trigger reconciliation activity.

It is not uncommon for some returns calculated by EnnisKnupp to differ from the returns calculated by a custodian bank. This is especially true when assets are added or removed from the portfolio causing large cash flows. During 2008, NCRS removed two and added five managers, which resulted in a few discrepancies with the returns. EnnisKnupp also compared approximately one-third of the calculated returns with those reported by the managers. Any differences were between 1-20 basis points. On a monthly basis, there were 12 occurrences when a monthly return EnnisKnupp calculated was +/-10 basis points from those provided by the managers. For the larger discrepancies (more than 15 basis points), large cash flows were recorded. Large cash flows often distort a time weighted return calculation.

For the private market assets (real estate and private equity), EnnisKnupp evaluated the calculation and cash flow process. EnnisKnupp found the process for the private market assets to be reasonable. EnnisKnupp did not recalculate or verify returns because fund manager cash flow information was not provided for inclusion in the analysis.

There are many elements of the NCRS performance calculation and presentation process that follow the GIPS. For instance, NCRS uses market values to evaluate portfolio performance and at least five years of return history is presented on the performance summaries. NCRS was also able to produce the fee schedule and portfolio mandates upon request for each of their portfolios. On the other hand, the NCRS performance summaries do not state when the returns are calculated net- or gross-of-fees.

<u>Conclusion</u>

During the manager selection due diligence process, the IMD staff should verify whether managers are claiming GIPS compliance. Based on the results of the spot check, it appears returns are calculated accurately.

Recommendations:

1. Consider verifying whether managers considered or utilized in the NCRS Portfolio claim GIPS compliance.
2. Indicate in all performance reports whether the presented returns are net- or gross-of-fees.

III. Performance Benchmarks

Background

Benchmarks measure actual portfolio performance and can be utilized by a fiduciary to evaluate the success of an investment program. Ideally, the highest fiduciary sets benchmarks for the total fund, each asset class, and each individual investment manager. Best practices call for the total fund to be measured against a policy portfolio benchmark, which is a passive representation of the target allocations of the fund. Appropriate asset class benchmarks and manager benchmarks broadly represent the entire opportunity set in a particular asset class or under a particular manager's mandate. When measuring actual performance against benchmarks, performance should be tracked monthly and the results should be reporting to the board quarterly. In the case of sole trustees, the reporting is often done monthly.

The risk of a portfolio compared to its benchmark is also important to measure. A manager or the total fund may be outperforming its benchmark, but at a greater level of risk. Reviewing performance on a risk-adjusted basis helps a fiduciary determine whether the returns are commensurate with the risk taken.

Findings and Analysis

The NCRS Policies indicate that Total Fund performance is to be compared to "a passive implementation of asset class benchmarks weighted by the target asset allocation." This type of benchmark is commonly called a "policy portfolio." The NCRS Policies further indicate that individual managers will be measured against relevant indices.

The benchmarks for each NCRS managers are set based on the IMD staff's assessment and discussion with each manager. For the internally managed portfolios, the benchmarks are established based on the portfolio manager's recommendation. Asset class benchmarks represent broad measures of each investment universe. The NCRS Total Fund benchmark is based on the policy allocations approved by the Treasurer. The benchmark is constructed using a weighted average approach, combining the underlying asset class benchmarks at the policy weight in the portfolio. Having a policy portfolio benchmark is a best practice. The NCRS Total Fund benchmark measures the impact individual managers have on Total Fund performance, and takes into account the impact deviations from policy targets have on performance.

The Treasurer is not part of any formal process used to approve manager and asset class benchmarks. However, such benchmarks are discussed with the IAC. It is a best practice for both the staff and the investment consultant(s), independent from the staff, to recommend benchmarks, and then for the benchmarks to be approved by the Treasurer.

Table 5.5 below identifies the benchmarks assigned to each asset class used in the NCRS investment program and provides EnnisKnupp's assessment as to whether the benchmarks are appropriate. Benchmarks that warrant further evaluation are shaded.

Table 5.5 – Asset Class Benchmarks

Asset Class	NCRS Benchmark	Assessment
Domestic Equity	Russell 3000 Index	Appropriate
Domestic Large Cap	Russell 1000 Index	Appropriate
Domestic Mid Cap	Russell MidCap Index	Appropriate
Domestic Small Cap	Russell 2000 Index	Appropriate
International Equity	90% MSCI EAFE / 10% MSCI Emerging Markets	Appropriate; the MSCI All Country World Ex-U.S. Index would also be an appropriate benchmark
Global Equity	MSCI World Index	Appropriate
Fixed Income (Long-Term Portfolio)	40% Gov't 5+ Year / 35% Investment Grad Corp (BBB Max 25%) / 25% Mortgage Master	Appropriate; the custom benchmark reflects the policy allocations to different segments of the bond market
Real Estate	90% NCREIF[9] ODCE[10] Index / 10% FTSE[11] EPRA[12]/NAREIT[13] Global Securities Index	Adding a premium of 100 to 200 basis points to the ODCE Index would better align the private markets benchmark with the NCRS portfolio. Alternatively, the NCREIF Property Index ("NPI") would also be an appropriate benchmark for a private real estate portfolio that includes core and non-core investments
Private Equity	Russell 3000 + 250 basis points (lagged 3 months) for the aggregated private equity portfolio; sub-portfolios have risk premiums of 200 – 400 basis points added to the Russell 3000 Index	Appropriate; Venture Economics would be a suitable secondary benchmark to compare strategy, vintage year, or geographic results
Hedge Funds	U.S. T-Bill + 400 basis points	HFRI[14] Funds-of-Funds index would be a better benchmark, as the investments of NCRS are highly correlated to the funds covered by this Index. Treasury bills plus 400 basis points is not the most appropriate benchmark given the expected volatility in the hedge fund program

9 NCREIF: National Council of Real Estate Investment Fiduciaries.
10 ODCE: Open End Diversified Core (an index of investment returns reporting on both a historical and current basis the results of 26 open-end commingled funds pursuing a core investment strategy).
11 FTSE: an independent indices company, jointly owned by The Financial Times and the London Stock Exchange.
12 EPRA: European Public Real Estate Association.
13 NAREIT: National Association of Real Estate Investment Trusts.
14 HFRI: Hedge Fund Research, Inc.

EnnisKnupp also analyzed the appropriateness of the benchmarks assigned to individual U.S. equity and non-U.S. equity managers in the NCRS investment program. The evaluation was based on qualitative and quantitative factors. The qualitative factors include EnnisKnupp's knowledge of the managers' mandates and strategies, while the quantitative factors include a statistical measure of the "fit" between the manager's return history and that of the benchmark. This "best benchmark" analysis employs two measures, R-squared and tracking error, to determine from a statistical standpoint which benchmark is the best match for a manager.[15] EnnisKnupp's findings are presented in Table 5.6 on the next page. Benchmarks that warrant further evaluation are shaded.

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[15] The R-squared value is the correlation coefficient squared. The correlation coefficient between a manager and a benchmark indicates how often the two move in the same direction. The amount of tracking error is the standard deviation of the manager's return in excess of the benchmark's return. The smaller the tracking error, the better the fit.

Table 5.6 – Equity Manager Benchmarks

NCRS Manager	NCRS Mandate	NCRS Benchmark	"Best Benchmark" Analysis Results	EnnisKnupp Assessment
Alliance Relative Value	Large Cap Value	Custom 1000 Value Index	S&P 500 /Citigroup Value Index	Appropriate; while the S&P 500/ Citigroup Value Index was the statistical best "match," a broader large cap value benchmark is also a reasonable benchmark
Hotchkis Large Cap Value	Large Cap Value	Russell 1000 Value Index	Russell MidCap Value Index	Appropriate; while the Russell MidCap Value was the best statistical "match," the Russell 1000 Value was also a close fit
Wellington Growth	Large Cap Growth	Russell 1000 Growth Index	MSCI U.S. Investable Market 2500 Growth Index	Evaluate current benchmark; the statistical analysis indicated a benchmark with mid-cap exposure may be a better fit than a pure large-cap growth index
BGI Russell 3000 Alpha Tilts	Large Cap Growth	Russell 3000 Index	Russell 3000 Index	Appropriate
Evergreen Russell 200 Enhanced	Large Cap	Russell Top 200 Index	Russell Top 200 Index	Appropriate
Wellington Tech Equity	Large Cap	S&P 500 Index	MSCI U.S. MidCap 450 Growth Index	Evaluate current benchmark; the statistical analysis indicated a benchmark with mid-cap growth exposure may be a better fit than a pure large-cap index
Relational Investors Large Cap	Large Cap	S&P 500 Index	Russell 2500 Value Index	Evaluate current benchmark; the statistical analysis indicated a benchmark with mid-cap value exposure may be a better fit than a pure large-cap index
Sands Large Cap	Large Cap Growth	Russell 1000 Growth Index	Russell 1000 Growth Index	Appropriate
BOA Large Cap Passive	Large Cap	S&P 500 Index	S&P 500 Index	Appropriate
Evergreen S&P 500 Index	Large Cap	S&P 500 Index	S&P 500 Index	Appropriate

NCRS Manager	NCRS Mandate	NCRS Benchmark	"Best Benchmark" Analysis Results	EnnisKnupp Assessment
First Citizens Large Cap Passive	Large Cap	S&P 500 Index	S&P 500 Index	Appropriate
Piedmont Strategic Core	Large Cap	S&P 500 Index	S&P Composite 1500 Index	Appropriate; the statistical analysis indicated a slightly broader large cap index would be a better "match," qualitatively the S&P 500 is a reasonable benchmark
Hotchkis Mid Cap Value	Mid Cap Value	Russell Midcap Value Index	Russell 2500 Value Index	Appropriate; even though the Russell 2500 Value index was indicated as the best "match," the Russell MidCap value also showed as a reasonable "match"
TimesSquare Composite	Mid Cap Growth	Russell Midcap Growth Index	MSCI Investable Market 2500 Growth index	Evaluate current benchmark; the statistical analysis indicated a benchmark with growth exposure may be more appropriate
BOA Mid Cap Passive	Mid Cap	S&P 500 Index	S&P 500 Index	Appropriate
Evergreen Mid Cap Passive	Mid Cap	S&P 500 Index	S&P 500 Index	Appropriate
Wellington Mid Cap Intersection	Mid Cap	S&P 500 Index	S&P 500 Index	Appropriate
Numeric Small Cap Value	Small Cap Value	Russell 2000 Value Index	MSCI U.S. Small Cap 1750 Value Index	Appropriate; even though the MSCI Small Cap Index was indicated as the best "match," the Russell 2000 Value is a reasonable benchmark from a qualitative standpoint
Sterlings Small Cap value	Small Cap Value	Russell 2000 Value Index	DJ U.S. Small Cap Value Index	Appropriate; even though the DJ U.S. Small Cap Value was indicated as the best "match," the Russell 2000 Value is a reasonable benchmark from a qualitative standpoint

NCRS Manager	NCRS Mandate	NCRS Benchmark	"Best Benchmark" Analysis Results	EnnisKnupp Assessment
Earnest Partners Small Cap Value	Small Cap Value	Russell 2000 Value Index	DJ U.S. Small Cap Value Index	Appropriate; even though the DJ U.S. Small Cap Value was indicated as the best "match," the Russell 2000 Value is a reasonable benchmark from a qualitative standpoint
Numeric Small Cap Growth	Small Cap Growth	Russell 2000 Growth Index	MSCI U.S. Small Cap 1750 Growth Index	Appropriate; even though the MSCI U.S. Small Cap 1750 Growth Index was indicated as the best "match," the Russell 2000 Growth also showed as a reasonable "match"
Brown Small Cap Growth	Small Cap Growth	Russell 2000 Growth Index	Russell 2500 Growth Index	Appropriate; even though the Russell 2500 Growth Index was indicated as the best "match," the Russell 2000 Growth also showed as a reasonable "match"
Wellington Biotech	Biotech	NASDAQ Biotech Index	NASDAQ Biotech Index	Appropriate
SSGA S&P Core 600	Small Cap	S&P 600 Index	S&P 600 Index	Appropriate
Turner Quant MicroCap	Micro Cap Growth	Russell Microcap Growth Index	Russell Micro Cap Index	Evaluate current benchmark; statistical analysis indicates a benchmark without a growth bias may be a better benchmark
GMO International	International Developed Markets	MSCI EAFE Index	MSCI EAFE Value Index	Appropriate; even though the statistical results indicated a benchmark with a value orientation may be a better match, from a qualitative standpoint the EAFE is a reasonable benchmark

NCRS Manager	NCRS Mandate	NCRS Benchmark	"Best Benchmark" Analysis Results	EnnisKnupp Assessment
Baillie Gifford	Intl Developed Markets	MSCI EAFE Index	MSCI All Country World Ex-U.S. Growth Index	Evaluate current benchmark; statistical analysis indicates a benchmark with emerging markets exposure may be a better benchmark; however, from a qualitative standpoint this would only be a better benchmark if Baillie Gifford invests in emerging markets
Invesco	Intl Developed Markets	MSCI EAFE	MSCI EAFE Index	Appropriate
Mondrian EAFE Value	Intl Developed Markets	MSCI EAFE	MSCI EAFE Value	Evaluate current benchmark; statistical analysis indicates a benchmark with value-orientation may be a better benchmark. However, from a qualitative standpoint the EAFE may still be a reasonable benchmark.
Oechsle EAFE Growth	Intl Developed Markets	MSCI EAFE	MSCI EAFE Value Index	Evaluate current benchmark; statistical analysis indicates a benchmark with value-orientation may be a better benchmark; however, from a qualitative standpoint the EAFE may still be a reasonable benchmark
BGI Non U.S. Alpha Tilts	Intl Developed Markets	MSCI EAFE	MSCI EAFE Index	Appropriate
BGI EAFE Index Fund	Intl Developed Markets	MSCI EAFE	MSCI EAFE Index	Appropriate
Alliance ACWI Ex U.S.	Intl Developed and Emerging Markets	MSCI All Country World Ex-U.S. Index	S&P/Citigroup PMI Growth Index	Evaluate current benchmark; statistical analysis indicates a benchmark with growth-orientation may be a better benchmark; however, from a qualitative standpoint the MSCI ACWXUS may still be a reasonable benchmark

NCRS Manager	NCRS Mandate	NCRS Benchmark	"Best Benchmark" Analysis Results	EnnisKnupp Assessment
Capital Guardian International	Intl Developed and Emerging Markets	MSCI All Country World Ex-U.S. Index	MSIC ACW ex. U.S. Growth index	Appropriate; statistical analysis indicates a benchmark with growth-orientation may be a better benchmark; however, the MSCI ACWXUS was also indicated as a reasonable benchmark
Wellington International	Intl Developed and Emerging Markets	MSCI All Country World Ex-U.S. Index	MSCI All Country World Ex-U.S. Index	Appropriate
Walter Scott International	Intl Developed and Emerging Markets	MSCI All Country World Ex-U.S. Index	MSCI All Country World Ex-U.S. Index	Appropriate
Alliance Emerging Markets	Emerging Markets	MSCI Emerging Markets Index	MSCI Emerging Markets Index	Appropriate
Baillie Gifford Emerging Market	Emerging Markets	MSCI Emerging Markets Index	MSCI Emerging Markets Index	Appropriate
BGI Emerging Markets	Emerging Markets	MSCI Emerging Markets Index	MSCI Emerging Markets Index	Appropriate
BGI Frontier Markets	Frontier Markets	MSCI Frontier Markets Index	MSCI Frontier Markets Index	Appropriate
Longview Global	Global Equity	MSCI World Index	MSCI World Index	Appropriate
Brandes Global Equity	Global Equity	MSCI World Index	MSCI World Index	Appropriate
AGA Global Strategy Partners	Global Equity	MSCI World Index	MSCI World Index	Appropriate

Alternative Investments Manager Benchmarks

Individual benchmarks are not assigned to the individual private equity and real estate investments. Rather, performance is analyzed at the sub-portfolio and aggregated portfolio level. This is a common and acceptable practice. Some institutional investors use Venture Economic results to benchmark individual private equity investments.

The benchmark for the individual hedge fund managers is the Treasury Bills plus 400 basis points. Similar to EnnisKnupp's recommendation on the asset class, the HFRI Funds-of -Funds Index would be a better benchmark, as the investments of the funds-of-funds are highly correlated to the funds covered by this Index. Also, the Treasury Bills plus 400 basis point benchmark does not take into account the expected level of volatility of the investments.

Conclusion

Market benchmarks are the best primary measurements for the Treasurer to use in evaluating whether the Total Fund, asset classes, and individual managers are meeting their return objectives. Risk adjusted performance compared to benchmarks is also an important metric to consider. EnnisKnupp concludes that the Total Fund benchmark is appropriate. Further, most of the asset class benchmarks are also appropriate, with the exceptions of the benchmarks for the real estate and hedge fund portfolios.

The current real estate benchmark is a combination of the ODCE Index and the FTSE EPRA/NAREIT Global Securities Index, reflecting the mix of private and public securities within the portfolio. EnnisKnupp does not believe the private real estate portion of the benchmark (the ODCE Index) most appropriately mirrors the composition of the NCRS real estate portfolio.
The NCRS real estate portfolio is designed to produce Core-Plus returns represented by its target weighting of 40% to Core and 60% to Value-Added and Opportunistic. The ODCE is solely comprised of levered Core funds. Used alone and without a premium, it is not a good proxy for the 60% Non-Core private market real estate exposure in the NCRS real estate portfolio. To reflect the non-core focus of the portfolio, EnnisKnupp believes adding a premium of 100 to 200 basis points to the ODCE would better reflect the risk and return characteristics of the NCRS portfolio. An alternative benchmark would be the NPI, which includes both core and non-core properties.

The portion of the real estate benchmark that measures the public markets investments, REITs, is a common and appropriate benchmark. It would be best to indicate that the benchmark is to be net-of-fees since performance is also reported net-of-fees.

For hedge funds, EnnisKnupp believes the HFRI Funds-of-Funds Index would be a better benchmark than Treasury Bills plus 400 basis points.

Many of the benchmarks for the individual equity managers are appropriate. There are some, as indicated in Table 6, which should be evaluated to ensure they are the most appropriate.

Recommendations:

1. Evaluate the ODCE plus a premium of 100 to 200 basis points, or the NPI Index, as the real estate asset class benchmark for the private markets portion of the portfolio.
2. Establish whether the real estate portfolio and its benchmark are measured net- or gross–of-fees.
3. Consider comparing private equity results by strategy, vintage year, or geography to Venture Economics data.
4. Employ the HFRI Funds-of-Funds Index as the only benchmark for the hedge fund program; discontinue the use of Treasury bills plus 400 basis points as a benchmark.
5. Reevaluate the equity manager benchmarks as noted in this Report to ensure they remain the most appropriate benchmarks given the managers' investment styles and opportunity sets.

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INTRODUCTION

Many factors influence investment program performance. Studies show asset allocation has a very large impact on investment portfolio returns, while manager and security selection has a much smaller effect.[1] However, manager selection and oversight should not be overlooked. On the contrary, fiduciaries are regularly called upon to make decisions about manager selection. When making these decisions, fiduciaries have the duty to act prudently. They are judged by the prudence of their process, not by the outcome.[2] Prudence is not the same as "perfection," but it does require the fiduciaries to use the same care, skill, and diligence that other sophisticated institutional investors use in the selection and monitoring of comparable investment managers.

Prudence necessitates a rigorous due diligence process, which has two phases: (1) the initial selection of managers and (2) the ongoing monitoring of those managers. The selection process begins with the consideration of a very large universe of managers or investment opportunities. For example, there are approximately 12,000 investment managers in the United States alone.[3] Of these, a much smaller number (5%) may be suitable for a public fund to seriously consider due to the size and structure of the investment portfolio. As a result, the selection process must effectively screen and identify the managers uniquely skilled for each mandate.

After managers or investments have been selected, due diligence must continue to ensure the selected opportunities remain appropriate for the fund. This part of the due diligence process includes a review of the investment's performance against agreed upon benchmarks and an assessment of whether any of the factors considered in the selection of the manager have adversely changed. In addition, the due diligence process should also include a review of compliance with stated guidelines and monitoring of risk in the portfolio. An effective due diligence process will trigger action when changes are needed.

It is also important to customize the due diligence procedures for each investment opportunity or sub-asset class. For example, private markets investments are often characterized by unique risks and long investment terms. The best due diligence processes focus on all success factors of each unique investment. A due diligence process can be exemplary, but if the research and analysis are not documented and codified in policies or procedures, these efforts will fall short of best practices. Documentation helps to ensure that a fiduciary's expectations for due diligence are broadly understood and followed.

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Public Markets Manager Selection
II. Private Markets Manager Selection

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[1] Ibbotson, Roger and Paul Kaplan, "Does Asset Allocation Policy Explain 40, 60 or 100 Percent of Performance?" *Financial Analyst Journal*, Vol. 56, No.1 (January/February 2000): 26-33.
[2] *Donovan v. Cunnigham*, 716 F.2d 1455, 1457 (5th Cir. 1987).
[3] Source: eVestment Alliance. 2009.

III. Ongoing Manager Monitoring

IV. Investment Manager Guidelines

I. Public Markets Manager Selection

Background

Manager selection is a crucial function for any public pension fund. The DOL Advisory Council's *Report on Guidance in Selecting and Monitoring Service Providers*[4] outlines three aspects of investment manager selection that fiduciaries must consider:

- Investment manager qualifications
- Reasonableness of investment management fees
- Investment manager conflict of interest policy

Historically, in the public pension fund arena, investment managers have been assessed and selected through a Request for Proposal ("RFP") process, where interested managers from the entire universe submit information on their investment strategies. Many funds continue to use such a formal process, as it often parallels the protocol other governmental entities use for purchasing goods and services. From a public policy perspective, this process is designed to offer equal opportunity for doing business with the government and to ensure fairness in the selection process. In the selection of investment managers, in theory, the RFP process opens up the opportunity for business to a large number of managers. Staff and the fiduciaries, often assisted by an investment consultant, then must formally evaluate all firms that submitted a bid. This evaluation can be a time intensive process. EnnisKnupp believes that a suitably large number of managers can be considered by using an alternative and equally fair process that does not use open bidding.

In fact, about 65% of EnnisKnupp's public fund clients have moved to an alternative search process. Such a process can be accomplished within six to eight weeks. Under this process, the investment consultant or fund staff identifies a list of suitable candidates that are appropriate for the mandate from a manager database. Leading investment consulting firms and sophisticated staffs often have 4,000 – 6,000 managers in their databases. Of those managers, the investment consultant or staff can readily narrow down the firms based on their knowledge of the managers and the fund's needs.

Many public funds find this process to be more efficient as it avoids the delays associated with receiving proposals from multitude of prospective vendors. At the same time, this alternative process is equally accessible, transparent, fair, and prudent as an RFP process. A few public funds do not have the ability to use such a search process because they are subject to laws or legal interpretations requiring them to comply with state or municipal procurement rules. These requirements are often extremely cumbersome and add months to the selection process.

[Section 1 (1.I.B) includes a detailed discussion regarding procurement.]

[4] U.S. Department of Labor, Advisory Council, November 13, 1996.

Findings and Analysis

The NCRS public markets manager search process begins with a proactive market scan of the manager universe. The IMD staff stays appraised of potential managers by communicating with existing managers, creating contact files, developing relationships with other institutional investors, and attending seminars and conferences.

When the IMD identifies a portfolio need for a new or replacement manager, it initiates and conducts a formal search process. An external investment consultant is not utilized. In this regard, the NCRS is somewhat unusual as 94%[5] of public pension funds report using an investment consultant for advice on investment matters. While this statistic is not specific to manager searches, in our experience, most public funds that retain an investment consultant also rely upon them for assistance with manager searches. An investment consultant is most often used when the staff does not have sufficient resources or expertise to conduct due diligence by itself. Some public funds that have the expertise on staff sometimes elect to proceed without external assistance. One model is not necessarily better than the other, as long as the process is thorough and well-executed.

In order for an investment manager to be included in a NCRS search, it must meet the minimum qualifications stipulated in the Public Equity Policy, one of the six documents that compose the NCRS Policies. Staff will screen the Plan Sponsor Network (PSN) database, as well as review any inquiries by interested managers. PSN is a highly-regarded and commonly utilized manager research database. It includes information on over 2,000 investment managers and 10,000 investment products. Potential candidates are ranked on four factors: past performance (30%), portfolio characteristics (40%), firm issues (15%), and composite (15%). The screening result is a “hot sheet” of potential candidates.

Managers who appear to be a good fit are then asked to complete a two-page questionnaire. Then staff asks the top candidates to respond to a formal RFP. This selective process eliminates the time intensive parsing of proposals received during an open RFP process where any manager, no matter what their qualifications, can submit a proposal. The NCRS RFPs are comprehensive and include many questions relevant to assessing the manager’s firm and investment strategy. Proposals are reviewed by a staff evaluation committee and rated based on organizational factors (40%), investment management capabilities (40%), performance (10%), and fees (10%). In this stage of the process, performance receives a minor weighting compared to the substantial weighting it received in the screening process. Performance is a poor predictor of future results. However, performance is commonly used as a significant factor in searches. EnnisKnupp believes other factors, such as manager skill and organizational issues, have a greater impact on performance. The best searches weigh these types of factors more heavily than performance in the final analysis.

Semi-finalists are selected to make presentations to staff. Subsequently, the investment staff conducts onsite due diligence visits with finalist firms. The top firms then make presentations to the Treasurer, who approves, modifies, or rejects staff’s manager selection recommendations. The recommendations

[5] Greenwich Associates 2008 Market Dynamics Survey. Public Funds over $5 billion.

are presented in a memorandum prepared by staff consisting of background information, bullet points describing key factors, strengths and weakness of the manager, and performance and risk exhibits. EnnisKnupp found the manager search memorandums to be somewhat abbreviated, without much in-depth analysis. The best search reports or memorandums give evidence to the thorough due diligence process that supported the search activity. For example, the search memorandum does not document the results of the IMD due diligence checklist. This detailed checklist, if followed, supports thorough, objective decision-making, and having such a document is a good practice. It is not evident, however, from the search documents we were provided that this checklist was followed. The best search reports or memorandums also provide the fiduciary analysis regarding the strengths and weakness of the managers considered, and an assessment of how the manager's investment process will fit within the current roster of managers.

The following table compares the steps in the NCRS due diligence process described to EnnisKnupp with those of industry best practices. The NCRS process, as indicated by the checklist (as opposed to the search memorandum) fares quite well in this comparison exercise.

Table 6.1 – Public Markets Due Diligence

Best Practices Public Markets Manager Due Diligence	Current NCRS Practice
Screen manager databases	
Maintain or have access to a comprehensive manager database	✓ Yes
Identify management firms that meet criteria	✓ Yes
Issue questionnaire	
Review biographies	✓ Yes
Review employee turnover	✓ Yes
Review team additions/departures	✓ Yes
Determine portfolio management responsibilities	✓ Yes
Review philosophy/process	✓ Yes
Identify strategy changes	✓ Yes
Conduct meetings/conference calls	
Ask questions regarding questionnaire response	✓ Yes
Begin assessment of skill	✓ Yes
Determine if manager warrants moving to next stage	✓ Yes
Assess perceived skill (cogent investment thesis, information advantage, unusual insight, talent, sound investment process, sustainability)	✓ Yes
Evaluate trading efficiency	No
Assess management fees	✓ Yes
Review past performance (short-term trends, results versus style, themes, risk-adjusted)	✓ Yes
Determine product fit	✓ Yes

Best Practices Public Markets Manager Due Diligence	Current NCRS Practice
Evaluate product importance	✓ Yes
Review ownership structure (depth and breadth of employee ownership, recent or upcoming changes)	✓ Yes
Evaluate organizational factors (governance, agency issues, compensation structure, clients gained/lost)	✓ Yes
Complete comprehensive profile	✓ Yes
Onsite visit	
Meet portfolio manager(s)	✓ Yes
View trading desk	✓ Yes
Assess administrative issues (SEC action, legal issues, etc.)	✓ Yes
Clarify questions on process/strategy	✓ Yes
Legal review of documents	
Review fees	✓ Yes
Establish guidelines	✓ Yes
Review contract terms	✓ Yes

<u>Conclusion</u>

The IMD has a thorough due diligence checklist for selecting public market investment managers. However, the manager search memorandums do not provide the fiduciary complete evidence that the process was followed and relevant factors were analyzed thoughtfully. The due diligence checklist, if followed, outlines a process and factors that are in accordance with industry best practices. The due diligence checklist is a useful tool to ensure that important factors are reviewed. [As discussed in Section 1 (1.I) of this Report, accountability and transparency are important in manager selection activities.] The NCRS manager selection process would be improved with further documentation, such as an investment related services search and selection procurement policy

Recommendations:

1. Ensure that the manager selection process and results of the due diligence checklist are executed and well documented.
2. Provide more in-depth analysis of managers being considered for inclusion in the NCRS Portfolio within the manager search memorandum.

   [See our recommendations in Section 1 (1.I.B) regarding procurement practices.]

II. Private Markets Manager Selection

Background

Often referred to as alternative investments, the private markets universe can offer a fund hundreds, if not thousands, of investment opportunities. It is imperative that a fund's alternative investment program efficiently, thoroughly, and accurately gauge the quality and risk factors associated with each opportunity before making an investment decision. Alternative investments are typically for a set investment period, often 8-12 years. Early exit opportunities are limited, and, if exercised, often result in a discount to the fund value. As such, it is very important for the terms, conditions, and investment expectations to be thoroughly understood before a commitment is made.

In the alternative asset classes, namely private equity, real estate including timber, and hedge funds, each investment is unique and affected by a different set of variables. Investors need to be strategic and portfolios should be constructed over a multi-year period diversified by manager style, strategy, geographic region, and other portfolio characteristics. In addition, it is important to be cognizant of historic returns, due to performance persistence[6] with some private markets managers, and capital flows.

Private markets present specific challenges to due diligence procedures. For alternative investments, the objective of the qualitative and quantitative due diligence process should be to obtain a clear understanding of the risk and return of the investment. The steps in the due diligence process include (1) identifying skilled managers, (2) validating a verifiable track record, (3) assessing the compatibility of the general partnerships ("GPs") with investment strategy, (4) checking references, (5) understanding the manager's economics, (6) achieving a comfort level with their decisions, (7) ensuring proper corporate governance, (8) reviewing legal terms and conditions, and (9) making sure adequate reporting policies and procedures are in place. Programs can use a range of internal and external methods and resources to ensure complete due diligence.

Findings and Analysis

The table on the following page compares the steps of the NCRS' private markets due diligence selection process with those of best practices.

[6] Some research supports the theory that private equity managers that have good performance are more likely to continue to have good performance, while this does not appear to be the case for public equity managers.

Table 6.2 – Best Practices in Private Markets Manager Selection

Best Practices Due Diligence for Private Markets Manager Selection	Current NCRS Practice		
	Real Estate	Private Equity	Hedge Funds
Market scan			
Screen for available opportunities	✓ Yes	Limited	✓ Yes
Identify appropriate mandates	✓ Yes	✓Yes	✓ Yes
Deal/fund screening			
Initial assessment of portfolio fit and stage	✓ Yes	✓ Yes	No
Initial assessment of management experience	✓ Yes	Limited	✓ Yes
Preliminary assessment of strategy	✓ Yes	✓ Yes	✓ Yes
Preliminary due diligence			
Summary review of strategy	✓ Yes	✓ Yes	✓ Yes
Assessment of experience of the GP	✓ Yes	Limited	✓ Yes
Review of track record	✓ Yes	Limited	✓ Yes
Examination of offering documents	✓ Yes	Limited	✓ Yes
Completion of telephone interviews	✓ Yes	Limited	✓ Yes
In-depth due diligence			
Interview with investment management team	✓ Yes	✓ Yes	✓ Yes
Contact references	✓ Yes	Limited	Limited
Research of GP's incentives and alignment of interests	✓ Yes	Limited	Limited
Review of public information on the fund/management team	Limited	No	✓ Yes
Review track record	✓ Yes	✓ Yes	✓ Yes
Recalculate IRRs for each investment	N/A	No	N/A
Recalculate IRRs for each portfolio (net of fees and profit participations)	N/A	No	N/A
Benchmark IRRs, cash flow multiples, and distributions	✓ Yes	Limited	N/A
Independently analyze performance by strategy and other issues pertinent to the GP	✓ Yes	No	✓ Yes
Complete in-depth questionnaire	✓ Yes	Limited	✓ Yes
Assess perceived skill (industry/market opportunity, information advantage, proprietary deal flow, relevant experience, depth of investment talent, quality of co-investors, stability of strategy, benefit to underlying companies)	Limited	Limited	✓ Yes
Review of fund size/competing accounts	Limited	No	No
Review of cost and fees	✓ Yes	✓ Yes	✓ Yes

Best Practices Due Diligence for Private Markets Manager Selection	Current NCRS Practice		
	Real Estate	Private Equity	Hedge Funds
Assess product fit	✓ Yes	✓ Yes	✓ Yes
Assess ownership	✓ Yes	Limited	✓ Yes
Review partner turnover	✓ Yes	Limited	✓ Yes
Review GP's competing lines of business	Limited	No	✓ Yes
Assess firm culture	✓ Yes	✓ Yes	✓ Yes
Review GP's reputation	✓ Yes	Limited	✓ Yes
Assess reporting and risk management platforms	Limited	No	✓ Yes
Review financing and counterparty agreements	No	No	No
Review internal process documentation	✓ Yes	Limited	✓ Yes
Assess investor relations capabilities	Limited	Limited	✓ Yes
Legal review and negotiations			
Evaluate key man provisions	✓ Yes	✓ Yes	✓ Yes
Review distribution waterfall	✓ Yes	✓ Yes	✓ Yes
Review clawback provisions	✓ Yes	✓ Yes	✓ Yes
Review side letters	✓ Yes	✓ Yes	✓ Yes
Review investment limitations	✓ Yes	✓ Yes	✓ Yes
Thorough legal and business review of limited partnership agreement	✓ Yes	✓ Yes	✓ Yes

Although there are areas where the analysis was not as in-depth or comprehensive as it could have been, many of the NCRS processes compare well to those of best practices. Similar to EnnisKnupp's findings for public managers, documentation of the process could be improved. The IMD staff should be able to quickly provide documentation of the due diligence process if questions are asked about the selection of an investment manager. Currently, a uniform documentation process does not exist.

Below, EnnisKnupp discusses more specifically the IMD's selection practices in each of the three alternative asset classes of private equity, real estate, and hedge funds.

Private Equity

The majority of the screening, sourcing, and due diligence private equity processes are completed internally by the IMD alternative asset investment staff – currentlythe Private Equity Portfolio manager. The prior CIO was also materially involved in the process. In addition, the NCRS' private equity consultant,, Strategic Investment Solutions ("SIS"), provides input on select issues. SIS will share deal logs, market views, and investment ideas with the IMD staff, but overall its involvement with manager selection is limited. SIS, only assists the IMD on a selective basis, and is not consistently involved in all aspects of manager screening and selection. This is atypical for a program where only one to two internal investment professionals conduct a majority of the due diligence.

Compared to other public funds with a similarly complex private equity portfolio, having two or less internal staff members responsible for the manager selection process is below average. Many other institutional investors either have a larger, more senior staff, or more hands-on comprehensive assistance from an outside advisor. This allows staff to leverage external resources, be more fully apprised of available opportunities, and complete advanced analysis.

The IMD staff begins the investment process by identifying areas of focus, contacting private equity funds, and conducting introductory meetings. While the NCRS makes a good effort in the market scan in light of current staff resources and time constraints, our discussions with the IMD staff revealed the initial market scan was not always comprehensive. An IMD investment professional creates and submits a preliminary diligence memorandum which is shared with the CIO and ultimately submitted to the Treasurer, who must approve or reject the fund for further due diligence.

Early in the investment process, staff reviews fund documents for basic terms such as management fees and carry, general partner commitment, key man clause, and no-fault dissolution that may simply prevent the NCRS from moving any further in the process. Typically, the IMD staff provides the general partner of the fund with a list of the NCRS preferred terms and conditions, as well as the NCRS standard side letter provisions. The NCRS asks the general partners to review this document (prior to an onsite due diligence visit), and to highlight any items with which they have an issue. The IMD staff and the general partner will have a conference call to review any such items requiring attention. The preferred terms and conditions, as well as standard side letter template, are updated periodically. If there are provisions that the NCRS must have with which the general partner does not agree, the IMD staff will not schedule an onsite visit.

When a due diligence request is approved, the full research process is conducted by the IMD staff (or, in several instances, by the investment consultant, SIS). Due diligence is completed with onsite meetings, conference calls, online data resources, and reference calls. These are all useful ways to complete research on a fund manager. A full due diligence report is submitted to the Treasurer for investment approval.

The due diligence memorandums are accurate. However, the majority of diligence is currently completed by a single investment officer.[7] Due to the size and complexity of the portfolio, EnnisKnupp believes additional resources should be dedicated to private equity due diligence. [See recommendation in Section 2 (2.II) regarding the need for additional staffing.] In some instances, fund returns and value creation analysis are not independently verified and will come directly from the fund manager. Typically, comparable programs will have input from more than one senior private equity professional with significant alternative investment experience.

[7] The new CIO's role in this regard has not been determined.

Investment experience is particularly crucial for the private equity asset class since these investment funds do not publicly disclose information and performance. Even reputable, useful data aggregators, such as Venture Economics, will not have absolute, comprehensive coverage of a private equity fund, a sub-asset class, or competitive set. Thus, it is crucial for institutional investors to have seasoned, private equity investment decision-makers who can navigate an extremely broad and fairly opaque, illiquid sub-asset class. Additional resources and support will allow for more thorough and in-depth diligence, extensive analysis of investment research, and more extensive quantitative analytics on track records.

For example, in the current due diligence reports, staff accurately displays investment manager track records and uses strong past performance as support for investment recommendations. This analysis can be further strengthened by more advanced track record analytics and benchmarking, which staff currently does not have the time or resources to complete. Additional resources can help the NCRS private equity portfolio manager independently rebuild manager track records and performance analysis, and reconstruct performance models from audited, independently verified third party cash flows. Additional resources will also broaden coverage and assist in quantifying a manager's potential to add value to the private equity platform.

The Treasurer approves the investment subject to legal review. Legal review is conducted primarily by external legal counsel in conjunction with the IMD staf. The legal review includes negotiation of any side letters and the limited partnership agreement. In this regard, the NCRS is meeting best practice by employing outside legal counsel to negotiate and review these documents. The process concludes when the Treasurer signs and executes the side letter and limited partnership agreement. After the closing, the IMD staff notifies SIS. Many other institutional investors, when using a consultant, tend to receive advice on all aspects of the selection process, as opposed to notifying them once the deal has been completed. The IMD also notifies Credit Suisse, the back office provider, so that it can arrange to track fund performance.

Real Estate

The IMD real estate unit follows a detailed, outlined process to research potential real estate managers. The IMD evaluates many important factors in the selection process. Guided by the portfolio's annual strategy and pacing model, staff reviews the marketplace to identity all managers offering funds in a particular style and strategy. The IMD staff has access to the real estate consultant's, Courtland, database. The IMD is also in the process of developing its own database. These managers are screened based on performance, organizational resources, and stability. If managers pass the initial screen, staff reviews all documents such as the private placement memorandum and terms and conditions. The CIO is notified of potential interest, who in turn notifies the Treasurer. If approval is granted to move on to the full diligence phase, a detailed questionnaire is sent out and reviewed. Staff makes reference calls and conducts onsite meetings. Onsite meetings focus on discussions with key investment personnel from different departments, property tours, and a close inspection of all internal investment review processes. In short, the IMD staff conducts a thorough in-depth due diligence.

Due diligence efforts are primarily conducted by staff with assistance from Courtland depending on the situation. Courtland's contract stipulates up to four searches a year, although they will also share information and observations with the IMD staff on most manager searches during the due diligence process. For example, when the IMD is surveying the universe of available investments, a verbal dialogue is held with Courtland. Also, Courtland will provide observations on best-in-class managers during the initial search process.

Based on the due diligence process, the IMD staff provides the Treasurer a memorandum with an adequate amount of information. The information includes manager overview, strategy, risks, terms, performance, and recommendation for the selection. The memorandum could have more detail and analysis. For example, the memorandum could include more information on how the investment fits in the entire NCRS Portfolio, detailing the risks of the investment and describing the steps of the due diligence process. It would also be beneficial to mention in the memorandum the outcomes from the reference checks and a competitive analysis of the manager compared to others in the market.

The final stage of the process includes a legal review by outside counsel, which is done for every investment. The information gathered from the diligence efforts is reported in a memorandum to the Treasurer outlining an overview of the manager and the strategy with the risks associated with them, terms, performance, and recommendation. As part of the due diligence process, the NCRS receives a written letter from legal counsel regarding the terms and conditions of the participation documents. Input by legal counsel that has subject matter knowledge and expertise, and documentation of their opinion is consistent with best practices.

Hedge Funds

Currently, the hedge fund portfolio is very small, and over a third of these funds are in the process of being liquidated. The staff charged with evaluating hedge funds does not have access to hedge fund databases.

EnnisKnupp focused the review on the selection process used for an investment manager that was funded in July 2008. When evaluating this manager for initial inclusion in the portfolio, the former CIO composed a due diligence memorandum summarizing the opportunity. The well-written memorandum included a reasonably balanced view of strengths and weaknesses of the manager. However, the memorandum did not discuss fees. Moreover, the memorandum did not address the expected volatility of the fund, which we would expect to be substantially greater than that of the HFRI. It represents an appropriate benchmark for most hedge fund-of-funds investments given its focus on emerging managers. The memorandum did focus on the downside protection capabilities of the fund, which is an appropriate way to measure the risk of a hedge fund. The NCRS' outside legal counsel was involved in a legal review of terms. As previously noted, input from legal counsel is consistent with best practices.

The NCRS' limited partnership agreement includes best practice terms such as a "most favored nation," confidentiality provisions, and key man provisions which are investor friendly structures that reduce the operational risk of investing.

An appropriate due diligence process covers both investment and operational risks. Additional focus on operational risks, such as the size of the NCRS' investment as a percent of assets under management, staff size, back office capabilities, and other relevant factors, in the due diligence process would benefit the NCRS.

In short, EnnisKnupp believes the NCRS hedge fund due diligence process follows common practices However, we believe the due diligence memorandums should discuss fees. In addition, the due diligence process should also focus on operational risks. The recent transfer of responsibility of the hedge fund program from the alternatives unit to the public equity unit can also add uncertainty to the evaluation process.

Conclusion

Overall, the NCRS manager selection process for private equity, real estate, and hedge funds is adequate. With the limited assistance of consultants, staff reviews many of the elements EnnisKnupp believes are present in a best practice process. Further documentation would provide better evidence of the course of action taken for the search and selection decision-making process.

The main concerns are with regard to resources. The IMD staff has responsibility for screening and researching a very large universe of investment managers, and evaluating complex investment opportunities. Without additional resources, it is difficult to ensure that all opportunities and relevant concerns will be identified, extensively evaluated, and adequately addressed.

Recommendations:

1. Utilize a private equity investment consultant more extensively to provide in-depth due diligence, analysis of investment research, and quantitative analytics on manager track records.
2. Enhance the private equity due diligence memorandums by including more advanced track record analytics and benchmarking.
3. Enhance the real estate due diligence memorandums by including: (1) a competitive analysis of other real estate funds in the marketplace with similar strategies; (2) information on sources of the due diligence process, including review of reference call; and (3) outline of the fund's parameters and limitations.
4. Enhance the hedge fund due diligence memorandums by including an analysis of fees and operational risks.

[See recommendation in Section 2 (2.II) regarding the need for additional staffing.]

III. Ongoing Manager Monitoring

Background

According to best practices, staff and investment consultants of public funds should update the fiduciaries on investment manager performance and organizational stability. EnnisKnupp advises that staff, often in conjunction with the investment consultant(s), perform ongoing due diligence on the managers including periodic onsite visits and a review of any changes in the factors used in the selection process. For example, special attention should be given to the manager's ownership, organization, key personnel, style drift, and investment philosophy. It is also important for internal managers to be held to the same review process and standards as external managers.

It is best practice for the manager assessments to be in writing. These assessments should be provided to the fiduciaries periodically (either quarterly or annually). These assessments help fiduciaries identify issues that could negatively impact performance or increase risk. Such documentation states whether or not staff or the investment consultants have any concerns. The assessment also evidences what due diligence has been performed and demonstrate that fiduciaries are meeting their duty of prudent oversight. Furthermore, it is important to properly store due diligence memorandums, notes, and analysis. This practice lends support to the previous investment decisions. Best practices dictate that such documents are stored electronically in compliance with a disaster recovery plan.

Private market investments are often illiquid—meaning that when the investment is first made the exit opportunities are limited. Since a limited partner's influence can still impact the operations and investment strategy adherence of a fund, ongoing investment monitoring is still important. Post-selection diligence operations and monitoring constitute a significant component of success, as a program must effectively interpret management changes, investment activity, changes in strategy, cash flows, and exit activities. Both internal and external professionals can obtain this information from manager meetings and fund communications. Key program decision-makers must periodically obtain and interpret this information to ensure proper compliance with the stated investment policy and also industry best practices.

Findings and Analysis

Public Equity Managers

The IMD monitors equity managers by conducting conference calls with managers, attending annual onsite due diligence visits, comparing results to peer managers, and completing monthly or quarterly write-ups on the managers. The IMD staff presents the outcomes of these monitoring activities during periodic strategy updates and asset allocation reviews to the Treasurer and the IAC. The IMD staff bases funding and rebalancing recommendations, in part, on due diligence findings, which is reasonable. For example, a manager that has organizational concerns may be a funding source for rebalancing activity, as opposed to another manager that has no concerns.

EnnisKnupp believes the IMD's level of focus on ongoing manager monitoring, including onsite due diligence visits, is essential. Onsite visits allow staff and/or consultants to understand the manager's approach, delve deeply into organizational and back office questions, and meet others (traders, analysts, etc.) with which they would not otherwise have an opportunity to interact. Recently, costs related to due diligence trips have received some negative attention in the industry. While all travel should be done in accordance with a prudent policy, EnnisKnupp believes the relatively minor costs associated with due diligence efforts are appropriate for public pension funds.

The IMD staff also utilizes a "watch list" to monitor equity managers. A watch list identifies managers with which there is a concern. The IMD's watch list criteria includes:

- Deviation in style or capitalization
- Merger/acquisition activity
- Changes in portfolio manager
- Organizational issues
- SEC violations/litigation
- Excessive tracking error
- Performance

The NCRS watch list appears to be working well in keeping the Treasurer apprised of performance or organizational issues. In general, a watch list provides a structured approach to monitoring and terminating managers, which appears to be the result at the NCRS. However, possible drawbacks of a watch list include creating unnecessary pressure on the investment staff and encouraging managers to take more risk to "fix" performance. In addition, developing a comprehensive watch list can be challenging since there are a myriad of factors that may warrant concern. No watch list can include all relevant factors.

The fixed income portfolio, which is internally managed, is reviewed by the Treasurer and the IAC during quarterly meetings along with the other asset classes. The IMD staff also monitors performance and analyzes on a monthly basis under the same standards as those for the externally managed portfolios.

Private Equity

For private equity monitoring, the IMD members attend annual partnership meetings and monitor the general partner's performance and strategy. While annual meeting attendance can be valuable in educating staff, the program needs additional staff/resources to properly monitor and record fund events and performance. Due to time constraints, investment staff is not able to maintain and analyze annual meeting notes and updates.

Additional resources, either internal or external, would assist in covering annual meetings and enhance manager coverage. If this is not possible, the investment staff should prioritize annual manager meeting attendance and explore ways to participate in meetings remotely to reduce travel time. Some public funds have an outside party attend annual meetings, which eliminates the need for the general partner to reimburse investment staff directly for meals and travel in relation to annual meeting attendance. Such reimbursement can be appropriate in the context of an advisory board relationship. However, it also leaves a public fund susceptible to criticism by those sensitive to conflict of interest and bias within the decision-making structure.

Both SIS and outside legal counsel assist the IMD staff with the review of some limited partnership amendments. Occasionally, SIS provides advice regarding amendments that are more complex and unusual. Generally, staff handles routine amendments (e.g., extending the fund's raising period to accommodate a potential investor for a one-month period). When more complex or unusual changes are involved, more resources and expertise are needed to ensure comprehensive coverage. In such cases, advice from external legal counsel is obtained. The external legal counsel typically assists in the review and negotiation of the terms and conditions, side letter provisions, and the limited partnership agreements.

Additionally, program transparency can be enhanced by ensuring that all investment fund activities are well documented, tracked, and easily accessible for investment staff. For example, detailed annual meeting notes, changes to limited partnership agreements, and fund strategy changes should be maintained and stored on a database. Using tools such as an investment manager ranking template, which can be completed in support of an investment recommendation, would assist in ongoing investment monitoring.

For back office functions, the NCDST has retained Credit Suisse to track cash flows on a daily basis and record information from the general partners, such as capital calls and distributions. BNY Mellon serves as the program's custodian and manages the cash flows of the capital calls and distributions. The capital call process is initiated when the NCRS operations department receives a capital call notice. A ticket order is created and the operations professional has the ticket approved and sent to BNY Mellon for cash flow disbursement to the general partner. Cash flow distributions are also channeled through BNY Mellon, who receives and records cash inflows. EnnisKnupp was informed that at the end of each month the FOD reconciles all records of both BNY Mellon and Credit Suisse to ensure that cash flows match investment activities.

Overall, EnnisKnupp believes the NCRS meets common practices in private equity monitoring efforts. However, additional expertise and resources are needed to meet evolving practices.

Real Estate

EnnisKnupp believes the NCRS real estate staff also follows a detailed process to monitor existing real estate investments based on close inspection of a random sampling of four due diligence documents.

Staff, with assistance from Courtland, conducts annual onsite meetings, reviews amendment change requests, and monitors each underlying fund's investment activity. The NCRS uses its real estate consultant when possible, and asks it to complete full fund diligence to sharing information throughout the diligence process. Due to internal resource constraints, staff also relies on Courtland for assistance with amendment reviews. Given the current real estate environment and the 73 underlying funds and separate accounts, staff utilizes Courtland to their full potential (based on the contract) in covering these reviews. Although it is best practice for both staff and consultants to conduct such reviews, EnnisKnupp believes the NCRS current practice is acceptable given staff resources. Staff also relies on Courtland for annual meeting attendance if staff cannot attend. Courtland has worked closely with the IMD staff in these areas over the last year. In general, staff successfully follows a structured investment monitoring process with the assistance of Courtland. However, the number of annual meetings and amendment reviews comprise a large portion of the staff's time, precipitated largely by the current real estate environment. EnnisKnupp believes this prevents staff from achieving long-term goals like creating a formalized watch list with checklists and procedures.

There is an informal process for placing managers on a watch list. The watch list criteria includes strategy deviation, organizational changes, staff turnover, questionable proposed amendment changes, and performance. The IMD places managers on a color coded "status" (green, yellow, or red), and the Treasurer receives updates regarding the managers on the watch list.

Hedge Funds

While nearly all institutional investors delegate the vast majority of their due diligence to consultants or funds-of-funds managers, the IMD has retained this due diligence responsibility internally. The IMD staff frequently performs due diligence on single managers, including those where due diligence has already been completed by a fund-of-funds manager. These duplicative efforts use important staff time and reduce the benefit of fees paid to funds-of-funds managers.

It is also of concern that many due diligence and annual meeting notes compiled by staff are handwritten. Meeting summaries are only typed when the attending staff member requests State reimbursement for travel expenses.

The monitoring of the hedge fund program approaches best practices. Performance reports provide excellent information, including attribution and asset allocation of the specific hedge fund strategies. Recent redemptions, which may have been justified for asset allocation reasons, were explained well by staff.

<u>Conclusion</u>

The IMD's due diligence efforts related to the public markets portfolios are thorough and reflect the high level of attention warranted. The watch list has served as an effective tool in monitoring managers with which the IMD has concerns.

The NCRS private equity investment program is sizable, and therefore it could benefit from additional resources to support the efforts of the investment staff. More resources are needed to assist with comprehensive deal sourcing, meeting notes analysis, due diligence analytics, annual meeting coverage, limited partnership amendment review, reference calls, performance tracking, and investment policy compliance monitoring.

Staff follows a very detailed, structured, and thorough diligence process for the real estate portfolio investments. The IMD's process of documenting meeting notes and reference calls do not meet best practices primarily because of a lack of time and resources. Staff is aware of this issue and is in the process of researching new software and infrastructure to compile, organize, and store diligence information in a central, secure location.

Staff's due diligence of hedge fund investments is adequate. Certain elements however, such as fees, could be added to the write-ups. The documentation of the due diligence should be standardized and stored in a centralized location, along with other asset class due diligence procedures and findings. Additionally, as long as consultants and funds-of-funds managers are retained, the NCRS ought to allow them to perform due diligence on underlying investment managers, which would reduce the travel expense and the workload of internal staff.

Recommendations:

1. Utilize a system that organizes and centrally stores notes and other documents for the due diligence and monitoring process in accordance with the NCRS disaster recovery plan.
2. Ensure that all monitoring activities are well documented, including possible use of an independent third party to assist in covering and compiling notes for general partner annual meetings.
3. Use technology to track and make accessible all due diligence and monitoring memorandums and activities.
4. Increase resources to review terms, conditions, side letter provisions, and limited partnership agreements.
5. Evaluate the use of consultants and funds-of-funds managers to monitor underlying hedge fund managers.

[See recommendation in Section 2 (2.II) regarding the need for additional staffing.]

IV. Investment Manager Guidelines

Background

In addition to managing risk through asset allocation, funds can control risk by imposing clear guidelines on the investment managers that implement the asset allocation. These fiduciaries should establish such guidelines that will limit the deviation an active investment manager may take relative to its benchmark in its attempt to add value. Investment manager guidelines allow for fiduciaries to exercise some control over a manager's investment strategy in order to limit risk. However, there must be a balance between providing an appropriate level of risk control and unduly constraining the manager's investment opportunity.

Findings and Analysis

The NCRS uses an investment management guideline template, identifying the following:

- Restrictions on short positions
- Maximum asset weights
- Maximum sector weights
- Maximum cash allocation
- Expectations for tracking error/excess return
- Investment restrictions

Institutional investors commonly define these types of risk parameters, and they are a good way to establish allowable risk in the portfolio. While expected tracking error is identified, the manager guideline template does not specify the range of active-risk that a manager can use in an attempt to earn excess return. In theory, a manager could employ an undesired level of risk in its efforts to earn excess return.

When restrictions or maximum weightings exist, it is important that adherence be monitored. The Investment Operations Unit, which utilizes the BNY Mellon's monitoring platform, reviews compliance of manager guidelines on a daily basis. Using a custodian's compliance monitoring services is a common and good practice, and BNY Mellon's compliance monitoring tools are effective. Monitoring compliance on a daily basis is a best practice.

Staff decides if they need to follow-up with the manager regarding guideline violations. Exceptions to guidelines are typically not communicated to the Treasurer unless they are determined to be material or are persistent in nature. Typically, staff assumes responsibility for guideline compliance monitoring. Providing a high level monitoring report to the Treasurer on a periodic basis is a good practice.

Conclusion

Guidelines need to strike a reasonable balance between risk controls and providing active managers enough latitude to implement their investment approach. The investment management template constitutes an adequate tool to limit risk. The NCRS manager guidelines are monitored appropriately. In addition, NCRS can further convey its risk tolerance by establishing active-risk ranges or targets for investment managers.

Recommendation:

1. Add active-risk parameters to the manager guideline templates as a quantifiable and permissible measure of risk.

INTRODUCTION

A number of indispensible services supports an institution's investment program. These services include brokerage and trading, custodian bank functions, and investment accounting and operations.

Brokerage and trading represent the process of buying and selling securities. Although the importance of brokerage and trading to the asset management process is often overlooked, these services generate significant transaction costs. Therefore, institutional investors have a duty to monitor "best execution" and the impact of costs on investment performance.

There are two elements of trading costs that should be consistently reviewed and evaluated: commissions and market impact. Commissions are the most visible and easiest component of trading costs to measure, but they constitute only a small component of total trading costs. The more significant component is the implicit market impact of the transaction such as the price paid or received for the security relative to the "market." The market component is difficult to measure. The negative price impact due to the improper handling of trade can produce much greater costs than commissions. Public funds often use an external service provider to assist them in assessing the efficiency of trading costs. A number of recognized companies, including several large custody banks, provide transaction cost analysis services.

The primary role of a custodian bank is safekeeping, account for, and report on the assets of an investor, such as a pension fund. The typical services that leading custodian banks provide their clients include: safekeeping and valuation of the assets, managing settlements relating to the purchase or sale of securities, handling collection of income and dividends on investments, assisting with voting proxies, and handling corporate actions on underlying securities, accounting for the investments and investment transactions, managing cash investments, and operating a securities lending program.

A strong custody bank relationship is critical to a successful investment program. The custody business is an extremely technology based business. In our opinion, the superiority of a custodian's technology platform is a key driver of its ability to consistently provide clients with the type of information they seek. When looking at the "top-tier" custodians, it is important to examine the type and scope of services offered. Given that the leading banks spend significant time and money in maintaining technology platforms, another key differentiator is the quality, depth of knowledge, and experience of the client service team assigned to a client relationship.

Securities lending is another investment related function which many large institutional investors participate in as part of their overall investment program. Although securities lending revenue typically constitutes a few basis points at the total fund level, the absolute dollar amount can be significant and can serve to offset a large portion of the costs incurred in running an investment program.

Investment accounting functions include identifying, categorizing, combining, and summarizing investment transactions. These functions are needed to make certain that all investment related transactions are properly recorded and reported, and are in compliance with the stated policies and guidelines. The investment accounting process serves as a fundamental internal control. It provides reasonable assurance to the fiduciaries that fund assets are properly safeguarded. To be consistent with best practices, investment accounting and operations should be independent of the people who have control and are making decisions regarding assets (e.g., external or internal investment managers).

SCOPE OF REVIEW

In this Section of the Report, EnnisKnupp focused on the following areas:

I. Brokerage and Trading
   A) Elkins/McSherry, LLC (public equity investments: trade cost analysis services)
   B) Use of Minority and Women Owned Businesses
II. Trust and Custody Arrangements
   A) Custodian and Custodian Fees
   B) Guidelines, Policies, and Procedures for the Short-Term Investment Fund
III. Securities Lending Programs
IV. Investment Accounting and Operations
   A) Investment Accounting System
   B) Internal Control Framework
   C) Trade Order Entry Management System
   D) Reconciliation Process Between Custodian and Accounting System

I. Brokerage and Trading

A) Elkins/McSherry, LLC (public equity investments: trade cost analysis services)

Background

Fiduciaries have a duty to maximize returns within a given risk tolerance and to minimize expense. Trading costs represent a very significant expense incurred in the asset management function. Therefore, it is critical for public funds to monitor and evaluate the effectiveness and efficiency of trading and determine whether "best execution" has been achieved. The obligation of "best execution" is codified in NASD Rule 2320. It requires that investment managers and broker/dealers, when executing a transaction, must use "reasonable diligence" to obtain the best possible result for the client. The requirement allows price, costs, speed, likelihood of execution and settlement, size, nature, or any other consideration relevant to the execution of the order to be taken into account.[1] This information can then be used to assist the fiduciaries in assessing the affect of trade execution on the overall performance of an investment manager.

Many public funds use an external service provider to assist them in measuring the costs and quality of trade execution by using sophisticated analytics to measure the performance of the brokers and traders used by the public fund's investment managers. Different approaches are used to establish the benchmark against which the transaction costs are measured. Examples of benchmarks commonly used include: Volume Weighted Average Price ("VWAP"), Implementation Shortfall, Arrival Price, Average Price, Open Price, Close Price, and Previous Night's Close. Some service providers have the ability to create a customized benchmark based on the client's requirements.

Findings and Analysis

NCRS retains Elkins/McSherry, LLC ("Elkins") to conduct trade cost analysis for all domestic and international equity trades executed by its investment managers. Elkins, a wholly owned subsidiary of State Street, has been a provider of global transaction cost analysis since 1991. Elkins' database includes time-stamped trade execution data for over 20 million trades, representing $5 trillion and 400 billion in shares traded across 208 exchanges in 47 countries worldwide. The database is used to generate reports on average commissions, market impact costs, and total costs across different markets on a quarterly basis. Elkins compares its clients' trade execution to its universe to determine the quality of trade executions by its clients' managers. Elkins' database comprises trading data from investment managers and plan sponsors, such as North Carolina. Elkins does not charge North Carolina a separate fee for its services. The services are provided as part of the contractual relationship with the custodian, BNY Mellon. Elkins Benchwork includes use of "VWAP".

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[1] See National Association of Securities Dealers ("NASD") Rule 2320 and Rule 2440, as amended by FINRA Rule 2010. The text of the Rules can be found in the FINRA Manual, www.finra.org/finramanual. See also, *European Markets in Financial Instruments Directive 2004/39/EC - Article 21*.

EnnisKnupp reviewed the Elkins trade execution reports prepared for the IMD for Q109. These reports covered approximately $3.8 billion in total principal traded in domestic equity markets including both passive and active managers and $3.1 billion in principal traded in 36 international equity markets. In addition, we drew from our ongoing research in transaction cost analysis and, more specifically, our experience with Elkins.

The reports prepared by Elkins for IMD are sufficiently detailed to allow the IMD to thoroughly review NCRS' investment managers' trading. The following is a list of some of the data Elkins provide relating to trade execution::

- For non-U.S. equity trading, a comparison of total trading cost to Elkins' total trading cost universe. Total trading cost includes commissions, fees, and market impact. Market impact is measured as the difference between the trade execution price and the VWAP of the stock on trade date. WVAP is calculated as the sum of dollars traded for every transaction divided by the total shares traded for the day.
- For U.S. equity trading, a comparison of NCRS' difference relative to VWAP, and the Elkins VWAP universe.
- For U.S. equity, a comparison of NCRS' trading relative to VWAP both for the aggregate trading and for trades across different market capitalization ranges and sectors.
- Detailed comparison of NCRS managers' trade execution relative to VWAP, including the quality of the managers' trade execution across the market capitalization segments and across different brokers.
- For international equity trades, the performance of trade execution by each country.

In addition to comparing NCRS' U.S. equity trading to the VWAP universe, it would be valuable to include a comparison of total execution cost for the VWAP universe. Since no transaction cost analysis is perfect, the IMD should consider the benefits and shortcomings of each approach in making qualitative judgments of the results. For example, for international equity trades, the evaluation of foreign exchange execution costs are ambiguous at best due to the nature of the foreign exchange markets.

Elkins provides a one-page commentary for the IMD to consider. The comments do not contain any recommendations from Elkins. A summary assessment of the details in the Elkins report would be of value. The summary should identify critical issues and suggest solutions. For instance, it would be useful to know whether an individual manager's sub-optimal trading costs from a quantitative standpoint are meaningful given the nature of their portfolio strategy and trading. This would enable the IMD to address issues with the manager, if appropriate.

Conclusion

In general, the methodology used to evaluate total trading costs is appropriate. Elkins provides useful information to the IMD, which is needed to effectively and efficiently monitor and analyze the brokerage and trading process. Enhancements to the information currently provided would add value.

Recommendations:

1. Consider requiring Elkins to provide measurement of costs against a total cost universe for the U.S. equity trades, in addition to the VWAP universe.
2. Review the transaction cost measurement process used by Elkins to provide measurement of costs against a total cost universe for the U.S. equity trades, in addition to the VWAP universe.
3. Consider requiring Elkins to provide a more robust qualitative summary assessment, including recommendations where appropriate and a list of follow-up issues for the IMD staff.

B) Use of Minority and Women Owned Businesses

Background

Typically, a public fund's investment managers have sole discretion of the broker-dealer selection. However, a number of public funds have statutory or policy mandates requiring that a portion of their brokerage and trading be allocated, subject to best execution, to minority and women owned businesses ("M/WBE") or "HUB" M/WBE and HUB directed brokerage mandates are fairly common and viewed as a means to demonstrate a commitment to diversity and to encourage economic development. Illinois, Ohio, and Maryland are examples of states that have instituted specific M/WBE legal requirements. New York City, New York State and the District of Columbia are examples of public funds that have instituted such programs by policy. Some public funds compile a database that lists minority and women owned firms. Others will obtain information by using the proprietary M/WBE database of a third party vendor. To be eligible for inclusion in a database, firms typically must complete a detailed questionnaire, meet certain pre-determined criteria, and be certified. Examples of criteria include: execution capabilities, technology platforms, and capital commitment. To promote transparency, the public funds often prepare and publish their W/MBE list and a report that describes the fund's usage, including local usage.

Findings and Analysis

The NCRS maintains a program directed at developing HUBs. The State of North Carolina also has a HUB program managed by the Department of Administration. Firms seeking to become a part of the program are required to provide detailed information on their corporate structure, compliance and audit policies, litigation or conflicts, trading process, and firm resources. Additional due diligence is also conducted and firms' qualifications are reviewed annually. Qualified firms are placed on a recommended list that is also distributed to external managers for their consideration. It is clear, however, that best price and execution are not to be compromised. We were informed that the external investment managers, as well as the staff responsible for the internally managed fixed income portfolio, are challenged to use HUB qualified broker/dealers.

Based on EnnisKnupp's review, the October 2008 NCRS Policies are silent on the use of HUBs. However, the Publicly Traded Equity Policy does address directed brokerage. The sample investment management agreement also does not contain any reference to the HUB program.

For the equity portfolio there are 15 approved HUB broker/dealers. For purposes of the internally managed fixed income portfolio, the 2008 Comprehensive Annual Financial Report ("CAFR") reported a list of four brokers that had been qualified for fixed income trading. Of these four firms, two were listed in the 2008 CAFR as being used for purposes of fixed income trading. The number of qualified firms in the program increased when compared to the prior year. While four might seem like a limited number, it is important to note that the use of smaller firms for fixed income trading can be problematic due to the principal requirements for settling trades. HUB and M/WBE are often smaller firms and it may be difficult for such firms to maintain the required capital level of their own liquid assets.

The trading report from Elkins McSherry for the Q109 has information on the top 20 brokers used across all managers and asset classes. There may well be wider use in the various externally managed portfolios, but of importance is that there are three firms that appear in the top 20 as both the NYSE[2] and NASDAQ trading reports. One of the three minority firms noted in the trading report from Elkins McSherry had not only the highest trading volume by shares during the Q109 for NYSE, but also one of the lowest commission rates, and an attractive average market impact cost.

Conclusion

The HUB program is having a positive impact on the use of minority and women owned broker/dealers in the NCRS investment program.

Recommendations:

1. Include a reference to the HUB program in the NCRS Policies and investment manager agreement.

[See Section 1 (1.I.A) for our recommendation to include HUB usage in an investment transactions report.]

[2] New York Stock Exchange

II. Trust and Custody Arrangements

A) Custodian and Custodian Fees

Background

Custodian banks safeguard fund assets, arrange settlement of any securities purchased or sold, manage cash transactions, and report information to their clients. The custodian bank often serves as the official "book of record." It is on this information that performance is typically calculated, so ensuring that custodial services are accurate and timely is important. Some custodians also provide other services to clients, such as performance measurement, compliance monitoring, and securities lending.

Custodian banks with sizeable assets benefit from economies of scale and function more efficiently than smaller banks. Further, banks with larger custody businesses accrue more experience and tend to maintain state-of-the-art operations. The latter is important as the custody business has become an increasingly technology-driven business. Also, organizations that derive a significant portion of their revenues from the custody business are likely to be more stable and take the necessary steps to remain competitive.

The best fit for a public fund is to use a custodian bank with sufficient experience and expertise to meet their specialized needs. Top-tier custodians will also offer high quality client servicing.

Findings and Analysis

BNY Mellon is the custody bank for the NCRS. In addition to the NCRS, BNY Mellon has over 180 U.S. based public fund clients with over $1.1 trillion assets under custody. Of these clients, over 120 each have $15 billion or more in assets.

BNY Mellon resulted from the 2007 merger of the Bank of New York ("BNY") Mellon Financial Corporation ("Mellon"). The merger between the two entities created multiple synergies from a custodial services prospective. The former Mellon organization had a large presence servicing institutional clients such as pension funds, foundations, and endowments, while the former BNY organization focused more on providing custody and administration services to mutual fund organizations. The merger allows the combined entity to deliver best-in-class asset servicing solutions to all types of clients and to possess the ability to leverage a strong technology and operational backbone. To the best of our knowledge, the integration of the two operations has gone smoothly thus far, and EnnisKnupp has a favorable view of how the merger has been executed.

The scope of NCRS relationship with BNY Mellon includes securities custody and accounting for the entire investment program, management of a short-term investment sweep vehicle (to invest idle cash in manager accounts), security trades processing, income collections (interest, dividends, etc.), tax reclaim processing, class action processing, and performance and analytical services. BNY

Mellon also provides securities lending services and is the exclusive lender of all of the NCRS internally managed fixed income portfolios.

NCRS receives performance and analytical services from BNY Mellon, and has the ability to access these services through the BNY Mellon Workbench online platform. Staff is able to produce fully customizable performance and analytics reports online via the Workbench system. These reports are then used by the IMD to compile monthly performance reports.

EnnisKnupp believes that the single most important factor in determining the level of client satisfaction is the quality of the people assigned to the custody relationship. At BNY Mellon, each relationship manager has between 8 to 10 clients with the average relationship manager having 20 years of custody experience. According to our discussions with the IMD, the staff is pleased with the level of service that NCRS has received from BNY Mellon relationship team. In addition, the IMD was impressed with the accuracy of the accounting and performance reports received from BNY Mellon.

NCRS pays BNY Mellon a flat annual fee of $1,800,000 for custody services. Assuming assets under custody of $70.0 billion, the custody fee represents approximately 0.25 basis points of Total Fund assets. For an investment fund of this size and structure, the fee is competitive. In addition, BNY Mellon currently is the exclusive lender of all of the NCRS internally managed fixed income portfolios. BNY Mellon offers the NCRS a split of 90% of securities lending income. [Securities lending is discussed in detail later in this Section (7.III).]

In addition to the flat custody fee, BNY Mellon charges NCRS a fee of 9 basis points on assets invested in its STIF cash sweep vehicle. Based on our analysis, EnnisKnupp finds this fee to be competitive when compared to those of other clients.

<u>Conclusion</u>

BNY Mellon is a top tier custodian in the industry. EnnisKnupp views the merger of the former BNY Mellon favorably, and has been impressed with integration of the two organizations. We have a very high regard for BNY Mellon’s capabilities and believe the fee NCRS pays for custody services is competitive when compared to similar investment programs.

Recommendations: None.

B) Guidelines, Policies, and Procedures for the Short-Term Investment Fund

<u>Background</u>

Generally, STIF investments are traditionally utilized by institutional investors to provide overnight or short-term liquidity within an investment program. Given the nature of these investment funds, guidelines and policies are designed to achieve the following three objectives: (1) capital preservation, (2) liquidity, and (3) yield maximization. Preserving principal through prudent investment and diversification of assets is paramount to the management of STIF portfolios. To ensure prudence and diversification, institutional investors should develop and adhere to stated guidelines and policies, whether done internally or by external asset managers. More importantly, well-defined guidelines and policies also manage risk in the investment program. These guidelines and policies provide specific parameters such as weighted average maturity and credit quality. These parameters permit investment managers to navigate a stated mandate.

Findings and Analysis

EnnisKnupp reviewed the STIF Guidelines, Policies, and Procedures ("STIF Policy") which contains provisions that govern the internal management of the short-term investment fund ("STIF"). The STIF Policy is one of the six policies that make up the NCRS Policies. The structure of the STIF Policy provides a thorough outline guiding the mandate's objectives, requirements, and responsibilities. While certain elements and the spirit of the document are appropriate, we believe that more specific language is needed to reflect how the STIF is actually being managed on a regular basis. The IMD staff informed us that a laddering strategy, which limits exposure to longer dated fixed income securities and ensures short-term liquidity, drives the STIF investments. The STIF Policy should be amended to reflect the laddering strategy being employed on a regular basis. Further detail will aid in mitigating the potential for failure to meet the mandate's investment objectives, and will better reflect the parameters under which the IMD manages the portfolio.

There are three primary areas that should be addressed to bring the STIF Policy more in accord with best practices. Each is discussed below.

First, the STIF Policy lacks a target weighted average maturity ("WAM") and allowable ranges. In the Purpose and Standard of Care section of the STIF Policy, "reducing total portfolio return volatility" is a stated strategic objective. However, the document also indicates that the "STIF Portfolio can be invested in instruments that include AAA-rated corporate bonds, with maturities ranging from overnight to seven years." This latter statement should be qualified as it relates to the laddering strategy in order to reflect how these longer dated securities are actually incorporated in the STIF portfolio. Additionally, to avoid the occurrence of an asset/liability mismatch, EnnisKnupp believes that a target WAM and allowable ranges around that target WAM should be explicitly stated in the STIF Policy.

Second, the STIF Policy does not designate a benchmark. The IMD has historically utilized a two-year constant maturity U.S. Treasury note return as the benchmark. Benchmarks are essential as they provide fiduciaries with a basis of comparison for evaluating the performance of investment managers. Regardless of the mandate, EnnisKnupp believes that benchmarking provides accountability and a measurable value associated with active management. The absence of an explicit benchmark creates ambiguity and the potential for mismanagement of assets outside the scope desired. EnnisKnupp recommends that the Policy be amended to state explicitly that the two-year constant maturity U.S. Treasury note return is the benchmark, reflective of current practice. [See Section 5 (5.III) for a more detailed discussion on benchmarks.]

Third, the IMD staff may want to evaluate a few of the STIF Policy's goals and objectives. For example, the STIF Policy's primary objective is the "safeguarding of assets," rather than "preservation of capital." Typically, "preservation of capital" is identified as the primary objective in terms of asset allocations, although "safeguarding of assets" is a critical fiduciary responsibility.

Conclusion

The STIF Policy could be enhanced by refining it to impart more clarity and detail. Modifications to bring the current STIF Policy more inline with best practices include the following: (1) establishing a stated benchmark against which the internally managed STIF portfolio can be measured on an ongoing basis, which in practice is the two-year constant maturity U.S. Treasury note return; (2) specifying a target WAM and allowable ranges around the target WAM; (3) ensuring that the maturities of individual securities in the STIF Portfolio are limited in accordance to the laddering strategy currently being employed; (4) implementing formal guidelines for the STIF portfolio that establish maximum exposures and ranges to all security types; (5) defining the term "competitive risk-adjusted return;" (6) inserting "safeguarding of assets" or "preservation of capital" as the first objective, preceding liquidity and competitive returns, in the Investment Objectives section of the STIF Policy; and (7) removing the statement "[g]iven the high degree of liquidity and relative lack of credit and interest rate risk of STIF portfolio investments, there are no formal guidelines governing subsector allocation limitations," in the Investment Guidelines and Ranges section.

Recommendations:

1. Modify the STIF Policy to make it more consistent with best practices.

III. Securities Lending Programs

Background

Securities lending is an investment strategy used by many institutional investors to generate incremental revenue from their portfolios. There are two sources of revenue in a securities lending transaction: intrinsic and reinvestment revenue. Intrinsic revenue is generated by negotiating favorable rebate rates on the loan relative to the Federal Funds rate. Reinvestment revenue is generated by investing the collateral received against security loans in short duration fixed income securities.

Securities lending programs do have risks. EnnisKnupp advocates minimizing risk over maximizing return. The key risks include operational risk, counterparty risk, and reinvestment risk. Operational risk arises from the many moving parts that exist in a securities lending transaction, including monitoring compliance with borrower limits, tracking corporate actions, mark-to-marking loans daily, and recalling securities when they are sold. Recent advancements in technology among lending agents largely mitigate this risk. Counterparty risk is the risk that the borrower will default and will not be able to return the borrowed security, thus resulting in a loss. Overcollateralization of loans, indemnification provided by lending agents, and extensive due diligence conducted by lending agents on each counterparty largely mitigate this risk.

The most risk in a securities lending program is in the cash reinvestment portfolios. Typically, collateral is invested in instruments with longer dated maturities. This is done to capitalize on higher yields (assuming an upward sloping yield curve), creating an asset/liability mismatch as most security loans are overnight contracts. Collateral losses can result if interest rates rise, the issuer of the fixed income paper is downgraded, or the issuer defaults. In 2008, many securities lending clients experienced this risk when securities, such as Lehman and Sigma (structured investment vehicle), that were held in the collateral reinvestment portfolios defaulted. As a result, securities lending clients invested in these securities realized losses. The credit crisis exacerbated the problem because they were also restricted from redeeming out of interest. Therefore, in structuring a low risk securities lending program, EnnisKnupp strongly advocates the use of conservative investment guidelines for cash collateral reinvestment portfolios.

Findings and Analysis

EnnisKnupp reviewed the NCRS securities lending programs at both State Street and BNY Mellon. A discussion of each is provided below.

State Street

State Street is one of the largest custodian lending agents in the industry with $1.9 trillion in lendable assets and an average of $425 billion in assets out on loan daily. State Street has 10 years of experience in lending securities and a global presence with over 400 clients worldwide, 150 borrower relationships, and lending in 40 securities markets. State Street lends all of the various asset classes and manages the reinvestment of cash collateral within large pools or separate accounts. Currently, State Street has 21 third party lending clients with an average of $35 billion out on loan daily. State Street has 50 individuals dedicated to counterparty, market, legal, and compliance risks. It has built a solid technology infrastructure to support the lending business.

Currently, State Street Bank is used to lend equity securities, both U.S. and non-U.S. equity. State Street acts as a third party lending agent for the NCRS since BNY Mellon, rather than State Street, is the NCRS custodian bank. The current contract allows State Street the discretion to loan out securities based on the current lendable base of assets and does not impose any restrictions. As of June 1, 2009, North Carolina had approximately $6 billion in equity securities out on loan and earnings year-to-date were $27 million. The current fee split is 90% to NCRS and 10% to State Street. Given what we see for institutional investors with similar sized lending programs, the securities lending revenue split for the NCRS with State Street is extremely competitive.

NCRS uses State Street's Quality D fund and pays 0.5 basis points for reinvestment of the cash collateral. EnnisKnupp believes both the fund type and fees are reasonable. State Street's Quality D fund is a conservative, short-term investment vehicle that is diversified across various types of securities. It holds a diversified basket of short-term securities including U.S. government securities, asset-backed securities, commercial paper of U.S. and foreign banks, and corporate bonds. Although State Street was not immune to the depressed pricing experienced in late 2008, it did avoid exposure to Lehman, Sigma, AIG,[3] and other SIV[4] securities. As a result of State Street's lack of exposure to permanently impaired securities, their cash collateral pools did not "break the buck."[5] However, their underlying NAV did fall below $1 given the depressed pricing experienced in the fixed income markets. Due to this illiquidity and depressed pricing, State Street is restricting large redemptions out of the lending program in order to ensure fairness to all clients invested in the cash collateral pools.

As of June 2009, the guidelines for the Quality D fund are now more conservative and follow the 2a-7 guidelines that were put in place by the SEC for registered money market funds. The Quality D fund continues to be an appropriate cash collateral pool for many clients. However, given the size of the NCRS lending program, the Treasurer may want to consider creating a separate account for cash reinvestment. This approach would afford NCRS the flexibility to create even more conservative, custom investment guidelines for investment of the cash collateral from the loans .More conservative investment guidelines would serve not to only limit risk on the reinvestment side, but also to force the lending agent to focus on intrinsic lending or only lending those securities in the portfolio that will demand a high premium from the borrowing community. EnnisKnupp believes that this is the best way to structure a securities lending program that appropriately minimizes risk.

[3] American International Group, Inc.
[4] Structured Investment Vehicles.
[5] Decline in the normally constant $1 NAV of a money market fund, typically as a result of severe losses or investment income falling below operating expenses. *Barron's Dictionary of Finance and Investment Terms, Seventh Edition.*

The IMD receives monthly statements from State Street on the securities lending program. The statement provides the necessary information to appropriately monitor the securities lending program that NCRS has with State Street on a monthly basis. The monthly reporting package includes a report that details the total amount of securities on loan, the type of collateral received (cash or non-cash), and the level of overcollateralization. A second group of reports shows the securities lending earnings by asset class (U.S. and non-U.S. equity) for each month and also breaks out the portion of that revenue earned from lending or cash collateral reinvestment; however, we note that consolidated reporting that incorporates both BNY Mellon and State Street's lending programs is not provided to the IMD. Consolidated reporting that combines the information across a client's multiple lending agents is desirable and offered by a number of other third party lending agents.

Historically, the FOD was responsible for the securities lending program. After the events of September 2008, the decision was made to move securities lending into the IMD in order to monitor the program more closely from an investment perspective. Both the Director of Public Equity and the Director of Fixed Income have responsibility for overseeing the securities lending program. The Fixed Income staff has had multiple meetings with State Street to discuss the exposures that exist within the Quality D fund, and now receives security level detail of the portfolio on a monthly basis.

Bank of New York Mellon

BNY Mellon currently lends all of NCRS' fixed income assets invested in two internally managed portfolios, the STIF and the LTIF. BNY Mellon has full discretion to lend the fixed income securities on behalf of the NCRS as the contract does not specify any limits on how much they can lend or on specific asset types. As of April 2009, BNY Mellon had lent out approximately $14.5 billion and earnings year-to-date through April were $141 million. The current fee split is 90% to NCRS and 10% to BNY Mellon (comparable to the State Street split) with a minimum earnings amount for NCRS of $5 million. This means that BNY Mellon only collects its 10% on an annual earning amount of over $5 million.

BNY Mellon is one of the largest securities lending agents in the industry with a lendable base of $2.5 trillion and an average on loan balance of $300 billion daily. It has a sophisticated team of securities lending traders that have experience in lending across the various asset classes and seek to find the best rates. BNY Mellon has built sophisticated technology to enhance the ability of its traders to maximize value for clients and locate demand in a timely manner.

BNY Mellon manages the cash collateral for NCRS in two separate accounts, each tied to the two internally managed fixed income portfolios, the STIF and LTIF. The reinvestment guidelines are customized to reflect a risk profile that is similar to the underlying pool of assets being lent. Therefore, the STIF has more conservative reinvestment guidelines, while the LTIF has slightly more aggressive reinvestment guidelines. The main difference in the guidelines is that the LTIF's collateral reinvestment portfolio can invest in A or AA securities, provided that their final maturity does not extend beyond two or three years, respectively, while the STIF's collateral reinvestment portfolio must only invest in those securities that "bear the highest rating of at least one nationally recognized rating service" with a final maturity of no longer than three years. Besides this difference, the investment guidelines are virtually identical. Reinvestment risk should be minimized regardless of the underlying characteristics of the assets being lent. EnnisKnupp believes the IMD should create guidelines that impose the same requirements on both pools of fixed income assets.

The monthly reporting package provided to the IMD on the BNY Mellon securities lending program is very comprehensive in nature and provides information on all aspects of the lending program. BNY Mellon provides a consolidated report that details the combined earnings and assets on loan for the month and year-to-date period for both portfolios. In addition, BNY Mellon provides individual reports that detail the monthly earnings, market value of lendable securities, market value of securities on loan, percent of portfolio on loan, and the return on both available and on loan assets. The report further divides this information into the various asset classes (Agency, Corporates, U.S. Treasuries) as well as the sources of revenue including intrinsic and reinvestment spread.

As with State Street, the Director of Public Equity and the Director of Fixed Income have responsibility for overseeing the securities lending program. The Fixed Income team has had multiple meetings with BNY Mellon to discuss the exposures within the collateral portfolios and now receives reports and security level detail on the portfolio on a monthly basis. One of the IMD's goals for 2010 is to revisit the investment guidelines for both cash collateral portfolios. This effort is favorable and should add value to the process.

Conclusion

EnnisKnupp often advises larger clients with attractive assets to pursue those lending agents they believe to have the best capabilities in lending certain types of assets. This often results in moving the securities lending program away from the custodial lender, as is the case with the NCRS' equity lending program. Consistent with that rationale, EnnisKnupp believes that NCRS' use of State Street as a third party lending agent is favorable. Additionally, we have confidence in State Street's cash management capabilities. State Street was able to avoid all of the securities that defaulted in late 2008 and avoided realized losses for clients.

While Quality D remains a viable cash reinvestment pool, especially given the new conservative SEC 2a-7 guidelines, we encourage the Treasurer to pursue a separate account, which will provide the flexibility to create and control the investment guidelines.

BNY Mellon is a top tier custodian lender in the industry and has strong capabilities in lending securities. The majority of institutional investors utilize their custodian as their securities lending agent, and EnnisKnupp views BNY Mellon as a strong competitor in this space.

It is a best practice to periodically review the securities lending agents to ensure they remain the most competitive.

The revenue splits at both BNY Mellon and State Street are reasonable and competitive based on industry standards for similar securities lending relationships.

Recommendations:

1. Consider creating a separate account, with customized investment guidelines, for the cash collateral reinvestment managed by State Street.
2. Create one set of guidelines for both fixed income pools that are conservative in nature and are not influenced by the actual pool of assets being lent.
3. Continue to create a more robust process of monitoring the securities lending program and the cash collateral reinvestment within the IMD.
4. Provide the Treasurer and the IAC with a comprehensive report on the securities lending program on an annual basis and provide summary reports on a quarterly basis.
5. Re-bid the securities lending agents on a periodic basis to ensure, as the industry and capabilities change, that the NCRS is utilizing those lending agents that can add the most value in the areas of technological continuity and consolidated reporting.

IV. Investment Accounting and Operations

A) Investment Accounting System

Background

The investment accounting system operates as the main internal control for a public fund's investment activities. Generally, the responsibilities of investment accounting and operations include analyzing and documenting each investment related general ledger income statement and balance sheet account, recording all investment transactions and related income, reconciling the ledger in an accurate and timely manner, and reporting on all financial transactions.

Investment accounting and operations unit works closely with the custodian bank. The custodian bank provides general ledger feeds to the investment accounting and operations unit, which then validates that the data is accurate and complete. At a public fund, best practices are for the investment accounting and operations function to be distinct from the investment management function.

The general ledger is the official set of accounting records (the "book of record") and primary source of data for financial reporting. Designating the custody bank as the official "book of record" is common among public funds. There is a growing trend among the larger public funds, particularly those with internally managed assets and internal trading operations, to maintain their own in-house investment accounting system for some or all of their investment transactions. However, the cost for establishing a sophisticated in-house investment accounting system, particularly for certain asset classes (e.g., international asset classes, hedge funds), can often be prohibitive.

Examples of some of the internal controls used to mitigate risk related to the accuracy and integrity of its financial information include:

- Verifying, reconciling, and validating the general ledger data (by accounting operations personnel)
- Instituting written accounting procedures that address the preparation and input of general ledger entries and the preparation of financial statement and reports
- Establishing a systematic process for reviewing new accounting pronouncements and new investment vehicles and determining the appropriate accounting treatment

Findings and Analysis

The group that is responsible for the investment accounting functions related to the IMD operates within the FOD lead by the CFO/Deputy Treasurer. For this Section of the Report, the group is referred to as the "Investment Accounting Group" or "IAG." EnnisKnupp used the interview and document review process to determine the role the IAG plays in the investment accounting system.

The IAG is comprised of six full-time individuals: three junior accountants, two supervising accountants, and the CFO. The IAG's primary role is as a financial reporting function, which includes preparing the financial statements for the NCDST on a monthly, quarterly, and annual basis. The IAG prepares the Combined Statement of Net Assets (balance sheet) and the Combined Statement of Operations (income statement).

The IAG is not involved in the day-to-day accounting for the investments, which is handled by the NCRS custodian, BNY Mellon. BNY Mellon houses the general ledger and is the official "book of record." Using the general ledger, BNY Mellon tracks all investments and cash accounts and performs the accounting entries. This information helps the IAG to build the financial statements.

The IAG receives the general ledger from BNY Mellon after the closing process each month. The IAG reconciles the general ledger to the source data, such as investment manager statements and trade tickets from the IMD. The IAG prepares and houses the financial statements in Microsoft Excel. These statements are audited annually by the State Auditor. An accounting specific software package can provide better controls for accessing and editing financial statements. [See also, the discussion in subsection D (Reconciliation Process Between the Custodian and Accounting System.]

The IAG is not involved in handling receipts or disbursements of cash, but is involved in recording the accounting activities of the investments to a general ledger system. The IAG's most important role related to investment activities appears to be performing monthly reconciliations of cash and investment accounts essential to building the financial statements. This function serves as a control on a component of BNY Mellon's investment accounting system. IAG is also not involved in the performance reporting of investments, which is handled by the IMD. Moving the performance reporting function from the IMD to another party would serve as a proper separation of duties regarding investment decision-making and investment performance reporting.

[Section 1 (1.I.D) includes a detailed discussion regarding the importance of internal controls in mitigating risk, and recommendations regarding the establishment of an internal audit function and an internal auditor position.]

<u>Conclusion</u>

The IAG appears to have a coordinating role in the accounting functions for the NCRS investments. It is not responsible for generating performance reports, which are handled by the IMD.

The tools used by the IAG may not be adequate to build current and future financial statements.

Recommendations:

1. For any investment performance reporting that is the basis for performance-based pay or incentives, shift the performance reporting of investments to a non-IMD party.
2. Utilize a more sophisticated software system than Microsoft Excel to create and store financial statements.

B) Internal Control Framework

[The overall importance of a systematic framework of internal controls as part of an enterprise risk management process, and the need for an internal audit function as an independent examination of the adequacy and effectiveness of the internal control structure, are discussed in detail in Section 1 (1.I.D). This subsection addresses internal controls within the framework of the IAG.]

<u>Background</u>

As it pertains to investment accounting operations, a proper internal control framework helps to ensure that all financial statement assertions and information processing objectives are covered. There are a number of risks related to financial accounting operations for public funds. A few examples include:

- Errors, misstatements, or losses may not be detected in a timely manner
- Financial statements may not adequately disclose all material matters
- Reasons supporting number changes may not be appropriately explained
- Staff may not have the expertise to understand how to account for and value certain debt and equity investment vehicles
- Accounting, valuation and other key information systems may not meet financial needs
- Statement on Auditing Standards No. 70, Service Organizations ("SAS 70") reports may not be obtained from outside service providers to ensure that the organization's internal control environment is sound

SAS 70 reports represent one of the most effective ways an organization can communicate information about its controls. There are two types of SAS 70 reports. A Type I SAS 70 is a fairness opinion about the organization's description of controls in place and the suitability of the controls to achieve their stated objectives. A Type II goes a step further and includes the auditor's opinion as to whether the controls were operating effectively at the time of the review.

<u>Findings and Analysis</u>

The IAG does not have documented internal controls covering the NCRS accounting and cash management systems. The IAG relies on the SAS 70 received from BNY Mellon to gain comfort over accounting internal controls. It is not clear whether the SAS 70, upon which IAG relies, is a Type I or a Type II report.

Outsourcing the day-to-day investment accounting functions to a third party service provider like BNY Mellon is common among public funds. This approach can be a positive solution for accounting needs. However, including a third party service provider introduces a separate set of risks for providing accurate financial statements and safeguarding assets. These risks can be mitigated with a proper internal control framework that considers the relationship with that service provider.

The IAG currently has a general set of accounting procedures primarily focused on cash and investment account reconciliation processes. Best practices are to have the internal control framework and accounting procedures thoroughly detailed and compiled into one cohesive document. The document should be reviewed by the CFO to ensure all functions and processes are covered and documented in a clear, concise manner.

NCDST is currently focusing its attention on internal audit functions and will be enhancing the controls that are already in place. This effort will increase the likelihood that transactions are recorded in a reliable, transparent, and timely manner.

Conclusion

Simply relying on the internal control framework of the day-to-day accountant is not sufficient. EnnisKnupp believes internal controls need to be in place that follow the accounting process through the financial reporting process.

Recommendations:

1. Document the internal controls currently in place for the accounting and cash management systems; centralize documentation of the accounting processes into one document; and task the CFO with the responsibility to ensure that all functions and processes are covered and detailed in a clear, concise manner, and that periodic reviews and updates are scheduled.
2. Review the SAS 70 received from BNY Mellon in detail to determine how much reliance can and should reasonably be placed on the control environment, whether internal controls are in place and whether BNY has tested them.
3. The internal audit function recommended in Section 1 should perform testing of the internal controls for financial accounting operations and prepare a report setting forth the findings.

C) Trade Order Entry Management System

Background

To manage risks, an investment body must establish a trading workflow system that properly oversees internal portfolio management. An Electronic Trade Order Entry Management System ("OMS") offer an investment entity the necessary tools for efficient portfolio manager oversight, including trade dissemination, integrated analytic engines, trade compliance, and portfolio performance.

Findings and Analysis

The IMD's fixed income unit is responsible for 42% of the Total Fund's assets, roughly $25 billion as of June 30, 2009. For an investment program, managing assets internally can be a great source of value. However, assuming such responsibility requires an investment body to manage operational risks, including trade execution, reconciliation, and compliance.

For its internally invested assets, the IMD utilizes Bloomberg OMS as its order management system, BondEdge for analytics, and BNYMellon for performance reporting.

Bloomberg OMS is equipped with an array of customizable functionalities that help align the fixed income portfolio managers with the strategic objectives and trading guidelines stipulated in IMD's STIF and LTIF Guidelines, Policies, and Procedures. For example, IMD utilizes Bloomberg OMS to monitor compliance of "hard" and "soft" trading rules. "Hard rules" are based on statutory requirements, such as trading a non-eligible security, and are coded into Bloomberg OMS, thereby preventing the trade from being executed. "Soft rules" are policy driven and assist the staff when trading falls outside of the trading strategies. For soft rules, the trader is not prevented from executing the trade. Instead, a system-driven warning is generated that can be overridden and executed. This is just one of the many ways the IMD uses its OMS system to monitor and control risk.

It is important to note that the use of a sophisticated electronic order management system constitutes only the first step in addressing risks associated with internal asset management. The next step relates to the oversight of the individuals using the trade order management tools. Currently, the IMD's trading workflow allows portfolio managers within the same unit to execute trades and authorize trades. However, the same portfolio managers can not both initiate and release a trade. The IMD also monitors portfolio risk and compliance with the statutory trading guidelines. In order to achieve appropriate operational control, it is best practice to segregate the portfolio management function from risk management and compliance functions.

Conclusion

Monitoring the risk exposures and running portfolio analytics are important functions that should remain within the portfolio management team. However, having a separate and distinct individual, such as a risk manager, to monitor portfolio risks and trade compliance would be a benefit to the NCRS.

Recommendations:
1. Review trade compliance as part of the compliance officer's duties.

[See recommendations in Section 1 (1.I.D) regarding hiring a risk manager, establishing a compliance officer function, and establishing an internal control function.]

D) Reconciliation Process Between the Custodian and Accounting System

Background

A public fund must have an appropriate reconciliation process between the custodian and the internal accounting system. Discrepancies between the custodian's reported market values, transaction information, and those posted on the internal accounting system need to be identified and documented. Information in the accounting system must be accurate as this appears in the fund's financial statements.

Findings and Analysis

The IAG's most significant function is reconciling BNY Mellon's accounting data to the source data retained by staff. Because the day-to-day accounting entries are handled by BNY Mellon, it is imperative that the FOD has a strong reconciliation process when translating custodian statements into the NCRS accounting records, which drive the financial statements.

The IAG staff has documented procedures for reconciliation of cash accounts and the investment programs for fixed income, equities, real estate, and alternatives. The IAG's process reconciles all cash activity reported by investment managers to activity reported by the NCRS, as well as income and capital appreciation/depreciation. Each account that flows through to the financial statements should be reconciled and properly documented. Appropriate documentation for a reconciliation should retain the periodic statement received from the custodian along with attached source documents detailing each transaction. There should be physical evidence that each transaction from the source documents has been tied to the custodian statement for completeness and accuracy. In addition, a listing of all transactions should be included to ensure that none were missed by the custodian. A proper reconciliation should show totals for all transactions being tied to the custodian statement and have explanations for any differences. Finally, all reconciliations should be reviewed by the supervisor of the staff member who performs this task.

Conclusion

Through interviews with the IAG staff, EnnisKnupp found that the IAG spends most of its time on the reconciliation function. After reviewing the sample documentation provided by IAG staff on reconciliations, it appears that the staff is performing a complete reconciliation process that helps support the accuracy of the accounting data presented in the financial statements.

Recommendations:

1. Perform an in-depth internal audit of the reconciliation process to identify weaknesses. [This recommendation is related to the internal audit recommendations in Section 1 (1.I.D).]

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North Carolina Department of State Treasurer
Independent Review and Evaluation of the
North Carolina Retirement Systems
Listing of All Recommendations

Below is a complete list of the recommendations that are included in the review. The Treasurer has the ultimate authority to prioritize, accept, modify, and reject any and all recommendations based on NCRS' needs and resources.

	Recommendations
	Transparency, Accountability, and Ethics
1.1	Amend the Placement Agent Policy to require the disclosure of political contributions and gifts to decision-makers by those doing and seeking to do business with the NCDST.
1.2	Produce and post on the NCDST website an investment transactions report, including placement agent usage, compensation, and registration status, and political contributions or gifts given to decision-makers.
1.3	Incorporate the Placement Agent Policy into a compilation of the NCDST ethics policies.
1.4	Implement and monitor the Placement Agent Policy.
1.5	Continue to post, and update as needed, key documents related to the governance and investment processes on the NCDST website.
1.6	Develop and adopt a comprehensive written investment related services search and selection procurement policy that is designed to mitigate risk and foster transparency and accountability.
1.7	Adopt a no contact policy, as a component of the written investment related services search and selection procurement policy, restricting communications during the procurement process.
1.8	Develop a service provider disclosure policy with a questionnaire as a component of the written investment related services search and selection procurement policy.
1.9	Develop a written statement of delegation which clearly defines what authority has been retained by the Treasurer and what has been delegated to the CIO.
1.10	Develop a written state of delegation that clearly defines what authority has been retained by the CIO and what has been delegated and to whom.
1.11	Generating a reporting format, using a consensus approach, designed to respond to the specific questions and concerns of the Treasurer.
1.12	Adopt an insider trading policy, applicable to all the NCDST staff and IAC members.
1.13	Consider adopting a personal trading policy applicable to the NCDST staff with access to material, non-public information.
1.14	Establish an internal audit function and hire an internal auditor.
1.15	Designate a compliance officer.
1.16	Adopt a clearly defined system of internal controls based on a comprehensive risk assessment of the investment program.

	Recommendations
1.17	Institute a risk management program.
1.18	Consider establishing a risk manager function.
1.19	Adopt a code of ethics for the non-administrative IMD staff members, incorporating certain ethics policies that have already been adopted for the senior level IMD staff members and using the CFA Code as a model for any additional investment related ethics policies that may be needed.
1.20	Develop and implement a service provider disclosure policy and a disclosure questionnaire.
1.21	Require all the IMD staff to disclose conflicts of interest as part of a comprehensive ethics code of conduct.
1.22	Extend the Supplemental Ethics Policy and the Two-Year Revolving Policy to all the non-administrative IMD staff.
1.23	Develop and implement an IAC code of ethics, including a disclosure process that mitigates the risk of conflicts of interest.
	Organizational Structure
2.1	Identify all parties that play an essential role in the investment program (Treasurer, Deputies, advisors, IAC, IMD staff, FOD staff, State Auditor, investment consultants, etc.) to create a comprehensive organizational chart and clarify reporting lines.
2.2	Use an accountability matrix or a similar tool to list essential duties related to the investment program, and determine involvement of each party in the decision-making and reporting processes.
2.3	Modify existing policies to reflect any changes that are made to ensure the policies are accurate and consistent with statutes and other policies.
2.4	Meet with affected staff to explain any changes in responsibilities.
2.5	Provide a thorough explanation to the IAC members about the responsibilities of the Committee.
2.6	Expedite the recruitment of the CIO and Director of Alternatives, and fill other key vacant positions.
2.7	Review and modify position descriptions to ensure they include all major functions and review the number of direct reports to the CIO, after the permanent CIO is hired.
2.8	Examine the staff size in light of the IMD workload, future expectations of staff, and use of outside consultants, after vacancies are filled and position descriptions are updated.
2.9	Consider improving the Academic Assistance Program to encourage the pursuit of advanced degrees and certifications for the IMD staff.
2.10	Communicate the essential elements of the position descriptions and the IMD organizational chart to eliminate the discrepancies between the descriptions and actual functions.
2.11	Ensure connectivity and information flow between all units of the IMD.
2.12	Conduct comprehensive exit interviews to determine and document causes for the high turnover rate.
2.13	Emphasize management skills when recruiting for the permanent CIO.

	Recommendations
2.14	Evaluate the tools and other resources provided to the IMD staff, and ensure that they are up-to-date and adequate.
2.15	Expand staff's access to the tools used by the NCRS' consultants.
2.16	Develop ways to demonstrate appreciation or give positive reinforcement for individual efforts.
2.17	Review the actual salaries of the IMD staff members below the Investment Director level.
2.18	Review NCDST's Pay Plan for the IMD to ensure it is appropriate and includes sufficient details regarding deferment and other provisions impacting incentive pay.
2.19	Consider making all the IMD staff members who manage assets eligible for incentive pay.
2.20	Consider basing a portion of the incentive pay for the IMD staff on factors other than the investment returns, such as relevant strategic plan goals and other qualitative criteria.
	Investment Policy and Asset Allocation
3.1	Complete a review of the NCRS Policies and the enhancements noted in this Report, make modifications as necessary, and seek formal approval from the Treasurer.
3.2	Develop a systematic process to regularly monitor and report on policy compliance to the Treasurer.
3.3	Adopt a policy that requires an asset liability study be conducted every five years or when major changes in the benefits structure are planned.
3.4	Ensure the next asset liability study is conducted by an independent investment consultant, working in conjunction with an actuary.
3.5	Continue annual reviews of the asset allocation.
3.6	Ensure the merits of each asset class are fully evaluated by the IMD and the Treasurer, and that supporting documentation for decisions for allocation changes is maintained.
3.7	Consider whether a higher allocation to private equity is appropriate for NCRS.
3.8	Evaluate the intended role of hedge funds within the NCRS Portfolio, and reconsider whether the 1% policy allocation is most appropriate for the NCRS.
3.9	Clarify whether rebalancing is intended to bring the Fund to the policy target or the edge of the range.
3.10	Review the reasons for the Fund's asset allocation exceeding the allowable ranges for several quarters over the last three years, and enhance policy compliance procedures, if warranted.
3.11	Consider using risk budgeting to determine and monitor risk within the NCRS Portfolio.
	Investment Management Structure
4.1	Complete an equity structure review that evaluates the number and types of managers, as well as any style or market segment biases in the portfolio.
4.2	Complete a fixed income structure review that evaluates the portfolio structure from an allocation, quality, and liability-sensitivity stand point.
4.3	Ensure that the IMD and Treasurer periodically review whether the use and amount of internal management remains appropriate for the Fund.

	Recommendations
4.4	Evaluate the costs and benefits of managing one or more of the U.S. equity index funds internally.
4.5	Evaluate whether an increased allocation to index funds would benefit the portfolio.
4.6	Reevaluate the merits of investing in three managers to gain exposure to the S&P 500 Index.
4.7	Consider the pros and cons of investing in a broad market index fund as opposed to different capitalization segments of the market.
4.8	Ensure that the allocation to passive management in each asset class is reviewed and adjusted, if deemed appropriate, on a periodic basis.
4.9	Revisit the policy and clarify the objectives for investing in real estate and the role it plays in the broader NCRS portfolio.
4.10	Evaluate whether the manager concentration limitation in the real estate policy should be reduced.
4.11	Consider the benefits of establishing additional diversification targets related to exposure to equity, first mortgage debt, mezzanine, and preferred equity.
4.12	Ensure an appropriate pacing model is used in funding the real estate allocation.
4.13	Consider investing in secondaries with vintage years outside of 2005 to 2008 to reduce the current vintage year concentration risk.
4.14	Address the role that timber plays in the real estate portfolio and define guidelines for it.
4.15	Re-classify timber as part of the real estate allocation or the inflation bucket.
4.16	Further evaluate the private equity program’s diversification across vintage years.
4.17	Rework and potentially scale back private equity cash flow pacing so that the program regains and maintains targeted private equity allocation levels in light of anticipated program growth.
4.18	Evaluate greater utilization of direct funds, secondary funds/investments, and co-investments within the private equity program with the goal of reducing management fees.
4.19	Define and document the desired structure for the hedge fund program, including an evaluation of whether a direct allocation to hedge funds (as opposed to fund-of-funds) would be beneficial.
4.20	Consider completing an analysis of the overlap between the hedge fund managers in the portfolio.
4.21	Continue to ensure fees paid to alternative managers are in compliance with agreed upon terms and conditions.
4.22	Enhance tracking activities to include all the fees paid to fund-of-funds managers.
	Investment Performance Reporting
5.1	Evaluate whether any additional elements should be added to the Pension Fund Overview or any of the asset class performance reports (private equity, real estate, and hedge funds).
5.2	Consider adding more detail to the private equity performance reports on the portfolio investments, including detailed performance benchmarking, fee schedules, and commentary on how investments fit within the program from a diversification standpoint.

	Recommendations
5.3	Consider augmenting the reporting contract of the private equity investment consultant (or hire another consultant) to include fund-by-fund updates, monitor investment policy compliance, and report on annual meetings.
5.4	Ensure the sub-asset class classifications in the Alternative Investments Policy and the private equity performance reports match so that compliance can more easily be monitored.
5.5	Ensure Credit Suisse has the most up-to-date Alternative Investments Policy information so that it can be referenced and analyzed in its report.
5.6	Report quarterly compliance in the real estate portfolio with each of the risk factors described in the NCRS Policies.
5.7	Consider verifying whether managers considered or utilized in the NCRS Portfolio claim GIPS compliance.
5.8	Indicate in all performance reports whether the presented returns are net- or gross-of-fees.
5.9	Evaluate the ODCE plus a premium of 100 to 200 basis points, or the NPI Index, as the real estate asset class benchmark for the private markets portion of the portfolio.
5.10	Establish whether the real estate portfolio and its benchmark are measured net- or gross–of-fees.
5.11	Consider comparing private equity results by strategy, vintage year, or geography to Venture Economics data.
5.12	Employ the HFRI Funds-of-Funds Index as the only benchmark for the hedge fund program; discontinue the use of Treasury bills plus 400 basis points as a benchmark.
5.13	Reevaluate the equity manager benchmarks as noted in this Report to ensure they remain the most appropriate benchmarks given the managers' investment styles and opportunity sets.
	Due Diligence
6.1	Ensure that the manager selection process and results of the due diligence checklist are executed and well documented.
6.2	Provide more in-depth analysis of managers being considered for inclusion in the NCRS Portfolio within the manager search memorandum.
6.3	Utilize a private equity investment consultant more extensively to provide in-depth due diligence, analysis of investment research, and quantitative analytics on manager track records.
6.4	Enhance the private equity due diligence memorandums by including more advanced track record analytics and benchmarking.
6.5	Enhance the real estate due diligence memorandums by including: (1) a competitive analysis of other real estate funds in the marketplace with similar strategies; (2) information on sources of the due diligence process, including review of reference call; and (3) outline of the fund's parameters and limitations.
6.6	Enhance the hedge fund due diligence memorandums by including an analysis of fees and operational risks.
6.7	Utilize a system that organizes and centrally stores notes and other documents for the due diligence and monitoring process in accordance with the NCRS disaster recovery plan.

	Recommendations
6.8	Ensure that all monitoring activities are well documented, including possible use of an independent third party to assist in covering and compiling notes for general partner annual meetings.
6.9	Use technology to track and make accessible all due diligence and monitoring memorandums and activities.
6.10	Increase resources to review terms, conditions, side letter provisions, and limited partnership agreements.
6.11	Evaluate the use of consultants and funds-of-funds managers to monitor underlying hedge fund managers.
6.12	Add active-risk parameters to the manager guideline templates as a quantifiable and permissible measure of risk.
	Investment Related Activities
7.1	Consider requiring Elkins to provide measurement of costs against a total cost universe for the U.S. equity trades, in addition to the VWAP universe.
7.2	Review the transaction cost measurement process used by Elkins to provide measurement of costs against a total cost universe for the U.S. equity trades, in addition to the VWAP universe.
7.3	Consider requiring Elkins to provide a more robust qualitative summary assessment, including recommendations where appropriate and a list of follow-up issues for the IMD staff.
7.4	Include a reference to the HUB program in the NCRS Policies and investment manager agreement.
7.5	Modify the STIF Policy to make it more consistent with best practices.
7.6	Consider creating a separate account, with customized investment guidelines, for the cash collateral reinvestment managed by State Street.
7.7	Create one set of guidelines for both fixed income pools that are conservative in nature and are not influenced by the actual pool of assets being lent.
7.8	Continue to create a more robust process of monitoring the securities lending program and the cash collateral reinvestment within the IMD.
7.9	Provide the Treasurer and the IAC with a comprehensive report on the securities lending program on an annual basis and provide summary reports on a quarterly basis.
7.10	Re-bid the securities lending agents on a periodic basis to ensure, as the industry and capabilities change, that the NCRS is utilizing those lending agents that can add the most value in the areas of technological continuity and consolidated reporting.
7.11	For any investment performance reporting that is the basis for performance-based pay or incentives, shift the performance reporting of investments to a non-IMD party.
7.12	Utilize a more sophisticated software system than Microsoft Excel to create and store financial statements.

	Recommendations
7.13	Document the internal controls currently in place for the accounting and cash management systems; centralize documentation of the accounting processes into one document; and task the CFO with the responsibility to ensure that all functions and processes are covered and detailed in a clear, concise manner, and that periodic reviews and updates are scheduled.
7.14	Review the SAS 70 received from BNY Mellon in detail to determine how much reliance can and should reasonably be placed on the control environment, whether internal controls are in place and whether BNY has tested them.
7.15	The internal audit function recommended in Section 1 should perform testing of the internal controls for financial accounting operations and prepare a report setting forth the findings.
7.16	Review trade compliance as part of the compliance officer's duties.
7.17	Perform an in-depth internal audit of the reconciliation process to identify weaknesses. [This recommendation is related to the internal audit recommendations in Section 1 (1.I.D).]

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INTERVIEWS

To gather relevant information for the review, EnnisKnupp interviewed the following individuals:

NCDST

- Janet Cowell, Treasurer
- Ron Ottavio, Chief of Staff
- Jay Chaudhuri, General Counsel & Senior Policy Advisor
- Sandra Johnson, Administrative Officer

NCRS

- Patricia Gerrick, Former Chief Investment Officer
- Michael Williamson, Director of Retirement and Interim Chief Investment Officer
- Jeff Smith, Director of Fixed Income
- Mark Roberts, Director of Public Equity
- Susan Carter, Director of Real Estate
- Bryan Lewis, Director of Administration and Operations
- Brett Hall, Senior Portfolio Manager Fixed Income
- Rhonda Smith, Portfolio Manager Public Equity
- Craig Demko, Portfolio Manager
- Brad Creel, Portfolio Manager Real Estate
- Rodney Overcash, Senior Research Manager
- Chris Morris, Operations Manager
- Norman Schiszler, Operations Analyst

FOD

- Pam Wortham, Director of Financial Operations
- Spencer Phillips, Accounting Operations Manager
- Malinda Peters, Accountant III
- Sharon Morgan, Accounting Technician IV
- Pam Nelms, Accounting Technician IV

Human Resources

- Stephanie Beard, Former Director of Human Resources

Service Providers

- Michael Humphrey, Courtland Partners
- Jennifer Strauss, Credit Suisse
- Carl Jocelyn, Credit Suisse
- Bruce Rosenberg, Credit Suisse
- Curt Smith, Strategic Investment Solutions
- Steve Hempler, Strategic Investment Solutions

DOCUMENTS REVIEWED

To gather relevant information for the review, EnnisKnupp reviewed the following documents:

- Select laws and statutes:
  - G.S. 147-69.1 – Investments authorized for general fund and highway fund assets
  - G.S. 147-69.2 – Investments authorized by special funds held by the State Treasurer
  - G.S. 147-69.3 – Administration of State Treasurer's investment programs
  - G.S. 147-69.4 – Local government other post-employment benefits fund
  - G.S. 147-69.5 – Local government law enforcement special separation allowance fund
  - G.S. 143, Article 33C – Meetings of public bodies
  - G.S. 132 – Public records
  - G.S. 116D – Minority and historically underutilized business participation
  - NC HB 556 – Treasurer's Transparency and Governance Act (2009)
  - NC SB 632 – Treasurer's Transparency and Governance Act (2009)
  - NC HB 1507 – State Treasurer's Investment (2009)
  - NC SB 703 – Session Law 2009-98 – An act concerning investments of the State Treasurer (2009)
- Comprehensive Annual Financial Reports (CAFR)
  - State Treasurer's CAFR (2008)
- Statement of investment policy (June 2008)
  - Total Fund
  - Public equity investment program
  - Real estate policy
  - Private equity investment program
  - Short-term investment fund
- Draft investment management division guidelines, policies, and procedures
  - Total Fund (October 2008)
  - Publicly traded equity (October 2008)
  - Real estate (October 2008)
  - Alternative investments (October 2008)
  - Long-term investment fund (October 2008)
  - Short-term investment fund (October 2008)
- Investment management division policies, guidelines, and procedures – credit strategies portfolio (June 2009)
- Other policies
  - Procurement policy (2006)
  - Campaign contribution policy (2008)

  - Academic assistance program policy (2006)
  - Compensation policy (2008)
  - Travel (2008)
  - Revolving door policy (2009)
- Department of State Treasurer strategic plan (2009)
- Department of State Treasurer policies and procedures
- Department of State Treasurer compliance report
- Department of State Treasurer report timeline
- Department of State Treasurer purchasing manual
- Statement of economic interests disclosure of third-party reimbursements (2009)
- Campaign finance manual (2008-2009)
- Select letters between the State Auditor, Department of Justice, and Womble, Carlyle, Sandridge, Rice (2009)
- Memo from outside attorneys regarding the Treasurer's standard of care (March 2009)
- Investment advisory committee
  - Meeting schedule (2007, 2008, 2009)
  - Meeting agendas (February 2007, 2008, 2009; May 2007, 2008, 2009; August 2007, 2008; November 2007, 2008)
  - Meeting minutes (February 2007, 2008, 2009; May 2007, 2008; August 2007, 2008; November 2007, 2008)
  - Meeting packets (November 2008, February 2009, May 2009)
  - Letters with meeting materials (2007, 2008)
- Basic ethics education and lobbying presentation (2009)
- Organizational charts
  - Office of State Treasurer
  - Investment Management Division
  - Investment Accounting
- Various position descriptions for IMD
- Various position descriptions for investment related staff
- Education and experience of investment staff
- Employee handbook (2007)
- Instructions for budget division authorization form (2006)
- Instructions for travel expense reimbursement form (2006)
- Staff turnover rates (2006 – May 31, 2009)
- State personnel manual – recruitment and posting of vacancies (2009)
- Investment division salaries and ranges (2009)

- Investment professional's compensation plan recommendation (2008)
- McLagan compensation competitive analysis (2008)
- Exempt Investment Professionals' Pay Plan (2008)
- Various performance management work plans for investment staff
- Various research databases for staff, investment managers, and consultants
- Actuary contact
    - Buck Consultants
- Service provider contact information
    - Courtland partners
    - Credit Suisse
    - Strategic Investment Solutions
    - BNY Mellon
    - Office of State Auditor staff
    - State Street
- Broker-dealer contact information with a sample agreement
- Consultant contracts
    - Credit Suisse (2006)
    - Strategic Investment Solutions (2006)
    - Courtland Partners (2005)
- Custodian bank agreement with Mellon Trust (2007)
- Draft investment management agreement (2007)
- BGI asset allocation reports (2008 and 2009)
- Experience studies
    - Local Government Employees' Retirement System (2004)
    - Teachers' and State Employees' Retirement System (2004)
- Actuarial valuations
    - Death benefits (2007)
    - Disability income plan (2007)
    - Consolidated Judicial Retirement System (2007)
    - Local Government Employees' Retirement System (2007)
    - Teachers' and State Employees' Retirement System (2007)
    - National Guard Pension Fund (2007)
    - Registers of Deeds (2007)
    - Firemen's and Rescue Squad Workers' Pension Fund (2008)
- Asset allocation history and targets (2004 – 2008)

- Memos from CIO to State Treasurer regarding asset allocation benchmark recommendations (2006 – 2008)
- Assets internally and externally managed – private equity update
- Assets with active or passive strategies (2009)
- Franklin strategy outlook spreadsheet
- Current manager list (2009)
- Equity manager fee schedule (2009)
- Equity managers list with mandates, guidelines, and benchmarks (2009)
- Equity assets (2009)
- Hedge fund managers mandates and guidelines
- Public equity investment manager monthly net-of-fees return (2008)
- Monthly returns for the Total Fund and the benchmarks (1997-2009)
- Investment manager returns from (1987-2009)
- Listing of asset class benchmarks
- Listing and description of all peer universes used in performance
- Presentation on performance measurement fundamentals by BNY Mellon
- Budget report (FY2008)
- Budget report (July 2008-May 2009)
- Investment expenditures from the investment pool (FY2007-2008, FY2008-2009)
- Cost for internal management (2009)
- Investment performance reports (2007-2009)
- Investment performance summaries (20096 – 2009)
- Manager selection protocol for private equity
- Global equity investment portfolio search
- Private equity investment process
- Real estate investment process
- Private equity description of manager monitoring policy
- Real estate description of manager monitoring policy
- Equity watch list criteria
- Brandes large cap value search write-up (2009)
- Brandes funding recommendation (2000)
- Real estate DRA Growth and Income VI memo (2009)
- Actuarial audit ITB
- Sample RFP or RFI manager searches
  - Commingled due diligence questions
  - Equity search procedures

  - Real Estate REIT
  - Real Estate REIT questions
  - Qualitative section
  - Quantitative section
- Due diligence sample reports
  - Earnest meeting summary sample (2009)
  - Wellington annual meeting sample (2009)
- Termination letters
  - Jarislowski Fraser Limited termination letter (2008)
  - Angelo Gordon Asset Management termination letter (2009)
- Emerging markets recommendation (2008)
- Capital Guardian Trust Company core letter (2008)
- Funding recommendation (Q32008 and Q42008)
- Real estate policy review and strategy (2009)
- Real estate scenarios (2009)
- Investment department due diligence checklist
- Real Estate due diligence reports
  - NCRS (2007-2008)
  - Courtland (2008)
- Private equity due diligence reports
  - Sample I Lexington
  - Sample II Lexington (2008)
  - Sample I Apollo
  - Sample II Apollo (2008)
- Alternative strategy plan (2009)
- Alternative investments plan (2009)
- SCS Financial Services financial memo (2008)
- SCS Financial Services on-site due diligence meeting (2008)
- List of inception-termination dates of all hedge fund products
- Hedge fund manager contracts
  - Franklin Street Multi Strategy Fund (2002)
  - SCS Institutional Global Series (2008)
- Taconic meeting summary (2009)
- Taconic opportunity fund 2nd quarter report (2009)
- FSFMF investment trip summary (2009)
- FSFMF monthly data (2009)

- Fixed income broker/dealer list (2009)
- Trading cost analysis reports from Elkins McSherry for domestic, global, and passive (1Q2009)
- HUB broker presentation (2009)
- BNY Mellon money market fund guidelines (2009)
- BNY Mellon fee schedule (2007)
- BNY Mellon monthly invoice (July 2009)
- Monthly custody report package (2009)
- Securities lending management survey (2009)
- Securities lending amount on loan (2009)
- Securities lending income attribution summary (2009)
- Securities lending revenue by month (2008 and 2009)
- Description of securities lending portfolio review process
- State Street securities lending contract (2007)
- Bank of New York securities lending and custodian contract (2007)
- Cash collateral guidelines (2004)
- Year-to-date monthly summary (2009)
- Plan accounting procedures due to Mellon conversion (2007)
- Daily reconciliation procedures
- Monthly reconciliation procedures
  - Short-term fund
  - Equity fund Part 1 and Part 2
  - Long-term fund
  - Real estate
- Various investment and banking division operating procedures
- Bloomberg POMS trading workflow
- Description of monthly closing process
- Flexcube access (core banking system)
- Trade ticket procedure (2009)

Please note: Any omission of documents from the list above that we used for the findings and conclusions in this Report is unintentional.

Name/Term	Acronym
Bank of New York Mellon	BNY Mellon
Barclays Global Investors	BGI
Certified Fraud Examiner	CFE
Certified Government Financial Manager	CGFM
Certified Information Systems Auditor	CISA
Certified Internal Auditor	CIA
Certified Investments and Derivatives Auditor	CIDA
Certified Public Accountant	CPA
Chartered Alternative Investment Analyst	CAIA
Chartered Financial Analyst	CFA
Chief Investment Officer	CIO
Committee of Sponsoring Organizations of the Treadway Commission	COSO
Comprehensive Annual Financial Report	CAFR
Unites States Department of Labor	DOL
Employee Retirement Income Security Act	ERISA
Enterprise Risk Management	ERM
European Public Real Estate Association	EPRA
Financial Industry Regulatory Authority	FINRA
Financial Operations Division	FOD
General Partner(s) or General Partnerships	GP
Global Investment Performance Standards	GIPS
Hedge Fund Research, Inc.	HFRI
Historically Underutilized Businesses	HUB
Investment Advisory Committee or Investment Advisory Council	IAC
Investment Accounting Group	IAG
Investment Management Consultants' Association	IMCA
North Carolina Department of State Treasurer's Investment Management Division	IMD
Investment Policy Statement	IPS
Invitation to Bid	ITB
Long-term Investment Fund	LTIF
Master of Business Administration	MBA
Modern Portfolio Theory	MPT
National Association of Real Estate Investment Trusts	NAREIT
National Council of Real Estate Investment Fiduciaries	NCREIF
NCRS Real Estate Portfolio	NCRS RE

Name/Term	Acronym
North Carolina	NC
North Carolina Department of State Treasurer	NCDST
North Carolina Retirement Systems[1]	NCRS
Open End Diversified Core	ODCE
Plan Sponsor Network	PSN
Request for Proposal	RFP
United State Securities and Exchange Commission	SEC
Short-Term Investment Fund	STIF
Short-Term Investment Portfolio	STIP
Strategic Investment Solutions	SIS

[1] Includes the following systems: Teachers' and State Employees' Retirement System, the Consolidated Judicial Retirement System, the Firemen's and Rescue Workers' Pension Fund, the Local Governmental Employees' Retirement System, the Legislative Retirement System, and the North Carolina National Guard Pension Fund.