

**City of New York  
Office of the Comptroller**

**Second Administrative Review of the  
New York City Retirement Systems  
and the Office of the Actuary**

**Final – November 30, 2006**

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November 30, 2006

The Honorable William C. Thompson, Jr.  
Comptroller of the City of New York  
c/o The Actuarial Audit Oversight Committee  
The Office of the Comptroller  
The City of New York

**Re: Administrative Review of the New York City Retirement Systems (“NYCRS”)**

Dear Comptroller Thompson:

We are pleased to submit this Administrative Review of the New York City Retirement Systems (“NYCRS”). The purpose of the review is to:

- Review and evaluate the valuation processes, procedures, systems, and documentation that the Systems and the OA use to gather and maintain data including the transmission of information to the OA;
- Review and evaluate each System’s record-keeping practices and respective database including recommendations for improvement; and
- Review and comment on the OA’s and the Systems’ progress in implementing the recommendations of preceding Administrative Reviews.

We received the cooperation of the staff of the Office of the Actuary. That cooperation is greatly appreciated.

In our opinion, progress continues to be made on improving the valuation data used in the actuarial valuations of the Systems, mostly due to improved technological capabilities though there continue to be some opportunities for further development.

We look forward to meeting with you to discuss this report and any follow-up to it.

Sincerely yours,

Amy S. Timmons, FSA, EA, MAAA, CFA  
Vice President and Actuary



**Table of Contents**

Executive Summary ..... 1

Introduction..... 4

Project Methodology ..... 5

Findings & Recommendations .....7

    Overview ..... 7

    NYCERS ..... 8

    TRS.....14

    BERS .....18

    POLICE ..... 24

    FIRE..... 32

    Office of the Actuary ..... 39

Status of Prior Administrative Reviews’ Recommendations..... 45

## Executive Summary

In January 2005, the Office of the Comptroller of the City of New York retained The Segal Company (Segal) to perform two engagements of actuarial audits and related review services with respect to the following retirement systems (collectively the “Systems”):

- > New York City Employees’ Retirement System (NYCERS)
- > Teachers’ Retirement System of the City of New York (TRS)
- > New York City Board of Education Retirement System (BERS)
- > New York City Police Pension Fund (POLICE)
- > New York City Fire Pension Fund (FIRE)

The first engagement was completed in May of 2006. This report is the deliverable for the second engagement of the Administrative Review. The report focuses on the actuarial data gathering, benefit certification, and management processes used by the Systems and the City of New York Office of the Actuary (OA) for the actuarial valuations. The report reviews the individual actuarial data elements tracked and maintained by the Systems.

## Key Findings & Recommendations

Given the historical resources of the Systems and the OA, the OA does an excellent job in collecting and processing the valuation data. The valuation data procedures used by the OA result in highly accurate valuation data. The procedures themselves are somewhat inefficient but are improving through the implementation by the City of new payroll systems and by the implementation and upgrading of the Systems’ computer administration systems.

Within the last few years, there have been significant improvements in the technology used by the Systems which provides opportunities for corresponding improvements in the actuarial data received from the Systems by the OA. Improved technology has allowed the Systems to better track items such as member demographics, increased-take-home-pay (ITHP) balances, employee required contributions, and buyback credits.

However, this Administrative Review revealed a number of ongoing issues. Most, if not all of these issues, have been identified in previous administrative reviews. Given the short time between the completion of the 2005 review and the commencement of the 2006 review, most 2005 recommendations have been repeated for each System and the OA in their respective sections of the report, updated for any changes since the 2005 review. Key findings and their associated recommendations include:

### Active and Pensioner Data

#### Finding:

The Systems track a significant percentage of the data elements required by the OA for input into the actuarial valuation. During our review of the required data elements with each System, it was found that there were data elements not previously tracked by the System and currently estimated by the OA which could now be provided by the System. It was also determined that there were data elements the Systems either did not realize the OA required or that were not clearly understood by the Systems.

**Recommendation:**

The OA needs to include, as part of its annual meeting with each System, a review of the data elements and a discussion with the System regarding the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with the Systems to have them provide the necessary data for the valuation and should estimate or impute an actuarial data element only if the System specifically cannot provide it. The OA should also communicate more clearly with the Systems regarding the details of the information it requires for the actuarial valuation (e.g., breakdown of service credit by types of service, salary used to calculate partial payments, leaves of absence, etc.)

Specific data elements for each System were found where the System could provide the needed data directly to the OA rather than the OA estimate or receive the data via another data source. Please refer to the minutes from the meetings with each System for details regarding the availability and use of each data element required for the actuarial valuation.

**PPMS Data****Finding:**

While the OA provided initial input into the design of the PPMS regarding specific data elements to be tracked in PPMS, the OA has not followed up with the Systems once they have converted to PPMS to discuss what fields it is expecting the Systems to populate in PPMS.

**Recommendation:**

Each System should be responsible for populating the data elements available in PPMS and for the tracking of actuarial valuation data. The OA should meet with each System and review those elements to insure that, as each System converts to PPMS, the data elements are getting populated correctly with the information the OA needs for the actuarial valuation.

**Collection of Data****Finding:**

The current data collection process is cumbersome and inefficient, involving old tape cartridges and diskettes, too many steps and not utilizing newer technology to collect and transmit valuation data.

Standard industry practice is for the retirement system to be the single source of all active and pensioner data to be responsible for the accuracy and completeness of that data, and to transmit that data electronically through a secure FTP website to the actuary.

**Recommendation:**

Each System should be responsible for the collection and transmittal to the OA of all required valuation data including contacting participating employers, if applicable, for any missing active and/or pensioner data.

The OA and each System should also develop a mechanism to transfer secure electronic files between themselves to facilitate the collection and transmittal of the data such as the use of a secure File Transfer Protocol (FTP) site where the System and the OA can transmit Pretty Good Protection (PGP) encrypted files between themselves.

Some of the Systems already exchange similar confidential information electronically via PGP encrypted files and secure VPNs. This same functionality is available to the OA and should be utilized more extensively.

## Data Errors

### Finding:

The OA currently attempts to identify and correct all data errors in the valuation data provided by the Systems. However, the extent and criticality of the errors are not tracked and communicated back to the Systems. There are no reports provided to the Systems detailing the number of data errors by category or type for the most recent valuation cycle and many discussions of data seem to center on historical problems that may or may not have been corrected and/or were not statistically significant.

### Recommendation:

The OA needs to track the data errors by System and provide each System with a report or listing showing all of the data questions or errors, summarizing them by category. Each System should then be responsible for addressing and cleaning up the data issues and correcting any systematic problems.

## Reconciliation of Status Changes for Each System

### Finding:

Most Systems still do not provide a report tracking changes in the active and retiree counts from the prior to the current valuation period.

### Recommendation:

Each System should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation date. The active report would show active members at the beginning of the period and new hires, withdrawals, retirements and deaths during the period to arrive at the active member count at the end of the period. The retiree report would show pensioners at the beginning of the period, new retirements, deaths or those returning to work during the period to arrive at the pensioner count at the end of the period. Such reconciliation reports would save the OA considerable time in investigation of errors. This would significantly improve the OA's ability to accurately and efficiently validate the current year's valuation data.

## Upgrading of Methods and Technology for the OA

### Finding:

The OA continues to revise and improve its methods for gathering, editing, handling, and transmitting of data as the Systems implement new administration systems and upgrade their technology. The OA has begun to utilize Microsoft Access databases to more easily manipulate, review and edit the data. However, the OA also is still utilizing a number outdated data handling and editing programs that are written in old computer languages (i.e., COBOL) technology and do not provide for quick and easy manipulation of the valuation data. In addition, the programs require a higher level of expertise for the handling of the data given the complexity of the programs.

### Recommendation:

The OA should leverage available, newer technology that allows less experienced staff to easily review and edit the data directly and more easily manipulate the data for error checking. The technology should track all data edits by user ID, date and time.

## Introduction

In January 2005, the Office of the Comptroller of the City of New York retained The Segal Company (Segal) to perform actuarial audits and related review services with respect to the following retirement systems (collectively the “Systems”):

- > New York City Employees’ Retirement System (NYCERS)
- > Teachers’ Retirement System of the City of New York (TRS)
- > New York City Board of Education Retirement System (BERS)
- > New York City Police Pension Fund (POLICE)
- > New York City Fire Pension Fund (FIRE)

The contract covers two consecutive engagements (later referred to as the first engagement and the second engagement) covering two biennial periods. Each engagement is comprised of the following for the five Systems:

1. An Experience Study, which compares actual experience with the assumptions, used to calculate pension contributions and comments on the appropriateness of each assumption. The first engagement will review experience data through June 30, 2003 while the second engagement will review experience through June 30, 2005.
2. An Audit of Employer Pension Contributions, which confirms the computations of actuarial assets and liabilities, including the software used, and the appropriateness and legality of the actuarial assumptions and methods used. The first engagement will audit employer pension contributions for fiscal year 2004 while the second engagement will audit employer contributions for fiscal year 2006.
3. An Administrative Review, which reviews the actuarial valuation and data process and comments on the quality and completeness of the data and financial, actuarial, and operational procedures used in the valuations.
4. An Independent Actuary’s Statement, which reviews the entire engagement and comments on the financial condition and financing policies.

This report is the deliverable for the Administrative Review for the second engagement and focuses on the actuarial data gathering and management processes used by the Systems and the City of New York Office of the Actuary (OA) for valuations.

## Project Methodology

Our approach was “bottom-up” where we collected information regarding valuation data processes and procedures, and performed an assessment of administrative processes, organizational structure, internal and external interfaces, supporting databases, and technology. This process is very similar to the process used in the previous administrative reviews.

According to the request for proposal, the objectives of the Administrative Review are:

- To review and evaluate the valuation process, procedures, systems, and documentation that the Systems and the OA use to gather and maintain data including the transmission of information to the OA;
- To review and evaluate each System’s record-keeping practices and respective database including recommendations for improvement; and
- To review and comment on the OA’s and the Systems’ progress in implementing the recommendations of preceding Administrative Reviews.

The project was comprised of the following phases:

### Phase 1 – Current State Assessment

An initial conversation was held with staff from the Office of the Comptroller and the OA to review the procedures and timeframes for conducting the study. Various documents were also reviewed including the summary plan descriptions of the different benefit programs, the comprehensive annual financial reports, the most recent administrative review, the actuarial valuation reports, and other pertinent documentation including the OA’s valuation data procedures. The OA’s valuation data procedures provide detailed descriptions of the current processes, data edits, and computer programs required to produce the data for each System’s actuarial valuation. These procedures were validated through discussions with the OA and the Systems during the on-site interviews and appear to accurately reflect the valuation and data processes. These documents provided Segal with a detailed understanding of the various plan provisions, administrative processes and functions used in the administration of the pension programs.

Then, during the on-site interviews, we met with key benefits and IT personnel involved in the administration of the pension plan for each entity to further our understanding of the administrative processes and responsibilities, the interactions between the OA and each System, and the supporting software applications used. Considerable time was spent during the interviews to determine processing concerns with regard to the preparation of the actuarial valuation data as well as member transfers and benefit certifications from the System staff’s perspective. Recent changes in processes and any emerging issues were identified and discussed during the on-site interviews. In addition, we also spent time during the on-site interviews reviewing the implementation status of the recommendations from the prior administrative reviews.

We also conducted a telephone interview with the City’s external auditor who is responsible for the annual audits of the Systems. Focus of this interview was a review of the procedures used to audit the valuation data from initial member set up through the System’s administrative computer system to the data provided to the OA for the actuarial valuation.



## Phase 2 – Documentation and Analysis

Segal then analyzed each System's and the OA's major actuarial data processes and focused on the completeness of the information, the accuracy of the information, and the efficiency of the process. Specifically, we compared the valuation data procedures prepared by the OA with the procedures described by each System during the interviews.

To complete this phase of the review for each System, Segal:

- > Analyzed the core administrative work processes, departmental interfaces, and supporting technology;
- > Assessed the efficiency and effectiveness of the existing procedures;
- > Performed a best practices or industry standard assessment of the data collection processes based on our observations, knowledge, and experience.

A second set of interviews was also conducted with each System to review, in detail, the data elements used by the OA in the preparation of the actuarial valuation and compare those data elements with the data tracked and maintained by each System. These interviews were used to determine if more accurate information was available from the System and could be provided to the OA for the actuarial valuation.

## Phase 3 – Final Report

This report documents our analysis and observations of the actuarial data elements and processes used by each of the six entities and includes a review of the data elements, the administration technology, operational processes, and required administrative functionality for the administration of the valuation data. Our analysis is based on conclusions drawn from information gathered throughout the project and our experience working with other clients, software applications, and administrators. Our focus is on *practical and implementable* recommendations for improved processing of the actuarial data.

The results of our review can be found in the following sections of the report.

## Findings & Recommendations

Each System (NYCERS, TRS, BERS, POLICE, and FIRE) provides most of the necessary actuarial data elements to the OA through a slightly different process. Overall, the Systems have made significant improvements in their data processing through the implementation of new computerized administration processes and/or computer systems, the transition to corpus funding for all but one System (FIRE), and the impact of recent legislation removing most of the required reserve transfers and associated calculations. These changes have allowed for more efficient transactions between the Systems and the OA and allowed the OA to become more responsive to the Systems' requests for expedited or supplemental calculations, benefit certifications, and actuarial factors.

Also, while some of the prior administrative reviews' recommendations are no longer applicable such as those concerning the transfers of reserves between TRS and BERS, several continue to be pertinent and are directly tied to the OA's reliance on external resources (CUNY and Buck) for technical support and the OA's need to leverage the use of technology for improved data processing.

The OA maintains relatively up-to-date detailed valuation data procedures for each System including the steps required to prepare the active and pension valuation data, process checklists, record layouts, data source for each record element, record codes, program names and descriptions, etc.

In addition, the City has continued to implement a new pension payroll management system (PPMS) which is expected to provide a coordinated source for pensioner valuation data. The OA provided input to the City's implementation team regarding what data fields the OA would need in the new system. However, the OA has not discussed directly with each System the need to populate specific fields in PPMS with data to be used for the actuarial valuation. The impact of the PPMS system on the accuracy and processing of pensioner valuation data cannot be determined at this time. FIRE was the first System to go "live" on PPMS in May, 2005. NYCERS and POLICE have also all gone "live" on PPMS in the last year. BERS is expected to go "live" on PPMS by the end of the year and TRS during the first part of 2007.

The City's current contract auditor, in accordance with auditing standards generally accepted in the United States, audits the financial statements of all of the Systems including their investments, outstanding loans, and benefit payments. For the auditing of benefit payments, the auditor collects a sample of the payment details and reviews the documentation supporting the payments for accuracy including verification of the member status. The auditor also reviews the OA reports and verifies that the member demographic information is accurately included in the valuation data, taking data samples and tracing them from the System and the original documentation through to the OA and the valuation. Historically, the auditor has not found any problems related to the member demographics.

Based on our interviews and the detailed data procedures, below are the key concerns by System regarding the current processes and/or valuation data elements.

**NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM (NYCERS)****Overview**

NYCERS and the OA continue to use the same general process for the collection of the actuarial valuation data as in prior years. This process includes a pre-valuation meeting to review issues from the prior year, exchange of data tapes for the active and pensioner data, and data clean up and validation. This process is detailed in the New York City Employees' Retirement System – Valuation Data Procedure dated July 27, 2004.

NYCERS is 17 months into a five-year project to clean up all service-related data. The project is expected to address a number of historical data problems and has resulted in the establishment within NYCERS of a new division tasked with data clean up. This division is responsible for the research and review of over 90,000 “unresolved” records involving members on various kinds of leaves, incomplete service records, missing dates of birth, and other data problems. These records are flagged on the NYCERS system as open records until the data issue has been resolved.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>NYCERS, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from NYCERS, PMS, and PPMS.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by NYCERS, particularly service values and pensionable salary. There are also data elements that NYCERS did not realize the OA required or did not clearly understand the breakdown of information that the OA would like which NYCERS can provide to the OA.</p>	<p>The OA needs to include as part of its annual meeting with NYCERS a detailed review of the data elements and discuss with NYCERS the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with NYCERS to have them provide the necessary data for the valuation.</p>
2.	PPMS Data	<p>The OA is expecting to collect directly from PPMS a number of data elements for the NYCERS actuarial valuation.</p>	<p>The OA has not discussed with NYCERS in detail the data elements the OA expects to collect through PPMS to insure that NYCERS is, in fact, populating those fields in PPMS with the information the OA requires for the actuarial valuation.</p>	<p>The OA should meet with NYCERS and review the data elements to be collected through PPMS and verify that NYCERS is correctly populating those fields.</p>

#	Concern	Discussion	Finding	Recommendation
3.	Collection of Active Data	<p>The OA requests the active data from each of the participating employers. This data is received by the OA on both diskettes and 3480 tape cartridges. The OA sends the diskettes and cartridges to CUNY for loading onto the mainframe system. That data file is then sent to NYCERS. The data file is imported into the NYCERS system, merged with the NYCERS active database, and populated with additional information. NYCERS then creates a data file for transmission to the OA via a tape cartridge. The OA sends the cartridge to CUNY for loading onto the mainframe system where the OA can edit the data via a series of mainframe computer programs.</p>	<p>The current data collection process is cumbersome and inefficient, involving old tape cartridges and diskettes, too many steps and not utilizing newer technology to collect and transmit valuation data. However, the OA has begun to utilize Microsoft Access databases to more easily manipulate, review and edit the data.</p> <p>Standard industry practice is for the retirement system, in this case NYCERS, to be the single source of all active data, responsible for the accuracy and completeness of that data, and to transmit that data electronically through a secure FTP website.</p> <p>NYCERS is currently exchanging similar data with other entities through a secure VPN and encrypted files. Therefore, it should be expected that a similar process would suffice for the OA.</p>	<p>NYCERS should be responsible for the collection and transmittal to the OA of all required valuation data including contacting participating employers for any missing active data.</p> <p>The OA and NYCERS should also develop a mechanism to transfer secure electronic files between themselves to facilitate the collection and transmittal of the active data such as the use of a secure File Transfer Protocol (FTP) site where NYCERS and the OA can transmit PGP encrypted files between themselves.</p>
4.	Reconciliation Reports	<p>NYCERS provides the OA with various listings showing which members have vested, terminated, etc. in conjunction with the data files it sends to the OA.</p>	<p>NYCERS does not provide the OA with a complete reconciliation report showing the changes in member status over the year. Therefore, the OA must prepare such a report in order to validate the data prior to performing any data edits or adjustments.</p>	<p>NYCERS should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation data. This would significantly improve the OA's ability to accurately and efficiently validate the current year's valuation data.</p>

#	Concern	Discussion	Finding	Recommendation
5.	Expired Labor Contracts	<p>NYCERS participants may retire after the current labor contract has expired and before the new labor contract has settled. NYCERS cannot calculate an accurate final retirement benefit for these participants and the OA cannot certify the final benefit until the new labor contract has settled. In the interim, NYCERS pays the participant an estimated or partial benefit. NYCERS does not provide the OA, in the valuation data, any code which indicates whether the participant is in partial, estimate, or full payment status.</p> <p>The OA currently estimates the impact of the settlement of expired labor contracts in the valuation by including an imputed load to the overall liabilities for the projected contract settlement increase as well as any retroactive payments.</p>	<p>NYCERS does not provide the OA with an indicator in the valuation data for the participants who are waiting for benefit finalization due to expired contracts. The OA estimates who these individuals are and increases the aggregate actuarial liabilities by both an estimated amount for the participant's full benefit as well as an additional amount for the projected contract increase.</p>	<p>NYCERS does have an indicator for those participants whose benefits have not been finalized to allow the OA to more easily identify and value the impact of the contract settlements.</p> <p>The OA should review whether it should continue to account for the expired contracts on an aggregate basis or should the expired contracts be accounted for on an individual basis for only those affected individuals.</p>
6.	Actual ITHP, Required ITHP, and Required Employee Contributions	<p>These elements can be calculated for all active members by NYCERS but are currently not provided to the OA. Therefore, the OA must estimate these amounts for use in the actuarial valuation.</p>	<p>The OA is estimating these values for the valuation data when NYCERS has already calculated them. However, NYCERS is not including them when they transmit the valuation data to the OA.</p>	<p>NYCERS should provide this information to the OA in the valuation data.</p>

#	Concern	Discussion	Finding	Recommendation
7.	Buyback Service	<p>The NYCERS computer system flags a member record when the member is buying back service. However, the indicator does not display how much or what type of service the member intends to buy back. The NYCERS computer system produces a report showing the buyback service only after the member has finished fully paying for it.</p>	<p>The OA will see sudden, unexplained increases in member’s services due to the buying back of service that must be explained by NYCERS.</p> <p>Many retirement systems track the buying back of service and include the pro-rated portion of the service already paid for in the valuation so as to avoid sudden jumps in liabilities. However, many times a member will not buy back service until just prior to retirement, when it is most beneficial to the member.</p>	<p>As part of the reconciliation reports noted above, NYCERS should provide the OA with an indicator as to which members are buying back service and the amount of service the member is currently buying back.</p> <p>The OA should decide how best to account for service buy backs in the valuation whether through the current process of accounting for the increased liability upon completion of the purchase or through some load to the actuarial liabilities based on historical experience.</p>
8.	Collection of Pensioner Data	<p>The OA currently requests the pensioner payroll data from the Comptroller’s Bureau of Information Systems (BIS) and sends it to NYCERS for completion of additional, missing information. NYCERS adds in the missing information and sends a tape to the OA. OA then matches the NYCERS information back to the BIS information for verification purposes. Most differences between the BIS and NYCERS data center are related to retroactive payments.</p>	<p>This data collection process, similar to the active process, is again cumbersome and inefficient, involving old tape cartridges and diskettes, too many steps and not utilizing newer technology to collect and transmit valuation data.</p> <p>Standard industry practice is for the retirement system, in this case NYCERS, to be the single source of all data and responsible for the accuracy and completeness of that data.</p> <p>However, the OA is looking to utilize PPMS as the single source of pensioner data.</p>	<p>NYCERS, in conjunction with the OA, should research whether PPMS can effectively identify these payments for the OA. While the OA can infer the reasons for the payment differences, it would save time and effort on behalf of the OA if NYCERS could code or otherwise identify these payments when setting them up on PPMS.</p> <p>NYCERS should still be responsible for the inputting and set up of all information in PPMS utilized by the OA in the actuarial valuation.</p>

#	Concern	Discussion	Finding	Recommendation
9.	Benefits in Partial Payment or Estimated Status	NYCERS will provide a member with a partial or non-finalized benefit payment pending finalization and certification of their final benefit. The OA tracks those members in non-finalized payment status internally through an Excel spreadsheet.	NYCERS does not provide the OA with an indicator in the valuation data for the participants who are in non-finalized versus finalized payment status. The OA estimates who these individuals are based on their internal lists and increases the participant's benefit to the estimated amount for the participant's full benefit.	NYCERS currently tracks these members and could identify those members with non-finalized benefits in the valuation data provided to the OA to allow the OA to more easily identify and value the impact of the finalization of these benefits. NYCERS and the OA should establish the required coding to communicate this information and code this information into PPMS.
10.	Benefit Certifications	The OA is required to certify all final pension calculations. Paper files showing final calculation and supporting documentation are couriered weekly from NYCERS to OA for approval. The OA utilizes internally developed Excel spreadsheets and the information included in the paper file to verify the calculations. The OA also has remote access to the NYCERS computer system to review information online. Files are returned as approved and/or for correction.	<p>This process is very manual and paper intensive and requires the OA to review and certify many routine, basic calculations.</p> <p>Most retirement systems do not require the certification of every benefit but rely on computer systems to calculate basic benefits with periodic auditing of those calculations to verify their accuracy. Manual review and certification are typically provided for more complex calculations such as those involving service credits from multiple retirement plans, aggregation of benefits from multiple tiers, and leaves of absence.</p>	<p>Given the implementation of imaging by both the OA and NYCERS and the ability of the OA to access the NYCERS computer system online, NYCERS and the OA should develop a procedure for automating this process and dispense with the exchange of paper files.</p> <p>In addition, based on the OA's experience with the rate of accuracy of NYCERS's calculations, the OA should consider whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>



**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK (TRS)****Overview**

TRS and the OA also continue to use the same general process for the collection of the actuarial valuation data as in prior years. This process includes a pre-valuation meeting to review issues from the prior year, exchange of data tapes/files for the active and pensioner data, and data clean up and validation. This process is detailed in the New York City Teachers' Retirement System – Valuation Data Procedure dated April 1, 2004.

TRS continues with its data quality initiative and has focused on cleaning up all outstanding data issues such as missing dates of birth, missing gender codes, etc. TRS is currently in the process of manually reviewing all case files for accuracy.

TRS has set up an electronic certification process for the OA and has trained the OA on how to use this application. However, the OA has not yet commenced use of the electronic certification process.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>TRS, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from TRS, PMS, and directly from employers.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by TRS, particularly earliest hire date and per session pay. There are also data elements that TRS did not realize the OA required or did not clearly understand the breakdown of information that the OA would like which TRS can provide to the OA.</p>	<p>The OA needs to include as part of its annual meeting with TRS a detailed review of the data elements and discuss with TRS the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with TRS to have them provide the necessary data for the valuation.</p>
2.	Collection of Active Data	<p>The OA requests the active data directly from TRS. This data is received by the OA on a 3480 tape cartridge. The OA sends the cartridge to CUNY for loading onto the mainframe system. The OA can edit the data via a series of mainframe computer programs.</p>	<p>The current data collection process is cumbersome and inefficient, involving old tape cartridges and not utilizing newer technology to collect and transmit valuation data. However, the OA has begun to utilize Microsoft Access databases to more easily manipulate, review and edit the data.</p> <p>Standard industry practice is for the retirement system, in this case TRS, to be the single source of all active data and responsible for the accuracy and completeness of that data and for that data to be transmitted electronically through a secure FTP website.</p> <p>TRS currently electronically exchanges similar files with FISA, the Department of Education and the Office of the Comptroller.</p>	<p>TRS should be responsible for the collection and transmittal to the OA of all required valuation data.</p> <p>The OA and TRS should also develop a mechanism to transfer secure electronic files between themselves to facilitate the collection and transmittal of the active data such as the use of a secure File Transfer Protocol (FTP) site where TRS and the OA can transmit PGP encrypted files between themselves.</p>

#	Concern	Discussion	Finding	Recommendation
3.	Reconciliation Reports	<p>TRS provides the OA with various listings showing which members have vested, terminated, etc.</p>	<p>TRS does not provide the OA with a complete reconciliation report showing the changes in member status over the year. Therefore, the OA must prepare such a report in order to validate the data prior to performing any data edits or adjustments.</p> <p>In discussions with TRS, TRS indicated that this report should be relatively simple to produce but had never been requested for this type of report by the OA.</p>	<p>TRS should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation data. This would significantly improve the OA's ability to accurately and efficiently validate the current year's valuation data.</p>
4.	Advance Payment Status	<p>TRS will provide a member with an advance payment based on 80% of the member's estimated benefit. Members receiving advance payments are not communicated to the OA. TRS does not issue a pension number while members are on advance payment. These cases are called "benefit pending" and are indicated by a different status code in the active member database.</p>	<p>TRS does not provide the OA with an indicator in the valuation data for the participants who are in "benefit pending" status. The OA imputes who these individuals are and increases the individual benefit payments to the estimated amount for the participant's full benefit.</p>	<p>TRS should identify those members in advance payment in the valuation data provided to the OA to allow the OA to more easily identify and value the impact of the finalization of these benefits.</p>

#	Concern	Discussion	Finding	Recommendation
5.	Benefit Certifications	<p>The OA is required to certify all final pension calculations. Paper files showing final calculation and supporting documentation are couriered from TRS to OA for approval. The OA also has remote access to the TRS computer system to review information online. Files are returned as approved and/or for correction.</p>	<p>This process is very manual and paper intensive and requires the OA to review and certify many routine, basic calculations.</p> <p>Most retirement systems do not require the certification of every benefit but rely on computer systems to calculate basic benefits with periodic auditing of those calculations to verify their accuracy. Manual review and certification are typically provided for more complex calculations such as those involving service credits from multiple retirement plans, aggregation of benefits from multiple tiers, and leaves of absence.</p> <p>TRS has created an online, automated certification application for use by the OA to automate this process and has trained the OA on this application. However, the OA has not yet gone live on the application nor is there a firm date or detailed plan as to when this will occur.</p>	<p>The OA should determine a set date for use of the online certification process, request additional or refresher training from TRS if needed, and commence use of this online application so as to dispense with the exchange of paper files.</p> <p>In addition, based on the OA’s experience with the rate of accuracy of TRS’s calculations, the OA should determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>

**NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM (BERS)****Overview**

The data collection process used by BERS and the OA has improved since the 2003 administrative review. BERS, through Prudential, is providing more detailed information to the OA, particularly regarding part-timers, enhanced retirement program features, and cause of termination. The actual steps in the process remain the same and include a pre-valuation meeting to review issues from the prior year, exchange of data tapes/files for the active and pensioner data, and data clean up and validation. This process is detailed in the New York City Board of Education Retirement System – Valuation Data Procedure dated May 25, 2004.

BERS continues to clean up the member records. In preparation for a new administrative computer system, BERS started a major data clean up project in the fall of 2005. IBM is currently helping BERS with this project to take the data from Prudential, normalize and clean it up, and import it into a data warehouse. All legacy data is being incorporated into this project.

BERS also started an imaging project to image all documents starting with all of the historical documentation and then the newer forms.

Unique to the BERS data process when compared to the other Systems, is that the OA sends a copy of the final valuation data back to Prudential. Prudential then compares the valuation data with the data originally sent to the OA and makes any appropriate edits to the data for the following period.

BERS is considering the feasibility of acquiring a new administration system to more efficiently enroll members, track member demographics, and perform benefit calculations. If BERS proceeds with the implementation of a new computer system, BERS should contact the OA to insure that all required data elements for the valuation are accurately recorded and tracked in the new computer system.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>BERS, Prudential, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from BERS, Prudential, PMS, and PPMS.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by BERS, particularly types of service and salary base for pension. There are also data elements that BERS did not realize the OA required or did not clearly understand the breakdown of information that the OA would like which BERS can provide to the OA.</p>	<p>The OA needs to include as part of its annual meeting with BERS a detailed review of the data elements and discuss with BERS the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with BERS to have them provide the necessary data for the valuation.</p>
2.	PPMS Data	<p>The OA is expecting to collect directly from PPMS a number of data elements for the BERS actuarial valuation.</p>	<p>The OA has not discussed with BERS, in detail, the data elements the OA expects to collect through PPMS to insure that BERS will be, in fact, populating those fields in PPMS with the information the OA requires for the actuarial valuation.</p>	<p>The OA should meet with BERS and review the data elements to be collected through PPMS and verify that BERS will be correctly populating those fields when BERS goes “live” on PPMS at the end of 2006/first part of 2007.</p>

#	Concern	Discussion	Finding	Recommendation
3.	Collection of Active Data	<p>The OA requests the active data from Prudential, BERS's recordkeeper. The OA sends Prudential the prior year's final valuation file including all data edits. Prudential compares the file from OA with the file sent to the OA to determine data edits to be made prior to preparing the current year valuation file. This data is received by the OA on a 3480 tape cartridge. The OA sends the cartridge to CUNY for loading onto the mainframe system. The OA can edit the data via a series of mainframe computer programs.</p>	<p>The current data collection process is cumbersome and inefficient, involving old tape cartridges and not utilizing newer technology to collect and transmit valuation data. However, the OA has begun to utilize Microsoft Access databases to more easily manipulate, review and edit the data.</p> <p>Standard industry practice is for the retirement system, in this case BERS and its recordkeeper, Prudential, to be the source of all active data and responsible for the accuracy and completeness of that data and for that data to be transmitted electronically through a secure FTP website.</p> <p>BERS is currently exchanging similar data with other entities through a secure VPN and encrypted files. Therefore, it should be expected that a similar process would suffice for the OA.</p>	<p>BERS should be responsible for the collection and transmittal to the OA of all required valuation data.</p> <p>The OA and BERS/Prudential should develop a mechanism to transfer secure electronic files between themselves and facilitate the collection and transmittal of the active data such as the use of a secure File Transfer Protocol (FTP) site where BERS and the OA can transmit PGP encrypted files between themselves.</p>
4.	Required ITHP and Required Employee Contributions	<p>These elements can be calculated for all active members by BERS but are currently not provided to the OA. Therefore, the OA must estimate these amounts for use in the actuarial valuation.</p>	<p>The OA is estimating these values for the valuation data when BERS has already calculated them. However, BERS is not including them when they transmit the valuation data to the OA.</p>	<p>BERS should provide this information to the OA in the valuation data.</p>

#	Concern	Discussion	Finding	Recommendation
5.	Reconciliation Reports	BERS provides the OA with various listings showing which members have vested, terminated, etc.	<p>BERS does not provide the OA with a complete reconciliation report showing the changes in member status over the year. Therefore, the OA must prepare such a report in order to validate the data prior to performing any data edits or adjustments.</p> <p>In discussions with BERS, BERS indicated that this report could be provided but had never been requested for this type of report by the OA.</p>	BERS or Prudential should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation data. This would significantly improve the OA's ability to accurately and efficiently validate the current year's valuation data.
6.	Supplemental Payment Status	Benefits are finalized as expired labor contracts are settled and may cause retroactive benefit adjustments/ payments. The OA does not receive an indicator within the actuarial data identifying those benefits where the benefits have not been finalized due to an expired contract though BERS does have an internal indicator it uses to identify these members.	BERS does not provide the OA with an indicator in the valuation data for the participants who are on a non-finalized benefit due to an expired contract. The OA imputes who these individuals are based on the tracking of the benefit calculation it has reviewed and increases the aggregate actuarial liabilities by both an estimated amount for the participant's projected contract increase.	<p>BERS should provide the OA with an indicator on the actuarial valuation data which identifies those members with non-finalized benefits due to expired contracts to allow the OA to more easily identify and value the impact of the contract settlements.</p> <p>The OA should review whether it should continue to account for the expired contracts on an aggregate basis or should the expired contracts be accounted for on an individual basis for only those affected individuals.</p>



#	Concern	Discussion	Finding	Recommendation
7.	Transfer of Account Balances	<p>Substitute and part-time teachers participate in BERS. Upon receipt of a full-time appointment, teachers are required to join TRS and leave BERS.</p> <p>There is no automatic transfer of contributions between BERS and TRS. TRS and BERS now have a new process whereby TRS will send a transmission to BERS through the Financial Information Services Agency (FISA) to terminate BERS deductions when TRS receives notification of a new appointee that should be enrolled in TRS. BERS has an automated process to transfer to TRS a member's contributions plus interest less any loan balance but only after the member completes a transfer application. BERS must have a member complete an application to transfer these account balances and that may take several months to complete.</p>	<p>The transfer of account balances from BERS to TRS or other Systems is typically delayed, waiting for the member to complete the transfer forms.</p>	<p>BERS should consider a legislative initiative to allow for the automatic transfer of a member's account balance upon notification by TRS of member enrollment. The initiative might include a provision for a member to proactively request that the transfer not occur. However, unlike the current requirement for the member to request the transfer, the initiative should be such that transfer will occur automatically unless the member elects otherwise.</p> <p>This would allow BERS to close a large number of inactive accounts where members are active in TRS but have not completed the necessary paperwork to allow the account transfer.</p>

#	Concern	Discussion	Finding	Recommendation
8.	Benefit Certifications	<p>The OA is required to certify all final pension calculations. Paper files showing final calculation and supporting documentation are couriered from BERS to OA for approval and back. Files are returned as approved and/or for correction.</p>	<p>This process is very manual and paper intensive and requires the OA to review and certify many routine, basic calculations.</p> <p>Most retirement systems do not require the certification of every benefit but rely on computer systems to calculate basic benefits with periodic auditing of those calculations to verify their accuracy. Manual review and certification are typically provided for more complex calculations such as those involving service credits from multiple retirement plans, aggregation of benefits from multiple tiers, and leaves of absence.</p>	<p>This process is very paper intensive. If BERS should implement a new computer system, consideration should be given to developing an automated process and dispense with the exchange of paper files.</p> <p>In addition, based on the OA’s experience with the rate of accuracy of BERS’s calculations, the OA should determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>

**NEW YORK CITY POLICE PENSION FUND (POLICE)****Overview**

POLICE is in the process of implementing a new computer system which will significantly automate the data collection process used by POLICE and the OA. However, the basic steps in the process should remain relatively the same and include a pre-valuation meeting to review issues from the prior year, exchange of data tapes/files for the active and pensioner data, and data clean up and validation. This process is detailed in the New York City Police Pension Fund – Valuation Data Procedure dated April 1, 2004. This documentation will need to be updated once POLICE's new computer system is fully implemented.

2006 will be the first year that POLICE's new computer system will be utilized to provide the data for the actuarial valuation.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>POLICE, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from POLICE, PMS, and PPMS.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by POLICE from their new computer system.</p>	<p>Given POLICE’s new computer system, the OA needs to include, as part of its annual meeting with POLICE, a detailed review of the data elements and discuss with POLICE the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with POLICE to have them provide the necessary data for the valuation.</p>
2.	PPMS Data	<p>The OA is expecting to collect directly from PPMS a number of data elements for the POLICE actuarial valuation.</p>	<p>The OA has not discussed with POLICE in detail the data elements the OA expects to collect through PPMS to insure that POLICE is, in fact, populating those fields in PPMS with the information the OA requires for the actuarial valuation.</p> <p>POLICE has an ongoing consultant onsite at POLICE to assist with any outstanding issues regarding PPMS.</p>	<p>The OA should meet with POLICE and review the data elements to be collected through PPMS and verify that POLICE is correctly populating those fields.</p>

#	Concern	Discussion	Finding	Recommendation
3.	Collection of Active Data	<p>The data file has traditionally been created through the manual entry of “blue cards” into a database maintained by POLICE. The “blue cards” are completed upon the swearing in of a new officer and are used to track all critical member information. The active data file is updated by the OA through a new member file, a vested member listing, a member contribution file, and withdrawal records provided by POLICE to the OA.</p>	<p>POLICE is implementing a new computerized administration system that should allow POLICE to provide all actuarial valuation data in an electronic file to the OA. Over 40,000 “blue cards” are being loaded into the new system and will be verified through statements sent to the members. This should improve the process flow and the accuracy of the valuation data as well as free the OA from manually maintaining the POLICE active data file.</p> <p>POLICE currently exchanges similar data with PMS, PPMS, and the Police Department through a secure VPN and encrypted files. Therefore, it should be expected that a similar process would suffice for the OA.</p>	<p>POLICE should work closely with the OA to ensure that all data elements for the actuarial valuation are tracked and maintained in the new computer system.</p> <p>The OA and POLICE should also develop a mechanism to transfer secure electronic files between themselves and facilitate the collection and transmittal of the active data.</p>

#	Concern	Discussion	Finding	Recommendation
4.	Expired Labor Contracts	<p>POLICE participants may retire after the current labor contract has expired and before the new labor contract has settled. POLICE cannot calculate an accurate final retirement benefit for these participants and the OA cannot certify the final benefit until the new labor contract has settled. In the interim, POLICE pays the participant an estimated, non-finalized benefit. POLICE does not currently provide the OA, in the valuation data, any code which indicates whether the participant is in non-finalized or finalized payment status.</p> <p>The OA currently estimates the impact of the settlement of expired labor contracts in the valuation by including an imputed load to the overall liabilities for the projected contract settlement increase and any retroactive payments.</p>	<p>POLICE does not provide the OA with an indicator in the valuation data for the participants who are waiting for benefit finalization due to expired contracts. The OA estimates who these individuals are and increases the aggregate actuarial liabilities by both an estimated amount for the participant’s full benefit as well as an additional amount for the projected contract increase.</p>	<p>POLICE should include in their new system the ability to flag or otherwise identify for the OA those participants in the valuation data whose benefits have not been finalized to allow the OA to more easily identify and value the impact of the contract settlements.</p> <p>The OA should review whether it should continue to account for the expired contracts on an aggregate basis or should the expired contracts be accounted for on an individual basis for only those affected individuals.</p>
5.	Reconciliation Reports	<p>POLICE provides the OA with various files and listings showing changes in its membership including which members have vested, terminated, etc.</p>	<p>POLICE does not provide the OA with a complete reconciliation report showing the changes in member status over the year. Therefore, the OA must prepare such a report in order to validate the data prior to performing any data edits or adjustments.</p>	<p>Through its new computer system, POLICE should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation data. This would significantly improve the OA’s ability to accurately and efficiently validate the current year’s valuation data.</p>

#	Concern	Discussion	Finding	Recommendation
6.	Buyback Service	<p>Buyback service is currently calculated and tracked in paper files by POLICE. The service does not show up as credited service until retirement.</p> <p>POLICE expects it will be able to track buybacks once the new computer system has been implemented because buybacks will be included in the data fields.</p>	<p>The OA will see sudden, unexpected increases in member’s services due to the buying back of service that must be explained by POLICE.</p> <p>Many retirement systems track the buying back of service and include the pro-rated portion of the service already paid for in the valuation so as to avoid sudden jumps in liabilities. However, many times a member will not buy back service until just prior to retirement, when it is most beneficial to the member.</p>	<p>As part of the reconciliation reports noted above, POLICE should provide the OA with an indicator as to which members are buying back service and the amount of service the member is currently buying back. POLICE should verify that appropriate functionality for tracking of buybacks and service eligible for buyback is included in its new computer system.</p> <p>The OA should decide how best to account for service buy backs in the valuation whether through the current process of accounting for the increased liability upon completion of the purchase or through some load to the actuarial liabilities based on historical experience.</p>
7.	Collection of Pensioner Data	<p>The OA currently requests the pensioner payroll data from the Comptroller’s Bureau of Information Systems (BIS). The BIS sends the OA two files – one for June and one for July of the current year. The files are sent to CUNY for loading onto the mainframe system and then the OA compares the two files to find pensioners who commenced payment in July and actually retired in June.</p>	<p>This data collection process is cumbersome and inefficient, involving old tape cartridges and diskettes, too many steps and not utilizing newer technology to collect and transmit valuation data.</p> <p>Standard industry practice is for the retirement system, in this case POLICE, to be the single source of all data and responsible for the accuracy and completeness of that data.</p>	<p>POLICE should ensure that its new computer system can provide the OA with an accurate, up-to-date list of all pensioners and should be responsible for the collection and transmittal to the OA of all required valuation data.</p> <p>The OA and POLICE should also develop a mechanism to transfer secure electronic files between themselves to facilitate the collection and transmittal of the pensioner data.</p>

#	Concern	Discussion	Finding	Recommendation
8.	Benefits in Partial Payment or Estimated Status	<p>POLICE pays a partial benefit payment of 90% of the estimated payment until the benefit has been finalized and certified. The OA does a preliminary check of this calculation but does not certify the final pension benefit until all contracts covering that benefit have been settled. Benefits are flagged internally as either finalized or non-finalized but this information is not communicated to the OA.</p> <p>However, with the POLICE's new computer system, such payments are supposed to be flagged and indicated on the actuarial valuation data provided to the OA.</p>	<p>Currently, POLICE does not provide the OA with an indicator in the valuation data identifying those benefits that are in partial payment status and those benefits that are in final payment status. The OA estimates who these individuals are based on their internal lists and increases the participant's benefit to the estimated amount for the participant's full benefit.</p>	<p>With the new computer system, POLICE should identify those members with non-finalized benefits in the valuation data provided to the OA to allow the OA to more easily identify and value the impact of the finalization of these benefits.</p>
9.	Joint & Survivor Calculations	<p>POLICE currently uses joint and survivor factor tables provided by the OA to perform the benefit option calculations.</p>	<p>These factor tables are currently maintained on paper.</p>	<p>POLICE should ensure that these factor tables are included in the new computer administration system and the OA should verify that the factors are correctly applied in the calculations performed on the new computer system.</p>



#	Concern	Discussion	Finding	Recommendation
10.	Benefit Certifications	The OA is required to certify all final pension calculations. Paper files showing final calculation and supporting documentation are couriered from POLICE to OA for approval. Files are returned as approved and/or for correction.	<p>This process is very manual and paper intensive and requires the OA to review and certify many routine, basic calculations.</p> <p>Most retirement systems do not require the certification of every benefit but rely on computer systems to calculate basic benefits with periodic auditing of those calculations to verify their accuracy. Manual review and certification are typically provided for more complex calculations such as those involving service credits from multiple retirement plans, aggregation of benefits from multiple tiers, and leaves of absence.</p>	<p>POLICE should consider developing an automated process with the OA to perform benefit certifications and dispense with the exchange of paper files.</p> <p>In addition, based on the OA's experience with the rate of accuracy of POLICE's calculations, the OA should determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>

#	Concern	Discussion	Finding	Recommendation
11.	Transfers of Reserves	<p>POLICE is one of two Systems that are still required to transfer reserves in order to recognize prior service when a member transfers in or out of POLICE to FIRE or the state police system. Transfers must be made within prescribed time limits.</p> <p>The basic calculation is done by POLICE but must be sent to the OA for calculation of supplemental provisions and calculation verification.</p> <p>Currently, all information is transferred via paper files. POLICE sends approximately 200 reserve calculations to the OA per year, with approximately 50-70 such requests outstanding at the OA for any given month. The process may take up to two years to complete and finalize if there are expired contracts which do not settle for a long period of time.</p> <p>With POLICE's new computer administration system, the expectation is that this information can be provided via a secured, encrypted connection between POLICE and the OA.</p>	<p>This process is also very manual and paper intensive and should be automated through POLICE's new computer system. However, there has been no discussion to date regarding how this process will change with the implementation of the new computer system.</p>	<p>POLICE should ensure that all data elements for the reserve calculations are tracked and maintained in the new computer system.</p> <p>POLICE, working with the OA, should also consider the automation of these calculations within its new computer system. The OA should then determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p> <p>POLICE and the OA should finally develop a mechanism to transfer secure electronic files between themselves to facilitate the processing and certification of these calculations.</p>

**NEW YORK CITY FIRE PENSION FUND (FIRE)****Overview**

FIRE and the OA continue to use the same general process for the collection of the actuarial valuation data as in prior years. This process includes a pre-valuation meeting to review issues from the prior year, exchange of data tapes/files for the active and pensioner data, and data clean up and validation. This process is detailed in the New York City Fire Pension Fund – Valuation Data Procedure dated April 1, 2004.

FIRE is the only System still not under corpus funding.

FIRE is in the process of acquiring a new computer system for the administration of the pension program. Upon implementation of the new system, the processes used for the collection of the actuarial data should be significantly automated.

FIRE was the first to go “live” on the new PPMS (pension payroll) computer system in May, 2005.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>FIRE, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from FIRE, PMS, and PPMS.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by FIRE, particularly tier changes and appointment date.</p> <p>There are also data elements that FIRE did not realize the OA required or did not clearly understand the breakdown of information that the OA would like which FIRE can provide to the OA.</p>	<p>The OA needs to include, as part of its annual meeting with FIRE, a detailed review of the data elements and discuss with FIRE the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with FIRE to have them provide the necessary data for the valuation.</p>
2.	PPMS Data	<p>The OA is expecting to collect directly from PPMS a number of data elements for the FIRE actuarial valuation.</p>	<p>The OA has not discussed with FIRE in detail the data elements the OA expects to collect through PPMS to insure that FIRE is populating those fields in PPMS with the information the OA requires for the actuarial valuation. During the discussions with FIRE, it became clear that, in fact, they are not populating some the PPMS fields due to a lack of understanding of the data required for the field or not understanding that the OA is expecting to use the field for data for the actuarial valuation.</p>	<p>The OA should meet with FIRE and review the data elements to be collected through PPMS and verify that FIRE is correctly populating those fields.</p>

#	Concern	Discussion	Finding	Recommendation
3.	Collection of Active Data	<p>The data file has traditionally been created through the manual entry of the history cards into a database maintained by FIRE. The cards include appointment date, age, contribution rate, and other member information.</p> <p>From the database, FIRE creates various files for the OA showing new members, withdrawals, terminations, and employee contributions/ service. These files are sent to the OA via e-mail using PKZip for encryption and are password-protected. FIRE also sends the files to the OA via diskettes which are password-protected. The OA then loads the file onto the CUNY mainframe system where the OA can edit the data via a series of mainframe computer programs.</p>	<p>The expectation for FIRE's new system is that it will track all information needed for the actuarial valuation and provide the actuarial valuation data in an electronic file to the OA. This should improve the process flow and free the OA from manually maintaining the FIRE active data file.</p>	<p>FIRE should work closely with the OA to ensure that all data elements for the actuarial valuation are tracked and maintained in the new computer system.</p> <p>The OA and FIRE should also continue to utilize a mechanism to transfer secure electronic files between themselves and facilitate the collection and transmittal of the active data.</p>

#	Concern	Discussion	Finding	Recommendation
4.	Collection of Pensioner Data	<p>The OA currently requests the pensioner payroll data from the Comptroller’s Bureau of Information Systems (BIS). The BIS sends the OA two files – one for June and one for July of the current year. The files are sent to CUNY for loading onto the mainframe system and then the OA compares the two files to find pensioners who commenced payment in July and actually retired in June.</p> <p>FIRE is the first System to go “live” on the new PPMS (pension payroll) computer system.</p>	<p>This data collection process is cumbersome and inefficient, involving old tape cartridges and diskettes, too many steps and not utilizing newer technology to collect and transmit valuation data.</p> <p>Standard industry practice is for the retirement system, in this case FIRE, to be the single source of all data and responsible for the accuracy and completeness of that data.</p>	<p>FIRE should include in its new computer system the ability to produce an accurate, up-to-date list of all pensioners for the OA and should be responsible for the collection and transmittal to the OA of all required valuation data.</p> <p>The OA and FIRE should continue to utilize a mechanism to transfer secure electronic files between themselves to facilitate the collection and transmittal of the pensioner data.</p>

#	Concern	Discussion	Finding	Recommendation
5.	Expired Labor Contracts	<p>FIRE participants may retire after the current labor contract has expired and before the new labor contract has settled. FIRE cannot calculate an accurate final retirement benefit for these participants and the OA cannot certify the final benefit until the new labor contract has settled. In the interim, FIRE pays the participant an estimated, non-finalized benefit. FIRE currently provides the OA, in the valuation data, a code which indicates that the participant is in non-finalized payment status.</p> <p>The OA currently estimates the impact of the settlement of expired labor contracts in the valuation by including an imputed load to the overall liabilities for the projected contract settlement increase and any retroactive payments.</p>	<p>FIRE does provide the OA with an indicator in the valuation data for the participants who are waiting for benefit finalization due to expired contracts. The OA then increases the aggregate actuarial liabilities by both an estimated amount for the participant's full benefit as well as an additional amount for the projected contract increase.</p>	<p>FIRE should ensure that their new system has the ability to flag or otherwise identify for the OA those participants in the valuation data whose benefits have not been finalized to allow the OA to easily identify and value the impact of the contract settlements.</p> <p>The OA should review whether it should continue to account for the expired contracts on an aggregate basis or should the expired contracts be accounted for on an individual basis for only those affected individuals.</p>
6.	Reconciliation Reports	<p>FIRE provides the OA with various files and listings showing changes in its membership including which members have vested, terminated, etc.</p>	<p>FIRE does not provide the OA with a complete reconciliation report showing the changes in member status over the year. Therefore, the OA must prepare such a report in order to validate the data prior to performing any data edits or adjustments.</p>	<p>Through its new computer system, FIRE should provide the OA with a reconciliation report showing all members who changed status and what the change was since the prior valuation data. This would significantly improve the OA's ability to accurately and efficiently validate the current year's valuation data.</p>

#	Concern	Discussion	Finding	Recommendation
7.	Benefit Certifications	<p>The OA is required to certify all final pension calculations. Paper files showing final calculation and supporting documentation are couriered from FIRE to OA for approval. Files are returned as approved and/or for correction.</p>	<p>This process is very manual and paper intensive and requires the OA to review and certify many routine, basic calculations.</p> <p>Most retirement systems do not require the certification of every benefit but rely on computer systems to calculate basic benefits with periodic auditing of those calculations to verify their accuracy. Manual review and certification are typically provided for more complex calculations such as those involving service credits from multiple retirement plans, aggregation of benefits from multiple tiers, and leaves of absence.</p>	<p>As FIRE implements its new computer system, FIRE should develop an automated process with the OA to perform benefit certifications and dispense with the exchange of paper files.</p> <p>In addition, based on the OA’s experience with the rate of accuracy of FIRE’s calculations, the OA should determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>
8.	Transfers of Reserves	<p>FIRE is one of two Systems that are still required to transfer reserves in order to recognize prior service when a member transfers in or out of FIRE to POLICE or NYCERS. Transfers must be made within prescribed time limits.</p> <p>The basic calculation is done by FIRE but must be sent to the OA for calculation of supplemental provisions and calculation verification.</p> <p>Currently, all information is transferred via paper files. FIRE sends 1-2 reserve calculations to the OA per month. There are approximately 20 outstanding reserve calculations for POLICE or</p>	<p>This process is also very manual and paper intensive and should be automated through FIRE’s new computer system.</p>	<p>The OA should work closely with FIRE to complete the outstanding NYCERS transfer calculations.</p> <p>FIRE should ensure that all data elements for the reserve calculations are tracked and maintained in the new computer system.</p> <p>FIRE, working with the OA, should also consider the automation of these calculations within its new computer system. The OA should then determine whether it needs to review every file, only a sample of the files, or only the more complex cases with set protocols established to determine when the OA reviews or audits a calculation.</p>



#	Concern	Discussion	Finding	Recommendation
		<p>state system transfers, down considerably from prior years due to the recently passed legislation that eliminated the requirement for most transfer calculations. FIRE flags all outstanding transfers waiting for reserve calculations on their system. FIRE has established a separate unit to work with members and the OA on service buybacks and transfers in order to expedite the processing of these.</p> <p>With FIRE's new computer administration system, the expectation is that this information can be provided via a secured, encrypted connection between FIRE and the OA.</p>		<p>FIRE and the OA should finally develop a mechanism to transfer secure electronic files between themselves to facilitate the processing and certification of these calculations.</p>
9.	Corpus Funding	FIRE is the only System not under corpus funding.	Corpus funding allows for improved investment in staff and technology.	FIRE should be approved for corpus funding.

**OFFICE OF THE ACTUARY (OA)****Overview**

The OA utilizes the relatively same process for the collection of the actuarial valuation data with each System, with some modifications to the process based on each System's technical capabilities. This process includes a pre-valuation meeting to review issues from the prior year, exchange of data tapes/files for the active and pensioner data, and data clean up and validation.

Since the 2003 administrative review, all of the Systems have implemented or are in the process of implementing new technology. With that new technology, previous actuarial data elements which the Systems were unable to provide may now be available. Therefore, the OA should be working closely with the Systems to determine which data elements still must be estimated and which data elements may be provided by the Systems. The OA should also leverage available, newer technology to automate more of the valuation process, including a better mechanism for handling of the data.

The OA has also started preparing for the retirement of key senior staff. The OA has focused on training and educating younger, junior staff on valuation data preparation and benefit certifications. In addition, junior staff is learning the current valuation processes and procedures through working closely with a senior staff actuary. Finally, the OA has formalized its actuarial trainee program to include a formal actuarial study program and improved matching of staffing positions with position responsibilities.

**Specific Findings & Recommendations**

#	Concern	Discussion	Finding	Recommendation
1.	Data Elements	<p>The Systems, the OA, and Segal reviewed the data elements, one-by-one, used by the OA in the preparation of the actuarial valuation.</p> <p>Valuation data is collected by the OA from each System, PMS, and PPMS.</p>	<p>There are data elements that the OA is currently calculating or estimating that can be provided by the Systems. There are also data elements that the Systems did not realize the OA required or did not clearly understand the breakdown of information that the OA would like which the Systems can provide to the OA.</p>	<p>The OA needs to include, as part of its annual meeting with each System, a detailed review of the data elements and discuss with each System the data elements and exactly what type of information the OA requires in each data element. The OA should work closely with each System to have them provide the necessary data for the valuation.</p>
2.	PPMS Data	<p>The OA is expecting to collect directly from PPMS a number of data elements for each System's actuarial valuation.</p>	<p>The OA has not discussed with any of the Systems, in detail, the data elements the OA expects to collect through PPMS to insure that each System is or will be populating those fields in PPMS with the information the OA requires for the actuarial valuation.</p>	<p>The OA should meet with each System and review the data elements to be collected through PPMS and verify that each System is correctly or will be correctly populating those fields.</p>
3.	Collection of Active Data	<p>The OA requests the active data from each of the Systems. This data is received by the OA on both diskettes and 3480 tape cartridges. The OA sends the diskettes and cartridges to CUNY for loading onto the mainframe system. That data file may be sent to the System for editing and additional information and then is returned to the OA via a tape cartridge. The OA sends the cartridge to CUNY for loading onto the mainframe system where the OA can edit the data via a series of mainframe computer programs.</p>	<p>With the implementation of newer computer systems at the Systems, the Systems should be able to track all information needed for the actuarial valuation and provide the actuarial valuation data in an electronic file to the OA.</p> <p>Many of the Systems are already exchanging similar data with other entities via encrypted files and secured network connections.</p>	<p>The OA and each System should establish a mechanism to transfer secure electronic files between themselves and facilitate the collection and transmittal of the active data so that the OA can import and manage the data themselves without relying on CUNY for support.</p>

#	Concern	Discussion	Finding	Recommendation
4.	Editing of Active Data	<p>The OA must run a series of old COBOL, mainframe computer programs to perform any edits to the active data. The programs produce edit listings showing records with a particular data error.</p> <p>These programs have been utilized for many years and require a significant amount of programming knowledge and experience with the program before any modifications can be made to the programs.</p>	<p>The OA is utilizing outdated data handling and editing programs that are written in old technology and do not provide for quick and easy manipulation of the valuation data. In addition, the programs require a higher level of expertise for the handling of the data given the complexity of the programs.</p> <p>The OA has begun to use Microsoft Access databases to manipulate, review and edit the data.</p>	<p>The OA should continue to leverage available, newer technology that allows less experienced staff to easily review and edit the data directly and more easily manipulate the data for error checking. The technology should track all data edits by user ID, date and time.</p>
5.	Rate of Salary	<p>The OA uses the rate of salary for the actuarial valuation and the Systems send the actual paid salary. Then, the OA requests the salary information from the Office of Payroll Administration (OPA). OPA writes the actual request and sends it to the Financial Information Services Agency (FISA). FISA creates a salary file for all active employees of the City and sends it to the OA. The OA sends the file to CUNY for loading onto the CUNY computer system for processing. The OA, using the CUNY computer system, splits the file by System and creates separate salary files for each System. The OA then overlays the paid salary information provided by the System with the rate of salary information provided by FISA.</p>	<p>The OA is collecting salary data from an alternate source, rather than going directly to the Systems and communicating the actual valuation data it needs.</p>	<p>Given the recent upgrade in technology at all of the Systems, the OA should communicate and work directly with the Systems to have them provide all of the required valuation data including the rate of salary.</p>

#	Concern	Discussion	Finding	Recommendation
6.	Expired Labor Contracts	<p>All of the Systems allow participants to retire after the current labor contract has expired and before the new labor contract has settled. The System cannot calculate an accurate final retirement benefit for these participants and the OA cannot certify the final benefit until the new labor contract has settled. In the interim, each System pays the participant some form of an estimated, non-finalized benefit.</p> <p>The OA currently estimates the impact of the settlement of expired labor contracts in the valuation by including an imputed load to the overall liabilities for the projected contract settlement increase and any retroactive payments.</p>	<p>The Systems generally do not provide the OA with an indicator in the valuation data for the participants who are waiting for benefit finalization due to expired contracts. FIRE is the only System that provides such an indicator. The OA must typically impute which individuals are being paid a non-finalized benefit and then increase the aggregate actuarial liabilities by both an estimated amount for the participant's full benefit as well as an additional amount for the projected contract increase.</p>	<p>Each System should provide the OA with a flag or otherwise identify for the OA those participants in the valuation data whose benefits have not been finalized to allow the OA to easily identify and value the impact of the contract settlements.</p> <p>The OA should review whether it should continue to account for the expired contracts on an aggregate basis or should the expired contracts be accounted for on an individual basis for only those affected individuals.</p>
7.	Pensioner Information	<p>The City is in the process of implementing a new centralized pension payroll management system (PPMS). FIRE is the first System to transition to the new PPMS. The OA has not reviewed the specifications for PPMS nor determined the data implications of PPMS for the valuations. However, the OA did provide detailed definitions of specific data fields for both the current payroll system and what would be needed by the OA from the new payroll system.</p>	<p>The OA is uncertain as to what information will be available through the new PPMS system as well as what data elements will be changed from the current payroll system.</p>	<p>The OA should review the PPMS specifications to determine if all required pensioner valuation data is contained on the computer system or can still be added to the computer system. The OA will need to coordinate with each System as it transitions to PPMS to ensure that it continues to receive all necessary pensioner valuation information.</p>

#	Concern	Discussion	Finding	Recommendation
8.	Pensioner Record Length	The OA has to split each pensioner record into two separate records to edit it on the mainframe system and then recombine the pieces by employee as the CUNY system has a record length limit which the pensioner record exceeds.	The OA is utilizing outdated data handling and editing programs that cause additional steps in the valuation process and potential errors as records are split and recombined.	The OA should leverage available, newer technology that has the flexibility to handle the variable-length pensioner records and not cause additional steps in the valuation process due to the record length limitations.
9.	Final Data Edits	<p>NYCERS commented that they are not always sure what information the OA requires with regard to different variables such as salary and that they do not know the extent of the data edits made by the OA to the valuation data as sent by NYCERS.</p> <p>TRS, FIRE, and POLICE do not receive a final report or other feedback back from the OA regarding the extent of the data edits made by the OA to the valuation data as sent by the System.</p> <p>BERS, through Prudential, does currently receive a copy of the final valuation data and compares it to the valuation data originally sent to the OA to determine what edits were made to the data and implement any appropriate edits to its database.</p>	The OA does not effectively communicate the adjustments and estimates made to the valuation data back to the Systems. Instead, the OA continues to make the same data edits year after year without allowing the Systems to identify and correct valuation data issues through their new computer systems.	In coordination with Item #1 above, the OA needs to communicate the edits made to the valuation data back to the Systems so that the Systems can correct their information as appropriate for the next year's valuation data. This could be simply the OA sending copies of the final valuation data back to the Systems and allowing them to conduct a comparison of the data that was sent to what was used on their own, or it could be a more formal data edit report prepared by the OA which shows, record by record, what was sent and what was the edit.

#	Concern	Discussion	Finding	Recommendation
10.	Calculation Spreadsheets	The OA utilizes Excel spreadsheets to reproduce each System’s benefit calculations and certify the final benefit amount.	Utilizing Excel spreadsheets to certify benefit calculations, in our experience, may meaningfully increase the probability of errors resulting from gaps in the underlying pre-existing spreadsheet logic or errors introduced unknowingly when existing spreadsheets are modified to accommodate new conditions.	<p>The OA should limit and track the development of Excel benefit calculation spreadsheets.</p> <p>One temporary approach to controlling this would be for the OA to create a well-documented spreadsheet catalogue containing only spreadsheets that have been thoroughly documented and to limit spreadsheet use to those contained in the catalogue. However, this approach is not recommended for the long-term as it is difficult to limit the use of variations of spreadsheets over an extended period of time and maintaining the catalogue becomes cumbersome as one tries to keep the catalogue documentation up-to-date.</p> <p>Through the use of available, newer technology, the benefit certifications could also be programmed and tracked through the valuation system.</p>

## Status of Prior Administrative Reviews' Recommendations

Below we present the status of the recommendations made by all of the prior administrative reviews that have been found to still be pertinent. Given the short time period between the 2005 and the 2006 administrative reviews and the lack of time for the Systems and the OA to take corrective action or respond to the recommendation, most 2005 recommendations were included in the 2006 review.

The exception was the recommendation regarding communication/education back to each System regarding the results of the valuation and the impact of valuation results may have on funded status, benefit increases, etc.

Recognizing that the OA has a unique relationship with each System, the OA has made a concerted effort to fully communicate the results of the valuation and the impact of any changes to member demographics, benefits, or actuarial assumptions through the appropriation letters and attendance at each System's Board meetings.

### **Gabriel, Roeder, Smith & Company (2003 Report)**

#### **1. Buy-backs and Breaks in Service**

Recommendation: The OA should evaluate the extent to which the understatement of liabilities on account of ignoring future buy-backs may be offset by the overstatement of liabilities due to the simplified treatment of breaks in service. If the net impact is significant, the OA should make appropriate buy-back assumptions and adjustments for purposes of determining the employer pension contributions.

Status: The OA has not actively quantified the impact of future service buy-backs nor the breaks in service on the actuarial liabilities.

#### **2. Schedule for Valuation Data Reporting**

Recommendation: The OA and the Systems should make all efforts to get back to the target schedule for data collection for the valuation. The Systems should consider appointing a staff member as a backup for liaison purposes who would be able to provide continuity and knowledge in the event the primary liaison is no longer available.

Status: The OA and the Systems are back to agreed upon target schedules for data collection for the valuations.

#### **3. Encryption for Transmission of Sensitive Information**

Recommendation: All Systems as well as the OA should use encryption when transmitting sensitive information such as employee Social Security Numbers and salaries via e-mail.

Status: The Systems and the OA are encrypting files when transmitting sensitive information.



#### 4. Transfer of Reserve Calculations

Recommendation: The OA should plan a strategy for reducing the transfer of reserve backlogs for Systems such as NYCERS and TRS with large backlogs, in the event that proposed legislation for elimination of transfer of reserve calculations does not pass soon.

Status: The transfer of reserves proposed legislation did pass and, therefore, has significantly reduced the number of required reserve calculations.

#### 5. Crediting of Prior Service for Transferees

Recommendations:

a) When an employee transfers from one System to another, the Sending System should send the service and salary record to the Receiving System immediately upon being notified of the transfer. The Receiving System should update the employee's service in its records immediately upon receipt of information from the Sending System and not wait for the transfer of reserves to be completed.

b) The Receiving System should also include updated prior service information in the annual data provided to the OA.

Status:

a) Sending Systems are communicating service and salary records to the Receiving Systems upon notification of transfer and the Receiving Systems are updating the employee's record. Due to recently passed legislation, the transfer of reserves is not required in most transfers.

b) The Receiving Systems are not generally providing updated prior service information in the annual data provided to the OA.

#### 6. New York State Insurance Department Reporting

Recommendation: The Office of the Comptroller move towards a full and speedy resolution to address the problems with data reporting by Citibank and that Citibank or any successor custodian that is chosen provides bond information containing the requisite detail.

Status: The City has a new custodian bank who is working more closely with the OA to provide the necessary information timely and accurately but which has been unsuccessful to date in providing the requisite bond information for the New York State Insurance Department Reporting.

#### 7. Status Reconciliation Report

Recommendation: The Systems should provide status reconciliation reports for actives and pensioners along with the valuation data to the OA.

Status: The Systems are not currently providing status reconciliation reports for actives and pensioners along with the valuation data to the OA.

## 8. Implementation of Auditor Recommendations

Recommendation: A group designated by the Office of the Comptroller should meet on a periodic basis to track progress on implementing the recommendations.

Status: No formal group has been designated to track progress on the implementation of the administrative review recommendations.

## 9. OA - Improved Security Measures for the OA

Recommendation: The OA should store the large number of hard-copy files that are on-site in fire resistant cabinets. It should also explore the use of imaging technology for electronic storage of hard copy documents.

Status: The OA has moved to the use of imaging for all files but has not moved the hard-copy files to fire resistant cabinets.

## 10. OA - Upgrading of Methods and Technology for the OA

Recommendation: Recommend that the OA commission a study to review alternatives for upgrading methods, applications and technology used for gathering, editing, handling and transmitting of data.

Status: The OA continues to revise and improve its methods for gathering, editing, handling, and transmitting data as the Systems implement new administration systems and upgrade their technology. In addition, the OA is currently exploring ways to leverage available technology to improve its handling of the valuation data.

## 11. OA - Staffing

Recommendation: The OA should be diligent in implementation of its hiring plan. The OA should hire additional staff with required skills as dictated by its needs for succession planning and implementation of new technology. The OA should also review the current study program and incentives for passing exams that are offered to actuarial trainees and revise these as necessary in order to improve recruiting and retention.

Status: The OA has implemented a formal actuarial program for actuarial trainees including a study program and incentives for passing exams. The OA has also been working on its succession plan and been more formally matching required job skills with positions.

## 12. OA - Increased Funding for the OA

Recommendation: Recommend increased funding for the OA for upgrading its technology and increasing staffing or training as necessary.

Status: The OA has received increased funding for increasing staffing and training and has requested increased funding for new technology.

**13. OA - Plan Provisions Used for the Valuation**

Recommendation: The OA should include or reference a clear outline of plan provisions used for the valuation in the document used to communicate the employer pension contribution to each System.

Status: The OA has begun to include additional funding information in each System's consolidated annual financial report but has not been providing outlines of plan provisions in its communication of the employer pension contribution to each System.

**14. OA - Formal Agreement with Buck**

Recommendation: Recommend that the OA consider entering into a formal agreement with Buck that would state that Buck would run the entire valuation if this were required on account of an emergency.

Status: The OA has elected not to implement this recommendation.

**15. NYCERS – Better Reporting of Buybacks**

Recommendation: NYCERS should provide the OA annual service updates resulting from employee buy-backs so that the OA may reflect this data in the valuation.

Status: NYCERS is currently not providing the OA with annual service updates resulting from employee buy-backs.

**16. NYCERS – Streamlining of Reporting of Employee Data for the Valuation**

Recommendations:

a) NYCERS and the OA should consider revision of current coordination procedures and the streamlining of reporting of employee census data in order to avoid delays in data gathering for the valuation.

b) NYCERS and the OA should resolve issues with conflicting active data sent under the two layouts for the valuation so that only one layout may be submitted by NYCERS for the valuation.

Status:

a) NYCERS and the OA have modified some of the procedures and continue to look for additional opportunities to streamline the reporting of employee census data for the valuation process.

b) NYCERS and the OA are using a new, single layout for the active data sent by NYCERS to the OA for the valuation.

**17. NYCERS – Better Reporting of Employee Contribution and ITHP Information**

Recommendation: NYCERS has data available on actual accumulated ITHP balances, minimum employee contribution balances and minimum ITHP balances for those Tier 1 and Tier 2 employees who are eligible to retire and it should report this data to the OA.

Status: NYCERS is currently not providing the OA with above available information.

**18. TRS – Cleanup of Valuation Data**

Recommendation: Encourage TRS to continue cleanup of valuation data and recommend TRS communicate proposed enhancements to the UPS Valuation Reporting Process to the OA and obtain input from the OA during the development process.

Status: TRS has completed a significant amount of data cleanup including the elimination of duplicate records with BERS, completion of missing birth dates, and entry of gender information. TRS has not discussed proposed enhancements to the UPS Valuation Reporting Process with the OA.

**19. TRS and BERS - Duplicate Records**

Recommendation: BERS should reflect information received from TRS in the active member data reported to the OA in order to avoid duplicate records.

Status: TRS and BERS have resolved the duplicate records issue showing a member active in both systems.

**20. BERS – Security Procedures**

Recommendations:

a) BERS should use encryption when sending sensitive employee information to Prudential via e-mail.

b) BERS should improve data back-up procedures for greater security.

Status:

a) BERS is using Prudential's secure website for all transmissions to Prudential.

b) BERS is backing up nightly its database to tape with the tapes being stored at an offsite, secure location.

**21. BERS – Part-timer Data**

Recommendation: The OA should obtain information on part-timers either from the Office of Payroll Administration or BERS in order to determine whether a more refined approach is required in the valuation for part-timers.

Status: BERS, through Prudential, is now providing more detailed information on part-timers to the OA in the active valuation data.

**22. POLICE – Data Procedures**

Recommendations:

a) POLICE should work towards a goal of reducing excessive dependence on the OA in maintaining pension data.

b) POLICE should automate registers as well as the calculation of routine pension benefits.

c) POLICE should aim to provide the OA data on actual ITHP balances for all members within the next two years and minimum employee contributions and minimum ITHP balances as a later step.

d) As POLICE builds its systems and applications, it should provide the OA annual updates on prior service and employee buy-backs.

Status:

a, b, c, d) POLICE is in the process of implementing a new computer system which should address all of the above recommendations.

**23. FIRE – Security Procedures**

Recommendations:

a) FIRE should use encryption when sending sensitive employee census information to the OA via e-mail.

b) FIRE should consider storing back-up tapes and back-up hard copies at a location sufficiently far from the primary location so as not to be subject to the same hazards.

Status:

a) FIRE is encrypting and password protecting all files transmitted to the OA.

b) FIRE has contracted with an external vendor to provide courier pickup and off-site storage of back-up tapes and files.

**24. FIRE – Funding for Technology and Staffing of Retirement System**

Recommendation: Recommend adequate funding for investment in technology and staffing for FIRE so that it can provide state of the art services to its members and avoid backlogs in pension calculations.

Status: FIRE has received some additional funding for staff and technology.

**Watson Wyatt (2000 and 1997 Reports)****1. Corpus Funding**

Status: Corpus funding has been approved for all Systems except FIRE and has allowed for the implementation of new administration systems which provide more accurate valuation information and faster processing.

**2. Funding for the Office of the Actuary by Systems**

Status: The OA has received increased funding for increasing staffing and training and has requested increased funding for new technology. The OA does not agree with the recommendation that it should be funded for by the Systems.

**3. Streamlining of External Reporting**

Status: The City has a new custodian bank who is working more closely with the OA to provide the necessary information timely and accurately but which has been unsuccessful to date in providing the requisite bond information for the New York State Insurance Department Reporting.

**4. Continued Investigation of Contribution/ITHP Data Sources**

Status: Except for FIRE and TRS, the OA continues to estimate minimum employee contribution and ITHP balances for all Systems. The OA also estimates actual ITHP balances for NYCERS and POLICE. NYCERS can calculate the minimum employee contribution and minimum ITHP balances for all active employees and should provide this information to the OA. POLICE is implementing a new computer system and is expected to be able to provide actual ITHP balance through its new system.

**5. Office of the Comptroller to Improve Investment Accounting**

Status: The City has a new custodian bank who is working more closely with the OA to provide the necessary information timely and accurately. NYCERS is also working to track and reconcile the investment information internally.

**William M. Mercer (1995 and 1992 Reports)****1. Improved Communication**

Status: Pre-valuation meetings are held between the systems and the OA. A formal post-valuation meeting is not usually held but becomes part of the agenda for the subsequent cycle's pre-valuation meeting.

**2. Communicate the Status of Work Plans and Due Date**

Status: Work plans and due dates for valuation data are communicated between the OA and the Systems but the OA does not follow up with the Systems and review the work plans and due dates as well as the information actually requested to insure that all parties agree to the timetable and understand precisely what information is required for the valuation.

**3. Continued Use of Control Totals**

Status: Control totals are provided most of the time when data is transferred from the Systems to the OA.

**4. Review the Automation of Registers**

Status: POLICE is implementing a new computer system which should provide for the automation of registers. None of the Systems are providing full, automated registers.

**5. Reconciliation of Status Changes for Each Retirement System**

Status: The Systems do not provide the OA with a report tracking changes in the active and retiree counts from the prior to the current valuation period.

**6. TRS and OA Should Coordinate Valuation Data Activities provided through Unified Pension System (UPS)**

Status: TRS has completed a significant amount of data cleanup including the elimination of duplicate records with BERS, completion of missing birth dates, and entry of gender information and is providing cleaner data to the OA. However, TRS has not discussed with the OA modifications to the UPS for the valuation data activities.

**7. POLICE to Address Automating of Pension Data**

Status: POLICE is implementing a new administration system that should fully automate the tracking and maintenance of all valuation and benefits data.

**8. Develop and Maintain Metrics on the Quality of Data**

Status: Metrics on data quality are not maintained by the OA.

**9. Develop an Automation Plan for the OA**

Status: Data is still managed and edited via outdated mainframe programs written in COBOL and FORTRAN. However, the OA has begun to utilize Microsoft Access databases to also review and edit and the data.

**Buck Consultants (1990 Report)**

We do not believe the recommendation made in the Buck report, as summarized in the prior administrative review, to be pertinent based on the more recent developments of the Systems and the OA as previously noted.