New York City Retirement Systems

Administrative Review Report
March 12, 2018

BOLTON PARTNERS

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March 12, 2018

The Honorable Scott M. Stringer
New York City Comptroller
Office of the New York City Comptroller
One Centre Street
New York, NY 10007

Re: *New York City Retirement Systems*

Dear Comptroller Stringer:

Bolton Partners, Inc. is pleased to present this Administrative Review Report, which is a key deliverable under our first biennial engagement to serve as Independent Actuary under Section 96 of the New York City Charter.

This report summarizes the results of our review, which covered:
- Processes for gathering, validating, and transmitting data for the actuarial valuations;
- Processes for performing retirement calculations and having them certified;
- Methods for participant communications;
- Procedures for maintaining security of confidential member information; and
- Status of implementation of recommendations from prior Administrative Reviews.

Overall, we found that the Systems and the Office of the Actuary are very knowledgeable about their roles and responsibilities and take their work seriously. The Systems have robust data management systems and processes in place that, in our opinion, provide sufficient quality data to the Office of the Actuary for their valuations.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, which would impair the objectivity of our work.
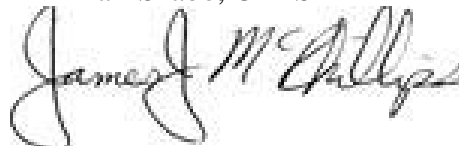
Respectfully submitted,

BOLTON PARTNERS, INC.

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Section I. Background

Bolton Partners, Inc. was retained by the New York City Comptroller's Office to serve as Independent Actuary under Section 96 of the New York City Charter. The engagement relates to the five pension funds that collectively comprise the New York City Retirement Systems (NYCRS), which are:

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

This report summarizes our first Administrative Review. This review did not constitute a full-scale audit of plan administration, but was a broad review of administrative procedures and practices. For example, we did not check individual benefit calculations. The areas covered in the Administrative Review include:

- Processes for gathering, validating, and transmitting data for the actuarial valuations;
- Processes for performing retirement calculations and having them certified;
- Methods for participant communications;
- Procedures for maintaining security of confidential member information; and
- Status of implementation of recommendations from prior Administrative Reviews.

We received a great deal of assistance from the staffs at the Office of the Actuary (OA) and each of the Systems. We could not have completed our work without drawing upon their expertise. We are most appreciative of the time and effort spent by these staff members to explain their processes and procedures and answer our many questions. The names of those who assisted us are listed in the appendix.

Section II. Executive Summary

General Conclusions

Overall, we were very impressed by the knowledge and dedication of the Systems' staff. The Systems care deeply about their members and provide them the best possible service. Comprehensive data storage systems have been put in place to manage the tremendous amounts of member data and most of the Systems have recently or are currently upgrading their data systems for technology improvements.

We were also very impressed by the staff at the OA and the strong relationships they have with the Systems. All parties work well together, and given the low staff turnover on both sides, they have developed efficient, streamlined methods for data handling.

Summary of Key Issues

In this section, we summarize some areas for improvement or increased efficiency we discovered during our review. Additional details can be found in the Results section of this report.

NYCERS

1. Continue moving toward a new pension administration system. If possible, involve the OA in the development process, to ensure all data they require will be able to be fulfilled with the new system.
2. Utilize the secure FTP to transmit data to the OA. We understand this is not a capability of the current pension administration system, but should be included in any new system.
3. Supply ITHP and required member contribution data to OA. This is a prior recommendation that we understand is slated to be a part of the new system, but it is worth mentioning since it is valuable information for the OA.
4. Consider including the ability to flag static data changes in the development of the new system, to reduce data questions from the OA. Also, focus on automating, as the current system requires many manual edits or entries. Documentation of new system will be important and should be a major focus as the system is rolled out.
5. Compare the data the OA provides for the annual valuation to the data stored in the PROD system, and flag any discrepancies for the OA. This would be an extra layer of validation for the OA's data.

Section II. Executive Summary

6. Consider performing periodic death audits for joint annuitants of <u>living</u> retirees who are receiving benefits in a joint and survivor form. If a beneficiary is found to be deceased, the valuation liability for the benefit becomes less since no survivor benefit will have to be provided. This would also make the processing of death benefits more efficient. We understand that this is not commonly done, but it may be worth consideration as it could impact the valuation.

TRS

1. Continue to work with CUNY (and whoever may have any authority over CUNY) to obtain better quality data for CUNY employees who participate in TRS. ASPEN has the functionality to receive data directly from the CUNY Human Resources system, but this data is not always accurate or timely. TRS has done significant outreach, but CUNY and the State payroll agency seem unwilling or unable to assist. TRS expressed frustration at not being able to provide the best possible service to CUNY members.
2. Consider renewing discussion with the OA about a "pre-certified" benefit calculator. This had been in discussion with OA in the past but discussions fell off. Having a pre-certified calculator for routine calculations would cut down on the work load for both TRS and OA.
3. Continue work toward updating the SPDs for Tiers 4 and 6. The versions on the TRS website were last updated in 2007. TRS says this is in progress but the completion target is not known. ERISA plans are required to update SPDs every five years if there have been changes during the five years; this is a good rule of thumb for how often TRS should update their SPDs.
4. Consider performing periodic death audits for joint annuitants of <u>living</u> retirees who are receiving benefits in a joint and survivor form. If a beneficiary is found to be deceased, the valuation liability for the benefit becomes less since no survivor benefit will have to be provided. This would also make the processing of death benefits more efficient. We understand that this is not commonly done, but it may be worth consideration as it could impact the valuation.

BERS

1. Prepare new, or modify existing, written documentation of internal processes to reflect the implementation of the new data management system.
2. Continue working to provide valuation data and benefit calculations to the OA via secure FTP, and consider giving the OA access to the data system to aid in the benefit certification process.

Section II. Executive Summary

(continued)

3. Enhance online member services, including the ability for members to run their own benefit estimates, and apply for loans and service purchases. This would reduce the amount of manual entry required by BERS staff thereby reducing human error in the data.
4. Work with Charter Schools to have them submit member data electronically.
5. Continue toward becoming a paperless office using the new data system to aid this process.
6. Renew discussion with the OA about a "pre-certified" benefit calculator, and consider allowing the OA access to the underlying data used in benefit calculations for their certification process. Having a pre-certified calculator for routine calculations would cut down on the work load for both BERS and OA.
7. Reach out earlier to members who have been terminated for five years, to initiate payment of benefits.
8. Increase focus on data and office security. Consider implementing a yearly internal training and certification process for employees. While the office entry is secure, and there is a private meeting area for members to receive retirement counseling, the office space is shared and not separately locked. It is important that staff be vigilant and member data be protected.
9. Consider creating communication materials in languages other than English. While we realize there may be a cost/benefit constraint on providing these materials, it would be beneficial to non-English speaking members.
10. Consider performing periodic death audits for joint annuitants of <u>living</u> retirees who are receiving benefits in a joint and survivor form. If a beneficiary is found to be deceased, the valuation liability for the benefit becomes less since no survivor benefit will have to be provided. This would also make the processing of death benefits more efficient. We understand that this is not commonly done, but it may be worth consideration as it could impact the valuation.

POLICE

1. Enhance online member services, including the ability for members to run their own benefit estimates, and apply for loans and service purchases. We understand that this is on the "wish list" for the new COPS2.0 system. This would reduce the amount of manual entry required by POLICE staff thereby reducing human error in the data.

Section II. Executive Summary

2. Continue efforts to move toward becoming a paperless office aided by COPS2.0 features as developed.
3. Initiate discussion with the OA about a "pre-certified" benefit calculator, and consider allowing the OA access to the underlying data used in benefit calculations for their certification process. Having a pre-certified calculator for routine calculations would cut down on the work load for both POLICE and OA.
4. Consider a second level of death searches beyond Social Security. POLICE stated in our meeting that they are considering using LexisNexis for batch death searches; we think this, or something similar is a good idea.
5. Talk to building management about possible improvements to security for building access. When we came for our onsite meeting, we did not have to give our names or show identification. We told the guard with whom we were meeting, and then were shown to the elevator. POLICE has its own security measures in place on their floors of the building, but we believe requesting heightened security in the lobby would create an additional layer of safety for employees, and better protect sensitive data and all internal systems.
6. Include OA in development of project requirements for COPS2.0.
7. Consider performing periodic death audits for joint annuitants of <u>living</u> retirees who are receiving benefits in a joint and survivor form. If a beneficiary is found to be deceased, the valuation liability for the benefit becomes less since no survivor benefit will have to be provided. This would also make the processing of death benefits more efficient. We understand that this is not commonly done, but it may be worth consideration as it could impact the valuation.

FIRE

1. Hire additional staff. Now that corpus funding is in place, FIRE plans to hire eight to ten new staff members across several areas (IT, retirement counseling, and benefit processing).
2. Move toward becoming a paperless office. Each member currently has a paper file stored onsite; files are only sent to offsite storage upon the member's retirement.
3. Continue working with the OA to send benefit calculations via FTP transfer, rather than via messenger. This project has been started; we believe it is important to see it through to completion to improve security and efficiency of the calculation and certification process.
4. Consider a second level of death searches beyond Social Security. FIRE stated in our meeting that they use LexisNexis as a verification of information found through the Social Security death search; we think this or a similar service should be used in tandem with the Social Security search.

Section II. Executive Summary

(continued)

5. Enhance online member services by extending portal access beyond fire station locations.
6. Initiate discussion with the OA about a "pre-certified" benefit calculator, and consider allowing the OA access to the underlying data used in benefit calculations for their certification process. Having a pre-certified calculator for routine calculations would cut down on the work load for both FIRE and OA.
7. Update computer systems to enhance security and decrease the use of manual edits and calculations.
8. Enhance e-UPS system to include capabilities to track terminated participants after 2012 and WTC disability elections and reclassifications for all members.
9. Create and expand training program. Due to the FIRE staff being so small for many years, training was mostly accomplished by shadowing a senior employee. Since the corpus funding was put into place, there are plans to increase the staff by 30-40%. The need for a more formal training program complete with documentation of processes will become more crucial to maintaining quality standards.
10. Consider performing periodic death audits for joint annuitants of <u>living</u> retirees who are receiving benefits in a joint and survivor form. If a beneficiary is found to be deceased, the valuation liability for the benefit becomes less since no survivor benefit will have to be provided. This would also make the processing of death benefits more efficient. We understand that this is not commonly done, but it may be worth consideration as it could impact the valuation.

OA

1. Work with Systems to get only data that is needed. IT is concerned that OA maintains data with Social Security numbers, which are not necessarily needed, and which are a security issue in case of a breach.
2. Explore possible precertification of the benefit calculation programs with each System.
3. Continue to work toward fully automated processes with the Systems. This will save paper, increase data security, and make inventory management much smoother in the upcoming years.

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Section III. Administrative Review Process

We began work on the Administrative Review by gathering publicly-available documents containing plan provisions, so that we could familiarize ourselves with the complex workings of the plans. We utilized the website for each System to obtain Summary Plan Descriptions, CAFRs, and other member communication materials.

The Office of the Actuary provided copies of data request letters that were sent to the Systems, minutes from the "kick-off meetings" between the OA and each System at the beginning of the valuation process, and the latest valuation reports prepared for POLICE and FIRE.

The Systems provided any relevant documents they had available. These documents included meeting minutes, process manuals, internal memoranda describing policies, financial audit reports and management letters, and documentation of internal audits.

Further, we obtained copies of the last several Administrative Review Reports, and reviewed them, paying close attention to their conclusions and recommendations.

Once we were familiar with the plan provisions and processes, we prepared questionnaires that would serve as agendas for onsite meetings with the OA and each System. We sent the questionnaires in advance, so the staff could gather their thoughts and be prepared for our questions. We decided to meet first with the OA, to get an overview of their processes for all five Systems. We then met with each System separately.

Meeting with the OA

We met with the OA on June 6, 2017. The meeting began with discussion with the Valuation Services Division about valuation data collection for the Systems generally, followed by discussion of specific issues and differences among the Systems. We then met with the Certification Services Division to talk about their processes for certifying retirement calculations, and the methods by which the requests and results are transmitted between the OA and each System. Lastly, we spoke with Information Security about infrastructure in place to maintain data security, and staff training in that regard. The agenda for the four-hour meeting was as follows:

1. Data collection
    a. Is there an annual kick-off meeting with the System? Who attends? What is the meeting agenda?
    b. From where does the OA get member data?
    c. How is member data transmitted to the OA?
    d. What procedures are in place for verifying/validating data?

Section III. Administrative Review Process

    e. How are member records tracked year over year?

    f. What happens to any data that is suspect?

    g. What is the target date for receipt of data?

    h. Do you generally have a lot of questions about the data? How are the questions resolved? How long does the process generally take?

    i. If you identify data issues that are eventually corrected, do you check in subsequent years that the corrections have been made and stored in the member database?

    j. How is the OA informed of any plan changes for each system?

2. Benefit calculation process

    a. How are calculations transmitted to the OA for certification?

    b. How many people at the OA are involved with a given benefit calculation? How long does the certification process generally take?

    c. Does the OA have access to the same member data that the System uses in the calculations? Is the data compared to the valuation data? What data validation is done by the OA?

    d. Are any calculations performed by OA rather than the System? In what kinds of cases? What are the processes for any such calculations?

    e. If errors or inconsistencies are found in a calculation, how are they resolved?

    f. How is the certification transmitted back to the System?

    g. Does the validation process include election forms and other necessary paperwork required upon termination/retirement?

3. Internal security policies and procedures

    a. Has there been any movement toward a paperless office system? How far along is it and what is the process to complete it if it isn't already there?

    b. Describe security procedures in terms of:

        i. Employee office access

        ii. Visitor office access

        iii. After-hours office access

        iv. Remote access

        v. Cell phone use

        vi. Locking of desk drawers/cabinets

        vii. Clean desk

        viii. Sending files to offsite storage

        ix. Outside vendor – access to system

    c. What are the processes for data backup and recovery? How often is data restoration tested? How often is disaster recovery tested?

    d. Are system breach tests performed? How, and how frequently?

Section III. Administrative Review Process

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4. Data transmission to outside parties
    a. What outside parties receive data from the OA? For what purpose?
    b. How is data transmitted? What security protocols are in place?
    c. How does the OA ensure that the vendor maintains the security of data?
5. Staff training
    a. How are new staff members trained?
    b. Are staff members cross-trained on other functions besides their primary function?
    c. How are staff members trained on any changes (new security procedures, or law changes that would affect data and benefits)?
    d. Do any staff members participate in outside continuing education programs? Are such programs supported by the OA?
6. Status of recommendations from prior administration reviews
7. Wish lists

Meetings with the Systems

After our meeting with the OA, we met with each System separately. (The order of the meetings was for no other reason than scheduling and availability of the staff necessary to address the topics on the agenda.) We met with FIRE on June 7, POLICE on June 15, BERS on June 16, TRS on June 22, and NYCERS on June 28. Each meeting lasted about three hours, and followed the same agenda:

1. Data collection, validation, and transmission to OA
    a. Where does member data come from?
    b. How frequently is member data updated?
    c. How is data entered and stored in the System's databases?
    d. What procedures are in place for verifying/validating data? Is data verified as received, or at some other interval?
    e. What happens to any data that is suspect?
    f. Are termination dates provided in the member data feeds? Does that trigger another process for benefit calculation or distribution?
    g. How are transfers handled? How is data stored for terms and rehires?
    h. How is data transmitted to OA? What is the target date for transmission? When data is requested, how difficult is it to compile the data to send to the OA?
    i. What is the data reconciliation process with OA? Does OA generally have a lot of questions? How are the questions resolved? How long does the process generally take?

Section III. Administrative Review Process

(continued)

     j. If OA identifies data issues that are eventually corrected, how does the System ensure that the corrections are stored in the member database? How are corrections documented?

2. Retiree maintenance
   a. Who is responsible for maintaining retiree data and processing payments?
   b. How is information about new retirees transmitted to the party responsible for making the payments?
   c. Are retiree death audits undertaken routinely? How are they done? What is the process for confirming a beneficiary's entitlement to survivor benefits and starting the payments?
   d. Are there beneficiary death audits?

3. Benefit processing (retirement, disability, death discussed separately to extent processes are different)
   a. What is the process for retirement, from the member's initial contact to the start of the payments? How long does that process generally take?
   b. Is data from the member database used for the benefit calculation? What data sources are used for calculations (same as valuation data sources)?
   c. Is any data supplied by the member? Do members supply data via paper, email, fax? Does the member have an opportunity to review the data and make any corrections?
   d. How many people at the System are involved with a given benefit calculation?
   e. Are any "special types" of calculations performed manually? How does the process differ for those?
   f. Are any calculations performed by OA rather than the System? In what kinds of cases? What are the processes for any such calculations?
   g. How is the completed calculation transmitted to OA? Does OA have access to all the data used by the System to do the calculation?
   h. How is the certification transmitted back to the System? How long does it generally take?
   i. Are signatures on election forms required to be notarized? Does the System have notaries on staff to assist?
   j. How are terminated members handled? Is there a process to reach out to those who've reached retirement age? What paperwork is provided to members upon termination?

Section III. Administrative Review Process

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4. Contribution-related election processing (loans, withdrawals, ITHP, buy-backs)
   a. How is a new loan initiated?
   b. What is the process for members repaying loans and having their accounts properly credited?
   c. What is the process/timing for a loan default?
   d. Certain plans/tiers allow members to suspend contributions or make additional voluntary contributions. What is the process for this? How is this data maintained in the system?
   e. What is the process by which members can buy back certain service credit?
5. Benefit statement processes
   a. How are statements generated? Directly from the member database, or from a different system?
   b. How are statements distributed?
   c. What can members do if they find errors on the statement?
   d. How are member errors corrected?
   e. Are member statements or benefit modeling capabilities available online?
6. Internal security policies and procedures
   a. Has there been any movement toward a paperless office system? How far along is it and what is the process to complete it if it isn't already there?
   b. Describe security procedures in terms of:
      i. Employee office access
      ii. Visitor office access
      iii. After-hours office access
      iv. Remote access
      v. Cell phone use
      vi. Locking of desk drawers/cabinets
      vii. Clean desk
      viii. Sending files to offsite storage
      ix. Outside vendor – access to system
   c. What are the processes for data backup and recovery? How often is data restoration tested? How often is disaster recovery tested?
   d. Are system breach tests performed? How, and how frequently?
7. Data transmission to outside vendors
   a. What outside vendors receive data from the System? For what purpose?
   b. How is data transmitted? What security protocols are in place?
   c. How does the System ensure that the vendor maintains the security of data?

Section III. Administrative Review Process

(continued)

8. Staff training
   a. How are new staff members trained?
   b. Are staff members cross-trained on other functions besides their primary function?
   c. How are staff members trained on any changes (new security procedures, or law changes that would affect data and benefits)?
   d. Do any staff members participate in outside continuing education programs? Are such programs supported by the System?
9. Status of recommendations from prior administration reviews
10. Wish lists

Follow-Up

The staff members in attendance at the meetings were all extremely accommodating and helpful. As we expected, though, the time allotted for the meeting was not enough to cover all of our questions in detail. Therefore, we sent follow-up questions to the OA and to each System, to clarify any confusion we had or to probe deeper into particular topics. We sent these questions via email, and received prompt written responses from each party.

Section IV. Results - NYCERS

General

NYCERS is the largest of the five Systems. They currently use a pension administration system called PROD, but are in the procurement process for designing and building a new system. The PROD system is a 35-year-old COBOL-based system. The new system requirements are being developed and will include increased functionality, capabilities to provide online statements to members, and increased access for the OA. NYCERS has included the OA in the development of the discovery of requirements, in an effort to address any issues that the OA has with their data feeds. They have also reviewed the data questions received annually from the OA and are planning to address as many of them as possible in the development of the new system. Since the plans for the new system are still in the development phase, there has been no identifiable timeline or completion date set as of the date of our first meeting. We will continue to monitor the progress in our second engagement.

NYCERS is a very well organized and thorough organization. They take employee training and data security very seriously. Their internal processes are well documented and their data security and disaster recovery is state-of-the-art. The development and implementation of a new pension administration system will further enhance data quality and efficiency in the coming years.

Data Collection and Validation

NYCERS receives payroll feeds for each pay period from the Office of Payroll Administration (OPA) and several other employer payroll systems. These files are aggregated, if necessary, and uploaded into the PROD system each pay period. The files contain member ID number, Social Security number, and payroll information only. All member demographic data is entered into the system separately from these data feeds. Since there are multiple payroll systems reporting information to NYCERS, the payroll uploads are constantly occurring. While there are no validation checks done on individual records at the time of upload, a process is followed to ensure accuracy and a reconciliation of deduction amounts is performed with each upload to identify possible data issues that may need correction.

For the annual valuation, the OA sends NYCERS files containing data collected from OPA and seven other small employers' payroll feeds (whose employees are not paid through OPA). They also send a pensioner payment file. The OA requests that NYCERS update the file for status changes from the prior year, and add new members. NYCERS uses their production system to fill in the data the OA has requested, and sends it back in the format detailed by the OA in the data request. They also provide a file containing withdrawal, service, loan, WTC, and union leave information.

Section IV. Results - NYCERS

(continued)

Terminated non-vested members stay in the PROD system and on the active data feed provided to the OA for five years from termination date. This is because a terminated member's membership continues for five years in case they are rehired within the System. Once a membership expires, the contribution balance is payable to the member and they are removed from the file if not vested, or kept as vested. The active file also contains vested member information. The data is provided in component pieces to the OA, and the OA calculates their deferred benefit amount for valuation purposes in-house. NYCERS processes these members' calculations when they elect to begin receipt of their benefit.

Once the OA processes the data, they send a list of questions to NYCERS. These are generally questions to confirm changes in data and salary changes. NYCERS researches the questions individually and corrects any errors within PROD. There is currently no capability in PROD to allow tracking of any data changes that occur on a year-over-year basis to be flagged.

NYCERS transmits data to and from the OA via CD. The current system does not include capabilities to transfer data via FTP, so NYCERS has included a requirement in the design for the new pension administration system to allow for FTP transfer with the OA.

NYCERS uses an outside vendor Pension Benefit Information, Inc (PBI) to assist with death audits. PBI provides a death match with Social Security monthly, and also supplies death matches from State vital records departments as well as nation-wide obituaries. Affidavits are sent to retirees over age 85 and beneficiaries over age 87 on alternating years. For any deaths found, NYCERS proactively locates the beneficiary to start payment and/or takes the necessary actions to recoup any overpayments. A death certificate is required before any beneficiary payment is made.

Benefit Calculations

Members file an application in person or by mail to initiate the retirement process. NYCERS has a client services team with 13 counselors on staff who deal primarily with retirement processing. Members can meet with a counselor who provides information on retirement, benefit estimates, assistance with filling out forms, and explanation of benefit options.

Vested members are tracked in PROD, and contacted 90 days before their normal retirement date to apply for vested benefits. Members who cannot be located continue to be tracked in the PROD system until their address can be found. If a valid address cannot be obtained, the member file is marked that mail is being returned and no mail will be sent until a new address is provided.

Section IV. Results - NYCERS

NYCERS Retirement Eligibility Unit (Operations Division) reviews and determines the eligibility of members who file for service retirement. The Vested Unit (Operations Division) and an independent Medical Unit (Client Services Division) determine the eligibility of vested and disability applicants, respectively.

Advance payment (AP) for service and vested retirees as well as for members who have been approved for disability retirement is then initiated. The member is paid a partial benefit amount as an advance payment while the benefit calculation is processed. The advance payment amount is predetermined, but hardship exceptions are made for members who contact NYCERS requesting an increase, if the situation is applicable. This would be processed manually using an Excel-based system.

The Service Processing Unit (Service and Disbursement Division) calculates the member's years of service, the Retirement Calculations Unit (Operations Division) reviews the earnings and calculates the compensation base, and the Active Accounts Review Unit (Service and Disbursement Division) reviews the required amount. The calculations, service, and required amount are then reviewed by the Edit and Annuity Unit (Operations Division) before being forwarded to the Data and Benefit Certification Unit (Operations Division) to calculate benefit options. Once the options are completed and reviewed, they are sent to the member to make their selection. Once their paperwork is returned, the system is updated and a Report of Benefit is generated. The case is then forwarded to the Pension Payroll Unit (Service and Disbursement Division) to adjust the pension benefit accordingly. Option selection usually occurs two to four months after the member's retirement date, depending on the volume of cases received in a specific month.

On average, benefit calculations take about four to six months to finalize. An exception report is generated monthly to identify members who remain on AP for six or more months. The Option Selection Unit reviews this report and sends out follow-up letters to those members to obtain the needed documentation/forms required to finalize their benefit.

Section IV. Results - NYCERS

(continued)

There is a Revision process that occurs 15 – 20 months after the retirement allowance is finalized where the calculation is reviewed again for accuracy and for any additional payments or checks received after the case is finalized. These payments include, but are not limited to, retroactive contractual increases in salaries, overtime payments, cancelled checks subsequent to the retirement process, changes in laws, procedures, and/or legal settlements. During this process, an overall review or update of the service, compensation base, annuity account balance, loan balance, refunds, and required contribution is completed. This information is provided by agencies before OA's review. The calculations and relevant updates are then forwarded electronically to the OA for certification. The OA is given access to the NYCERS system to perform their calculation review. Once completed, the OA returns the certified Report of Actuary (ROA) to NYCERS reflecting the revised benefit allowance.

An estimated 700 benefit calculations are performed monthly. A recent contract settlement has created a backlog of around 27,000 calculations that required adjustment. When we met with NYCERS in June 2017, NYCERS had processed over 50% of these recalculations.

In general, all benefit calculations are performed in-house, except Social Security offset calculations (for Tier 4 members with Tier 3 rights and Tier 3 22-year plan members), 415 limits, survivor benefit calculations, death gambles, and present value requests, which are forwarded to the OA for processing.

Data Security

Visitor access to the building requires that the visitor provide identification and pass through security. NYCERS offices require a security card to open the door, and the front desk requires visitors to sign in and provide identification. Member-facing teams reside on the mezzanine level, which has a separate entry to allow for visitor access. Offsite data centers require security card access where only specific IT personnel are allowed access.

Employees have building access from 7:00 am until 5:30 pm, Monday through Friday. Senior staff and IT staff have 24-hour access. After-hours access and remote network access is limited and must be approved. Network access is only allowed through a NYCERS-approved device; personal phones and devices cannot connect to the NYCERS network. NYCERS enforces a clean desk policy where all sensitive information must be secured when the employee is not at their desk. To enforce the policy, routine walkthroughs are done and violations are documented.

An internal recertification process occurs two times a year, during which all levels of employee access are reviewed, verified, and adjusted if necessary. Employee access to the PROD system is reviewed and adjusted, if necessary, every 90 days. Terminated employee access to network and systems is revoked within 24 hours.

Section IV. Results - NYCERS

The network is routinely backed up. Disaster recovery tests are performed two times a year, and the outcome shows that crucial systems, such as call center, website, and production system, were up and running within one to four hours. Disaster simulations are performed, recently including finance information, to make sure pensioners' checks could be processed in the test. Vulnerability scans are performed by an outside "white hat" group of computer security specialists at least every two years. The Information Security unit runs scripts and vulnerability scans internally to test the system routinely and identify possible problems.

NYCERS has a document control area where scanning, indexing, and archiving takes place. All member applications are scanned into the system. All paper files go through a document destruction process after they are aged out (around nine months). The paper files are stored onsite at NYCERS or in a Long Island City facility.

Any data being shared with a vendor or within the City of New York requires the recipient of the data to ensure the data will be stored securely. The recipient must also disclose what the data will be used for. NYCERS has internal consultant policies which define access control, require confidentiality agreements, and detail contractual requirements to obtain access to the system.

Staff Training

NYCERS conducts a multi-phase onboarding process where new employees are taught agency policies and citywide rules and regulations, provided an employee handbook, and shown how to log onto the employee portal to review their basic information. Specific areas are highlighted to the employees on day one, especially as they pertain to office policies and the employee handbook. New employees also attend a seven-day new employee training where they learn the basics of the NYCERS plans, tiers, contributions, loans, etc. Other training is performed onsite through working with a senior level employee, shadowing (especially in the member facing teams), and in a classroom setting.

There are also mandatory annual training sessions, including, but not limited to Code of Conduct, EEO training, conflict of interest, safety, and right to know. Plan changes and legal issues are handled through emails to notify employees of law changes initially. Directives are created that outline the new policy based on the law; internal meetings are subsequently conducted to inform employees of new policies.

Staff members are also allowed to participate in up to 70 hours of outside training per year. These additional training opportunities require manager approval, and focus mainly on technical knowledge, management training, compliance, and requirements related to specific fields and designations.

Section IV. Results - NYCERS

(continued)

Other

The NYCERS website contains a wealth of information for members. Copies of Summary Plan Descriptions and other benefit summaries and instructional videos are available for easy reference.

There is also a secure member portal, on which members can view their estimated benefit, apply for loans, obtain information about service purchases, and view historical pension payment amounts. NYCERS provides two types of benefit statements annually: an estimated retirement benefit for members who are eligible for retirement, and employee contribution balances, beneficiary information, and loan information for all active members.

Status of Recommendations from Prior Administrative Reviews

1. Involve the OA in the development of the new pension administration system.

   Response: NYCERS has included the OA in the development of the discovery of requirements in an effort to address any issues that the OA has with their data feeds. They have also reviewed the data questions received annually from the OA and are planning to address as many of them as possible in the development of the new system.

2. Reach out to TRS to learn about its employee security education program

   Response: A Security Awareness Program to address physical security concerns has been incorporated into all NYCERS employee training programs. Employees also participate in Ethics Training provided by the Conflicts of Interest Board and Corruption Awareness Training sponsored by the Department of Investigation. Employees are reminded that they are part of the security solution at NYCERS. The phone number of the Security Directors and security desk are indicated on the rear of all Identification cards. Employees are encouraged to report any suspicious activity or unidentified people attempting to gain access to NYCERS. In our opinion, the security training at NYCERS is as strong, even if not exactly the same, as the training provided to employees at TRS.

Section IV. Results - NYCERS

(continued)

3. Work with the OA and data management to become the single source of data

   Response: NYCERS reports data to the OA in the same manner as they have historically. NYCERS receives an active file from the OA containing data collected from OPA and seven other small employers' payroll feeds (that aren't paid through OPA). They also receive a pensioner payment file from the OA. NYCERS uses these files to fill in any missing data the OA has requested and sends it back in the format they detail in the data request. This process will remain unchanged until the pension administration system is implemented with the required functionalities to facilitate the annual valuation process.

4. Share service purchase information with the OA and work with the OA to determine if this information would be useful to the OA in the development of a service purchase assumption or estimation of potential service purchase liabilities.

   Response: NYCERS provides service purchase information to the OA as a part of the annual valuation data collection process.

5. Supply the Increased Take-Home Pay (ITHP) and required employee contributions to the OA

   Response: As of the date of our meeting, NYCERS is in the procurement process for a new pension administration system that will be able to provide this information to the OA.

Section V. Results - TRS

General

TRS has a full-time staff of about 370 employees. They currently use an administration system called UPS. TRS is undergoing a modernization process/total upgrade in which they are gradually migrating to a new system called ASPEN (created by SagiTech). The migration will have seven phases. Three have been completed; the remainder are expected to be complete by 2022. For now, anything done or processed in ASPEN bridges back to UPS, so all information in UPS is up to date. UPS is still being used to generate the data for OA.

TRS takes security and staff training very seriously. They proudly state that clear accountabilities and roles relative to information security management are established across TRS. The Information Security Manager leads the Information Security Program sponsored by the Deputy Executive Director. It is the responsibility of all associates to help maintain the highest possible degree of security. Information Security roles and responsibilities are documented in TRS' Enterprise Information Security Policy and communicated across TRS. Information security responsibilities are taken into account during each employee's performance evaluation. The TRS website for members is state-of-the-art, and their critical processes are very well documented. Data quality continues to improve, with fewer issues found by the OA each year.

Data Collection and Validation

TRS receives bi-weekly data feeds from the Department of Education (DOE) which contain demographic and service information. They also receive bi-weekly feeds from OPA with payroll information.

As of the date of our meeting with TRS, there are twelve Charter Schools with employees who participate in TRS. Data for those employees comes directly from each Charter School. The data is submitted electronically; the timing differs depending on the school (some submit bi-weekly, others submit monthly).

City University of New York (CUNY) employees are given the choice between participating in a TIAA defined contribution plan or in TRS. Those who do not affirmatively elect the TIAA plan within 30 days from appointment date default into TRS. Since CUNY senior college employees are paid by the State, the State's payroll agency is responsible for providing payroll data for those employees to TRS. However, despite repeated requests by TRS, the State is unable to provide all of the information TRS needs in a timely manner. Therefore, TRS relies on the payroll secretaries of each individual senior college to inform TRS of employees who are mandated into TRS following the period in which they can elect to join TIAA. This notification often does not occur in a timely manner, leaving TRS to rely on these members to proactively enroll in TRS by paper form, resulting in a delay of enrollment and missed required contributions that must be billed as contribution deficits directly to the member since the State's payroll agency will not support payroll deductions for contribution deficits.

Section V. Results - TRS

(continued)

If any data is missing on a feed, TRS deals directly with the member and gets their birth certificate or other verification of the missing information. TRS policy prevents members from accessing services (taking a loan, for example) without complete information on file. Some data comes into ASPEN and is updated there, but all data bridges back to UPS. UPS is updated for all data feeds once a month. TRS has a daily process to validate data, so they believe it is generally of very good quality before year-end. When the data is being compiled for OA, they have testers look at control totals and spot check data again.

TRS sends the following files to OA: Active members (includes members terminated with money left in the plan and members on leave of absence), deceased, new pensioner, withdrawal, and "exceptions" file (shows flags of notable data changes from prior year, as well as transfers and anything else unusual). These files show any transactions dated during the year. For example, if a member retired years ago but has a recalculation or revision to their benefit in the current year, that will show on the "new" pensioner file in the current year. Inactive members (terminated not vested, due a contribution refund) stay in UPS and on the file to the OA for seven years from termination date. This is because a terminated member's membership continues for seven years in case they are rehired by the DOE. Once a membership expires, the contribution balance is distributed to the member and they are removed from the file if not vested, or kept as terminated vested.

Transfer contributors are members who change jobs within the City but elect to remain TRS members. Pay data for these members comes through on the OPA feed, but the service and demographic changes are provided manually from the new employer. This data is not always the most up-to-date. There are very few of these members.

Data is generally sent to OA at the end of August using secure FTP. Since most retirements occur in June, we wondered if this timing was problematic in making sure all retirements were captured. TRS does not have a concern in this regard, since they believe they are able to catch retirements daily and report actual status at June 30.

There are many ways by which TRS finds out about member deaths. Often, the beneficiary notifies TRS of the death. TRS uses an outside vendor, PBI, to assist with death audits. PBI provides a death match with Social Security monthly, looks for obituaries, and uses LexisNexis as well. Affidavits are sent to retirees who have moved overseas, once every two years. TRS is looking into outsourcing this to a vendor based on discussions with peer systems. For any deaths found, TRS proactively locates the beneficiary and starts payments. A death certificate is required before any beneficiary payment is made.

Section V. Results - TRS

Benefit Calculations

When approaching retirement, members typically first go to their union for a pension consultation, and to get an estimate of their benefit. They then file a retirement application up to 90 days ahead of the retirement date. After receiving the application, TRS does an extensive review of service, and bills the member for any prior service or membership service deficits. Then the calculation is performed, including available options. Almost all calculations are done electronically in UPS. Seven staff members are trained to do years of service calculations; eight more are trained to do the retirement calculations. One staff member checks the routine calculations done in UPS before certification by the OA. Complex calculations involving multiple positions, breaks in service, and transfers are sometimes seen by four different TRS employees. UPS can do QDRO calculations, after the legal department reviews the QDRO and provides the benefit split.

All calculations are then sent to OA for certification. This is an automated process using Lotus Notes. A work list is automatically created, and the OA can certify electronically (including an e-signature). OA has access to all underlying data; this was automated in 2007.

Advance payments are made upon retirement, based on a conservative estimate (generally 85% of the finalized benefit). The process from application to benefit finalization averages three to four months. TRS will escalate the advance payment by 10% if the process is delayed beyond that timeframe. Administrative delay interest at a rate of 5% per annum is applied on retroactive payments. The retired member sees all the details of the calculation in a letter sent to them at finalization.

Data Security

TRS has documented information security policies that are based on the City's policies and best industry practices. The Risk Department leads the information security program, but takes joint responsibility with the IT Department for data security. The Risk Department was created based on recommendations from a prior audit.

Visitor access to the building requires that the visitor's name be on a list at the lobby desk. Visitors must show identification, and have a photo taken for a security badge. Visitors must also pass through a metal detector.

Section V. Results - TRS

No TRS staff members work from home on a regular basis. Remote connections are available via virtual desktop for "disaster" scenarios. This is tested three times per year by allowing "critical" staff to access from home ("critical" is defined based on business impact analysis plan). To be given remote access (for example, if an employee is unable to come to the office for medical reasons for an extended period), employees can submit a request to IT with their unit manager approval. If approved by the unit manager, IT will provide the employee remote access, which includes an RSA key. Outside vendors do not access the network except when guided by IT.

Personal devices are not allowed to access the network. Guest wi-fi is separate from the local network. Remote email access through TRS-issued phones is allowed if the employee requests access. IT can remove access from devices if lost.

Incoming mail is opened, scanned, authenticated, and sent to Iron Mountain for storage. Boxes are sent to Iron Mountain at least weekly, or more frequently if necessary. Boxes are sometimes retrieved for cases like death calculations for members who retired long ago (generally, records were not scanned for members retired prior to 1985). To try to eliminate the need to retrieve those boxes, TRS sent out letters to approximately 36,000 retirees, asking them to confirm their beneficiaries. About 20,000 have responded, and the responses were scanned, so the paper files are generally no longer needed for them.

TRS maintains online data centers in New York and New Jersey. Backups are also done to tape nightly. Encrypted tape backups are stored at Recall. Once a year, IT goes to Recall and verifies the tapes are there. There is a regular need for restoring files (for example, accidentally deleted emails) so the recovery process is continually being tested. TRS is on an initiative to go paperless, however, they are being very careful to not destroy files unless they are sure they are no longer needed. Destruction of data in offsite storage follows a written retention policy.

Staff Training

New employees get mentored by another staff member and spend much time shadowing that staff member to learn their functions. New hire orientation provides an overview of the different departments and their functions. There is also City-wide diversity and equal employment opportunity training that is required every two years. DCAS (City-sponsored), AMA, Cornell, etc. are used for outside technical training or career development. Certain training may be brought in-house if enough staff needs training on a topic.

Section V. Results - TRS

(continued)

Critical processes are documented well. Documentation is being improved and updated as part of the modernization roadmap. There is/will be formal training for each new phase of the modernization as it is implemented, for staff that will be using it. A system called Policytech houses procedure and policy documents.

TRS doesn't have high staff turnover. They have done succession planning for critical staff nearing retirement. Cross-training is promoted, depending on department, to ensure backup on all functions. TRS has recently added staff at lower levels, to move people up for implementation of modernization.

New employees have security training within a week of hire, and must sign an agreement to comply with IT policies, before being certified to access the network. There is mandatory annual security training for all employees. Annual performance reviews cover information security, based on their role in TRS. TRS also uses creative methods to remind employees of security policies, like poster competitions, or "red cards" left on desks of employees violating the clean desk policy. There are stickers on printers to remind employees to shred personal information.

TRS maintains a data leakage prevention system. IT is notified if a staff member tries to email out something secure without the proper protection. The IT Service Desk can release such an email if a manager determines necessary or due to a false positive screening.

Other
The TRS website contains a wealth of information for members. Copies of Summary Plan Descriptions and other benefit summaries on a topical basis are available for easy reference. Although the benefit summaries are updated frequently, the SPDs have not been updated since 2007. TRS is currently in the process of updating the SPDs.

There is also a secure member portal, on which members can apply for loans, review and update beneficiary information, obtain information about service purchases, and view benefit statements. TRS provides two types of benefit statements: a quarterly statement of account balances, and an annual statement of estimated pension benefits. Starting in 2018, TRS plans to discontinue mailing of any paper statements and only print paper statements upon member request.

Section V. Results - TRS

(continued)

Status of Recommendations from Prior Administrative Reviews

1. Reach out to NYCERS to gather information on its paperless system/process

   Response: TRS collaborates with the other City pension systems, as well as pension systems worldwide through CEM Pension Benchmarking. They feel that this keeps them abreast of new developments and best practices in the industry. A paperless initiative has been started at TRS, but will be fully implemented as part of the modernization roadmap.

2. Review process of storing boxes of information waiting for transportation to offsite facilities

   Response: The previous administrative review found that boxes of sensitive information sometimes sit at TRS for two to three weeks before being sent to offsite storage. TRS now reports that boxes are sent at least weekly, or more frequently if needed.

3. Some active member data, such as from CUNY and Charter Schools, are entered into the TRS database manually. TRS should explore secure electronic methods of receiving this data and entering it into the TRS database.

   Response: Charter Schools data is being received electronically, directly from each Charter School. CUNY data has been a continuing and well-documented struggle for TRS. TRS would like more buy-in from the State payroll agency and CUNY so that they can better serve the CUNY employees who participate in TRS.

Section VI. Results - BERS

General

The BERS Pension Fund employs a staff of approximately 90. Effective June 1, 2017, BERS went live with a new data management system called CPMS, which replaced a Prudential system that had been in place for decades. In addition to the new system, BERS has recently created a quality assurance department that is concerned with the data flow, origins of data, and filtering systems to identify and modify issues within the data.

Prior to going live with CPMS, an internal database scrub of data from 1990 forward was completed. The data was reviewed extensively to create a complete, accurate employment history for each member. During this process, checks were perfomed to ensure that the correct employee contributions are being withheld. Previously, due to the large number of part-time members who work multiple jobs and have separate payrolls for each position, employee information wasn't always consistent and the primary employer wasn't always easy to identify. DOE payroll is reported across 5 separate payroll feeds making payroll verification an important component of data management. The quality assurance team is tasked with creating documentation on how to load payroll feeds into CPMS.

The implementation of CPMS has been a tremendous step forward for BERS. BERS is keeping a "wish list" for future enhancement of CPMS as issues arise. BERS is considering connecting member forms to CPMS electronically, to reduce manual data entry and paper flow in the office. They are also working to create and fine-tune logical edits in the system with the hopes of reducing human error. The data historically provided by BERS was of lesser quality than what the other Systems provided, but we believe CPMS should provide data of much better quality to the OA going forward, thanks to the extensive clean-up of data and the new systems capabilities. We will be able to review this further in our next engagement.

Data Collection and Validation

For active members, payroll information is loaded into the system from an electronic feed from OPA and reconciled internally. The DOE provides service data including hours for part-time employees. Member breaks in service can be identified from the City's payroll system since payroll data is loaded on each pay date. There are 60 - 70 payroll sources from which information is loaded each month. The information is loaded into CPMS from three electronic and four manual sources.

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Section VI. Results - BERS

CPMS has the capability to identify DOE employees who can enter BERS and transfer in service. This allows BERS to proactively reach out to these employees to notify them of their eligibility. BERS is currently staffing an outreach program to conduct informational seminars to assist in enrolling eligible employees. There are about 11,000 - 12,000 employees who are eligible to join BERS but have not yet done so.

BERS and the OA have an annual kickoff meeting where they discuss plan changes, agree on deadlines, and review the data request, noting any changes. BERS has a good working relationship with the OA and feels the data requests are being fulfilled in a timely, efficient manner. However, due to the implementation of the new data system, the data was provided to the OA about six weeks later than usual this year.

An FTP connection has been established between the OA and BERS. A 2017 supplemental file was sent recently to the OA and confirmed received. BERS intends to use this FTP connection going forward to transmit data and benefit calculations to the OA.

The OA identifies any data issues and sends questions to BERS for confirmation or correction. Member demographic data is changed only when a proof document is shown, which is scanned and kept digitally. Any data issues are researched and resolved within CPMS.

Benefit Calculations

About 99% of members attend a personal counseling session prior to retiring. BERS has eight staff members who can conduct the counseling sessions. Approximately 300 individualized sessions are provided each month. If possible, benefit calculations are provided at the session, benefit options are discussed, and assistance is provided with completing paperwork. Proof documents are required in some circumstances (for example, beneficiary date of birth); all proof documents are scanned and stored electronically in CPMS. There are notaries onsite.

Members initiate retirement by completing an application. Once the application is processed, BERS aims for a six-week turnaround to have the member's retirement processed for payment. BERS performs 100 to 150 retirement calculations per month. Calculations are performed for members once actual retirement occurs. Employee data is stored in CPMS, but all Tier 1 and 2 benefit calculations are processed manually outside of CPMS. All other tiers' benefit calculations are performed within CPMS. Benefit estimates are done within CPMS. BERS has plans to write standard operating procedures for benefit calculations once the calculations can be processed in CPMS. There is a plan to assemble a library of training materials and process documents as CPMS continues to develop.

Section VI. Results - BERS

(continued)

The benefit calculation team of eight employs a enterer/verifier/approver process. Calculations are performed and reviewed on-site for accuracy. Once a calculation has been checked and reviewed, it is sent to the OA for certification. Currently, benefit calculations are sent via messenger to the OA for review. BERS upgraded the file transmission to a secure FTP transfer this year. When we met with BERS in June 2017, there was a backlog of about 400 calculations that needed processing, mostly due to the system upgrade. As of the date of this report, the calculation backlog has been resolved. If there is a dispute with a member about a benefit calculation, the member may provide proof documents, which are scanned and saved electronically in CPMS, to initiate a recalculation.

The OA performs the calculations for members who elect to annuitize their TDA balance at retirement. All other calculations are processed in-house by BERS. Calculations for Tier 1 and Tier 2 members are mostly automated but do include some manual edits.

The member is initially paid 80% of their calculated benefit amount until their benefit can be finalized. The temporary disposition is no longer in practice and BERS is back to 100% payment. BERS finalizes the calculation after the OA review. Once a union contract is adopted, members who are in receipt of benefit but may be affected by the new contract are identified and their benefits are verified again. There is no identifier of finalized vs. non-finalized benefits in CPMS.

Terminated members, when identified, are put into a suspended status until the status change can be verified. Terminated members can continue to appear on the payroll feeds for up to 18 months, appearing with $0 earnings. However, $0 earnings on the payroll feed can also identify part-time members and employees on leave without pay, so it cannot be relied upon to show that a member's employment has terminated.

Membership remains active for five years after employment has ceased, due to the fact that interest crediting continues for five years after termination. Non-vested members receive account balance statements for five years after employment ceases. When a "cease code" appears on the payroll data, the employee's termination can be verified. BERS reaches out to non-vested members after five years to initiate payment. BERS staff would like to be more proactive and reach out earlier to members who are coming up on five years for payment.

Deceased members are identified through a Social Security death match. LexisNexis is also used to provide death notifications.   In certain situations, such as checks going uncashed for several months, the retiree is contacted and asked to provide proof of life.

Section VI. Results - BERS

Data Security
BERS is focused on going paperless in the next few years. There is an imaging group on staff that digitizes member information; so far, close to nine million images have been scanned. The digital copy must be certified before the original paper copy can be destroyed. Paper copies of files already digitized are stored in a basement file room, with limited staff access. BERS has the goal of digitizing documents at the beginning of the process instead of the end.

A security guard is stationed in the building lobby. Visitors must be signed in and show photo identification to enter the building. Employees must show their department identification to enter the building, and need security cards to enter office space. Office access can be restricted on a person by person basis. BERS policy states that visitors may never be left unaccompanied in the office space. There is private space available in the office for members to meet with retirement counselors.

Remote computer access is allowed for a few select, authorized staff members, using VPN. DOE controls the VPN, which is monitored by the Department of Information, Technology and Telecommunications (DoITT). A few executives have BERS issued phones, but those with only personal phones may not use them to access the network. There are internal directives on securing sensitive data, and locked file storage, where access is allowed only for staff members in a specific group.

Data is backed up to tape daily. The tapes are sent to offsite storage at Iron Mountain once a week. Tapes are maintained at Iron Mountain for four years. Tapes are not generally retrieved to test whether the data is intact, but there was an instance recently where data needed to be restored from a tape and it was located and usable. DOE runs periodic system breach testing and controls system access.

Staff Training
There has been a fair amount of IT and leadership turnover in the past few years, necessitating staff training policies. Most training is done by having a new staff member partner with a senior staff member to learn and understand processes. The implementation of CPMS required online training sessions and manuals. For the retirement counselors, scripts are provided for training purposes and to ensure that all items are discussed and all relevant information is provided to the member. There is a focus to increase cross-training between teams, to increase staff knowledge and ability to shift roles when specific groups receive surges in requests.

Section VI. Results - BERS

(continued)

Other

The BERS website contains general plan information and documents such as SPDs and forms that can be downloaded and printed. The ability to apply for loans or view statements online does not currently exist.

Statements of account balances are mailed to members twice a year, as of June 30 and December 31. An estimated 10% are returned undeliverable. BERS attempts to resend the returned statements after trying to locate member's address through the payroll system. Currently, BERS is considering moving to electronic delivery method for statements. Thousands of members call in after the statements are issued, most with general questions or requests to change beneficiary information. If an error is identified, the member is asked to fill out a form to identify the error, and return it with the statement. The adjustment is made in the system and if necessary, a revised statement is issued.

Status of Recommendations from Prior Administrative Reviews

1. Develop a formal set of business rules to use in the data verification process.

   Response: BERS has recently created a quality assurance department that is tasked with creating documentation concerning data loading and processing. The data verification process was also incorporated into the development of the new CPMS system.

2. Work with DOE to improve credited service reporting for the annual valuation.

   Response: An internal database scrub of data from 1990 forward was completed. The data was reviewed extensively to create a complete, accurate employment history for each member. The new CPMS system has accrued service for all members but there are still many variables to be resolved as the system continues to be rolled out.

3. Involve the OA in the development of the new administration system.

   Response: The OA was involved in the selection and implementation of the new system.

4. Share the Administrative Review Report with staff.

   Response: Staff has indicated that the hard copy of the final Administrative Review Report is routinely made available to all staff interested in reviewing it.

Section VI. Results - BERS

5. There is no specific documentation of BERS' process to provide active member data to the OA. BERS should document its active data process in writing.

    Response: With the implementation of CPMS, BERS is reviewing, updating, and creating new documents covering all CPMS-related projects. We will follow up on the progress of this in our next engagement.

6. BERS does not supply full-time employees' service and part-time employees' hours to the OA for the valuation. The OA and BERS should work together to validate this data, and if valid, it should be provided to the OA.

    Response: This data is now housed in CPMS, and will be provided to the OA. We will follow up on this in our next engagement.

7. The active valuation data process depends too heavily on the involvement of Prudential. BERS should complete the effort to replace the Prudential data system.

    Response: This has been accomplished with the implementation of CPMS.

Section VII. Results - POLICE

General

POLICE employs approximately 150 staff members to administer the Police Pension Fund. They utilize a database management system called COPS (Comprehensive Officer Pension System) which houses all active member data, except for the three remaining active members in Tier 1. COPS was first developed in 2002, and was designed to handle only one tier of benefits. Since there are now multiple tiers, POLICE is currently in a procurement process to develop COPS2.0. It is expected that COPS2.0 will be able to handle multiple tiers of benefits, and will also have enhanced security and enable member self-service transactions. The development of COPS2.0 is expected to involve three or four rollouts and take up to four years to complete.

POLICE is at the forefront of data security and disaster recovery. They unfortunately dealt with a data breach several years ago, and with Hurricane Sandy more recently, which tested their processes and led them to improvements they may not have otherwise considered. Data quality continues to improve, with fewer questions from the OA each year. The implementation of COPS2.0 will be a major step forward for POLICE, by further enhancing data quality and allowing member self-service transactions.

Data Collection and Validation

COPS serves as the member data warehouse for POLICE. Data is entered into COPS in three different ways:

1. OPA provides an electronic data feed every other week. This feed includes demographic data, payroll figures, and amounts of any pension-related transactions such as loans, payroll deductions, contributions, account adjustments, and termination information. This data is uploaded into COPS every other week (in off-payroll weeks) through an automated process. The process is first run in a pre-production environment where any errors (for example, invalid dates) can be corrected before the data is actually fed into COPS for staff use.
2. The NYPD provides an electronic data feed daily, which is uploaded into COPS each night. This feed contains members' name, Social Security number, address, rank, and command. There is generally no review of changes that appear in these feeds; any changes are assumed to have been initiated by the member.
3. Certain transactions are initiated by the member and handled on paper forms, such as loans, buy-backs, and service purchases. This information is manually entered into COPS. There is a record-level audit trail within COPS where any manual entries or changes can be viewed.

COPS does not track or store member service. Instead, it creates an "equated date" equal to the appointment date, adjusted for leaves of absence, purchased service, etc.

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Section VII. Results - POLICE

Each year, the OA sends POLICE a "seed" file containing member data as of the prior valuation date, and asks POLICE to update the data to the current valuation date. Most of the data for the OA is produced in batch processing through COPS. There are a few members (Tier 1 members, reinstated members, and a few dozen managers) who require manual processing. The Financial Information Service Agency (FISA) sends retiree data to the OA, and OPA sends payroll data to the OA. All of the data is sent using secure FTP transmission.

Within a few days of their receipt of the data, the OA sends an initial list of questions to POLICE. These are generally questions regarding changes in static data. After two to three weeks, the OA sends a more comprehensive and detailed list of questions. Questions are researched in COPS, and if corrections are needed, the corrections are made in COPS so they will be maintained in future years.

POLICE believes that they are being asked fewer data questions every year. They attribute this to better internal documentation of the data process, better understanding among staff of the OA's needs, and continuing improvement in data quality due to member feedback on the annual pension statements.

POLICE gets a Social Security Administration death feed once a month to compare payees to the death match index. There are additional safeguards in place to identify possibly deceased members, such as returned mail, uncashed checks, and rejected direct deposits. Also, often the family notifies the NYPD of the member's death. Affidavits are sent to overseas and Puerto Rico retirees that require members to certify their status. POLICE currently uses LexisNexis as a cross-reference to verify deaths discovered in other ways. They are considering using LexisNexis on a bi-monthly basis as a second source to identify deceased members. Once it is determined that a member is deceased, beneficiary information is researched and confirmed. Beneficiaries are contacted via mail or phone.

Benefit Calculations

Active members planning to retire schedule an appointment to meet with a retirement counselor. There are eleven POLICE staff members who counsel members. At the counseling session, the member is given a benefit estimate (which may be prepared in advance or can be prepared on the spot in COPS). They discuss tax and direct deposit information, verify the data used in the estimate, discuss retirement benefit and health insurance options, and can sign necessary forms and have them notarized. The amounts of the benefit options are not provided at the counseling session, but the couselors do have some "rules of thumb" for estimating the reductions for the various options. Only about 8% of members elect an option other than the maximum, since they believe the reductions are too steep.

Section VII. Results - POLICE

Vested members are tracked in COPS, and contacted only once approximately four to six months in advance of their normal retirement date. A locator service is used to find addresses for anyone whose address in COPS is no longer valid. Members who cannot be located continue to be tracked in COPS until they are located. Payments are made retroactive to the twenty-year anniversary if the member is late to apply for retirement.

Most benefit calculations are performed in the COPS system. COPS is currently unable to process calculations for Tier 3 members, so any calculations for those members are done manually. Since Tier 3 is relatively new, there are not many retirements in that tier. The OA also performs line of duty death benefit calculations and death gamble calculations as well as provides the benefit options for all retirement, disability, and death benefits. Current plans for COPS2.0 include the ability to calculate member benefit options.

The member initially receives monthly benefits equal to 90% of the estimated benefit until finalization occurs. Once the member selects their payment option and the benefit calculation is finalized, the member's benefit is increased to the full amount, and a back payment (with no interest adjustment) is processed within one month of finalization of the benefit. Finalization cannot occur until union contracts are settled, which sometimes takes years. As of the date of our meeting with POLICE in June 2017, there was a backlog of approximately 5,400 calculations due to a recent contract settlement.

Data Security
A security guard is always in the building lobby. Access to the POLICE offices is only available with swipe cards. Paper files are maintained onsite, in the 19th floor office space. POLICE is working toward going paperless. They support a clean desk policy, whereby all files are placed into locked storage at the end of the workday.

When counseling staff runs seminars offsite, a member of the IT department attends and brings laptop computers that connect back to COPS remotely. No POLICE staff members have remote access capability, except for a few senior staff and IT. Only a few senior staff have work-issued cell phones. There is no strict policy for personal cell phones, except that personal devices cannot be connected to POLICE computers. There is very limited internet access on workstations, only business-related sites are available. Access is very restricted and granted only on an as-needed basis.

Section VII. Results - POLICE

POLICE maintains a data recovery site on Staten Island. The data recovery site has its own power source, cooling system, and security. Only a few select IT employees have access to that location. Data is backed up daily, and tapes are stored offsite at Iron Mountain. Tapes are regularly brought back to have certain files restored. System breach tests were performed in 2007 and 2009. A security consultant is being brought in for the COPS2.0 implementation to help perform intrusion and penetration tests. Breach tests may be performed annually going forward, depending on budget.

Other

The POLICE website contains general plan information, such as Summary Plan Descriptions, financial information, and member forms that can be downloaded, printed, and completed. There is no member portal, but this is on the POLICE wish list for COPS2.0.

Benefit statements are mailed to members annually. The statements have been a tool by which member data in COPS has been improved, when members contact POLICE to question or correct the data shown.

Status of Recommendations from Prior Administrative Reviews

1. Review NYCERS policies/program regarding a paperless office

    Response: POLICE spoke to NYCERS, and to other retirement systems across the country, to learn more about what other systems are doing with regards to a paperless office. They have created a two-stage implementation process for going paperless. In COPS, paper flows through the office and ends up online by the end of the specific process. A goal with the COPS2.0 development is to have paper scanned at the beginning of the process or to have information received electronically.

2. Hire additional staff

    Response: As of June 2017, POLICE had a backlog of about 5,400 calculations to be finalized, once union contracts have been settled. They have added two employees to assist with the backlog, but are mostly clearing the backlog through rededication of staff. Even with the staff enhancements, it is expected to be three years before all of the calculations will be finalized. POLICE is considering utilizing more of a batch approach to future finalizations to speed the process.

Section VII. Results - POLICE

(continued)

3. World Trade Center election data should reside in COPS and WTC data should include an indication of whether, and when, members reclassify their status to WTC accidental disability.

    Response: This has been completed.

4. POLICE should continue to look for ways to streamline report creation by COPS.

    Response: Both POLICE and the OA are happy with the quality of the data and the format in which it is provided.

Section VIII. Results - FIRE

General

FIRE employs approximately 25 staff members to administer the FIRE Pension Fund. They utilize an in-house system, Electronic Uniformed Pension System (e-UPS), which houses member data. Corpus funding has recently been established for the pension group. With the corpus funding, an additional eight to ten new employees may be added, with responsibilities ranging from information technology to benefits. Additionally, there may be an office move that will require a change to where systems, currently combined with the Fire Department systems, are housed.

FIRE does a good job of outreach to their members, by offering monthly retirement seminars and by placing portals in each station to allow members to review their own data and statements. They have a robust internal audit system in place in a continuing effort to improve data quality and processes. This has resulted in very good quality data being provided to the OA, with fewer questions each year. Now that corpus funding has been put in place, FIRE will build up additional resources to further improve their data quality and security.

Data Collection and Validation

The e-UPS serves as the member data warehouse for FIRE. Data is entered into e-UPS in three different ways:

1. OPA supplies the payroll data electronically to FIRE on a bi-weekly basis.
2. New members are added through the payroll department via a one-time manual entry that is sent to OPA after entries are reviewed.
3. There are also some supplementary payrolls that are uploaded separately and consolidated in-house. These are for members that miss a regular payroll.

Data is validated through the annual statements provided to members, OA data review for valuation calculations, and member feedback. A portal is provided in each fire station that allows members to verify data, perform estimates and real time calculations for retirement, apply for loans, and update beneficiary information.

Section VIII. Results - FIRE

Each year, the OA sends FIRE a "seed" file containing member data as of the prior valuation date, and asks FIRE to update the data to the current valuation date. FIRE also provides files containing:

- Terminations
- New Entrants
- Withdrawals
- Employee Contributions and Service
- Military Service
- Transfers
- VSF Members

The data feeds are provided electronically to the OA through an encrypted FTP system.

The OA sends member data questions to FIRE. These are generally questions regarding changes in static data. FIRE experiences fewer data questions each year due to having a better understanding of what the OA is requesting and e-UPS system enhancements. Any data issues that are identified are researched and resolved. If a change to the system is required, it is made and noted in the member's file. Data verification includes some research in paper files. Data for terminated members is stored in paper files as well as in e-UPS (for members terminated after 2012). Paper files are necessary for possible tier reinstatement and other issues that aren't currently capable of being tracked in e-UPS. All members have paper files stored on-site.

Retiree data is validated through questionnaires mailed to all retirees annually, requiring the retiree to attest to benefits and notify FIRE of status changes in a timely manner or risk having their benefit payment stopped until the form is received. Death audits are performed bi-monthly through the NYC affirmative action division that provides a death match from Social Security. LexisNexis is also used as a backup system for death audits, and FIRE is considering services of a vendor for death searches. They are also working with banks to be able to reverse electronic payments upon notification a member is deceased.

Benefit Calculations

FIRE estimates that there are 700-900 retirements each year. Members are asked to go through the chain of command process for retirement. Most retirements are for disability, either recommended by the Commissioner, by self-application with doctor advice, or Board recommended if not in the line of duty.

Section VIII. Results - FIRE

The benefit application process begins with members filling out their paperwork and returning it to the office. Members are strongly encouraged to come to a counseling session for paperwork processing so the benefits group can confirm data and provide retirement information or loan information. There are notaries on-site to assist with certifying election forms.

Typically within 60 days, an estimate is mailed to the member. The member then has 60 days to respond with their election; if no response is received the application goes to the board of trustees to request the maximum payment as the option.

Benefits are calculated in e-UPS. The e-UPS system is used to obtain data for the calculation, as well as any documents the member provides. Once the benefit has been calculated, checked and reviewed in-house, the calculation is sent to the OA for benefit certification. The turnaround time for the OA is usually two weeks, with the calculation sent to OA and returned via messenger. FIRE is working with the OA to set up secure FTP transfer for the calculations. We will review their progress in our next engagement.

While most calculations are automated, manual calculations are performed for WTC reclassifications, some death benefits, pre-2012 retirees (their information is not contained in the system), USERRA law changes about imputed overtime, some contract renegotiations, and member transfers. The OA does complete some calculations for FIRE, including transfers to other State plans.

The OA does not have access to the member data in FIRE's internal system. However, since the source data for the e-UPS system is the same as the source data obtained for valuation purposes by the OA, their data is most often consistent with each other.

Data Security
All visitors must go through security upon entering the building where ID is required. Visitors must pass through metal detectors and be accompanied by an employee to office space. Floors are locked individually, and some can be accessed only by fingerprint scan. Certain employees, depending on seniority level, can come in on weekends and can access only certain floors.

Section VIII. Results - FIRE

Paper files are stored in a locked area which requires a key for entry. Files for retirees are stored offsite, and are destroyed after 56 years. Now that corpus funding is in place, FIRE would like to go paperless and create a document control system.

Employees do not have remote access except to view email. FIRE has a clean desk policy, such that any personal information must be locked when the employee is not at their desk.

Data is backed up to tape daily. These backup tapes are sent to offsite storage on a weekly basis. In addition to the FIRE security procedures, general New York City security procedures are managed by DoITT.

Staff Training

Staff members are trained in a classroom setting. There are in-house training sessions and small group discussions on how to handle changes in the law that affect benefits. New employees often train on the job with senior employees on procedures and calculations due to the complexity of the plan design. There is also a procedures manual for employees to reference during and after training.

Other

FIRE does not currently have its own website. Some information, such as plan summaries and CAFRs, is available on the website of the Comptroller's Office. Member-specific information is available through the secure portal accessible from each fire station.

Legally required benefit statements, usually ready by May 1, are sent electronically through the e-UPS employee portal on an annual basis. The portal provided in each fire station allows members to perform estimates and real time calculations for retirement, loan processing, and beneficiary updates. FIRE is not currently able to track how many members view their statement. Statements are not sent by mail. Some members call with corrections to information on their statement, but FIRE requires that written documentation be submitted.

Section VIII. Results - FIRE

Status of Recommendations from Prior Administrative Reviews

1. Provide corpus funding for FIRE.

   Response: This has occurred.

2. WTC election and buy-back service data reside in data files which are separate from FIRE's main database. These data items should reside in FIRE's main database. WTC data should include an indication of whether, and when, members reclassify their status to WTC accidental disability.

   Response: The WTC reclassified disability and death data is still stored in a separate physical file. Buy-back service now resides in the main database.

3. The OA should be given access to actual member data for benefit certification purposes.

   Response: The OA does not have access to the FIRE database for benefit certification purposes.

4. Data security can be improved.

   Response: Data security is a major concern for FIRE. The recently approved corpus funding has provided extra funds to FIRE which will allow for them to hire their own IT staff instead of borrowing from other departments.

Section IX. Results - OA

General

The OA employs a staff of approximately forty, with about eighteen in the Valuation Services Division, twelve in the Certification Services Division, and ten in administrative and support roles. There are ten credentialed actuaries in the office. The office follows a "team" structure, whereby each plan has a team assigned to it. All of the members of the team attend the kickoff meeting with the System staff. There is some crossover on the teams to provide backup (for example, since the uniformed plans are very similar, there is natural backup between those teams). They did mention that they are working to have even more crossover among the teams, so that when special projects arise, there are more staffing options.

The OA states that they have excellent working relationships with the Systems. There is very little turnover on either side, so the relationships have become long-term and very solid.

Data Collection and Validation

Before the plan year begins, the OA sends data request letters to each of the Systems, as well as "seed" files with instructions for updating them. They also send letters directly to OPA and FISA to request salary data for active members and benefit information for retirees. In addition, they send letters directly to outside agencies whose employees are members of one of the Systems (e.g, Transit Authority). The letters are followed by kick-off meetings with each System. The meetings last about an hour, and are intended to ensure that all parties are aware of timing, deadlines, and data needs.

Once the OA receives the member data, they perform several "high-level" checks. Specifically, they look for changes in static data elements like birthdate and gender, invalid dates, and inconsistencies from the prior year (for example, service increasing more than one year). Once any issues from the high-level checks are addressed, more detailed data validation is performed. The OA states that they have very few data questions, and seemingly fewer every year. They attribute that to the Systems gaining better understanding of the OA's needs, and the Systems having better processes in place to ensure better quality data. Some of the Systems go so far as to add comments and flags to the data files, to pre-empt questions from the OA.

All of the files received by the OA contain both member number and Social Security number. Most of the data reconciliation work uses member number, not Social Security number. However, it is sometimes useful for the OA to have the Social Security number, for example, to identify when retirements have been reclassified or when retirees with joint and survivor benefits have died.

Section IX. Results - OA

There is no standardized data process office-wide, because the Systems and data they provide are so different that standardization is not viable.

Once the OA has completed the data reconciliation process, they send the data to the outside actuary (Conduent). Conduent does additional review of the data and sends any questions or inconsistencies back to the OA to resolve.

Based on inquiries from Unions, State Senators, outside consulting firms that work with Unions, and from the Systems themselves, the OA prepares fiscal notes to estimate the cost impact for all possible plan changes. They have had about 40-50 fiscal notes requested in the past year.

Benefit Calculations

The Certification Services Division certifies approximately 550 calculations each week. Each CSD staff member is trained on at least three Systems, so they can be moved depending on case load. Each case is done, checked, and reviewed before being certified. The process generally takes about two weeks, but no longer than a month. The certifications are done in Excel spreadsheets that contain some VBA programming.

NYCERS and TRS provide most, if not all, of their calculations electronically. The OA has the ability to access the underlying data used in the calculations.

BERS, POLICE, and FIRE provide their calculations on paper. The OA does not have access to the underlying data used in the calculations, so they are able only to check for reasonableness.

The OA performs, rather than just certifies, any non-standard calculations. Fifty to one hundred calculations per week are considered non-standard (for example, service transfers, death benefits).

The OA estimates that about 3% of cases have errors, although many are minor errors such as the misspelling of the member's name. The OA points out the error to the System, but does not get involved in the correction process if there is one.

Section IX. Results - OA

There has been discussion over the years about whether the OA could give the Systems "pre-checked" calculation software, to be used for standard cases. This would greatly reduce the OA's workload and improve the turnaround time for the non-standard calculations. This has not been implemented at any System, but all parties seem to be open to the idea. However, the OA did mention that this would be difficult to implement for NYCERS in particular, given the variety of plan provisions.

Data Security

All paper files are stored onsite. The OA is running out of filing space, since they have paper files that date back to 1920. They are moving toward becoming a paperless office. This is a City-wide initiative, and something that the Chief Actuary strongly supports. Any paper files that are no longer needed are shredded in-house after being scanned.

The OA does not currently have specific policies related to cell phones or clean desk. They believe that all employees understand the confidential nature of the information in their possession, and trust employees to treat the data with care.

No employees are permitted to tele-commute on a regular basis; only in special cases of inclement weather or special overtime. Only a few select staff members, senior staff and IT, have remote access. The remote access is done via VPN which is managed by DoITT.

A security guard is always onsite in the building lobby. Visitors must be signed in and must show identification before being allowed past the lobby. Employees have access cards that allow them into the building between 7:00 am and 7:00 pm.

Data is backed up to disk every night. Two weeks of backup disks are kept onsite. After two weeks, disks are boxed up and sent to offsite storage (under a City-wide contract). Boxes are kept in offsite storage for ten years. The boxes are rotated back to the OA so the oldest disks can be re-used. The boxes are all sealed closed with a unique zip-tie, so when the boxes are recovered the OA can be sure they were not opened or tampered with. They have never looked at the data on the returned tapes to see if it is intact or usable.

The OA has never run a data breach test internally, but the City does run such tests regularly. The OA is protected by two firewalls; their own and one through Citynet. All desktops and servers are mandated to run the City's software for intrusion protection and virus protection.

Section IX. Results - OA

Status of Recommendations from Prior Administrative Reviews

1. Perform all portions of the experience study internally

    Response: The OA would not be opposed to doing the experience study in the future, but would need additional staff to take on that additional work. Given the project nature of this work, level staffing would be difficult. However, the OA believes that the City favors having an independent party perform the experience study and review the actuarial assumptions developed by the OA.

2. Prepare formal valuation reports for NYCERS, TRS, and BERS

    Response: These valuation reports are currently in the works. The OA should have more of an update on their progress in our next review. However, they currently prepare contribution letters for NYCERS, TRS, and BERS, which they believe contain information which is very similar to what would be contained in a formal valuation report.

3. Work with BERS to obtain better credited service information

    Response: BERS recently implemented a new data management system. During the implementation process, the data was reviewed and cleaned up significantly. We expect that going forward, the data provided by BERS to the OA will be much more accurate. We will look into this further in our next review.

4. Prepare for the contribution audit while performing the regular valuation

    Response: The prior actuarial auditor, GRS, mentioned that receipt of sample lives from the OA was delayed, and recommended that the OA develop a representative list of sample lives to provide upon request. However, we did not encounter the issue GRS mentioned in this regard. We prefer to select sample lives rather than have a pre-selected set, and when we requested sample life output for our chosen sample, we received the information promptly. We also did not see the need to review as many sample lives, given the full replication nature of the audit.

Section IX. Results - OA

(continued)

5. CSD should explore whether using the FTP site will increase efficiency in processing benefit calculations

    Response: The Systems that currently provide calculations on paper (BERS, POLICE, and FIRE) are all in the process of upgrading their data management systems. It is expected that electronic transmission of benefit calculations will be much more feasible once the new systems are in place. We will follow up on this in our next review.

6. CSD should reconsider batch processing of recalculations due to contract settlements

    Response: There has been discussion over the years about whether the OA could give the Systems "pre-checked" calculation software, at least to be used for standard cases. This would greatly reduce the OA's workload and improve the turnaround time for the non-standard calculations. This has not been implemented at any System, but all parties seem to be open to the idea. However, the OA did mention that this would be difficult to implement for NYCERS in particular, given the variety of plan provisions.

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