NYC DEP Bureau of Customer Services (BCS) Best Practices Customer Service Model Design Project Report

January 2007 - October 2007

New York, NY
Updated as of October 22, 2007

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Booz | Allen | Hamilton

Table of Contents

- BCS Project Overview P. 3 – 9
- Customer Service P. 10 – 47
- Revenue Collection P. 48 – 78
- Systems and Technology P. 79 – 96
- Organizational Design and Next Steps P. 97 - 111

Introduction

- The Bureau of Customer Service (BCS) plays a vital role as the interface between DEP and the city's 826,000 account holders, whose payments support the entire water and wastewater enterprise. Historically, this relationship has been plagued by poor access to customer service assistance, an inability to resolve disputes promptly, high numbers of estimated bills and lack of adequate enforcement techniques. As a result, DEP's collection rate has been below that of other large cities, and a large accounts receivable balance has accumulated over the years.

- Within the last 18 months, DEP launched a complete overhaul of BCS operations, beginning with immediate customer service improvements, such as extending hours for the telephone call center and dramatically reducing the average customer wait time. DEP also laid the planning and procurement groundwork needed for longer-term projects, such as the City's conversion to automated meter reading (AMR) – a system that will provide more accurate and comprehensive usage information to DEP customers and dramatically reduce the need for estimated bills.

- BCS transformation will continue with the analysis and recommendations contained in this report by Booz Allen Hamilton, some of which are currently being implemented (e.g., Payment Incentive Program, service termination and high-volume outbound calling pilots, and internal standard operating procedures development, among others). DEP engaged Booz Allen in January 2007 to conduct an extensive analysis of current BCS operations, systems and processes compared to the best practices of other large water utilities. The most ambitious and intensive component of this work was to analyze issues and barriers to timely resolution of billing disputes and revenue collection.

Introduction (cont.)

- This report is divided into four sections: Customer Service, Revenue Collection, Systems and Technology, and Future Organization and Next Steps. Each section contains an overview of relevant issues, analysis, key observations and specific recommendations. The report will serve as a tool for DEP managers, shaping the transformation of every major operating and customer service system used by the bureau.

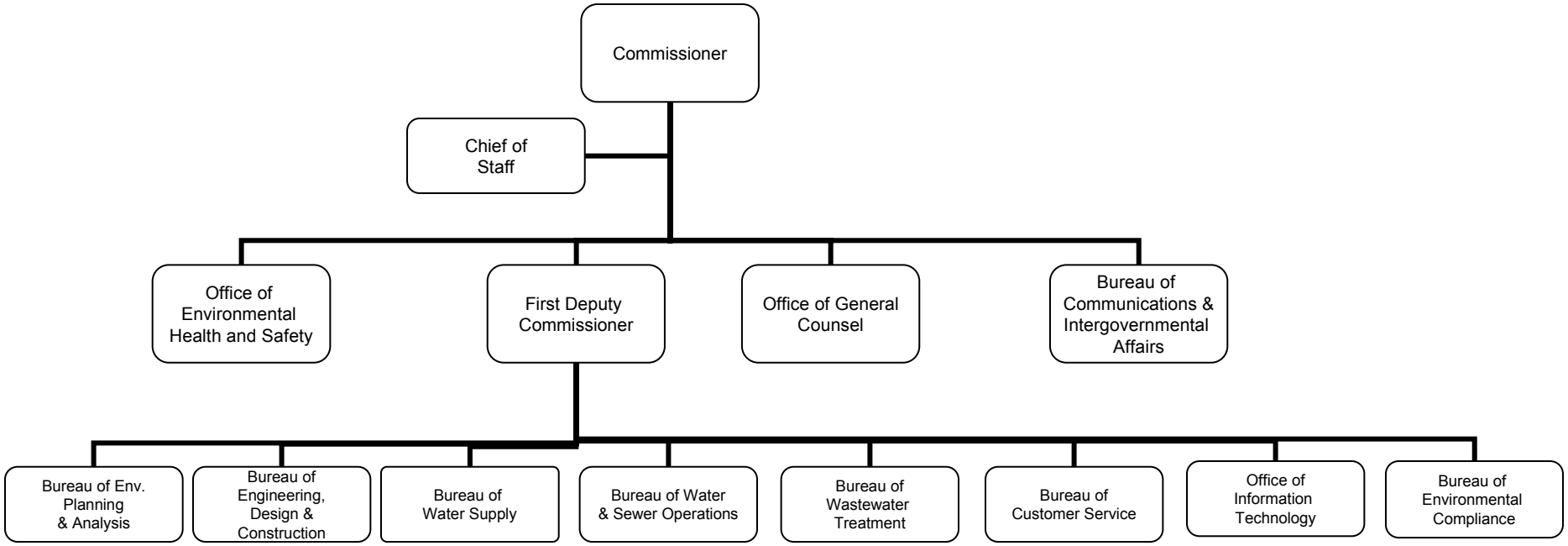
- In conducting this study, Booz Allen observed many opportunities within BCS to build on a dedicated staff and changes already underway. One example is DEP's automatic meter reading (AMR) system. DEP began piloting AMR this summer and will start installing the system this fall to continue transforming the customer service experience. AMR will improve both the accuracy of data collected and the ways in which that account information – from water consumption to utility charges – is provided to the customer.

- Booz Allen also noted several areas that need to be completely redesigned. One such area is collections strategies. BCS does not currently have available enforcement tools that are standard in other parts of the country and correlate directly to a much higher collection rate.

The Bureau of Customer Services (BCS) is one of 10 bureaus and offices within the Department of Environmental Protection

The Department of Environmental Protection's (DEP) mission is to **promote public health, by providing clean water, managing the effects of storm water and removing wastewater safely.** *DEP also provides stewardship of other critical environmental issues, such as air, noise and hazardous waste*

DEP Bureaus and Offices



Sources: New York City Department of Environmental Protection Website (http://www.ci.nyc.ny.us/html/dep/home.html), Strategic BCS Workplan (2007)

BCS is transforming its vision, strategy and day-to-day operations using a Best Practices Customer Service Model

- BCS is transforming into a customer-focused organization that uses state of the art technology and business practices to accurately and clearly bill and collect from 826,000 water and sewer account holders

- Objectives:
  - ***World-class customer service***
  - ***Efficient collection of revenue***
  - ***Effective promotion of water conservation***

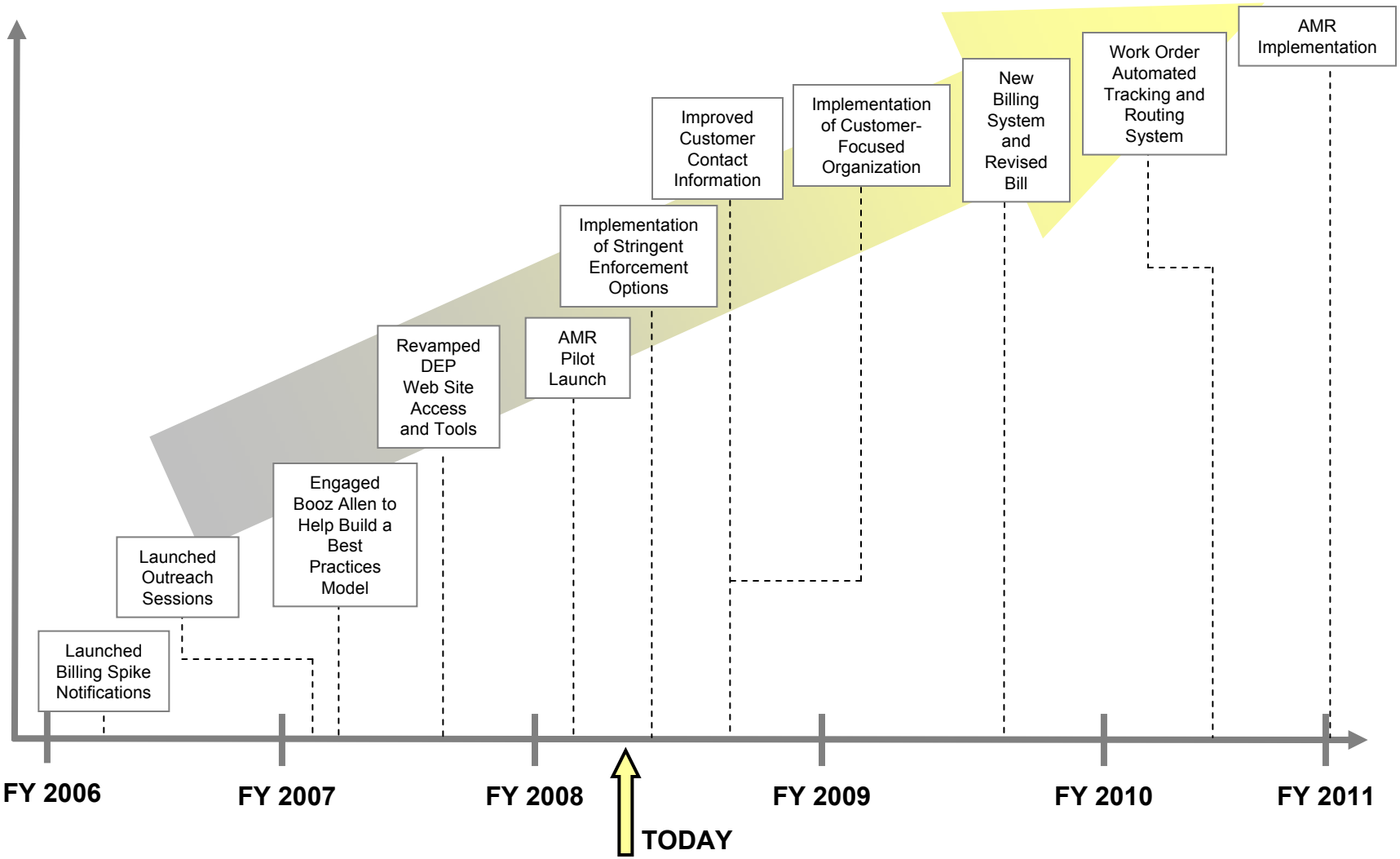
- Reflected in this report is significant analysis that will allow DEP to:
  - ***Correct outdated account information***
  - ***Settle outstanding account balances***
  - ***Begin supplying better information to customers***

- This effort will include the introduction of a new billing system and culminate in the installation of AMR within the next few years – both of which are critical to improving BCS infrastructure and providing good customer service

Already, BCS has achieved significant customer service milestones and increased customer access

- The BCS Call Center, which handles 85 percent of customer inquiries, has been significantly overhauled
  - Already, there has been more than a 95 percent reduction in average call wait time (currently at nine seconds)
  - Call Center hours extended
  - Staff reorganized and retrained
- There has also been a 41 percent reduction in response time for written correspondence
- BCS has launched successful collection program pilots
- BCS is coordinating across multiple city agencies to verify existing data and acquire missing data

As part of transformation, BCS is implementing several customer-focused initiatives, such as a self-service Web site, AMR, a new billing system and more



In January 2007, DEP engaged Booz Allen to analyze BCS operations, make recommendations and implement key process improvements over a six-month period

Area	Description
Customer Service Process Assessment	Evaluation of BCS customer service operations across delivery channels, including the call center, correspondence unit and walk-ins
Organizational Design and Reorganization	Design of BCS organizational model to support best-in-class customer service
Collections Strategy	Analysis of DEP collections processes, customer data segments and operating model
Accounts Receivable (A/R) Strategies	Evaluation of A/R reporting, policies, processes and systems
Redesign of Water Bill	Analysis and redesign of DEP's water bill to facilitate payment and promote effective communication with customers
Analysis of Technology & System Capabilities	Evaluation of DEP's technology capabilities to drive recommendations in contact center technology and infrastructure

Section 1: Customer Service

Customer Service is the cornerstone of BCS transformation; improving it will be key to creating a more effective organization

- By building on the work already underway as well as the recommendations in this report, BCS can be more effective in deploying customer relationship management. BCS can improve customer communication and all of the channels that support it. BCS customer communications channels include the telephone (in-person assistance and recorded messages); borough-based, customer assistance walk-in centers; the Web and annual/quarterly bills currently sent via mail. Customers rely on these delivery channels to proactively receive information from DEP and resolve service and billing issues.

- All of these channels have been or are currently being redesigned, as are the information systems that will allow DEP to make customer communication more effective. The foundation of this effort is AMR. AMR will help DEP obtain and provide more accurate information to customers. Since AMR is already underway, all new systems will be made compatible with it. For example, within the next few years, DEP will launch a new Customer Information System, which will provide more flexibility, including proactive communications with customers who might have billing issues. Together, these systems will allow DEP to introduce a new bill for customers and later, move from quarterly to monthly billing. Monthly billing will be more convenient for customers (e.g., household or business budgeting purposes) and help highlight discrepancies or issues before they become major problems.

- Improving the quality and scope of BCS information systems and customer data will enhance and streamline service channels, maximize the efficiency of billing resolution, and encourage increased customer payment and responsiveness. Improved customer channels will also create a stronger understanding of the relationship between water/sewer bills and effective delivery of water/sewer services.

AMR is the foundation for timely, accurate billing and enhanced customer service...

Key Benefits

- Provides more accurate billing records, which help DEP build and maintain positive relationships with customers
- Generates daily consumption information that helps identify leaks immediately (e.g., water spike notifications for customers)
- Speeds up resolution of customer inquiries/complaints by giving customer service representatives (CSRs) greater confidence in billing and consumption accuracy
- Enhances customer service by minimizing the need to access properties for meter reading
- Allows DEP to switch to monthly billing cycles, reducing delinquent accounts and improving revenue flow

Key Milestones

- Install and implement AMR field test (July - August 2007)
- DOITT and AMI (vendors) begin installation of receivers (October 2007)
- Complete majority of MIU Installation work (January 2011)

...which includes improved processes and delivery channels

Summary: Customer Service Process Assessment Improvement

- **Challenges**
  - Formal mechanisms and integrated planning—to align strategic vision, resource allocation and system development—do not exist
  - Operational processes are not fully documented and accessible to BCS staff. Policies and procedures are subject to interpretation and executed inconsistently by customer service representatives (CSR) and other staff, depending on location or business unit
  - BCS' current training program does not address CSRs' professional development, which makes it difficult for CSRs to meet customers' changing needs
  - BCS does not consistently track and measure key performance indicators
- **Approach**
  - The Operation Process Assessment and Improvement task identified challenge areas for DEP to tackle to improve customer service across all delivery channels
  - Focus: *What tactical and strategic measures can be implemented in the short- and long-term, to improve BCS operational processes?*
- **Recommendations**
  - Develop a strategic vision that is aligned to BCS' mission and direction, and builds the foundation for a customer-focused organization
  - Optimize internal processes for business unit support and prioritization in daily operations, including clearly defined roles and responsibilities for all staffing levels, workforce management tools and methodology, IT, operations and change management governance processes, and training
  - Integrate quality assurance measures that are aligned to BCS customer service goals

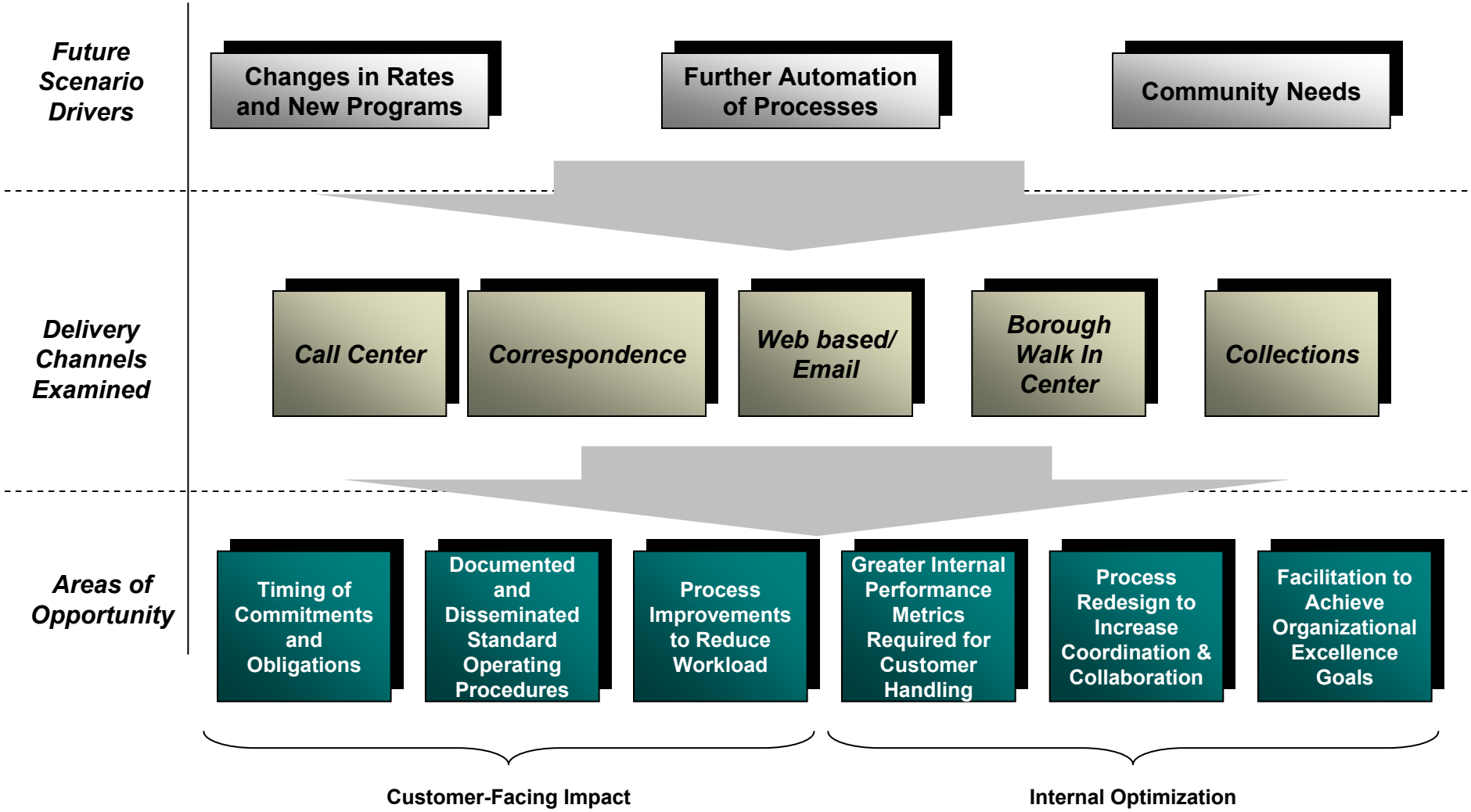
To align BCS operations with superior customer service models, Booz Allen performed Operational Process Assessment and Improvement (OPAI)

- Reviewed existing processes and operations, and identified systemic weaknesses
- Established a vision for BCS that is consistent with industry best practices and the DEP mission
- Recommended specific changes or process adjustments to help BCS achieve its vision in both the short and long term

As part of OPAI, Booz Allen comprehensively analyzed existing BCS operations and processes

- **Reviewed BCS operations and current service delivery model**
  - Documentation to understand existing BCS operations for all service delivery channels; e.g., call center, correspondence, Web site/email and walk-in borough offices
  - Existing customer service programs—such as quality assurance, training, workforce management and performance management—for each service delivery channel
  - Current service delivery model across all channels, including the overall BCS strategic vision and performance metrics
- **Conducted process review and overall assessment of as-is BCS human resources and staffing**
  - Workforce management models such as call center staffing levels and staffing methodology
  - Knowledge management system and process for training and information dissemination
  - Training/career development program (e.g., initial new hire training/orientation, employee development and ongoing training, quality assurance integration/modular approach)
- **Documented DEP processes, methods and procedures for customer handling**
  - Skills-based routing and workflow within various customer-facing business units
  - Operational process mapping across all service delivery channels
  - Quality assurance and quality control programs
  - Training integration and feedback mechanisms

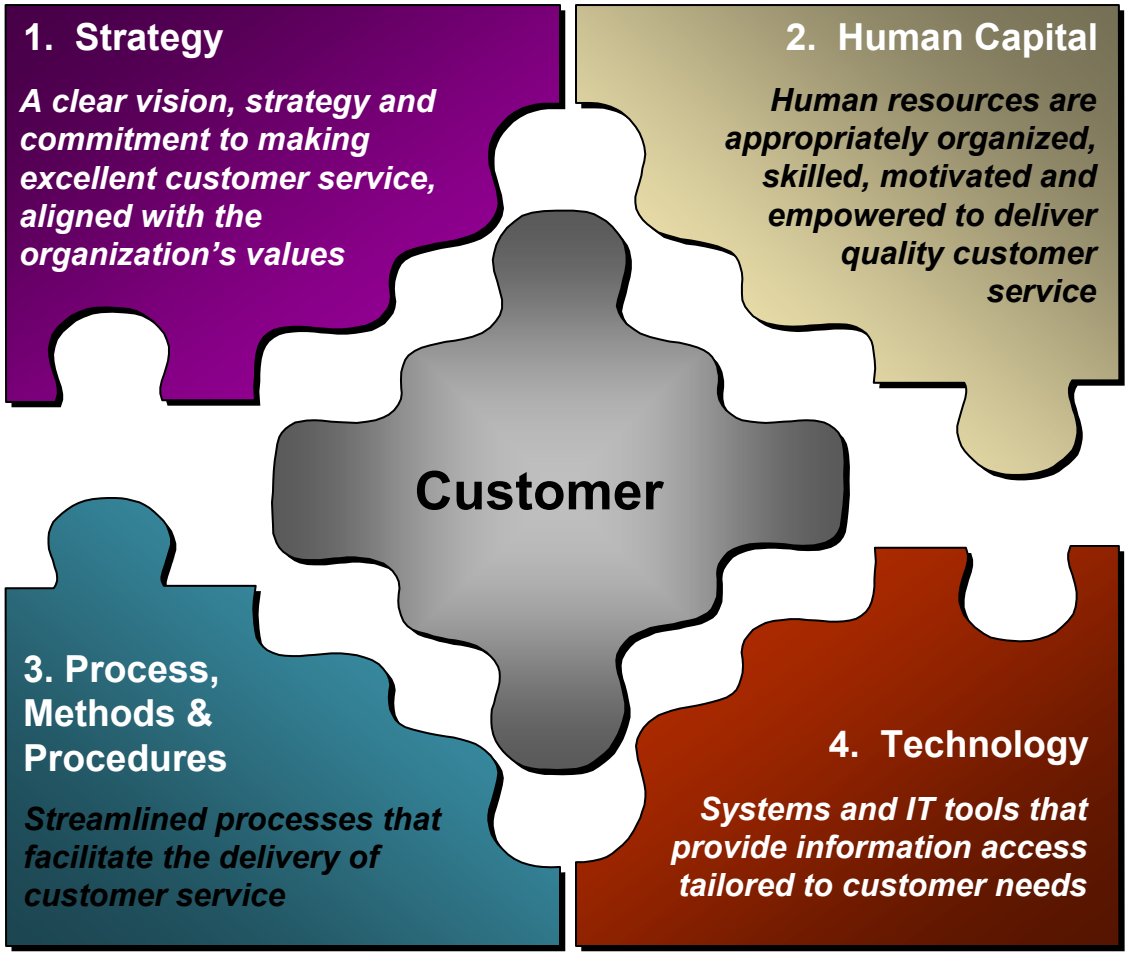
For example, Booz Allen assessed anticipated future needs and drivers to identify opportunities and operational recommendations for improving each delivery channel



OPAI followed a specific framework to focus on customer-centric delivery channels and service

Strategy
- Customer Profiling and Segmentation
- Industry and Market Analysis
- Benchmarking and Best Practices

Processes
- Activities and Tasks
- Sequence
- Rules
- Targets and Outputs



Human Capital
- Organization Structure and Design
- Human Capital Management
  - Workforce Planning
  - Leadership
  - Training and Development
  - Reward Systems
  - Diversity
  - Recruiting

Technology
- Data
- Applications
- Technology Infrastructure
- Performance Management

The goal of this task was to develop an integrated customer services organization that could help DEP prepare for upcoming challenges

- A key element of this preparation is the vision that BCS will meet or exceed customer expectations as measured by:
  - A high degree of first contact resolution by a knowledgeable and well-trained, front-line staff member
  - An enhanced dispute resolution process that makes it "easier to do business with DEP" and enables efficient collection of past-due revenue
  - Standardized inquiry resolution process across all service delivery channels
  - Efficient utilization of staff by appropriately applying skills-based workflows
  - Service level- and key performance indicator-driven performance measurement

- This vision requires comprehensive changes to three key components[1] within the BCS approach:
  - Strategy
  - Process
  - Human capital

(1) Technology (component four) is covered in the Systems and Technology section of this report.

Through OPAI, Booz Allen identified several challenge areas that significantly impact customer service across all delivery channels

Strategy

- Delivery Channels
- Strategic Vision
- Performance Metrics

Human Capital

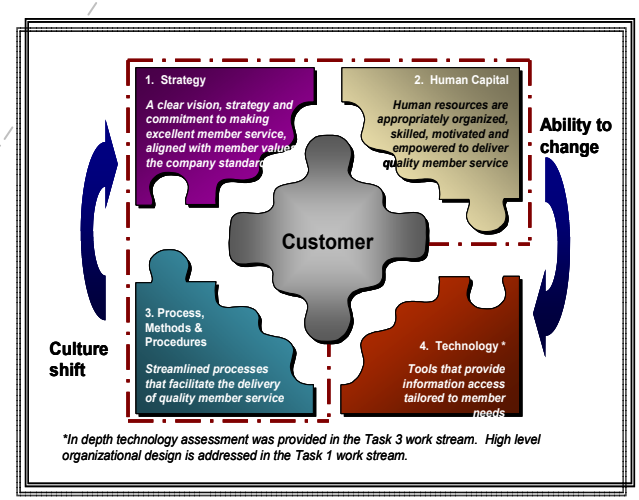
- Staffing and Planning
- Knowledge Management
- Roles and Responsibilities
- Training

Process, Methods & Procedure

- Operational Process Mapping
- Quality Monitoring
- Skills-Based Routing and Work Flow
- Customer Self-Help
- Reporting

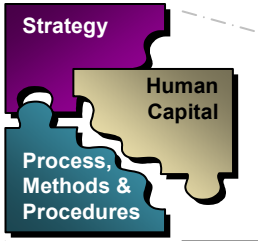
Re-engineering or enhancing key supporting processes can yield improvements for several components across BCS business units

The OPAI assessment of key BCS components



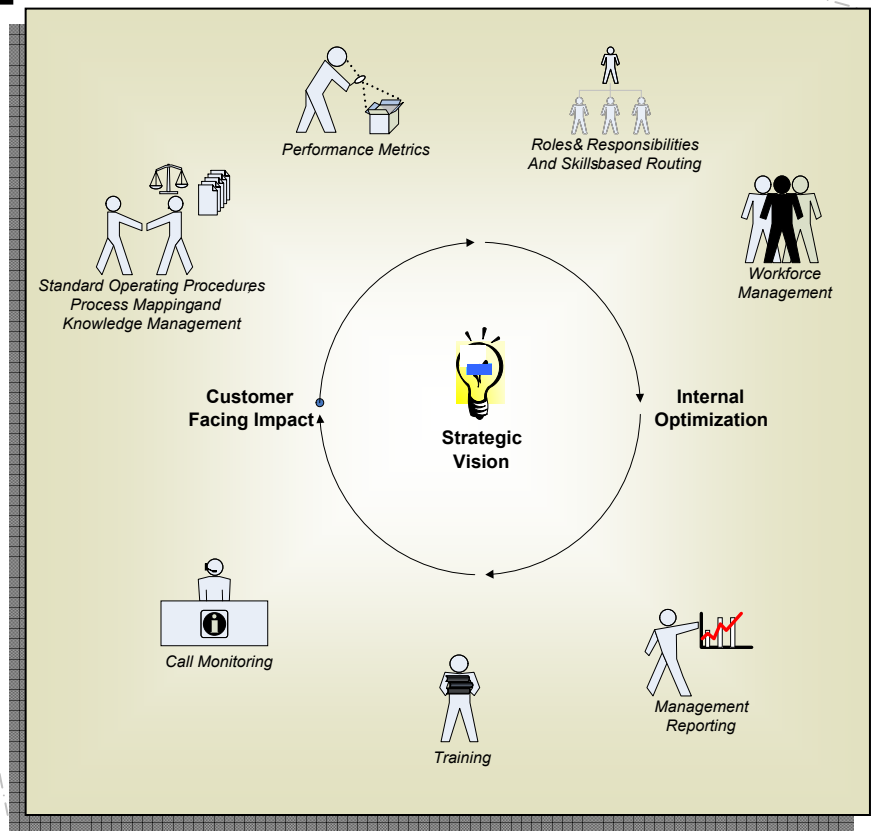
*In depth technology assessment was provided in the Task 3 work stream. High level organizational design is addressed in the Task 1 work stream.

BCS transformation can be enhanced by realigning operational processes for strategy, human capital, and process, methods and procedures

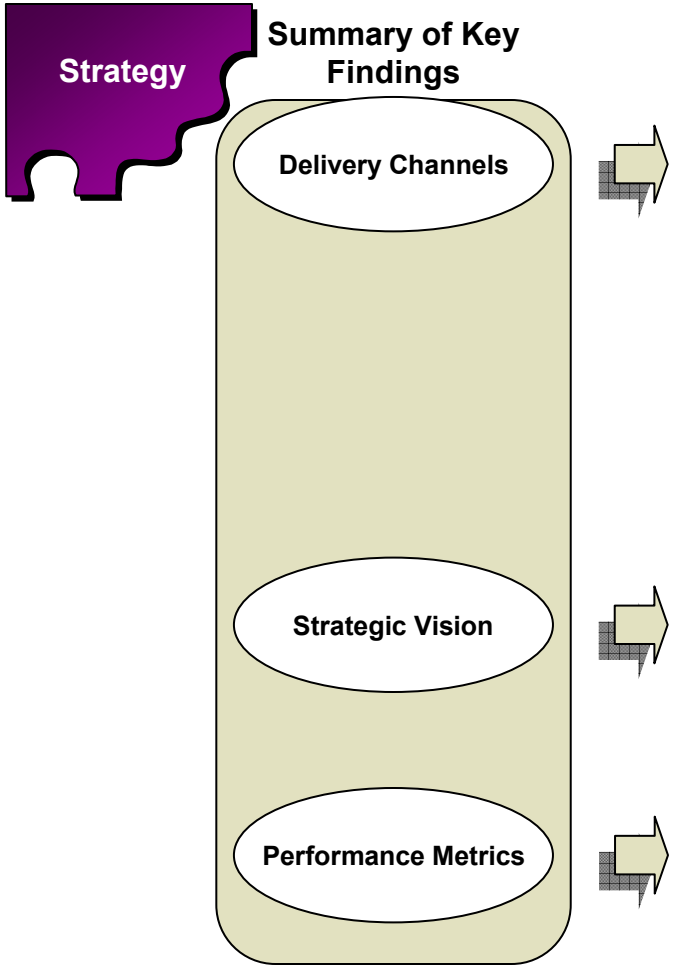


Key actionable areas for growth include:

- **Standard operating procedures** that are uniform, clearly understood, documented, disseminated and accessible
- **Enhanced customer self-help** that enables customer self service and promotes call avoidance through intelligent call routing and scripting (IVR), as well as corresponding Web site enhancements
- **Quality monitoring program** to ensure a closed feedback loop
- **Training program** for new hires and ongoing staff development
- **Workforce management** process that accurately predicts staffing needs
- **Defined roles and responsibilities** for staff, supervisors and managers, including integrated quality assurance procedures
- **Performance metrics** to benchmark success
- **Management reporting dashboard** to give supervisors a "quick glance" overview of BCS activity



Among business units, no clear consensus on DEP strategic vision, utilization of service delivery channels and performance metrics exists

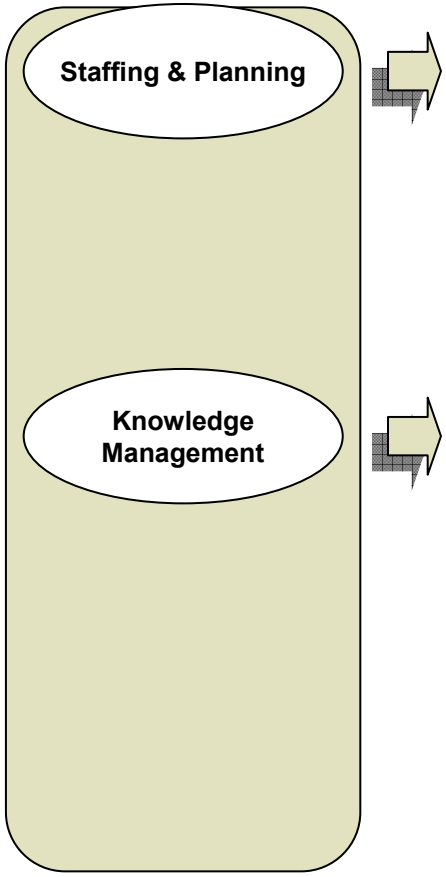


- **BCS' organizational structure, operational processes and performance metrics are not aligned to ensure optimal service delivery to the customer**
  - Communication across delivery channels is limited; BCS business units operate in silo structure
  - Browser Applications (BAPPS) tool was developed by OIT to provide single system for customer handling and billing; however, inconsistencies in interpretation, process and training result from lack of synchronization across units
  - Formal mechanism for integrated resource allocation and system development planning does not exist
- **BCS does not have an established, strategic and effectively communicated vision for delivery of comprehensive customer service**
- **No clear consensus on which metrics are important to defining BCS' customer service strategy**
  - Established metrics for successful review and assessment of department performance are not internally publicized and consistent

Workforce and knowledge management processes and procedures are ad hoc, lacking comprehensive definition or utilization

Human Capital

Summary of Key Findings



- **Workforce management is manually performed by staff**
  - Management does not utilize forecasting and scheduling technology
  - CSR schedule adherence, compliance and occupancy is not formally tracked
  - Established, proactive plan for CSR recruitment, attrition and hiring is not currently in place resulting in subsequent negative impact on staffing pipeline
- **Knowledge management practices to institutionalize staff best practices and standardize knowledge are limited**
  - Customer handling procedures are not consistent across delivery channels, or even within delivery channels
  - Utilization of current documentation management program (WebEx) for tracking customer correspondence varies
  - Availability of templates and reference documentation through the Document Management System (DMS) is very limited. There is a current initiative to increase the number of available templates; however, a formal process for identifying and addressing template needs has not been established
  - Standardized call scripts are not available for CSR use

Productivity and efficacy of staff and managers are impacted by limited definition of their roles and responsibilities

Human Capital

Summary of Key Findings

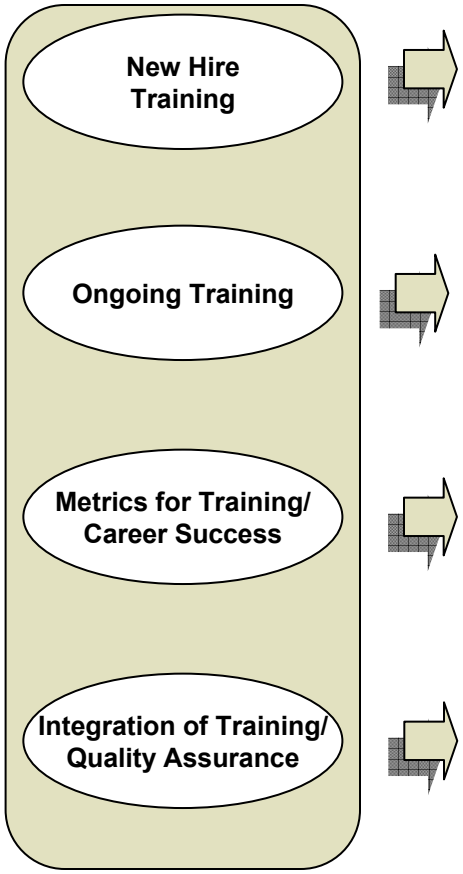
- Management & Supervisor Roles
- Staff Feedback Mechanisms
- Responsibility metrics

- **Management and supervisors efforts are widely dispersed among the diverse functions of customer responsibilities, performance issues, administrative duties, and technical tasks**
  - Supervisors' roles and responsibilities are not clearly defined
  - Supervisors' workload is focused on escalated customer issues; staff coaching and performance assessment is limited as a result
  - Practice of second tier triage through team leads has been discontinued
- **Need for formalized closed loop feedback mechanism for performance management, staff development and to enable individual staff member growth and increase job satisfaction**
- **Supervisory accountability and ownership of team productivity and work quality goals are not tracked through formalized metrics**
  - Management of metrics such as procedural accuracy, quality control and minimum productivity are not specifically quantified under supervisory duties

Ongoing and new hire training does not address employee development or provide an effective feedback loop across BCS

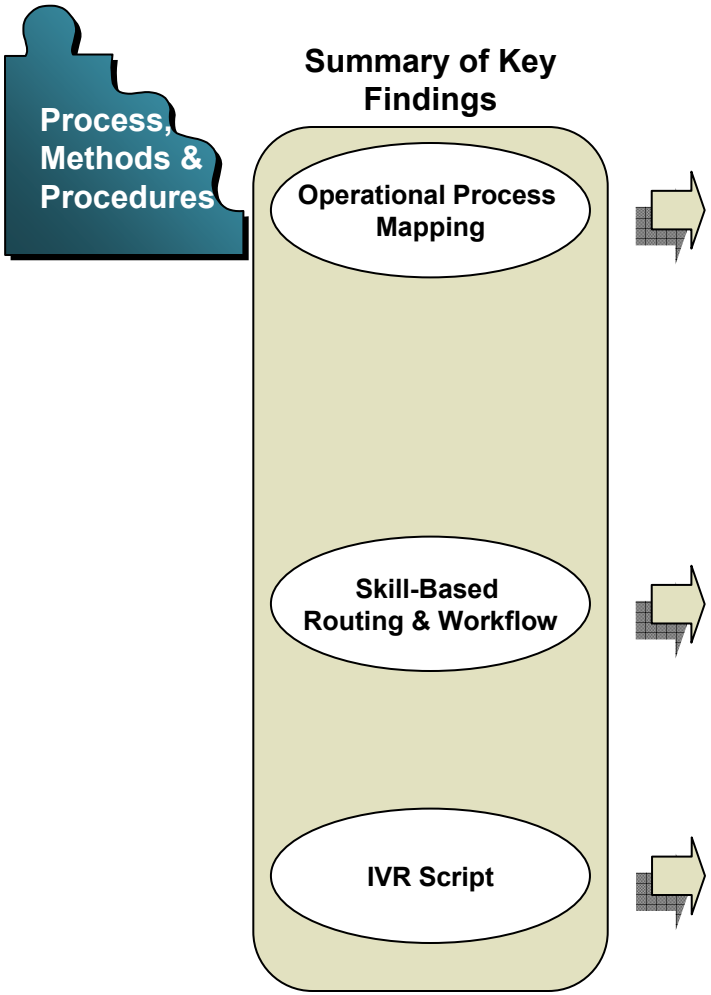
Human Capital

Summary of Key Findings



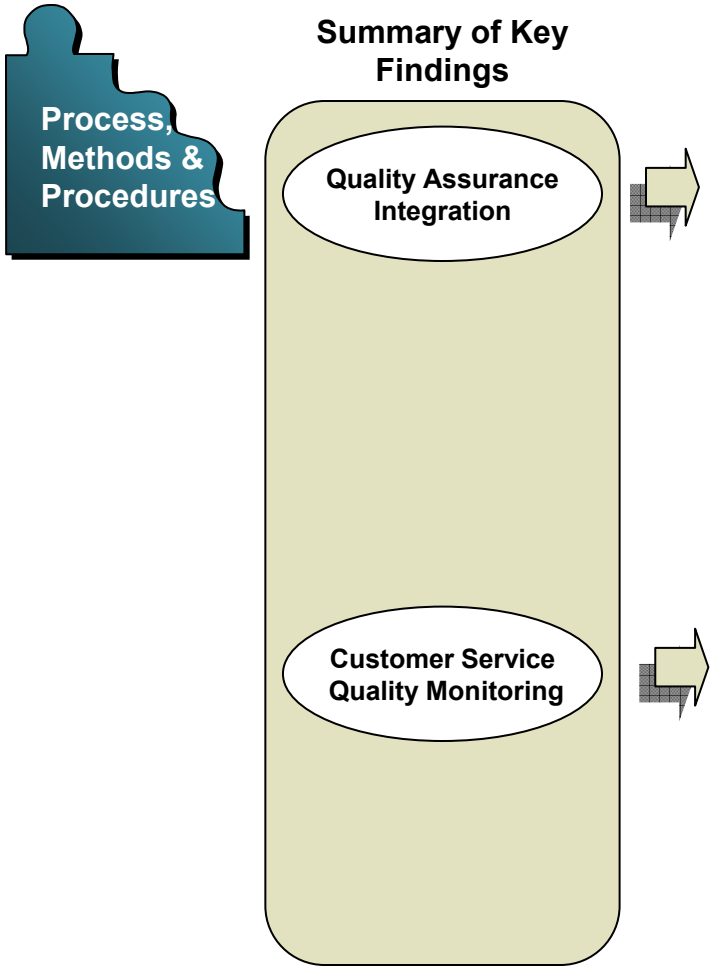
- **New hire training consists of both classroom and experiential modules**
  - Standard curriculum, training and timelines do not exist for new hires
- **Ongoing training opportunities for staff are limited**
  - Continuous training modules for staff, supervisors and new managers have not been established
  - Changes to processes and technology are not formally disseminated to staff through training modules
- **Pathway for career development is undefined**
  - Hierarchy for career progression, including staff and supervisors' roles and responsibilities, is not established in or between business units
  - Defined metrics for training success, such as formal mechanisms to assess competency levels, are not established
- **Issues identified in quality assurance (QA) review are not formally integrated into the training process**
  - Issues identified by QA as systemic are addressed with staff on an individual, rather than team, bureau and/or department level

Operational mapping and processes for customer handling require full documentation and potential revision



- **Operational processes are not fully documented and accessible to staff, resulting in different customer experiences**
  - Documentation exists in many different forms; however, formal, regularly updated documentation that enables all stakeholders to understand current flows and determine appropriate changes does not exist
  - Inconsistencies in customer experiences exist due to inconsistent implementation and adherence to standard operating procedures across business units
- **Customer handling for call center follows the *first* available agent approach**
  - BCS does not formally use a tiered “best-practice” model, where customer service operations are structured to handle inquiries with the *best* available resource
- **BCS can improve IVR scripting to help customers find key information, decreasing calls and identifying appropriate departments for issue resolution**
  - BCS does not regularly assess IVR scripts for user friendliness
  - Options and call flow for IVR do not reflect current call volume needs, and call routing does not allow customers to immediately route to the appropriate BCS unit

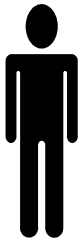
Integration of quality assurance measures and programs across business units is limited



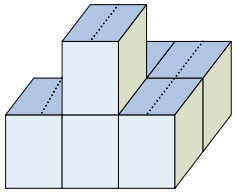
- **Quality assurance (QA), training and performance metrics programs are not aligned to address BCS goals**
  - QA is performed on a department-to-department basis; a comprehensive program that incorporates QA, training and performance measurement could improve customer service at DEP
  - Auditing manual transactions is limited to the QA team, which has limited staff resources for comprehensive review, impacting accuracy; supervisors are not integrated into the QA/billing adjustment audit process
- **Quality monitoring is not administered on a regular basis, due largely to diverse management duties and under-staffing**
  - Call monitoring must be conducted on a consistent basis, which includes the same number of monitoring events for each CSR
  - Supervisor call monitoring has been discontinued
  - Customer satisfaction levels and answer accuracy are not currently tracked
  - Customer operations and field operations have limited quality control programs or measurements for answer accuracy in place

Booz Allen designed future state operational processes to address these systemic weaknesses in existing BCS operations

- **Strategic Vision** is comprehensive, documented and clearly communicated. It is aligned to the mission and direction, and builds the foundation for a customer-focused organization



- **Customer-Facing Impact** encompasses processes or delivery channels that affect the customer experience, such as:
  - Performance metrics
  - Standard operating procedures
  - IVR scripts
  - Call monitoring



- **Internal Optimization** addresses processes for business unit support and prioritization of daily operations, including:
  - Clearly defined roles and responsibilities
  - Workforce management
  - IT governance
  - Training

Summary of OPAI Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**BCS does not have an established, strategic and effectively communicated vision for delivering comprehensive customer service**	**Develop a comprehensive, documented and clearly communicated vision, mission and strategic direction that builds the foundation for a customer-focused organization**
2.	**BCS' organizational structure, operational processes and performance metrics are not aligned to ensure optimal service delivery to the customer.** Communication across delivery channels is limited; BCS business units operate in silo structure. The Browser Applications (BAPPS) tool was developed by OIT to provide a single system for customer handling and billing. However, inconsistencies in interpretation, process and training result from lack of synchronization across units. Formal mechanism for integrated resource allocation and system development planning does not exist	**Address strategic needs by optimally aligning, assessing and integrating business units to support the interdependencies between the customer service front-line and analysis business units, thus enabling organizational units to best serve the customer.** Implement procedures and policies to support the interdependencies between collections, account maintenance, management analysis, QA and training, and customer service front-line organizations (e.g., customer operations, field operations), thus enabling the overall strategic alignment of the organizational units to best serve the customer
3.	**No clear consensus exists on which metrics are important to defining BCS' customer service strategy.** Established metrics for performance review and assessment are not internally publicized and consistent. Reporting tools currently available are not effectively employed, structured or utilized to sufficiently enable management decision making. BCS managers employ a labor-intensive process to create usable reports; systemic data reconciliation issues have been cited across all business units. BCS lacks a comprehensive management reporting dashboard for senior management and appropriate drill-down capabilities that provide actionable information	**Assess organizational needs, establish agreed upon performance metrics and develop a management reporting dashboard.** Institute a high-frequency, comprehensive management reporting dashboard for senior management. Include drill-down capabilities that provide actionable information, enabling effective supervision and real-time reaction by managers.

Summary of OPAI Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
4.	**Workforce management is manually performed by staff.** Management does not utilize forecasting and scheduling technology. CSR schedule adherence, compliance and occupancy is not formally tracked. An established, proactive plan for CSR recruitment, attrition and hiring is not currently in place, resulting in a negative impact on the staffing pipeline	**Institute systematic and procedural improvements to current workforce management methodology.** Review, assess and redesign workforce management procedures to provide a more accurate staffing model. Develop integrated staffing models across all service delivery channels to align with future-state transformation and increases in issue volume, based on BCS initiatives. Assess, identify and facilitate the implementation process for formalized CSR schedule adherence, compliance and occupancy. Establish a formal, proactive plan for CSR recruitment, attrition and hiring within the parameters of NYC hiring protocol, to streamline the staffing pipeline
5.	**Knowledge management practices to institutionalize staff best practices and standardize knowledge are limited.** Customer handling procedures are not consistent across or within delivery channels. Utilization of current documentation management program (WebEx) for tracking customer correspondence varies. Availability of templates and reference documentation through the Document Management System (DMS) is very limited. There is a current initiative to increase the number of available templates; however, a formal process for identifying and addressing template needs has not been established. Standardized call scripts are not available for CSR use	**Establish knowledge management practices and enhanced protocol for developing institutional knowledge.** Create a separate business unit under the Future State Task 1 organizational design to handle the holistic assessment and improvement of staff customer handling. Centralize M&P, QA and training into one unit to ensure that QA issues and detailed, vetted M&P processes are incorporated into training modules for BCS staff

Summary of OPAI Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
6.	**Management and supervisors' efforts are widely dispersed among the diverse functions of customer responsibilities, performance issues, administrative duties and technical tasks.** Supervisors' roles and responsibilities are not clearly defined. Supervisors' workload is focused on escalated customer issues; staff coaching and performance assessment is limited as a result. In addition, the practice of second-tier triage through team leads has been discontinued	**Clearly define lines of accountability and authority.** Staff members are better able to fulfill their roles and responsibilities
7.	**BCS needs a formalized, closed-loop feedback mechanism for performance management and staff development, to enable individual staff member growth and increase job satisfaction**	**Develop closed-loop feedback mechanism and regular review cycle for staff development**
8.	**Supervisory accountability and ownership of team productivity and work quality goals are not tracked through formalized metrics.** Management of metrics such as procedural accuracy, quality control and minimum productivity are not specifically quantified under supervisory duties. QA director reviews QA staff work, resulting in increased staff accuracy	**Increase accountability and ownership for management and supervisors.** Assess current reporting tools to ensure they are effectively employed, structured and utilized by supervisors and managers, which better enables decision making. Facilitate and launch system reports and tool availability to ensure consistent measurement and management of customer service staff

Summary of OPAI Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
9.	**Standard curriculum, training and timelines have not been developed for new hires or continuing staff development.** Ongoing training opportunities for staff are limited. Continuous training modules for staff, supervisors and new managers have not been established. Changes to processes and technology are not formally disseminated to staff through training modules	**Provide comprehensive training for BCS staff to develop appropriately trained, skilled, empowered and motivated front-line, customer-facing employees.** Create curriculum and timelines for critical day-one training, such as customer service soft skills, systems training and business logic training. Develop training curriculum to assist in ongoing employee development, enhance supervisory skills, address identified development needs and provide job enrichment
10.	**The pathway for career development is undefined.** Hierarchy for career progression, including staff and supervisors' roles and responsibilities, is not established in or between business units. Defined metrics for training success, such as formal mechanisms to assess competency levels, are not established	**Identify employee developmental needs and provide training and coaching to ensure supervisors are adequately developing and supporting staff.** Establish metrics for successful graduation in training and staff competencies
11.	**Issues identified in quality assurance review are not formally integrated into the training process.** Issues identified by QA as systemic are addressed with staff on an individual, rather than team, bureau and/or department level	**Integrate formal process to ensure global errors and challenges identified by quality assurance and operations teams are included in the training process**

Summary of OPAI Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
12.	**Operational processes are not fully documented and accessible to BCS staff, resulting in significant variances in the customer experience.** Documentation exists in many different forms. Formal documentation that is updated on a regular basis allows all stakeholders to understand the current flows and form the basis for determining appropriate changes. The customer experience varies due to inconsistent implementation and adherence to standard operating procedures across business units	**Assess gaps and inconsistencies in business units' policies and procedures, and provide a framework for consistent policies and procedures, for business units from the central office.** Compare current practices to industry best practices, and recommend standards that are applicable nationwide
13.	**Call center customer handling follows a first available agent approach**	**Establish a tiered model to handle each inquiry with the best available resource.** Implement a tiered customer service approach that effectively utilizes the skills and knowledge of senior CSRs and technology to transfer customers to tier 2 in real-time, minimizing the number of RTS referrals
14.	**IVR scripting could be improved to help customers find relevant information, decreasing calls and identifying appropriate departments for issue resolution.** BCS does not regularly assess the IVR script for user-friendliness. Options and call flow for IVR do not reflect current call volume needs, and call routing does not enable customers to immediately route to appropriate BCS units	**Assess and redesign the IVR script to enable customer self-service.** Improve IVR scripting to help customers find relevant information, decreasing calls and identifying appropriate departments for issue resolution. Institute regular BCS assessment of IVR scripting to proactively design the IVR to respond to customer inquiries. Realign options and call flow for IVR to reflect current call volume needs. Enable customer to utilize IVR call routing to immediately route to appropriate BCS units

Summary of OPAI Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
15.	**Quality assurance, training and performance metrics programs are not aligned to address BCS goals.** QA is performed on a department-by-department basis. Audit of all manual transactions is limited to the QA team. QA has limited staff resources for comprehensive review, impacting accuracy. Supervisors are not integrated into quality assurance/the billing adjustment audit process	**Establish a comprehensive process that incorporates QA, training and performance measurement.** Include team performance and accuracy in staff metrics
16.	**Quality monitoring is not administered on a regular basis, due largely to diverse management duties and under-staffing.** Call monitoring needs to be conducted on a regular basis, which includes the same number of monitoring events for each CSR. Supervisor call monitoring has been discontinued. Customer satisfaction levels and answer accuracy are not currently tracked. Customer operations and field operations have limited quality control programs or measurements for answer accuracy in place	**Develop enhanced control mechanisms and a quality management (i.e., quality monitoring) program based on focused measurement, analysis and benchmarking as part of the QA process.** Develop a critical, day-one customer service quality monitoring program within BCS. Use quality monitoring principles, best practices, processes, scorecard development, and calibration best practices and principles. Establish a quality monitoring effort that includes assisting in the selection and implementation management of quality monitoring vendor hardware and software, and provide appropriate technology training

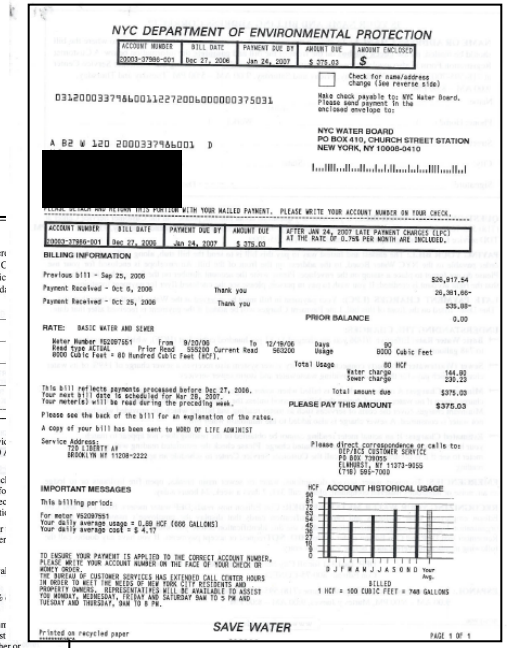
Summary: Water Bill Redesign

- **Challenge**
  - DEP's water bill has not been updated in more than 10 years, potentially making it difficult for customers to understand the relationship between water/sewer bills and effective delivery of water/sewer services
  - The current bill is also difficult for some customers to understand due to small text size, complexity of information presented and lack of definition within key areas of the bill
- **Approach**
  - The water bill redesign focused on two key questions:
    - *How can DEP's water bill be redesigned to better communicate key information to the widest range of customers?*
    - *What other opportunities can be leveraged to support BCS' goal of water conservation and communicate programs and policies to customers?*
- **Recommendation**
  - Water bill redesign recommendations covered:
    - Changes to bill design and content
    - Options for bill generation and production
    - Opportunities for integrating bill messaging with other DEP communications

Existing water bill effectiveness was evaluated using discussions with customers and key stakeholders, as well as best practices research

Key Observation Categories
Overall Design / Layout: The layout and aesthetics of the bill are not user-friendly and do not effectively communicate key information
Presentation of Billing Information: Billing information is not clearly communicated to customers
Communications: DEP's water bill provides opportunities to share important information, such as water conservation strategies

General Metered Bill



NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

ACCOUNT NUMBER	BILL DATE	PAYMENT DUE BY	AMOUNT DUE	AMOUNT ENCLOSED
03003-37986-001	Dec 27, 2006	Jan 24, 2007	$ 375.03	$

Check for name/address change (See reverse side)

Make check payable to: NYC Water Board. Please send payment in the enclosed envelope to:

NYC WATER BOARD
PO BOX 410, CHURCH STREET STATION
NEW YORK, NY 10008-0410

A 82 W 120 200033796L001 D

[redacted]

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR MAILED PAYMENT. PLEASE WRITE YOUR ACCOUNT NUMBER ON YOUR CHECK.

ACCOUNT NUMBER	BILL DATE	PAYMENT DUE BY	AMOUNT DUE	AFTER JAN 24, 2007 LATE PAYMENT CHARGES (LPC) AT THE RATE OF 0.76% PER MONTH ARE INCLUDED.
03003-37986-001	Dec 27, 2006	Jan 24, 2007	$ 375.03	

BILLING INFORMATION

Previous bill - Sep 25, 2006		$26,917.54
Payment Received - Oct 6, 2006	Thank you	26,381.66-
Payment Received - Oct 25, 2006	Thank you	535.88-
	PRIOR BALANCE	0.00

RATE: BASIC WATER AND SEWER

Water Number 952097551 From 9/20/06 To 12/18/06 Days 90
Read type ACTUAL Prior Read 555200 Current Read 563200 Usage 8000 Cubic Feet
8000 Cubic Feet = 80 Hundred Cubic Feet (HCF).

Total Usage 80 HCF
Water charge 144.80
Sewer charge 230.23

This bill reflects payments processed before Dec.27, 2006.
Your next bill date is scheduled for Mar 28, 2007.
Your meter(s) will be read during the preceding week.

Total amount due $375.03
PLEASE PAY THIS AMOUNT $375.03

Please see the back of the bill for an explanation of the rates.

A copy of your bill has been sent to WORD OF LIFE ADMINIST

Service Address:
720 LIBERTY AV
BROOKLYN NY 11208-2222

Please direct correspondence or calls to:
DEP/BCS CUSTOMER SERVICE
PO BOX 730095
ELMHURST, NY 11373-9095
(718) 595-7000

IMPORTANT MESSAGES

This billing period

For meter V52097551
Your daily average usage = 0.08 HCF (000 GALLONS)
Your daily average cost = $ 4.17

TO ENSURE YOUR PAYMENT IS APPLIED TO THE CORRECT ACCOUNT NUMBER, PLEASE WRITE YOUR ACCOUNT NUMBER ON THE FACE OF YOUR CHECK OR MONEY ORDER.
THE BUREAU OF CUSTOMER SERVICES HAS EXTENDED CALL CENTER HOURS IN ORDER TO MEET THE NEEDS OF NEW YORK CITY RESIDENTS AND PROPERTY OWNERS. REPRESENTATIVES WILL BE AVAILABLE TO ASSIST YOU MONDAY, WEDNESDAY, FRIDAY AND SATURDAY 8AM TO 5 PM AND TUESDAY AND THURSDAY, 8AM TO 8 PM.

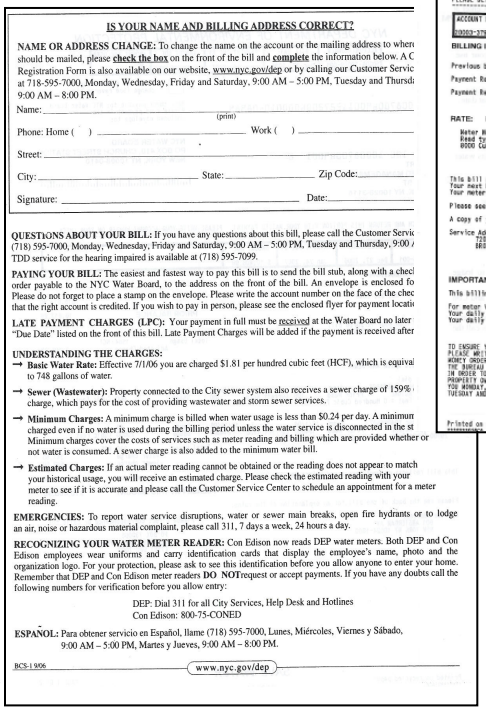
HCF ACCOUNT HISTORICAL USAGE
Overall Average
Average
Monthly Average
D J F M A M J J A S O N D Your Avg.
BILLED
1 HCF = 100 CUBIC FEET = 748 GALLONS

Printed on recycled paper

SAVE WATER

PAGE 1 OF 1

Front



IS YOUR NAME AND BILLING ADDRESS CORRECT?

NAME OR ADDRESS CHANGE: To change the name on the account or the mailing address to where should be mailed, please **check the box** on the front of the bill and **complete** the information below. A C Registration Form is also available on our website, www.nyc.gov/dep or by calling our Customer Servic at 718-595-7000, Monday, Wednesday, Friday and Saturday, 9:00 AM – 5:00 PM, Tuesday and Thursda 9:00 AM – 8:00 PM.

Name: _____ (print)

Phone: Home ( ) _____ Work ( ) _____

Street: _____

City: _____ State: _____ Zip Code: _____

Signature: _____ Date: _____

QUESTIONS ABOUT YOUR BILL: If you have any questions about this bill, please call the Customer Servic (718) 595-7000, Monday, Wednesday, Friday and Saturday, 9:00 AM – 5:00 PM, Tuesday and Thursday, 9:00 TDD service for the hearing impaired is available at (718) 595-7099.

PAYING YOUR BILL: The easiest and fastest way to pay this bill is to send the bill stub, along with a chec order payable to the NYC Water Board, to the address on the front of the bill. An envelope is enclosed fo Please do not forget to place a stamp on the envelope. Please write the account number on the face of the chec that the right account is credited. If you wish to pay in person, please see the enclosed flyer for payment locati

LATE PAYMENT CHARGES (LPC): Your payment in full must be received at the Water Board no later "Due Date" listed on the front of this bill. Late Payment Charges will be added if the payment is received after

UNDERSTANDING THE CHARGES:

- **Basic Water Rate:** Effective 7/1/06 you are charged $1.81 per hundred cubic feet (HCF), which is equival to 748 gallons of water.
- **Sewer (Wastewater):** Property connected to the City sewer system also receives a sewer charge of 159% charge, which pays for the cost of providing wastewater and storm sewer services.
- **Minimum Charges:** A minimum charge is billed when water usage is less than $0.24 per day. A minimum charged even if no water is used during the billing period unless the water service is disconnected in the st Minimum charges cover the costs of services such as meter reading and billing which are provided whether or not water is consumed. A sewer charge is also added to the minimum water bill.
- **Estimated Charges:** If an actual meter reading cannot be obtained or the reading does not appear to match your historical usage, you will receive an estimated charge. Please check the estimated reading with your meter to see if it is accurate and please call the Customer Service Center to schedule an appointment for a meter reading.

EMERGENCIES: To report water service disruptions, water or sewer main breaks, open fire hydrants or to lodge an air, noise or hazardous material complaint, please call 311, 7 days a week, 24 hours a day.

RECOGNIZING YOUR WATER METER READER: Con Edison now reads DEP water meters. Both DEP and Con Edison employees wear uniforms and carry identification cards that display the employee's name, photo and the organization logo. For your protection, please ask to see this identification before you allow anyone to enter your home. Remember that DEP and Con Edison meter readers **DO NOT** request or accept payments. If you have any doubts call the following numbers for verification before you allow entry:

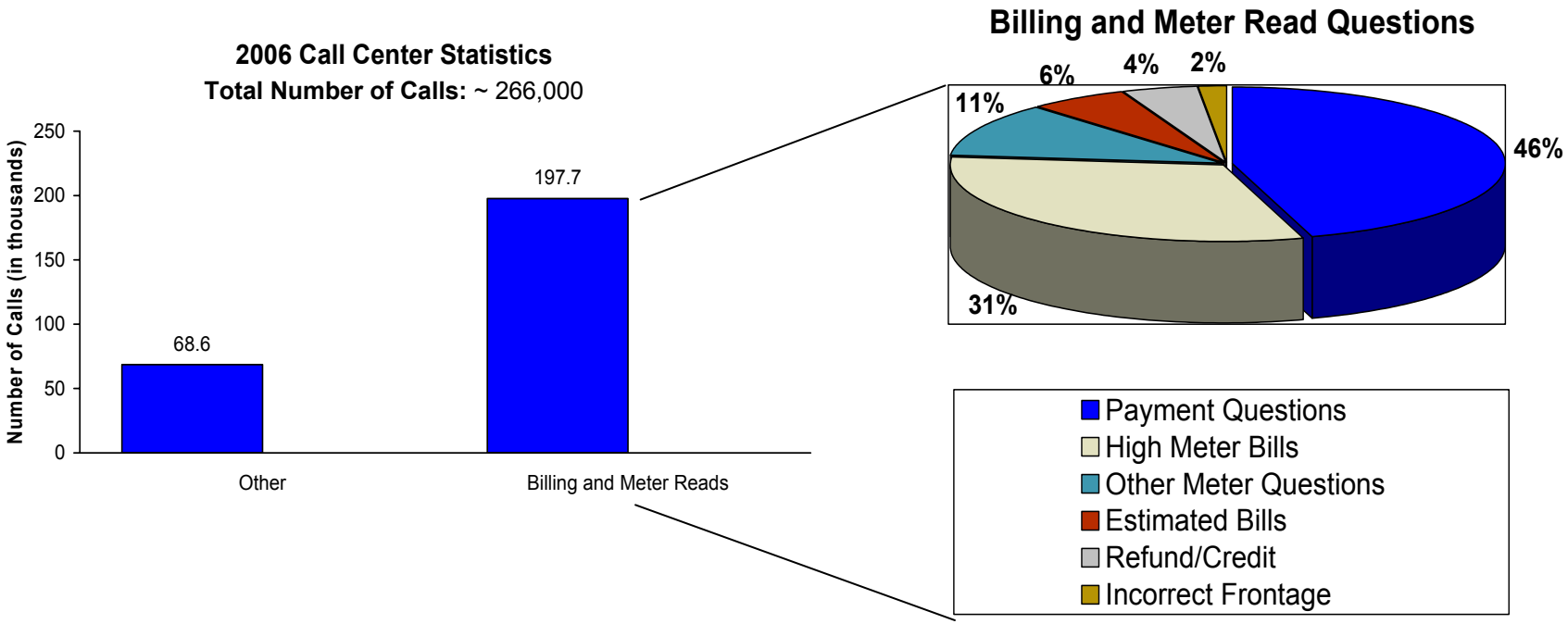
DEP: Dial 311 for all City Services, Help Desk and Hotlines
Con Edison: 800-75-CONED

ESPAÑOL: Para obtener servicio en Español, llame (718) 595-7000, Lunes, Miércoles, Viernes y Sábado, 9:00 AM – 5:00 PM, Martes y Jueves, 9:00 AM – 8:00 PM.

BCS-1 9/06 www.nyc.gov/dep

Reverse

Approximately 76 percent of all call center inquiries handled in 2006 were related to billing and meter reads

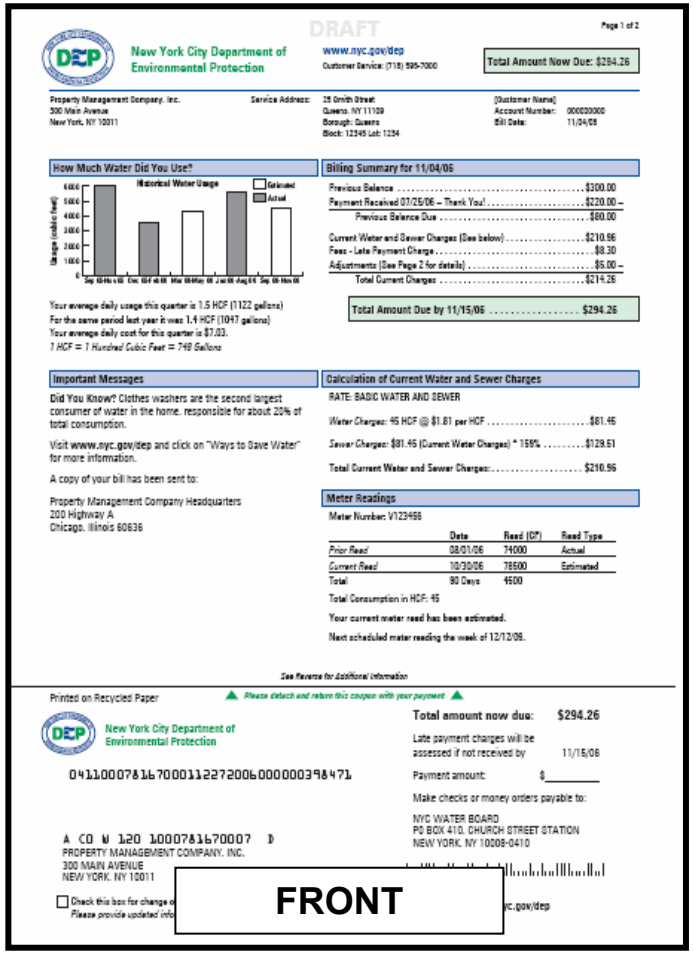


Examples of common customer questions about metering and billing:

- Is my bill actual or estimated?
- Why did I receive an estimated bill?
- Why is my bill so high?
- What is the date for my next read?
- How do I read my meter?
- What is HCF?
- How does DEP charge for sewer services and why?
- How does DEP calculate consumption?
- When will I receive the next bill?

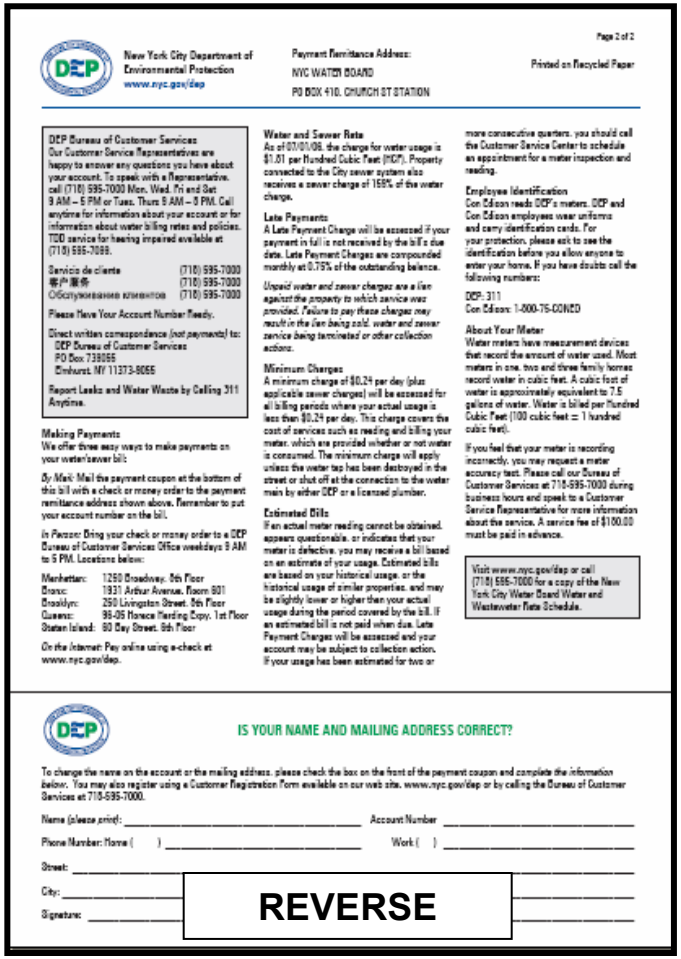
Sources: Call Center Statistics for Year 2006 (January 9, 2007); Interviews with Call Center and Queens Walk-in Staff

To decrease call volume, Booz Allen recommends developing a new bill using industry best practices

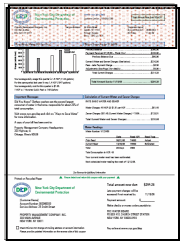


Highlights

- Use of lines, colors and headers to differentiate major sections
- Separation of billing summary from detailed calculation of current charges
- Separation of detailed metering information from billing summary
- More prominent placement of historical consumption graph and message fields



The header is the first point of focus for the customer and an opportunity to summarize key information



- Placing the pay stub at the bottom of the bill allows DEP to create a header for the water/sewer bill
- The header includes two key components: account information, and balance due
  - The service address is now easily located at the top of the page
  - DEP's Web site address is more prominently displayed on the bill

Page 1 of 2

New York City Department of Environmental Protection

www.nyc.gov/dep
Customer Service: (718) 595-7000

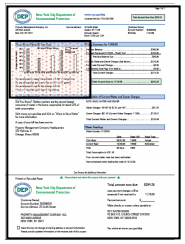
Total Amount Now Due: $294.26

Property Management Company, Inc.
300 Main Avenue
New York, NY 10011

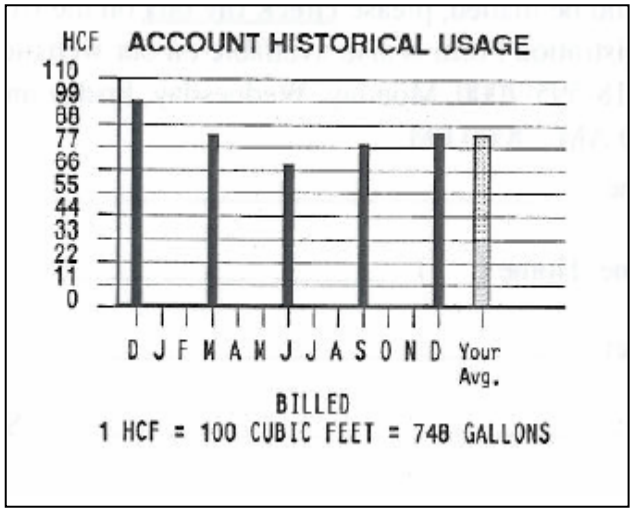
Service Address: 25 Smith Street
Queens, NY 11109
Borough: Queens
Block: 12345 Lot: 1234

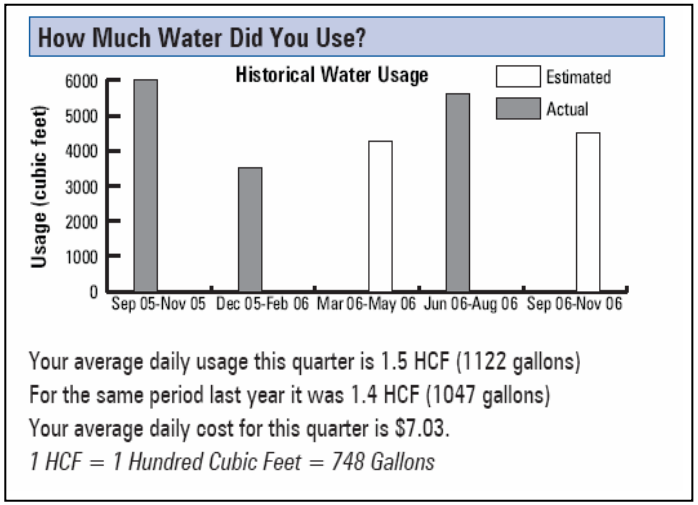
[Customer Name]
Account Number: 000000000
Bill Date: 11/04/06

The historical water consumption graph could play an important role in water conservation

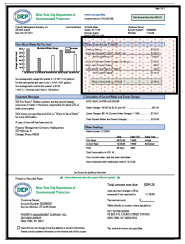


- The graphical display for quarterly bills groups data by quarter, which is easier to comprehend
- Color-coding distinguishes between estimated and actual consumption
- In addition to average daily usage and cost, the narrative describes average daily usage for the same period last year
- This graph does not currently appear on an adjusted bill, and adjusted consumption values are not reflected in later bills; BCS should revisit business rules associated with the consumption graph and investigate options for improving data accuracy





The billing summary provides a user-friendly overview of a customer's charges



- The billing summary provides a roll-up of all charges, including water and sewer, fees, and adjustments
- Fees are represented as individual line items; BCS should revisit the labels currently assigned to fees in CIS to make them user-friendly for customers
- Detailed information on adjustments is rolled over to a second page

BILLING INFORMATION

Previous bill - Sep 25, 2006		$28,484.14
Special Fees - Special Meter Readin - Sep 29, 2006		25.00
Payment Received - Sep 29, 2006	Thank you	25.00-
Payment Received - Sep 29, 2006	Thank you	28,484.14-
	PRIOR BALANCE	0.00
	Water charge	153.85
	Sewer charge	244.62
	Total amount due	$398.47
	PLEASE PAY THIS AMOUNT	$398.47

Billing Summary for 11/04/06

Previous Balance	$300.00
Payment Received 07/25/06 – Thank You!	$220.00 –
Previous Balance Due	$80.00
Current Water and Sewer Charges (See below)	$210.96
Fees - Late Payment Charge	$8.30
Adjustments (See Page 2 for details)	$5.00 –
Total Current Charges	$214.26
Total Amount Due by 11/15/06	**$294.26**

Bill adjustments are presented in summary format on the front page; customers are referred to a second page for adjustment detail

Billing Summary for 11/04/06

Previous Balance……$2026.33
Previous Balance Due $2026.33

Current Water and Sewer Charges (See below)…..……....$0.00
Fees…….…….....$0.00
Adjustments (see Page 2 for additional information)……..$1816.93-
Total Current Charges $1816.93-

Total Amount Due by 11/15/06 $209.40

Billing Adjustment Summary

Cancelled Charges

Transaction Type	*Transaction Date(s)*	*Adjusted Amount*
Cancelled Late Payment Charges	09/21/06	23.55 -

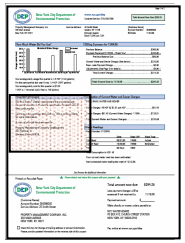
Transaction Type	*Bill Date(s)*	*Adjusted Amount*
Cancellation of Charges	09/14/06	964.33 -
Cancellation of Charges	06/15/06	149.57 -
Cancellation of Charges	06/15/06	1055.55 -

New Charges

Transaction Type	*Billing Period(s) Covered*	*Adjusted Amount*
Rebilled Charges	12/08/05 - 09/21/06	$376.07

Billing Adjustment Total $1816.93 -

Important messages are given a distinct section on the bill to draw attention to key information



- Water conservation tips could be varied from quarter to quarter and targeted by customer segment
- Messages from various locations on the current bill could be pulled into this section to make the bill more readable
- Details on payment agreements could be included in this section where applicable
- Daily average usage statistics have been moved to the metering section

IMPORTANT MESSAGES

This billing period:

For meter N32371238
Your daily average usage = 0.87 HCF (651 GALLONS)
Your daily average cost = $ 4.07

TO ENSURE YOUR PAYMENT IS APPLIED TO THE CORRECT ACCOUNT NUMBER, PLEASE WRITE YOUR ACCOUNT NUMBER ON THE FACE OF YOUR CHECK OR MONEY ORDER.
THE BUREAU OF CUSTOMER SERVICES HAS EXTENDED CALL CENTER HOURS IN ORDER TO MEET THE NEEDS OF NEW YORK CITY RESIDENTS AND PROPERTY OWNERS. REPRESENTATIVES WILL BE AVAILABLE TO ASSIST YOU MONDAY, WEDNESDAY, FRIDAY AND SATURDAY 9AM TO 5 PM AND TUESDAY AND THURSDAY, 9AM TO 8 PM.

THIS BILL IS AN ESTIMATE OF THE WATER YOU HAVE USED. AN ESTIMATED BILL BASED ON PREVIOUS CONSUMPTION IS A VALID BILL AND WILL ACCRUE INTEREST IF NOT PAID WHEN DUE. THIS BILL MAY BE HIGHER OR LOWER THAN YOUR ACTUAL CONSUMPTION, AND WHEN YOUR METER IS READ, YOUR CHARGES MAY BE ADJUSTED TO REFLECT THE ACTUAL CONSUMPTION REGISTERED ON THE METER IF IT IS OPERATING CORRECTLY. IF YOU BELIEVE THERE IS A SUBSTANTIAL DIFFERENCE BETWEEN YOUR ESTIMATED AND ACTUAL USAGE, PLEASE CALL 718-595-7000 TO SCHEDULE AN INSPECTION.

Important Messages

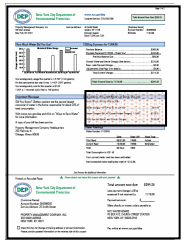
Did You Know? Clothes washers are the second largest consumer of water in the home, responsible for about 20% of total consumption.

Visit **www.nyc.gov/dep** and click on "Ways to Save Water" for more information.

A copy of your bill has been sent to:

Property Management Company Headquarters
200 Highway A
Chicago, Illinois 60636

The calculation of water and sewer charges section clearly breaks down the formula used to calculate current charges



- Water charges are calculated by showing consumption and the cost per unit of water consumed
- Sewer charges are calculated by showing water charges and the percentage of water charges used in determining sewer charges
- Multiple rates could be shown using several subsections
- Calculations could be broken out into two lines when rate changes have been applied or when there are multiple meters for a given rate

Calculation of Current Water and Sewer Charges

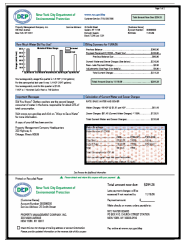
RATE: BASIC WATER AND SEWER

Water Charges: 45 HCF @ $1.81 per HCF $81.45

Sewer Charges: $81.45 (Current Water Charges) * 159% $129.51

Total Current Water and Sewer Charges:. $210.96

The meter readings section pulls all metering information into a separate area of the bill



- Meter information is presented in a structured, tabular format to help customers see consumption calculations more easily
- An indicator of whether the previous consumption was actual or estimated should be added
- A message directly adjacent to the meter information notifies customers of an estimated current read

RATE: BASIC WATER AND SEWER

Meter Number N32371238 From 9/15/06 To 12/22/06 Days 98
Read type ESTIMATED Prior Read 754300 Current Read 762800 Usage 8500 Cubic Feet
8500 Cubic Feet = 85 Hundred Cubic Feet (HCF).
Total Usage 85 HCF

Meter Readings

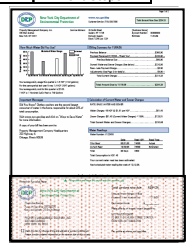
Meter Number: V123456

	Date	Read (CF)	Read Type
Prior Read	08/01/06	74000	Actual
Current Read	10/30/06	78500	Estimated
Total	90 Days	4500	

Total Consumption in HCF: 45

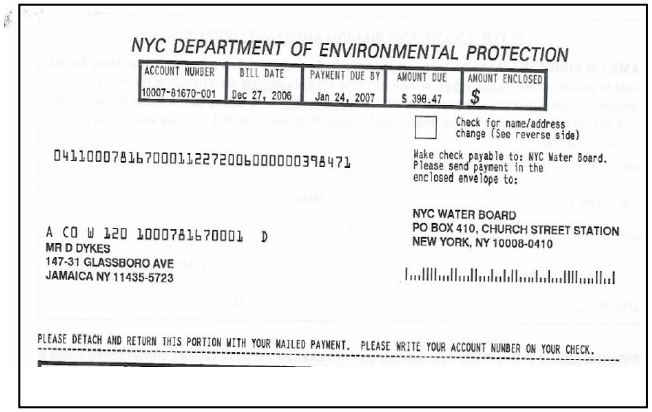
Your current meter read has been estimated.

Next scheduled meter reading the week of 12/12/06.



The pay stub is located on the bottom of the bill to facilitate scanning by the bank

- Locating the pay stub on the bottom could make the scanning process run more smoothly; currently, the location of the perforated edge can cause stubs to move out of alignment during the scanning process
- The pay stub should include the billing address as well as the service address for the customers' convenience
- Adding a reference to the online payment option would help communicate the availability of this service to customers
- Reducing the pay stub to 3" tall provides an additional opportunity to present key information on the main part of the bill



NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

ACCOUNT NUMBER	BILL DATE	PAYMENT DUE BY	AMOUNT DUE	AMOUNT ENCLOSED
10007-81670-001	Dec 27, 2006	Jan 24, 2007	$ 398.47	$

Check for name/address change (See reverse side)

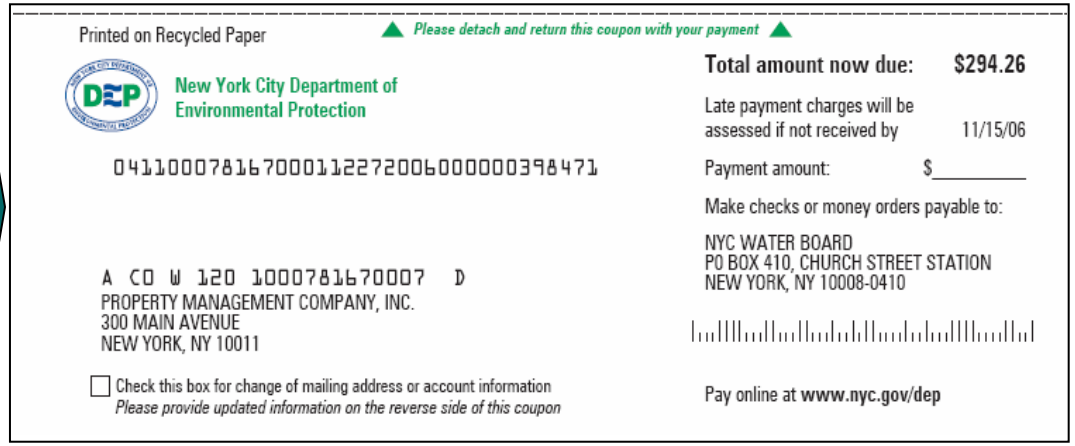
041100078167000112272006000000398471

Make check payable to: NYC Water Board. Please send payment in the enclosed envelope to:

NYC WATER BOARD
PO BOX 410, CHURCH STREET STATION
NEW YORK, NY 10008-0410

A CO W 120 1000781670001 D
MR D DYKES
147-31 GLASSBORO AVE
JAMAICA NY 11435-5723

PLEASE DETACH AND RETURN THIS PORTION WITH YOUR MAILED PAYMENT. PLEASE WRITE YOUR ACCOUNT NUMBER ON YOUR CHECK.



Printed on Recycled Paper

Please detach and return this coupon with your payment

New York City Department of Environmental Protection

041100078167000112272006000000398471

A CO W 120 1000781670007 D
PROPERTY MANAGEMENT COMPANY, INC.
300 MAIN AVENUE
NEW YORK, NY 10011

Check this box for change of mailing address or account information
Please provide updated information on the reverse side of this coupon

Total amount now due: $294.26

Late payment charges will be assessed if not received by 11/15/06

Payment amount: $_____

Make checks or money orders payable to:

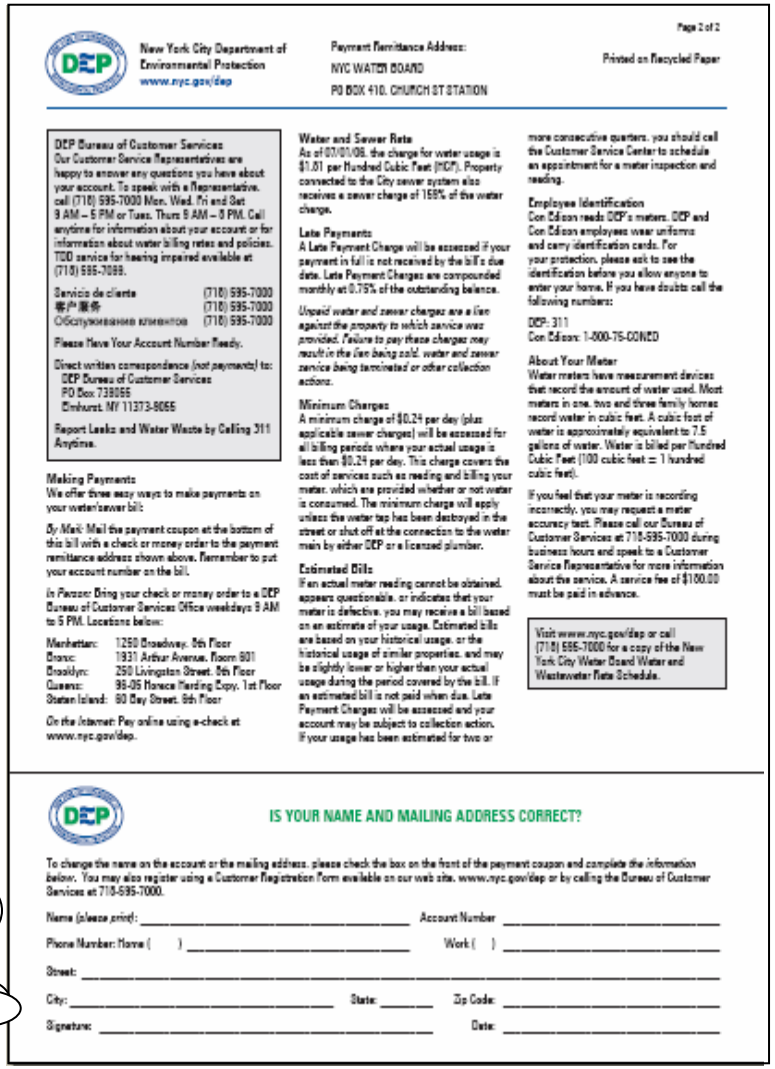
NYC WATER BOARD
PO BOX 410, CHURCH STREET STATION
NEW YORK, NY 10008-0410

Pay online at **www.nyc.gov/dep**

The reverse side of the bill gives BCS an opportunity to provide further details on payment options, metering, etc.

- The payment remittance address has been added to inform customers about where to send payments even if pay stubs have been removed
- All customer service information is consolidated in one location, including alternate languages
- Payment information from the regular insert, "Paying your Water and Sewer Bill," has been incorporated into the reverse of the bill
- Information on how to read a water meter has been incorporated from DEP's Web site

DEP should work with the Department of Finance on integrating processes for updating customer information. In the future, this section could be replaced with an explanation of how to update account information (e.g., on the DOF Web site)



Page 2 of 2

New York City Department of Environmental Protection
www.nyc.gov/dep

Payment Remittance Address:
NYC WATER BOARD
PO BOX 410, CHURCH ST STATION

Printed on Recycled Paper

DEP Bureau of Customer Services
Our Customer Service Representatives are happy to answer any questions you have about your account. To speak with a Representative, call (718) 595-7000 Mon, Wed, Fri and Sat 9 AM – 5 PM or Tues, Thurs 9 AM – 8 PM. Call anytime for information about your account or for information about water billing rates and policies. TDD service for hearing impaired available at (718) 595-7089.

Servicio de cliente (718) 595-7000
客户服务 (718) 595-7000
Обслуживание клиентов (718) 595-7000

Please Have Your Account Number Ready.

Direct written correspondence (*not payments*) to:
DEP Bureau of Customer Services
PO Box 738055
Elmhurst, NY 11373-8055

Report Leaks and Water Waste by Calling 311 Anytime.

Making Payments
We offer three easy ways to make payments on your water/sewer bill:

By Mail: Mail the payment coupon at the bottom of this bill with a check or money order to the payment remittance address shown above. Remember to put your account number on the bill.

In Person: Bring your check or money order to a DEP Bureau of Customer Services Office weekdays 9 AM to 5 PM. Locations below:

Manhattan: 1250 Broadway, 5th Floor
Bronx: 1931 Arthur Avenue, Room 901
Brooklyn: 250 Livingston Street, 5th Floor
Queens: 98-05 Horace Harding Expy, 1st Floor
Staten Island: 60 Bay Street, 6th Floor

On the Internet: Pay online using e-check at www.nyc.gov/dep.

Water and Sewer Rate
As of 07/01/06, the charge for water usage is $1.81 per Hundred Cubic Feet (HCF). Property connected to the City sewer system also receives a sewer charge of 159% of the water charge.

Late Payments
A Late Payment Charge will be assessed if your payment in full is not received by the bill's due date. Late Payment Charges are compounded monthly at 0.75% of the outstanding balance.

Unpaid water and sewer charges are a lien against the property to which service was provided. Failure to pay these charges may result in the lien being sold, water and sewer service being terminated or other collection actions.

Minimum Charges
A minimum charge of $0.24 per day (plus applicable sewer charges) will be assessed for all billing periods where your actual usage is less than $0.24 per day. This charge covers the cost of services such as reading and billing your meter, which are provided whether or not water is consumed. The minimum charge will apply unless the water tap has been destroyed in the street or shut off at the connection to the water main by either DEP or a licensed plumber.

Estimated Bills
If an actual meter reading cannot be obtained, appears questionable, or indicates that your meter is defective, you may receive a bill based on an estimate of your usage. Estimated bills are based on your historical usage, or the historical usage of similar properties, and may be slightly lower or higher than your actual usage during the period covered by the bill. If an estimated bill is not paid when due, Late Payment Charges will be assessed and your account may be subject to collection action. If your usage has been estimated for two or more consecutive quarters, you should call the Customer Service Center to schedule an appointment for a meter inspection and reading.

Employee Identification
Con Edison reads DEP's meters. DEP and Con Edison employees wear uniforms and carry identification cards. For your protection, please ask to see the identification before you allow anyone to enter your home. If you have doubts call the following numbers:

DEP: 311
Con Edison: 1-800-75-CONED

About Your Meter
Water meters have measurement devices that record the amount of water used. Most meters in one, two and three family homes record water in cubic feet. A cubic foot of water is approximately equivalent to 7.5 gallons of water. Water is billed per Hundred Cubic Feet (100 cubic feet = 1 hundred cubic feet).

If you feel that your meter is recording incorrectly, you may request a meter accuracy test. Please call our Bureau of Customer Services at 718-595-7000 during business hours and speak to a Customer Service Representative for more information about the service. A service fee of $100.00 must be paid in advance.

Visit www.nyc.gov/dep or call (718) 595-7000 for a copy of the New York City Water Board Water and Wastewater Rate Schedule.

IS YOUR NAME AND MAILING ADDRESS CORRECT?

To change the name on the account or the mailing address, please check the box on the front of the payment coupon and complete the information below. You may also register using a Customer Registration Form available on our web site, www.nyc.gov/dep or by calling the Bureau of Customer Services at 718-595-7000.

Name (please print): _____ Account Number _____
Phone Number: Home ( ) _____ Work ( ) _____
Street: _____
City: _____ State: _____ Zip Code: _____
Signature: _____ Date: _____

Summary of Bill Redesign Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**Bill layout and aesthetics are not user-friendly and do not effectively communicate key information**. The bill is difficult to read due to the narrow typeface, small font and cluttered appearance. The bill does not include headers and section breaks, and there is no clear hierarchy of information to emphasize the most important data elements	**Use lines, colors and headers to differentiate major sections of the bill**. Separate the billing summary from detailed calculation of current charges, and from detailed metering information. Provide a more prominent placement for historical consumption graph and message fields
2.	**Billing information is not clearly communicated to customers**. For example, total current charges are not calculated separately from carryover charges from previous bills. In addition, fees and charges often appear without clear labels. For example, a denial of access fee will appear as "Fee." A final read charge will appear on the bill as "g-off." Finally, bill adjustment information is a direct reflection of the account adjustments made in CIS, which can be confusing to customers	**Clearly represent the calculation of water charges by showing consumption and the cost per unit of water consumed**. Include a billing summary that provides a roll-up of all charges, including water and sewer, fees, and adjustments. Revisit the labels currently assigned to the fees in CIS to make them user-friendly for customers. Detailed information on adjustments should be rolled over to a second page
3.	**DEP's water bill provides opportunities to share important information, such as water conservation strategies**. For example, the water bill is not currently integrated into a comprehensive communications strategy. Bill messages do not promote opportunities for water conservation / savings by customers. In addition, there is no one function within BCS that has ownership over billing inserts, bill messages, and billing information on DEP's Web site, which limits its branding program (for example, the bill design does not include design elements found in other DEP products)	Use bill messages to target specific customer groups or communicate broader information on programs and services. **Standardize communications materials and any other written and verbal correspondence with respect to message and tone**. Formulate messages to reflect BCS' priorities. Identify one primary communications liaison who is responsible for reviewing and coordinating all communications materials

Section 2: Revenue Collection

BCS Revenue Collection encompasses two focus areas: recovering past-due revenue and preventing more accounts from becoming past due

- BCS revenue collection issues can be divided into two related, but distinct categories: collecting past-due revenue that in February 2007 totaled approximately $590 million; and creating new accounts receivable systems and reporting mechanisms to improve overall revenue collection and prevent additional accounts from becoming past due.

- For these two areas, Booz Allen developed new customer segmentations to enable creation of policies and procedures that better reflect customer needs, rather than conforming to standard government categories, such as tax class. Booz Allen also built an analytical model to gauge DEP's ability to recover debt of varying ages and identify effective debt collections strategies.

- Additionally, Booz Allen analyzed other large cities' water utility collections strategies and enforcement tools and identified the best options for New York City, including stand alone lien sales, service termination and high-volume outbound calling.

Summary: Collections Strategy

- **Challenge**
  - Since the introduction of metered service, DEP's past-due balances have exceeded industry standard levels in amount and age, for a number of reasons (e.g., chronic estimated meter reads, lack of effective enforcement, systems tools, difficulty in resolving customer disputes)
  - DEP has limited collections strategies to be effective in its revenue recovery activities
- **Approach**
  - Collections strategy was framed using two key questions:
    - *How should DEP address the current $589.6 million[1] in outstanding debt, and what actions should DEP take to reduce that debt?*
    - *What long-term policies and procedures should DEP adjust to prevent future delinquencies?*
- **Recommendation**
  - Collections strategy recommendations covered:
    - Customer segmentation
    - Analysis of age distribution of A/R
    - Treatment options
    - Implementation roadmaps and timelines

Using a three-step approach, Booz Allen developed an overall collections strategy

1 Segment Customers

Identify Customer Segmentation, Treatment Options and A/R Distribution

- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Segment 6
- Segment 7
- Segment 8
- Segment 9
- Segment 10
- Segment 11
- Segment 12
- Segment 13
- Segment 14

2 Develop Collections Model

Build and Apply Collection Model to Determine Ability-to-Collect for Each Customer Segment

Residential: Small Family (Tax Class 1)

	Current Treatment Options Used By DEP				
	Dunning Notice	Outbound Calling	Lien Sale	Service Termination	Baseline Results
Effectiveness Rating Score (Range 1 - 10)	1.9	1.2	2.2	0.0	5.3

Baseline Model Score

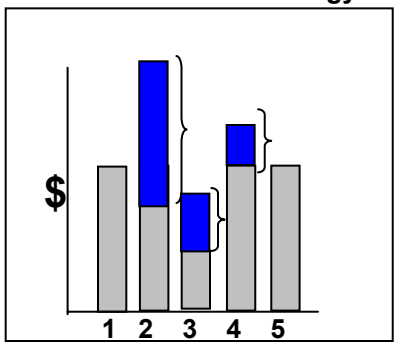
	Statistical Support Data For Effectiveness Scores:			
Definition of Supporting Data	% of customers in this customer category that posted a payment within 60 days of receiving a Dunning Notice (CIS Data 2/20/07)	% of Outbound Calls That Resulted in Payment in Full or PA (Extrapolated from DEP Collections calling campaign results, see assumptions)	% A/R Successfully Collected From 2006 Lien Sales or Payments in Full Before the Sale vs. Total A/R Eligible for Lien Sales(Tax Class 1, 2006 results)	DEP is authorized to perform S.T. for this customer category, but currently does not. No statistical data available.
Number of Successes	6,171	37	$ 2,171,273	n/a
Total Number of Attempts	31,767	311	$ 9,940,618 *	n/a
Rate of Success	19%	12%	22%	0.0%

** 9.9M represents the total A/R from "eligible" accounts, meaning accounts that received the 60-day Lien Sale Notice sent by DOF. These accounts met both the DOF's >3 yrs. property tax delinquency requirement for tax class 1 properties and DEP internal criteria for lien sales*

3 Analyze Financial Impact

Perform Financial Impact Analysis for Each Treatment Stream and Rate of Recovery Perspectives

Potential Financial Impact of New Collections Strategy



Deconstructing DEP's current tax classes served as a key first step to understanding potential collections strategies

	Tax Class	Existing Enforcement[1]	Tax Class Eligibility and Enforcement Definition	Impact to DEP Ability to Collect
1	Tax Class 1 ***Residential***	▸ No Service Termination or Stand Alone Liens	▸ Eligibility for lien sale for Tax Class 1 properties requires >3 years of delinquency in property taxes at DOF and includes a loop hole whereby customers can stop the lien sale process by paying property taxes	▸ Alternative treatment streams are required to collect on customers
2	Tax Class 2 ***Residential***	▸ No Service Termination or Stand Alone Liens	▸ Eligibility for lien sale for (most) Tax Class 2 properties requires >1 year of delinquency in property taxes at DOF, with no loop hole[2] given to the customer to stop the process	▸ Alternative treatment streams are required to collect on customers
3	Tax Class 3 ***Utilities***	▸ No Service Termination or Stand Alone Liens	▸ Lien sale eligibility requirement matches that for Tax Class 2 (>1 yr delinquency in property taxes), but is not a realistic treatment for utility properties	▸ Focus on maintaining customer relationship to drive revenue collection
4	Tax Class 4 ***Commercial***	▸ Service Termination ▸ Stand Alone Liens	▸ DEP has full authority to sell liens on Tax Class 4 properties without DOF property tax requirements	▸ Tools readily exist to enforce customer payment
5	Tax Class 4 ***Residential (Lofts/Apt-Overs)***	▸ No Service Termination ▸ Stand Alone Liens	▸ DEP has full authority to sell liens on Tax Class 4 properties without DOF property tax requirements	▸ Liens readily exist to enforce customer payment, but service termination may not be feasible
6	Tax Class 4 ***Special/Gov't***	▸ No Service Termination or Liens	▸ DEP has full authority to sell liens on Tax Class 4 properties, but is not a realistic treatment for government and other special or nonprofit properties	▸ Focus on maintaining customer relationship to drive revenue collection

(1) DEP is authorized to perform Service Terminations across all segments. In this column, comments on Service Terminations reflect current DEP practices (operational vs. authorized)

(2) Verified during discussion with Helen Rhodes on 4/5/2007

Booz Allen then developed new, simpler customer segmentations for a more targeted collections approach

Current BCS Customer Segmentations

	Residential
1	1 Family (A*) (A0-A9)
2	2 Family (B*) (B1, B2, B3, B9)
3	3 Family (C0)
4	Multi Family (C1-C9)
5	Elevator Apts (D*) (D0-D9)
6	Residential Multi Use (S*) (S0-S5, S9)
7	Loft Building (L*) *Except L8 (L1-L3, L9)*
8	Condos (R*) (R1-R9)
9	Store, Apartments Above (K4)
10	Office Buildings with Residential Apts (O8)
	Commercial
11	Warehouses (E*) (E1, E3, E4, E6, E9)
12	Factory & Industrial (F*) (F1, F2, F4, F5, F8, F9)
13	Garages & Gas Stations (G*) (G0-G9)
14	Hotels (H*) (H1-H9)
15	Theaters (J*) (J1-J9)
16	Store Building (K*) *Except K4 (K1-K3, K5-K9)*
17	Office Building (O*) *Except O8 (O1-O7, O9)*
18	Loft with Retail Stores (L8)
	High Profile: Health
19	Hospitals & Health (I*) (I1-7, I9)
20	Asylums & Homes (N*) (N1-N4, N9)
	High Profile: Religious
21	Churches & Synagogues (M*) (M1-M4, M9)
	High Profile: Government
22	Government Installations (Y*) (Y1-Y9)
	High Profile: Other
23	Outdoor Recreation (Q*) (Q1-Q9)
24	Transportation (T*) (T1, T2, T9)
25	Utilities (U*) (U1-U9)
26	Vacant Land (V*) (V0-V9)
27	Educational Structures (W*) (W1-W9)
28	Exempt Properties (X*) (X0-X9)
29	Miscellaneous (Z*) (Z0-Z9)
30	Public Assembly (P*) (P1-P9)

Methodology Used

- Realigned the original list of 207 building class codes into 15 new BCS customer segments

Factors Considered

- Tax Class
- Customer Attributes
- Past Payment Patterns

Recommended BCS Customer Segmentations

	Future BCS Customer Segmentation	Tax Class
1	Residential: 1 Family	1
2	Residential: 2-3 Family	1
3	Residential: Multi-Family Walk-Up	2
4	Residential: Multi-Family Elevator	2
5	Residential: Mixed Use (Tax Class 1)	1
6	Residential: Mixed Use (Tax Class 2)	2
7	Residential: Mixed Use (Tax Class 4)	4
8	Residential: Condos	1
9	Commercial: High Consumer	4
10	Commercial: Mixed Consumer	4
11	Commercial: Low Consumer	4
12	Special: Hospitals/Health	4
13	Special: Government/Religious/Education/Others	4
14	Special: Utilities	3
15	Housing Development Fund Corporation (HDFC)	2

Using the revised segmentation, Booz Allen examined A/R balances[1] across tax classes[2] to generate detailed insight for the collections strategy

Building Class Category	Tax Class Group					
	1	2	3	4 Residential	4 Commercial	4 Special
Residential: 1 Family	$ 81,716,764					
Residential: 2-3 Family	$ 135,198,186					
Residential: Multi-Family Walk-up		$ 100,417,657				
Residential: Multi-Family Elevator		$ 56,283,734				
Residential: Mixed-Use (Tax Class 1)	$ 30,036,639					
Residential: Mixed-Use (Tax Class 2)		$ 27,001,495				
Residential: Mixed Use (Tax Class 4)[2]				$ 4,533,061		
Residential: Condos	$ 25,551,472					
Commercial: High Consumers					$ 2,993,167	
Commercial: Mixed Consumers					$ 31,211,448	
Commercial: Low Consumers					$ 16,945,522	
Special: Hospitals/Health						$ 18,191,528
Special: Govt/Relig/Educ/Other						$ 26,038,277
Special: Utilities			$ 3,145,342			
Housing Development Fund Corporation	$ 174,249	$ 29,694,721			$ 138	$ 507,773
Sub Totals	**$ 272,677,309**	**$ 213,397,606**	**$ 3,145,342**	**$ 4,533,061**	**$ 51,150,275**	**$ 44,737,578**

Total Residential $460.7 MM

Total Commercial $51.1 MM

Total Special $47.4 MM

Total HDFCs $30.4 MM

Total A/R:	$ 589,641,172

(1) 2/20/2007 CIS data extract was used in this analysis

(2) Building category "4 Residential" includes lofts and apartment-overs

Data extract as of February 20, 2007

For a more comprehensive view, Booz Allen divided DEP's delinquent debt into two segments: accounts delinquent less than and greater than five years

Factors Considered

- Results from previous DEP collections campaigns indicate there are customers with aged arrears 3+ years who are willing and able to make payment; thus, the industry 3 year demarcation point was determined to be too early
- The average balance for the 5+ years segment is $17,168 vs. $1,720 for the <5 years segment (a difference of almost 900%), therefore, highly unlikely to be collectible

Collections Model *(Forward going Processes and Procedures)*

5+ Arrears Analysis *(One-time Clean-up)*

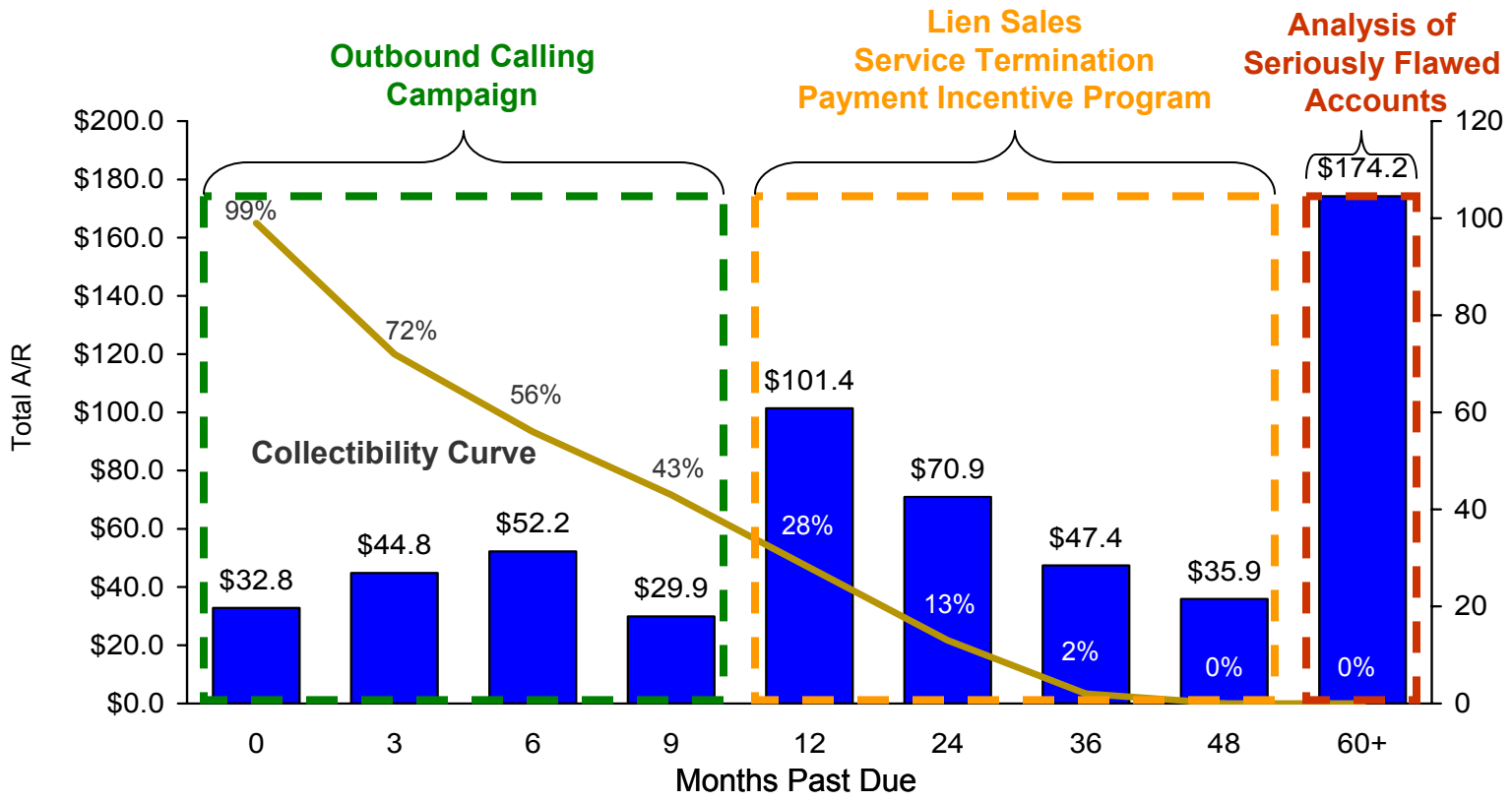
Total Current A/R

Building Class Category	Tax Class Category	0-1 Year Combined		1-5 Years Combined		5+ Years Combined	
		Balance	Accounts	Balance	Accounts	Balance	Accounts
Residential: 1 Family	1	$ 16,789,274	68,806	$ 31,379,260	19,658	$ 33,548,230	3,494
Residential: 2-3 Family	1	$ 32,432,446	71,780	$ 59,389,780	21,392	$ 43,375,960	3,226
Residential: Multi-Family Walk-up	2	$ 24,169,259	12,254	$ 52,290,116	4,629	$ 23,958,281	637
Residential: Multi-Family Elevator	2	$ 23,396,812	1,798	$ 26,663,306	524	$ 6,223,616	75
Residential: Mixed-Use (Tax Class 1)	1	$ 4,009,589	4,766	$ 11,628,795	2,100	$ 14,398,255	705
Residential: Mixed-Use (Tax Class 2)	2	$ 4,906,428	3,052	$ 12,714,985	1,451	$ 9,380,082	366
Residential: Mixed Use (Tax Class 4)	4 Residential	$ 2,626,341	1,195	$ 1,611,833	263	$ 294,888	12
Residential: Condos	1	$ 5,585,514	1,463	$ 10,545,314	596	$ 9,420,644	277
Commercial: High Consumers	4 Commercial	$ 2,323,916	169	$ 504,892	24	$ 164,359	4
Commercial: Mixed Consumers	4 Commercial	$ 15,064,903	5,729	$ 12,879,917	1,752	$ 3,266,628	82
Commercial: Low Consumers	4 Commercial	$ 9,473,736	4,265	$ 5,390,380	1,302	$ 2,081,407	91
Special: Hospitals/Health	4 Special	$ 7,016,002	345	$ 6,981,316	94	$ 4,194,209	13
Special: Govt/Relig/Educ/Other	4 Special	$ 7,004,886	2,139	$ 10,733,224	847	$ 8,300,167	267
Special: Utilities	3	$ 1,421,542	111	$ 1,028,929	26	$ 694,872	30
Housing Development Fund Corporation	Various	$ 3,558,489	461	$ 11,965,204	312	$ 14,853,189	115
Subtotal (excluding HDFCs)		**$ 156,220,646.59**	**177,872**	**$ 243,742,047.04**	**54,658**	**$ 159,301,596.88**	**9,279**
Total (including HDFCs)		**$ 159,779,135.48**	**178,333**	**$ 255,707,250.66**	**54,970**	**$ 174,154,785.79**	**9,394**

(1) The age of delinquency reflects the oldest date up to which the last payment was applied - and might not represent the official start of delinquency. This is a close approximation for the original point of delinquency. Total delinquent balance equals $589.6MM, as of Feb 20, 2007 OIT data extract (includes both metered and frontage accounts)

Aged Receivables were then further refined into three segments, with customized collections strategies recommended to increase revenue recovery against these delinquent accounts

Aged Receivables[1] vs. Collectibility Curve[2]



(1) The age of delinquency reflects the total A/R currently due for each account according to the oldest date up to which the last payment was applied - and might not represent the official start of delinquency. This is a close approximation for the original point of delinquency. Total delinquent balance equals $589.6MM, as of Feb 20, 2007 Data Extraction (includes both metered and frontage accounts)

(2) Source: IRS Collectibility Curve, August 5, 2002, as well as Industry Receivables and Collections Best Practices

To determine potential new collections strategies for BCS, Booz Allen analyzed enforcement methods employed by water utilities in other large cities

Collections Strategy Methods

Metropolitan Water and Service Providers Contacted

	NYC (DEP)	Wash. D.C.	Chicago	Boston	Phila-delphia	LIPA Key/Span
Account Profile & Other Attributes						
- Percentage of Rental Units	70%	57%	56%	68%	41%	N/A
- Property-based Accounts	√	√	√	√	√	
- Monthly Billing		√	√[1]	√	√	√
- AMR[2]	√	√	√	√	√	
- Easy-valve shut-off		√	√	√	√	√
- Avg. Cost per Service Termination[3]	$1,500 - $3,000	$50	$35	$80	$100	N/A
Collections Enforcement Methods						
- Service Termination		√	√	√	√	√
- Stand Alone Liens for all accounts		√	√	√	√	
- AutoDialer		√	√			√
- Payment agreement programs	√	√	√	√	√	√
- Third-party collection agencies		√	√		√	√
- Multi-lingual collections notices		√	√	√	√	

(1) Chicago bills monthly, bi-monthly, quarterly, semi-annually, and annually depending on the account type
(2) NYC DEP is in the early stages of AMR implementation planning. Chicago is in the early stages of implementation in the field
(3) Costs are for water shut-off only. Additional costs are assumed for restoring service. DEP shut-off cost is estimate only.

Booz Allen then further narrowed the collections strategies, and based on New York City's unique environment, recommended several for further research and potential implementation in the near term

Recommended Collections Methods

Collections Enforcement Methods	Status	Timeline	Description
Stand Alone Lien Sale	**Expand and Enhance**	**> 6 months**	Introduce legislation to grant DEP authority to pursue stand alone lien sales across all Tax Classes (i.e., lien authority independent of Department of Finance requirement of delinquent property taxes)
Service Terminations[1]	**Enhance**	**< 6 months**	Begin strategic service terminations as a collections strategy, where feasible
Payment Incentive Program[1] (Structured Compromise)	**New**	**< 6 months**	A one-time Payment Incentive Program (PIP) would allow DEP to collect delinquent receivables from a large number of residential property owners that are willing to pay past utility charges, with removal of Late Payment Charges (LPC). This treatment option would be offered to customers before more stringent enforcement options would be deployed (service termination, lien sales)
Dunning Notice[1]	**Enhance**	**< 6 months**	Customize notices to address different customer segments and attributes, and to describe the specific penalties and timelines for non-payment that apply to that segment
High Volume Outbound Calling (Auto Dialer)[1]	**Enhance**	**< 6 months**	Implement a tool that automatically calls customers in delinquency and leaves a *soft* reminder message that a balance is due, while also providing an option to connect to DEP staff when customer answers[2]
Low Volume Outbound Calling (Person-to-Person)	**Enhance**	**< 6 months**	Implement a "tiered customer service model" in which outbound calling is reserved exclusively for high risk delinquent accounts and managed systematically by collections reps that are specialists in those customer segments

(1) Implementation underway

(2) Currently this treatment option is being implemented through DOITT's 311 outsourced services to leverage cost and speed factors

Using BCS' current collections capabilities (for accounts delinquent less than 5 years) as a baseline for comparison, Booz Allen quantified the effectiveness of each recommended collections strategy

	COMPONENTS	DESCRIPTION
1	**Baseline Model: Debt Handling** — Notice A; Out-bound Calling; Service Term; Lien Sale ▸ Past performance effectiveness is converted to a scaled score from 1 to 10, per each customer segment ▸ All scores are summed to provide a holistic capability rating	▸ This activity will baseline the effectiveness of current treatment streams available to DEP
2	**Advanced Model: Debt Handling** — Notice A; Auto-Dialer Calling; Service Term; Lien Sale (all TC); Rent Receivership ▸ Appropriate treatment options are added to each customer segment ▸ Performance effectiveness is converted to a scaled score from 1 to 10, based on best practices, DEP input and industry analysis ▸ Scores are added to provide a future state capability rating ▸ Baseline and Advanced Model scores are compared to predict revenue recovery potential[1]	▸ This activity will provide a comparison to a portfolio of new and enhanced treatment options weighed against the baseline model

** The ability to recover revenue represents the dollar amount delinquent, and not the amount of arrears; see later slide for detailed explanation.*

Collections strategies such as stand alone lien sales, a Payment Incentive Program, service termination and high-volume outbound calling could help DEP recover 25 - 35 percent in past-due A/R

Based on the experience of other water utilities and reengineered processes, this version of the model depicts a 33% recovery rate.

Near Term | Future Consideration

	Customer Categories	% of Current A/R Balance	Estimated Collected FY06	% Increase from Model	Estimated $ Increase from Impact of Model[2]	Estimated $ Value of Increased Collections Attributed to Each Enhanced or New Treatment Option[1]: Stand Alone Lien	Service Termination	Payment Incentive Program (PIP)	Dunning Notice	Low Volume Outbound Calling	High Volume Outbound Calling (311 Implementation)	Collection Agencies
1	Residential: Single Family (TC 1)	12%	$ 14,343,519	292%	$ 41,838,428	$ 14,732,213	$ 13,381,618	$ 6,238,358	$ 471,681		$ 4,856,232	$ 2,158,325
2	Residential: 2 to 3 Family (TC 1)	23%	$ 27,342,618	198%	$ 54,246,361	$ 28,083,575		$ 11,891,994	$ 899,152		$ 9,257,289	$ 4,114,351
3	Residential: Multi-Family Walk-up (TC 2)	19%	$ 22,767,902	185%	$ 42,085,759	$ 24,512,921		$ 8,582,439	$ 502,139		$ 5,876,489	$ 2,611,773
4	Residential: Multi-Family Elevator	13%	$ 14,906,790	114%	$ 16,950,492	$ 14,666,399			$ 182,588	$ 538,847	$ -	$ 1,562,658
5	Residential: Mixed-Use (TC 1)	4%	$ 4,656,763	224%	$ 10,450,997	$ 4,932,595		$ 2,916,983	$ 139,913	$ 112,913	$ 1,625,949	$ 722,644
6	Residential: Mixed-Use (TC 2)	4%	$ 5,247,265	204%	$ 10,728,214	$ 5,975,925		$ 2,466,081	$ 68,808	$ 148,073	$ 1,432,610	$ 636,716
7	Residential: Mixed-Use (TC 4)	1%	$ 1,262,034	196%	$ 2,473,212	$ 704,425	$ 1,347,693		$ 14,298	$ 27,165	$ 262,822	$ 116,810
8	Residential: Condos (TC 1)	4%	$ 4,803,402	82%	$ 3,949,863	$ -		$ 2,219,000	$ 75,271	$ 146,698	$ 1,508,893	
9	Commercial: High Consumers (TC 4)	1%	$ 842,356	252%	$ 2,119,110	$ 683,072	$ 1,306,841		$ -	$ 15,928		$ 113,269
10	Commercial: Mixed Consumers (TC 4)	7%	$ 8,321,346	194%	$ 16,106,109	$ 5,185,692	$ 9,921,174		$ -	$ 139,337		$ 859,907
11	Commercial: Low Consumers (TC 4)	4%	$ 4,426,203	206%	$ 9,111,616	$ 2,952,548	$ 5,630,404		$ -	$ 39,064		$ 489,600
12	Special: Hospitals/Health (TC 4)	3%	$ 4,168,090	3%	$ 144,120	$ -			$ -	$ 144,120		
13	Special: Govt/Relig/Educ/Other (TC 4)	4%	$ 5,282,015	4%	$ 186,724	$ -			$ -	$ 186,724		
14	Special: Utilities (TC 4)	1%	$ 729,696	4%	$ 31,339	$ -			$ -	$ 31,339		
15	Housing Development Fund Corporation	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	(HDFC's not included in model)		**119,100,000**		$ 210,422,343	**$ 102,429,363**	**$ 31,587,729**	**$ 34,314,854**	**$ 2,353,851**	**$ 1,530,209**	**$ 24,820,285**	**$ 13,386,052**
						49%	**15%**	**16%**	**1%**	**1%**	**12%**	**6%**

$ 133,273,368
(Estimated Range)

Analysis indicates that the effectiveness of Stand Alone Lien authority extended across all Tax Classes will represent approximately 49 percent of the total projected increases in collections

Assumptions for Collections Model Summary (Debt < 5 Years)

1) The collections model applies to all delinquent A/R aged under 5 years based on the 2/20/2007 OIT A/R data extraction file, not including HDFC's

2) The Estimated $ Increase from Impact of the Model ($210.4MM) is not meant to be an annual figure, but one that may be realized over the next few years, depending on the implementation timelines of enhancements and new treatment options.

3) We estimate that stand alone lien policy implementation for Tax Class 1 & 2 properties could yield increases in collections that range from $102.4MM to $133.3MM, with the highest estimated amount based on the increase in the number of Tax Class 4 liens sold one year after the 2001 stand alone lien policy change (333% increase in the number of BBL's sold). For additional details, see the Advanced Model assumptions for Tax Class 1 and 2 customer categories

4) $210.4MM represents the debt from the Collections Model analysis, i.e., debt that is less than 5 years old

We conducted a detailed analysis of approximately 8,000 accounts that have been delinquent more than 5 years

Topic of Analysis	Description
A/R Distribution	The age and size of A/R on the accounts, for each building class category
Account Information	Indicators as to whether there may be issues with the owner name, address, etc. that could be preventing the owner from receiving the bill
Payment History	Customer's payment history – indicators of a current relationship with the customer
Billing History	Indicators as to whether there may be issues with the billing history

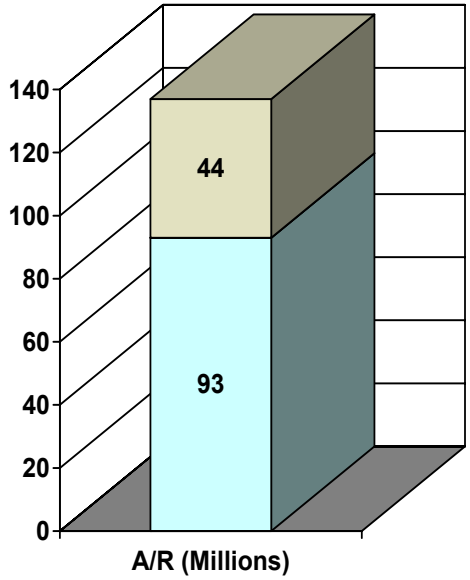
Key Questions

- How old are the outstanding charges on the accounts that have open charges 5 or more years of age?
- How is the delinquent A/R distributed among building class categories?
- What is the magnitude of the A/R balances among this population, and how much of the A/R is comprised of LPC?
- How much of the A/R on the books is more than 5 years old how much is more recent?
- What portion of these charges have already been subject to Collections actions?
- Are the delinquent customers in this study population making payments against their outstanding balance?
- What are the characteristics of the customers who are not paying?
- How do DEP payment rates compare with DOF payment rates?

Although these accounts have been delinquent for at least five years, almost 70% of the charges were posted from 2003-2007

Building Class Category	Accounts	Total AR	AR > 5 Years Old (Charges posted before 2003)	AR < 5 Years Old (Charges posted 2003 - 2007)
Residential: 1 Family	2980	$ 27,145,422	$ 9,064,211	$ 18,081,212
Residential: 2-3 Family	3107	$ 43,882,073	$ 14,142,641	$ 29,739,432
Residential: Multi-Family Walk-up	432	$ 16,677,874	$ 4,939,680	$ 11,738,194
Residential: Multi-Family Elevator	37	$ 3,389,465	$ 1,208,715	$ 2,180,749
Residential: Condos	240	$ 7,740,536	$ 2,517,626	$ 5,222,909
Residential: Mixed-Use (Tax Class 1)	671	$ 14,426,436	$ 5,013,271	$ 9,413,165
Residential: Mixed-Use (Tax Class 2)	570	$ 19,044,137	$ 5,809,569	$ 13,234,567
Residential: Mixed Use (Tax Class 4)	11	$ 309,338	$ 160,937	$ 148,401
Commercial: High Consumers	4	$ 181,497	$ 32,333	$ 149,164
Commercial: Mixed Consumers	81	$ 2,645,934	$ 740,553	$ 1,905,380
Commercial: Low Consumers	80	$ 1,347,559	$ 531,620	$ 815,939
Total	8213	$ 136,790,268	$ 44,161,156	$ 92,629,113

$$\frac{\$93\text{ M}}{\$136\text{ M}} = 68\%$$



Charges Posted Before 2003
Charges Posted 2003-2007

** This analysis focused on the 8,200 accounts in the Residential and Commercial building class categories. This excludes the "Special" building classes, such as government and religious properties, and HDFCs, because BCS has a process in place for dealing with these accounts on an individual basis. In addition, a few categories of accounts that are known to be mis-categorized are excluded. Finally, these data are from September 13, 2007. For all of these reasons, the total amount shown here differs from the $175 million on Slide 55.*

An analysis of payment history over the last 10+ years indicates that customers who are not paying DEP are paying property taxes and other city charges

# of Accounts

	Date of Last DOF Payment				
Date of Last DEP Payment	No Payment on Record	1979 - 1995	1996 - 2002	2003 - 2006	Total
No Payment on Record	31	59	107	1040	1237
1995 - 2002	56	28	208	3791	4083
2003 - 2007	11	31	86	2765	2893
Total	98	118	401	7596	8213

84% (1040 out of 1237) of the customers with no DEP payment on record have paid DOF between 2003 – 2006. The A/R associated with these accounts is nearly $24 m.

The remaining 197 accounts, comprising $6.5 m in A/R, likely have major issues with the account data or are no longer valid properties.

93% (3791 out of 4098) of customers whose last payments were between 1995 – 2002 have paid DOF between 2003 – 2006.

The remaining 292 accounts, comprising $4.8m in A/R, may have problems with account data that could be repaired through a cross-check with DOF.

Total A/R

	Date of Last DOF Payment				
Date of Last DEP Payment	No Payment on Record	1979 - 1995	1996 - 2002	2003 - 2006	Total
No Payment on Record	$478,939	$1,942,713	$4,059,277	$23,921,821	$30,402,750
1995 - 2002	$462,356	$458,409	$3,889,665	$54,083,887	$58,894,317
2003 - 2007	$96,625	$951,737	$3,621,530	$42,823,310	$47,493,201
Total	$1,037,920	$3,352,859	$11,570,472	$120,829,017	$136,790,268

- DOF payment rates may be higher because many tax bills are paid by mortgage service companies; however, the discrepancies (particularly among DEP customers with little to no payments on record) may in some cases be due to inconsistencies in account data.

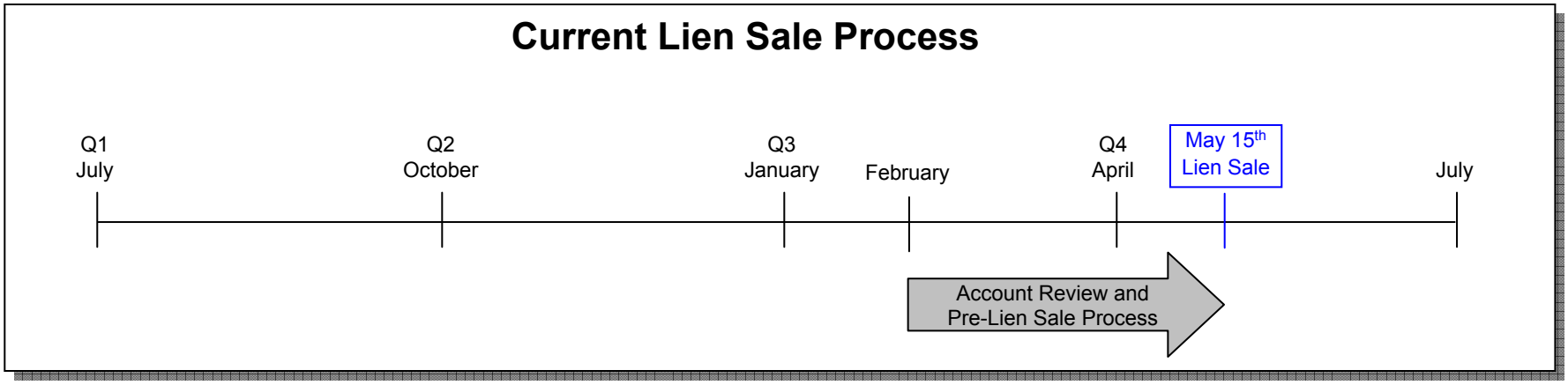
Notes:

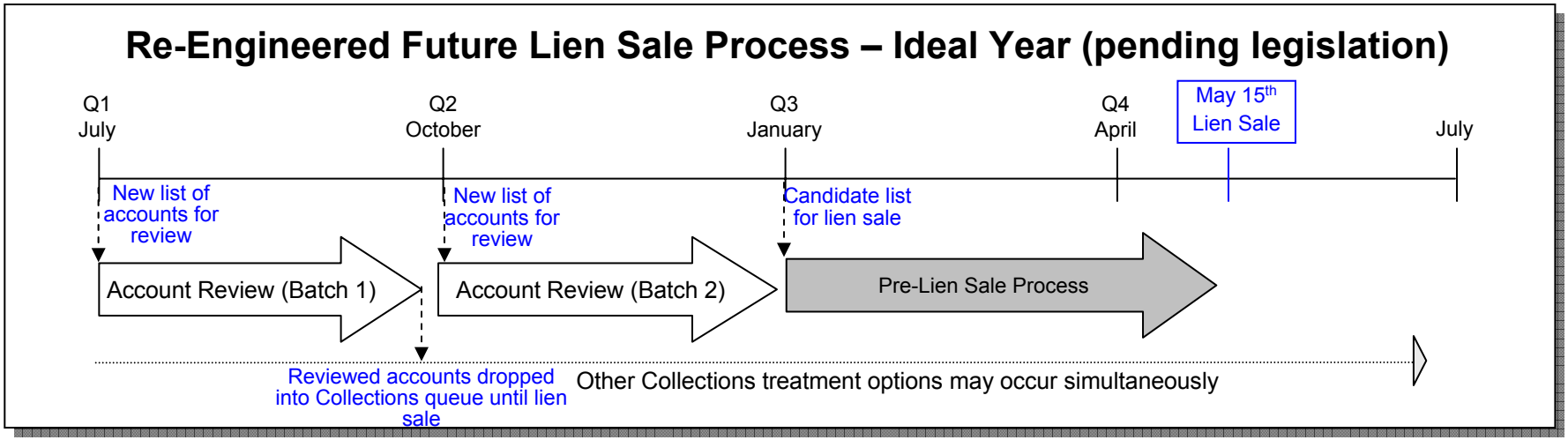
(1) Based on data extract on 09/13/07

(2) Excludes HDFCs, A4s, block 99999, lot 9999, "Special" Building Classes

(3) DEP payment records available through 1995

The re-engineered lien sale process incorporates multiple account review batches to efficiently process larger volumes of accounts for collections and the annual lien sale

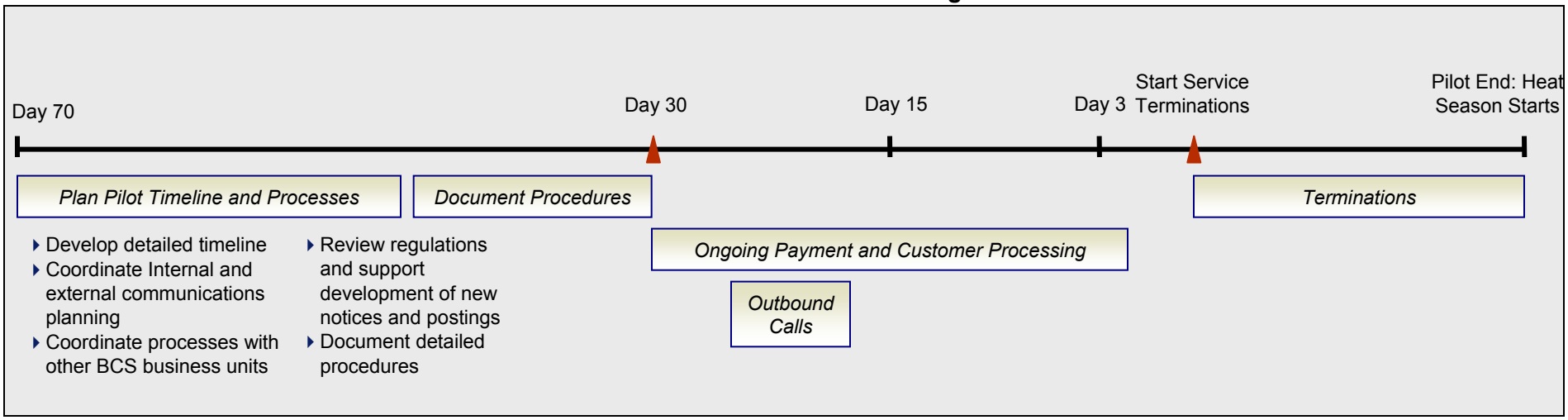




A service termination pilot will help DEP collect past-due revenue and discourage additional customers from becoming delinquent

- Deliberate and justified pilot program service terminations can enable DEP to clearly demonstrate its determination toward actively enforcing payment policy for residential properties
  - Pilot will focus on Tax Class 1 – Single Family Residential (Building Class A)
  - Defaulted payment agreement (no substantial payment for six months)
- Selective service terminations using accounts with defaulted payment agreements will send the message that DEP can and will start implementing more stringent enforcement methods

2007 Service Termination Pilot Program



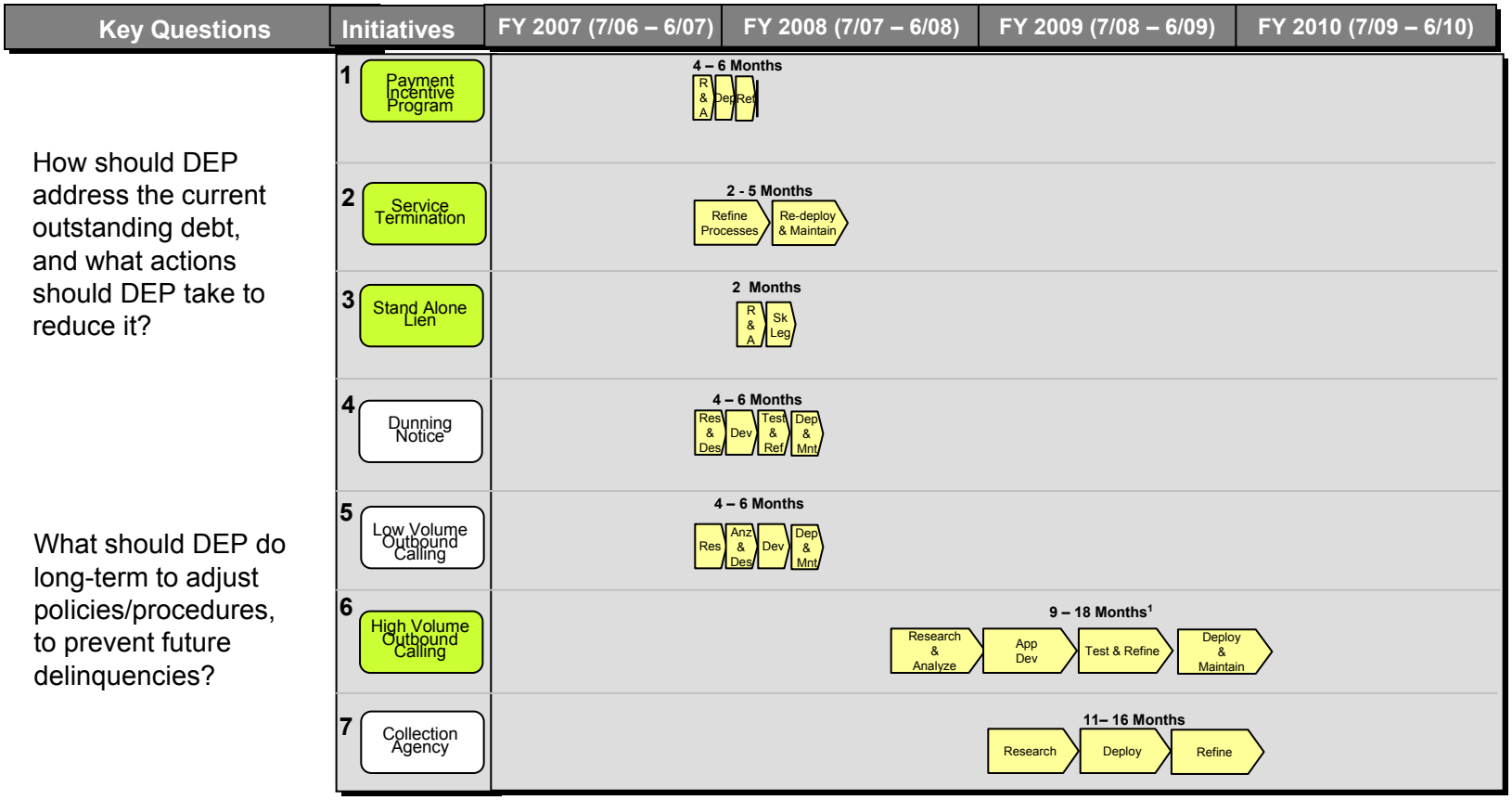
Leveraging Department of Information Technology and Telecommunications' 311 call center will allow DEP to implement a cost-effective, high-volume outbound calling campaign

- Enables DEP to directly contact customers and provide an immediate mechanism for customers to speak with a trained Collections Department agent
  - 311 Call Center capacity up to 48,000 calls per day
  - Option to transfer to a collections CSR during the recording
- Permits less costly, widespread, early-stage delinquency treatment against customer segments with generally lower accounts receivable balances
  - Outbound calls for past-due accounts less than one year old (8,600 accounts)
  - Also includes potential PIP candidates that have not responded to DEP notices about the program
- Prevents the need for employing vendor staff, conducting vendor training, or sharing sensitive DEP account data with a third party

The consolidated multi-year plan shows how all treatment options should be rolled out to support a comprehensive collections strategy

How should DEP address the current outstanding debt, and what actions should DEP take to reduce it?

What should DEP do long-term to adjust policies/procedures, to prevent future delinquencies?



(1) The proposed Road Map for the High Volume Outbound Calling treatment option (Auto Dialer) represents the timeline for implementation by DEP. By leveraging DOITT's 311 infrastructure, timeline for outsourcing this treatment option is shortened to two months for a pilot program

Summary of Collections Strategy Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**DEP currently lacks the infrastructure to support visibility of A/R from the point of delinquency.** Delinquent balances are reported as a snapshot in time; e.g., outstanding balances as of 30 days ago, 60 days ago, 90 days ago, up to five or more years ago. The current collections aging approach impedes DEP's ability to understand customer behavior from time of delinquency and begin proactive, early delinquency detection programs	**Use detailed, customer-level aging reports to track customers by aging categories from time of delinquency.** DEP will then be able to more effectively implement collections strategies. DEP will also be able to perform trending analysis and predict customer behavior by having management data on amount of time into delinquent status (see A/R strategies recommendations for aging report requirements), versus having customer account information from five years ago, four years ago, etc.
2.	Industry research supports the concept that the probability of collecting on delinquent accounts decreases as age of delinquency increases. Currently, DEP does not have a process in place to manage this program. **Opportunities exist to work with OIT to begin identifying and managing accounts from first day of delinquency**	**Work with the A/R strategies recommended, including a new A/R individual to launch an Early Detection Program.** Automating management reporting of new delinquencies from the first day of delinquency will allow DEP to strategically recover delinquent debt as early as possible through the use of an AutoDialer, reminder notices, etc. For additional details, see specific, customized (early stage delinquency) collections strategy recommendations by customer segment
3.	Detailed customer segmentation and profiling is not currently being done at DEP (either within the collections department or within other business units such as account maintenance or call center). **Opportunities exist to better understand DEP customers and their behavior and/or trending**	**Use detailed, customer-level aging reports to perform more granular customer segmentation analysis and profiling.** The recommended, new A/R individual and the collections department must work in partnership to better understand DEP's customer profiles and related behavior patterns and/or trending. This information could help BCS promote better customer service delivery, earlier recovery of delinquent debt and more effectively organized business unit staffing

Summary of Collections Strategy Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
4.	**A comprehensive, centralized reporting tool/mechanism for tracking metrics on all applied collections strategies is not currently available.** The success rates of collections activities are currently tracked manually by campaign. In some cases, reporting on strategy success rates is manually and independently tracked by separate borough offices	**Work with OIT to implement detailed, centralized and comprehensive management reporting on the success rates of each collections strategy** (e.g., payment received within x days of AutoDialer voicemail message). Industry practices indicate that success-rate reporting will help DEP periodically modify its collections strategies to maximize effectiveness and lower overall collection costs
5.	Discussions with various DEP stakeholders illustrate a disconnect between mail services and other BCS business units regarding monitoring and corrective action for incorrect/obsolete customer contact information. **Returned outgoing mail or unsuccessful phone calls to customers have little visibility, and the impact is neither measured nor controlled**	Assess relationship and policies between BCS customer-facing business units and DEP mail services regarding outgoing bills, notices and phone calls with delivery failures due to incorrect address or phone information. **Assess opportunities to improve customer relationships by proactively correcting customer contact information via a centralized, ongoing effort within BCS**
6.	**Billing errors, account maintenance challenges (e.g., chronically estimated meter charges) and test account data negatively impact collections activity and reporting.** Currently, collections staff must contend with poor account billing history. Delinquency reporting is also potentially skewed by test accounts in the CIS production environment	**Conduct a thorough exercise in data cleanup on the CIS billing system.** Data cleansing efforts will increase accuracy of bills sent to customers, improving DEP's ability to quickly and accurately address complaints directed by customers, other city agencies, the media, etc. This effort includes the purging all test accounts from the production environment, ensuring accurate billing history on remaining accounts and maintaining billing accuracy going forward

Summary of Collections Strategy Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
7.	Billing adjustments in CIS lead to a loss of historical age of delinquency data for an account. For example, if an account undergoes a billing adjustment where charges are verified (e.g., in preparation for a lien sale), **CIS no longer shows how long the account has been delinquent, eliminating DEP's ability to track behaviors, payment patterns and trends across customer accounts**	**Work with OIT to preserve historical data on age of delinquency after billing adjustments.** In conjunction with the new aging reports recommended above, this modification will increase DEP's ability to accurately monitor and track customer payment patterns and trends over time
8.	Currently, customers can receive bills for very small, residual balances. For example, without a minimal threshold level set for mailing bills from CIS, customers can receive bills for charges that are less than the cost of one stamp. **From a collections standpoint, the value of extremely small unpaid balances might be offset by the costs of the collections effort**	**Work with OIT to determine a minimum threshold level for bills to be sent (e.g., no bills sent for balances under $5 or $10).** This threshold will help DEP redirect the costs of collection toward larger balances
9.	**Standardized operating procedures (SOPs) or checklists are not followed consistently by collections staff**	**Develop, implement and train collections staff in standardized operating procedures.** Adherence to policies and procedures can result in consistent service and increased confidence in the accuracy of DEP's information

Summary of Collections Strategy Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
10.	**Very few penalties are effectively employed against accounts that default on payment agreements.** Customers that default receive a notice of default, but no consistent penalty actions are currently enforced. Accounts are encouraged to re-enter a new payment agreement	**Redesign parameters for payment agreements that align more closely with industry standards.** For example, DEP could allow only two payment agreements for the life of the account. Proactive tracking and follow-up mechanisms should be in place. Penalties for default should be strictly enforced through collections strategies appropriate for that customer segment (e.g., lien sale, service termination or third-party collections)

Summary: Accounts Receivable (A/R) Strategies

- **Challenge**
  - BCS has a limited view of its total A/R balance, which results in potentially ineffective collection efforts and business processes
  - Difficulty in accessing A/R reporting, analysis and aging results in lack of reconciliation of end-of-month activities
- **Approach**
  - Observations relevant to the core A/R business processes, as well as performance metrics, were noted during interviews with key BCS stakeholders:

    - How is A/R accuracy and completeness impacted by billing?

    - How is A/R timeliness impacted by remittance?

    - What is the impact on effectively and efficiently monitoring and reporting A/R by management and reporting analysis?
- **Recommendation**
  - A/R accountability and ownership
  - Tools that support effective A/R management
  - A/R governance model

In addition to pursuing collections strategies and programmatic changes, BCS must improve its underlying ability to effectively manage A/R…

BCS Current State

Capability Level	Initial	Intuitive	Managed	Optimizing
Capability Description	**AD HOC** Relatively unstable business process environment	**INSTINCTIVE / VAGUE** Process established and repeating; Needs improved documentation of processes and roles and responsibilities	**DEFINED / MANAGED** Polices, processes and standards defined and institutionalized; Process and roles and responsibilities documented and accountability established	**CONTINUOUS IMPROVEMENT** Continuously improving business processes and controls enterprise-wide; "Chain of accountability" sustained
Capability Attributes	• Best Undefined, manual processes and activities • Activities may be completed by unskilled staff not appropriate for the function • Significant error correction • Multiple financial and accounting systems with no integration with other related financial functions (e.g., Procurement, Accounts Receivable, Accounts Payable) • Lack of internal control structure	• Established processes, although some may be disparate • Use of automated and manual accounting systems with reliance on moderate manual intervention • Activities are performed by skilled staff appropriate for the function • Redundant checks made to detect errors • Multiple financial and accounting systems with limited integration with other related financial functions • Limited internal control structure with some policies and procedures documented	• Best Standardized, defined and communicated processes exist • Internal control structure is documented and polices and procedures are followed • Documented and communicated roles and responsibilities with trained staff • Automated financial and accounting systems are used to process payments and record transactions to the General Ledger, although there is still manual data entry • Errors are detected, not prevented	• Best practices are widely implemented (e.g., electronic invoice receipt, invoice and document imaging, electronic billing/invoicing) • Robust financial reporting • Consistent and regular process monitoring and correction • A fully integrated financial and accounting system is used, driven by business needs and processes (e.g., Enterprise Resource Planning (ERP)) • Internal control structure enables errors to be prevented and corrective action taken to resolve problems • Performance measurement activities are embedded

…and transition through recommended organizational changes to a desired future state, where A/R is effectively managed

TRIGGER

- Customer understands the bill
- Customer has confidence in the accuracy of the bill
- Aggressive action taken against delinquency

- Fewer estimated bills
- Fewer erroneous billing adjustments
- Reduction in late payment charges

- Ongoing, detailed analysis of customer A/R balances by customer type, segment, and age
- Automated production of monthly aging schedules / reports

- Monthly A/R reconciliations are performed at the summary and detailed customer level
- Aging reports reconcile to general ledger activity reports

FUTURE STATE

Reduced customer dissatisfaction and fewer over-aged accounts → Orderly A/R customer balances → Robust A/R reporting and analysis → Recurring and timely A/R reconciliation

OUTCOME

Manageable Accounts Receivable Portfolio

- Efficient business processes
- Informed decision making and planning
- Targeted and prioritized collection efforts
- Reduced opportunities for fraud, waste and abuse
- Reliable A/R balance

Summary of A/R Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**Accountability for and ownership of A/R** ▸ There is no central management of A/R within BCS. As a result, responsibility for improving processes and remediating issues that affect A/R is dispersed throughout the organization ▸ BCS efforts are primarily focused on collections efforts to reduce the high A/R balance without including key, day-to-day, A/R management activities that assist in the development of guided collections strategies and ensure the reliability and accuracy of the A/R balance	**Establish an authoritative, accountable A/R position within BCS** ▸ BCS should designate one individual with an accounting background (CPA preferred) who would be responsible for managing A/R on a daily basis. Suggested responsibilities for this individual include: –Perform monthly A/R reconciliations (also consider performing revenue reconciliations) –Work in conjunction with OIT to develop, produce and analyze A/R aging schedules / reports on a monthly basis –Develop monthly A/R management reports, and distribute and communicate results to key BCS stakeholders (also consider developing revenue reports and shifting the A/R reporting currently performed by the New York City Water Board to this individual's area of responsibility) –Work in conjunction with the billing, remittance, refunds, correspondence and collections departments to develop and implement performance measures, update and implement key internal controls, report results, and address issues within these business units that impact A/R (consider aligning the collections department within this individual's area of responsibility)

Summary of A/R Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
1.	**Accountability for and ownership of A/R (cont.)**	**Establish an authoritative, accountable A/R position within BCS (cont.)** –Lead stakeholder planning and decision making for A/R management strategies, and work in partnership with the collections department to develop strategic plans and performance targets for continued efforts to reduce the A/R balance –Work with the New York City Water Board and the Water Finance Authority on an annual basis to develop the annual revenue plan, set revenue performance targets, and determine annual financial statement presentation figures applicable to A/R such as allowance for doubtful accounts and bad debt reserve –Act as the primary BCS point of contact during annual external audits for A/R and work with the external auditors throughout the year to address recommendations

Summary of A/R Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
2.	**Customer Information System (CIS) capability to effectively manage A/R** ▸ CIS does not have the full suite of capabilities to effectively and efficiently manage A/R ▸ CIS' current functionality limits BCS' ability to employ many update-to-date, automated mechanisms for payment processing, billing and collections	**Replace CIS with an Enterprise Resource Planning (ERP) application** ▸ BCS should strongly consider converting to an ERP application. This ERP application would include an accounts receivable module and be fully integrated and compatible with other modules such as billing and the general ledger ▸ With an ERP application, BCS could realize all of the benefits an ERP system offers and be able to more effectively and efficiently manage A/R. With an ERP system, BCS could: –Easily generate a suite of standard reports such as aging, days sales outstanding and cash collected versus target –Automatically generate aging reports and categorize receivables individually by age –Enable users to easily gather information from a few number of screens to perform required operations and make adjustments

Summary of A/R Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
2.	**Customer Information System (CIS) capability to effectively manage A/R (cont.)**	**Replace CIS with an Enterprise Resource Planning (ERP) application (cont.)** –Process direct debits to a customer's bank account –Flag accounts based on a delinquency condition or bounced check –Independently support the collections process through automated prioritization of accounts for collection action or automated generation of collection letters –Categorize complaints with a reason code, and type or prioritize complaints based on pre-established criteria –Automatically adjust small balance discrepancies

Section 3: Systems and Technology

Systems and Technology provide supporting tools and infrastructure, enabling DEP to serve its customers more efficiently

- Systems and Technology are essential not only to BCS' back-office functions, but also to its ability to transform into a more customer-focused organization. In addition to the key systems already referenced in the customer service section (CIS and AMR), Booz Allen recommends redesigning the telephone interactive voice response (IVR) system and using new and different technology-based systems to improve management, metrics and quality assurance.

- This section approaches BCS customer service delivery channels as an integrated system. Effective use of these channels will enable BCS to provide extensive, accurate and frequent information to the customer to reduce confusion and the need for additional phone calls or written correspondence. New and redesigned systems will increase BCS' organizational efficiency and significantly enhance the implementation, oversight and management of the other recommendations contained in this report.

Summary: Systems and Technologies Assessment

- **Challenge**
  - Limited service delivery channel tools do not allow BCS to deliver world-class customer service
  - Systems and technology tools for customer service representatives do not allow for efficient and effective customer handling
- **Approach**
  - Observations relevant to the core BCS systems and technologies were noted during interviews with key BCS stakeholders:

    - How does BCS effectively leverage its service delivery channels?

    - How has BCS aligned its technology and system applications to deliver on its mission and goals, and how does technology fit into the needs of meeting current and future BCS customers' expectations?

    - What are the tools and processes that BCS uses to communicate needs and requirements to OIT?
- **Recommendation**
  - Systems and technologies recommendations covered:

    - Service delivery channels supported by technology infrastructure

    - Telephony technology and customer management systems

    - IT governance structure

As part of this analysis, Booz Allen completed a detailed technology assessment, which revealed existing, effective processes as well as areas for improvement

- **Performed a high-level review of BCS operations**
  - Reviewed supporting documentation to understand existing NYC DEP Customer Care operations for all customer service delivery channels, including Call Center, Correspondence, Website and Walk-in channels
  - Reviewed existing customer service programs, including Quality Assurance, Training, Workforce Management and Performance Management in use for each customer service delivery channel
- **Conducted technology assessment**
  - Reviewed, identified and documented issues concerning BCS Customer Care tools and technologies, including:
    - CSR Desktop Application, Knowledge Management Systems and other tools used by CSRs
    - Telephony Systems: IVR (Interactive Voice Response) and ACD (Automatic Call Distributor)
    - Performance Optimization Systems: Quality Monitoring, Training, and Workforce Management
  - Initiated development of short-, medium- and long-term technology optimization recommendations for BCS across all customer care service delivery channels based on the current state assessment, BCS requirements and industry best practices
- **Initiated development of technology alternatives, recommendations for improvement and high-level implementation roadmap**

BCS exhibited industry practices in several areas, including staff and supervisor/management tools…

Observed BCS Industry Practices

Staff Tools

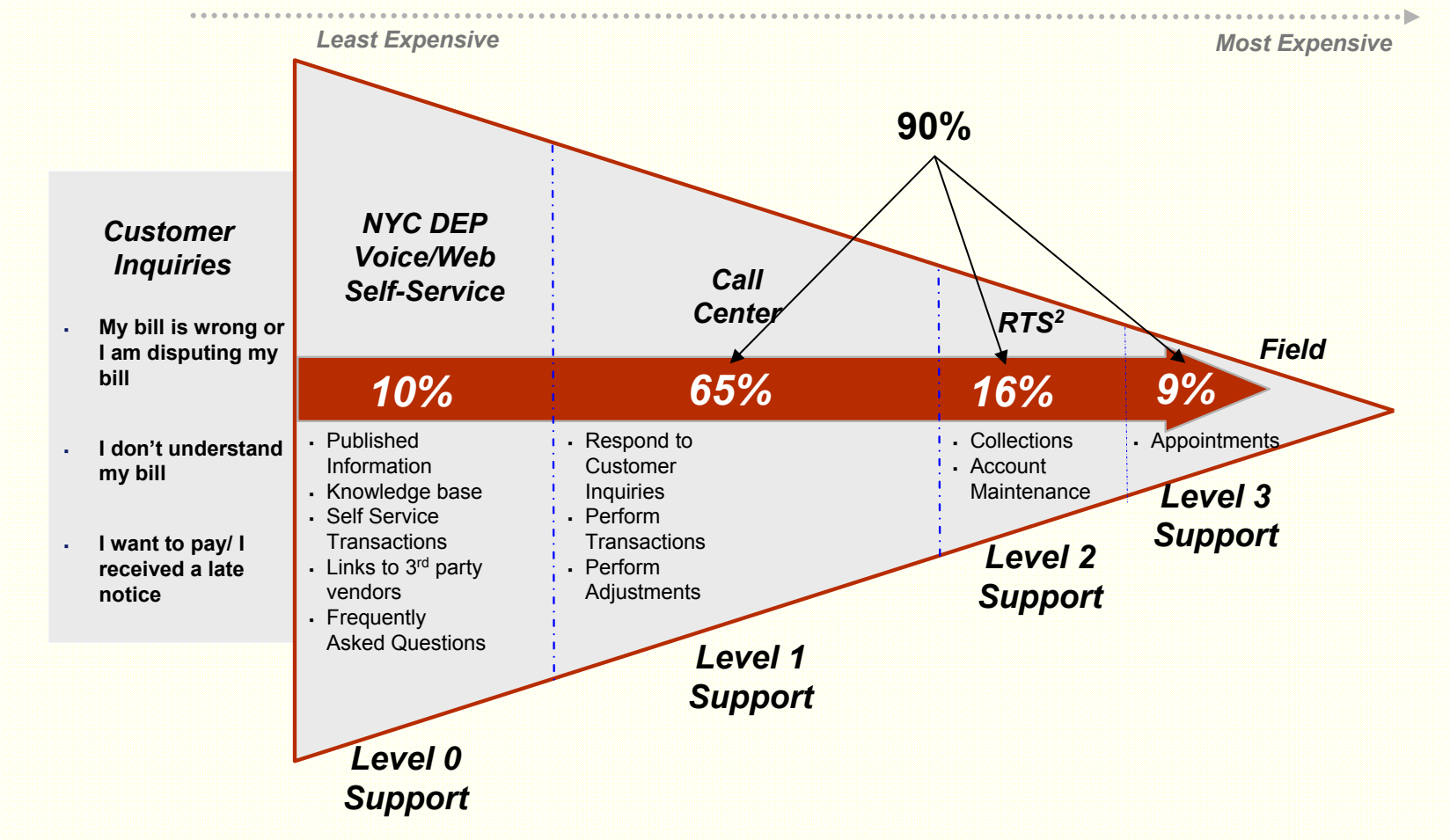
- The BCS IT team has provided users with a convenient way to access BCS applications from a central location utilizing single sign on via BAPPS. BAPPS is an intranet system that contains a number of browser based applications and serves as a single point of access to BCS systems, external applications, links to external websites, and other useful information
- BCS created an intranet document management library (DMS) for internal use, which contains general information, procedures, policies and templates for staff. Updates to content, including the addition of supplemental documents, is currently required. Upon completion of these updates, staff will be able to centrally access BCS documents

Supervisor/Management Tools

- Call center statistics are reported on a regular basis and management works towards (and is achieving) an average speed of answer (ASA) of under 40 seconds[1]
- Options to Pay from the Interactive Voice Response Unit (IVR) and the DEP Web site are currently in development to provide customers with convenient bill payment alternatives; this will enhance revenue collection and increase customer satisfaction
- The Office of Information Technology (OIT) developed the System Enhancement (SE) application, to enable the Business Units and OIT to communicate the needs and business requirements of IT-related projects, prioritize requests, share information and track progress of existing IT programs. Process to utilize the SE application has yet to be established
- Call center hours of operations have been extended on Tuesday and Thursday evenings, and the BCS Call Center is open on Saturday, providing customers with an option to contact BCS outside of normal business hours

(1) ASA of 40 seconds statistic is being achieved during Q1, 2007. Annual ASA for 2006 is documented at 4 minutes 26 seconds.

… but problems also exist; for example, 90 percent of all customer inquiries coming into the call center require live CSR interaction[1]



(1) 90% represents all calls taken after subtracting calls coming through the IVR. (Source: NYC DEP Memorandum - Call Center Statistics for Year 2006, January 9, 2007).

(2) RTS – Referral Tracking System

Highlights of the current state analysis were framed around several key questions

1. How does BCS effectively leverage its service delivery channels?

2. How has BCS aligned its technology and system applications to deliver on its mission and goals, and how does technology fit into the needs of meeting current and future DEP customers' expectations?

3. What are the IT governance-related tools and processes that BCS uses to communicate needs and requirements to OIT?

BCS service delivery channels are comprised of specific technology elements and processes

1 How does BCS leverage its service delivery model/channels?

	Features	Elements	Description
Service Delivery Models/Channels	• BCS Call Center • Mail/Correspondence unit • Borough offices – Walk-in • Web-based customer service	• Types of service offered across delivery channels • Utilization of telephony tools across various delivery channels • Utilization of systems tools to support delivery model in place	• Call Center and borough offices handle routine and complex inquiries • Correspondence unit handles more complex inquiries and formal disputes • Web-based service is minimal, however, web-based payment option is scheduled to be launched shortly
Processes	• Processes vary by delivery channel • Lack of standardization often leads to inconsistent and/or incomplete information provided to customers	• Process documentation and SOPs are available on DMS • Technology is easily manipulated to over-ride certain information requirements	• Problem resolution is not customer defined, it is based on internal BCS requirements • Many workflow hand-offs • Exception handling procedures are not well defined

Numerous tools and infrastructure support BCS' customer service delivery

2

- How has BCS aligned its technology and system applications to deliver on its mission and goals, and how does technology fit into the needs of meeting current and future DEP customers' expectations?

	Features	Elements	Description
Telephony Technology A	• Identification of telephony technology required to support organization - Integration - Access to all customer information and Database	• ACD • IVR • Workload Reporting and Performance Metrics tools	• Telephony systems support customer inquiries received via the telephone • Telephony technologies include: • Routing tools with skill based / intelligent routing capabilities •VoIP and CTI technology
Customer Management Systems B	• Identification of systems required to support BCS business operations - Full integration - Robust databases - Access to all customer information	• Case Management Systems (CIS, RTS) • Intranet (BAPPS)	• Case management and customer relationship management (CRM) tools • Technologies that increase efficiency and effectiveness, i.e., Wireless, video tools • Integration between systems and use of Graphic User Interface (GUIs)
Customer Care Supporting Systems C	• Identification of systems required to support BCS agent performance and service goals	• Knowledge Management • Workforce management • Training • Quality Assurance	• Workforce management and QA tools to determine proper staffing and Agent Performance • Knowledge management tools and training technologies facilitate training activities

Understanding and communicating business needs between BCS departments and OIT will help drive customer care technology enhancements

3 ▸ What are the tools and processes that BCS uses to communicate needs and requirements to OIT?

	Features	Elements	Description
Stakeholder Commitment	• Buy-in of strategy and mission statement • Stakeholder involvement in strategic decisions	• **Vision** • **Communication**	• Continuous dialogue with resources, e.g., structured mechanisms such as regularly scheduled meetings
Organizational Structure	• Clear ownership and accountabilities • High-level of empowerment of service professionals	• Aligning roles and responsibilities with appropriately skilled resources • Right Span of Control	• Evolution towards a service-oriented customer base organization • Evolving model that optimizes ratio of service professionals to team leader
Resources	• On-going training	• Recruiting & Training	• Stringent interview process- phone tests & listening • Intensive training (initial and on-going) • Continuous testing of knowledge • Career path and levels clearly defined with proper compensation scenarios

To begin, Booz Allen prioritized IT investment opportunities based on specific evaluation criteria

The team helped identify, review and prioritize technology improvement opportunities along four key evaluation criteria:

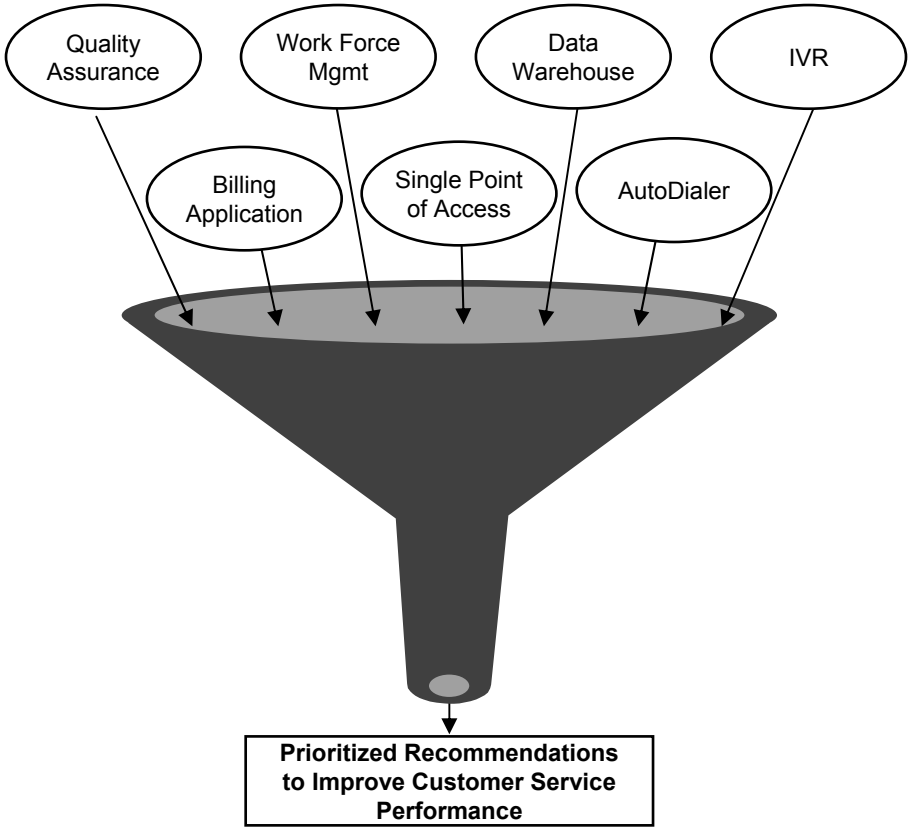
Evaluation Criteria

Estimated Benefit
What is the projected benefit associated with the recommendation? (High, Medium, Low)

Implementation Effort
What is the expected level of effort required for implementation? (High, Medium, Low)

Time to Implement
What is the expected time requirements to implementation? (High, Medium, Low)

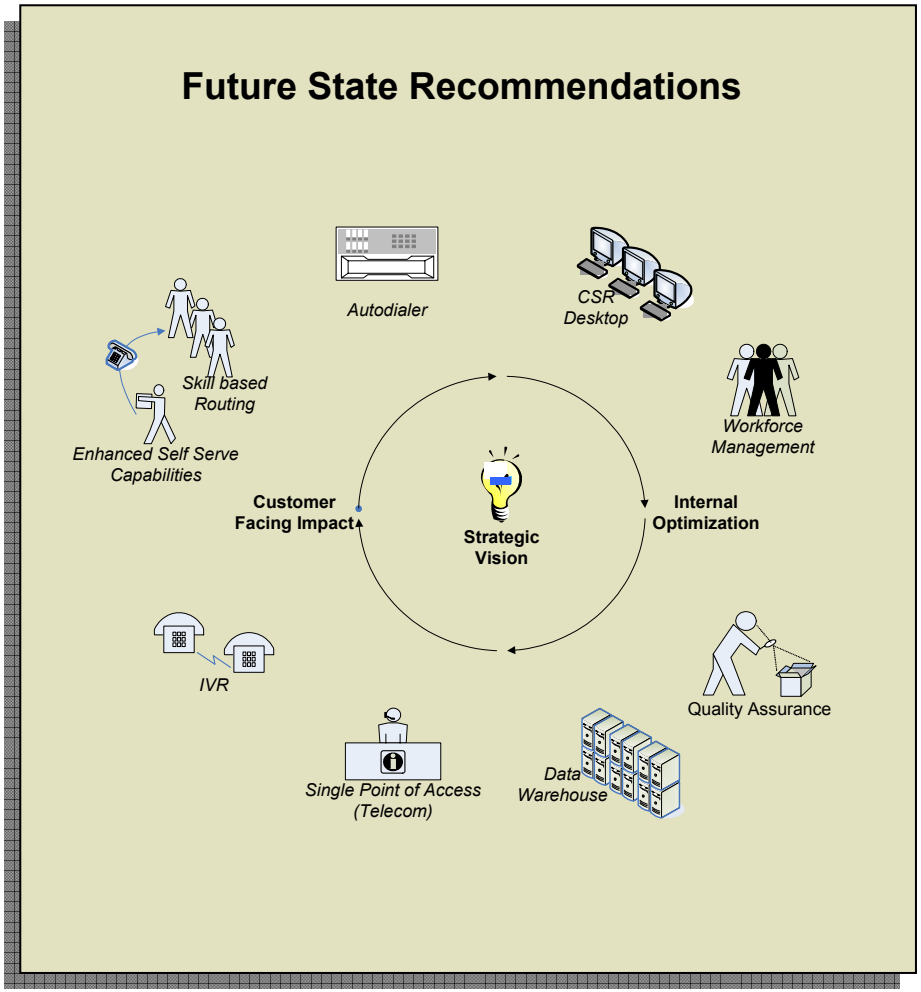
Cost
What are the expected costs associated with each recommendation? (High, Medium, Low)



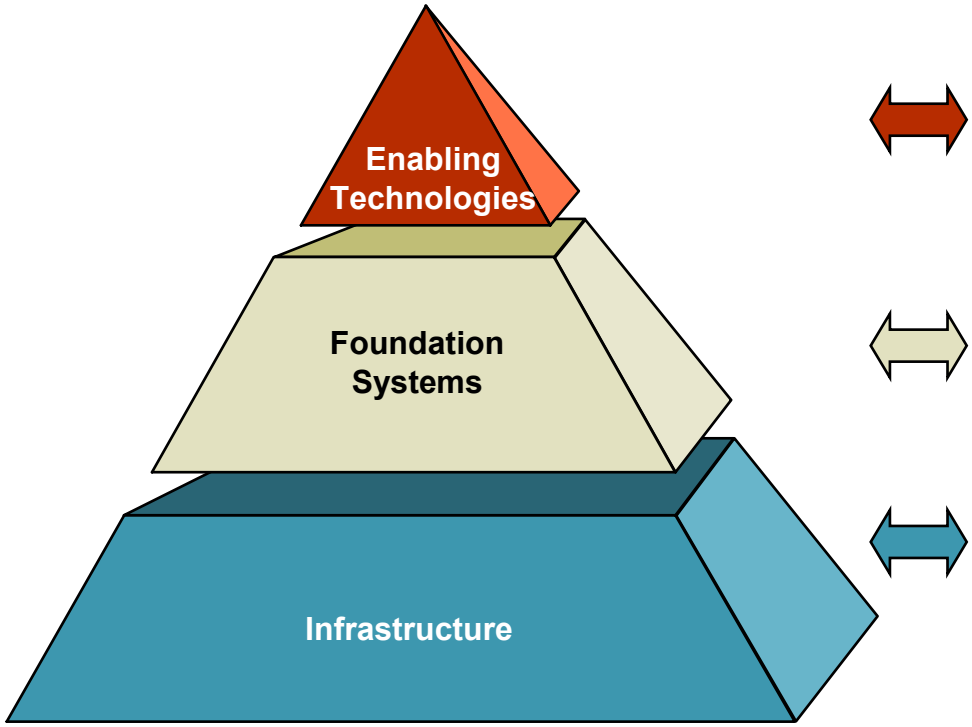
Booz Allen then designed system recommendations to help improve the customer experience and optimize internal efficiencies

Summary:

- Provide BCS personnel with a new Billing/Customer Management System
- Enhance management's ability to measure departmental and individual performance through the implementation of automated Workforce Management and Quality Assurance systems
- Enhance management's ability to measure individual and departmental performance by implementing a Data Warehouse
- Upgrade the current IVR technology in order to:
  - Facilitate enhanced self-service capabilities
  - Enable the deployment of skills based call routing



The recommended BCS IT tools framework builds on existing infrastructure



Data Warehouse, Call Quality Assurance software, Workforce Management software, Single Point of Access

IVR, AutoDialer, Billing/Customer Management System

Telecommunications capacity, bandwidth, etc

The technologies outlined above are important to the long-term strategy of BCS, but due to resource limitations and business uncertainty, the relative importance of each technology compared to the other technologies needed to be determined. The above framework, along with BCS' business strategy, was used to prioritize investment initiatives.

Summary of Systems and Technology Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**Service delivery channels do not provide customers with robust options for world-class customer service** ▸ Intelligent workflow routing is not utilized and self-help capabilities are limited – Call center does not utilize skills-based routing – Limited self-help capabilities exist via the IVR and Web ▸ Multiple, disconnected input channels create inconsistent service delivery – Customers can "answer shop" through BCS' different communications channels (e.g., call center, walk-in) and might receive different answers to the same inquiry ▸ No standardized inquiry response process – Staff members access different systems to answer similar inquiry types; however, there are no standardized processes or procedures in place to ensure consistency of information provided to the customers (e.g., property information can be obtained from ACRIS, GOAT and RPAD)	**Implement tools to improve customers' call handling experiences and more efficient use of staff resources** ▸ DEP should implement more self-service channels such as web-based account management tools ▸ DEP should create common set of procedures as part of a larger continuous learning training to promote consistency in standardized inquiry responses

Summary of Systems and Technology Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
2.	**Antiquated telecommunications and system applications do not help BCS deliver on its mission and goals** ▸ Multiple telephone numbers are used by customers to contact DEP – Customers contact DEP by calling the BCS call center, BCS business units, personal telephone lines of DEP staff members, and field office locations to receive similar types of service and inquiry resolution – Inconsistent contact information is being distributed throughout different channels ▸ IVR does not support Computer Telephony Integration (CTI) or future migration to VoIP, if required – BCS IVR tool does not have the capability to support CTI or VoIP, minimizing intelligent routing options and integration of the IVR with BCS customer management systems ▸ The IVR offers a limited number of self-service capabilities – Basic and routine inquiries (e.g., account information, payment status) are handled by CSRs due to minimal self-service capabilities offered via the existing IVR tool	**BCS should implement more self-service capabilities through IVR and additional telephony tools such as CTI** ▸ BCS Management should track accurately track customer inquiries and workload and standardization of inquiry reporting– this impacts the ability to see the holistic view of BCS activities across the business units ▸ Tools such as CTI integration with the IVR will decrease costs associated with handling a customer ▸ Offering more self-service capabilities will substantially improve the customer experience and reduce BCS' operational costs

Summary of Systems and Technology Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
2.	**Antiquated telecommunications and system applications do not help BCS deliver on its mission and goals (cont.)** ▸ Current suite of desktop systems offers some integration across applications, but requires CSRs to keep multiple applications open simultaneously – Current tools offer limited functionality to service DEP customers and staff, and require execution of additional steps to make basic changes/updates to customer accounts – Several BCS systems contain information that is different in nature, but related to the same customer accounts (i.e., CIS / Hansen). Current limitations require staff to make account updates numerous times ▸ There are some limitations of current tools to manage workload and performance metrics across BCS business units – Business units utilize various tools and technologies to manage workload and measure performance	**BCS should implement more self-service capabilities through IVR and additional telephony tools such as CTI** ▸ Access to multiple systems and/or screens (to perform basic account maintenance functions) will result in fewer potential errors, re-work, and duplication of effort ▸ A more robust set of desktop tools will reduce common errors and allow for more efficient use of processes when performing account updates/changes. This change can result in less re-work, fewer customer call backs, and ultimately, higher customer satisfaction

Summary of Systems and Technology Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
3.	**Other supporting tools do not adequately provide the mechanisms for BCS staff members to perform their jobs efficiently** ▸ Workforce scheduling is performed manually – Staffing requirements are determined manually, using tracking and manager's historical, intuitive experience – Managers might not be fully utilizing the ACD reporting capabilities (addressed in OPAI) ▸ System-generated reports might not provide adequate information to efficiently manage the quality assurance (QA) process – Managers might not be fully utilizing BAPPS reporting capabilities (addressed in OPAI) – Formal reports for BCS management that detail QA audit results have been discontinued pending report upgrade/assessment	**BCS should implement more productivity tools such as workforce management systems to optimize customer service staffing** ▸ Implementing a workforce management system would reduce potential mis-alignment of staff to call arrival patterns, and improve staff utilization, service levels and customer satisfaction rates

Summary of Systems and Technology Observations and Recommendations (cont.)

	Observed at BCS	Recommended Corrective Action
4.	**While an IT governance process has been developed to manage communication between OIT and business units, it is not currently in use by BCS** ▸ OIT works with its limited staff resources to balance the priorities of multiple business units' IT-related projects ▸ Business units compete for system development resources while requesting ad-hoc data and system requests ▸ High-priority reporting requests often require a quick turn-around. Issues are escalated to expedite the development timeline ▸ The SE application was created to track IT-related projects and provide BCS senior management with a comprehensive view of system enhancements and change requests; SE is not currently utilized by all BCS units ▸ A process for gathering requirements between OIT and business units has not been established	**BCS should implement an IT governance process** ▸ Lack of a formalized governance structure to manage the flow of requests from business units to the IT department puts stress on resources and results in silo-centric IT initiatives ▸ Completion of other IT programming projects are often impacted, resulting in potential delays ▸ Understanding the ROI / business case for each IT-related projects challenges the priority and vision for how to fund future IT projects ▸ Lack of a comprehensive, structured and prioritized pipeline of IT requests can affect BCS' ability to: –Identify impacts of project progress on business operations; e.g., prioritization of projects –Drive future IT needs

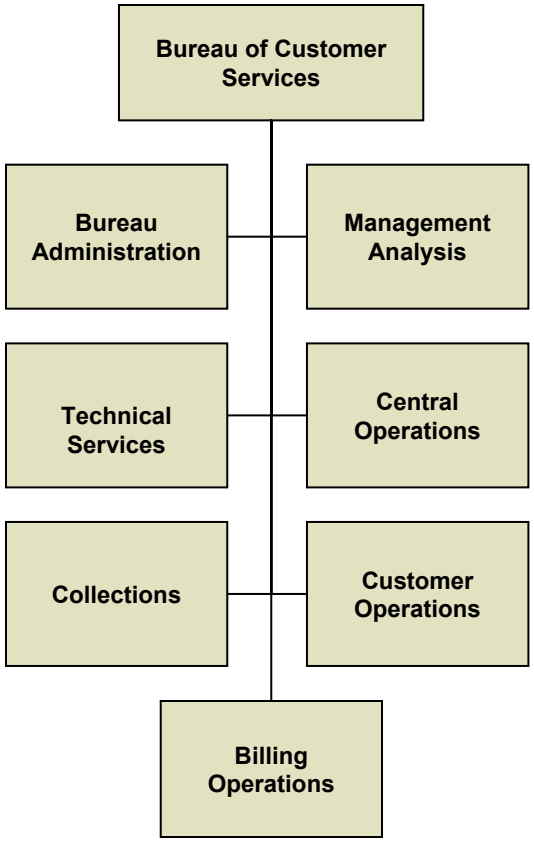
Section 4: Organizational Design and Next Steps

Organizational Design serves as the future foundation of work already underway; new roles and responsibilities will help institutionalize transformation at BCS

- Booz Allen is working with BCS to propose a new organizational structure to assist in the development, implementation and perpetuation of transformation.
- As part of this effort, Booz Allen benchmarked BCS against water utilities nationally and evaluated internal BCS systems to develop recommendations.
- To ensure these recommendations are implemented efficiently and effectively, Booz Allen is developing integrated timelines and roadmaps that include organizational design and build on the work already started by BCS staff, such as AMR. This section features an overall timeline for BCS transformation, with major changes continuing during the next few years.

Currently, BCS is organized into seven divisions that support an array of functions in addition to water and sewer billing

Current Organization



- **Bureau Administration** – Manages human resource activities, procurement and fleet/ facilities
- **Management Analysis** – Primary function is to resolve difficult or high-profile account issues
- **Technical Services** – Responsible for the management and oversight of larger water meter repair, inspection, installation and conservation programs, and the AMR program
- **Central Operations** – Responsible for managing the five borough offices, permit compliance, and lien sales
- **Collections** – Responsible for identifying delinquent accounts and corresponding with customers to collect funds
- **Customer Operations** – Primarily responsible for managing the central office's correspondence with customers through the call center and written correspondence
- **Billing Operations** – Responsible for processing customer data used to generate bills and conducting quality assurance reviews of billing data

(1)Ten core processes include: Account Setup/Update, Metering, Billing, Remittance, Inspection / Meter Repair or Replacement, Billing Adjustment, Refund, Collections and Annual Lien Sales and Foreclosures, and Customer Handling (Call Center, Web, Correspondence and Walk-ins)

Booz Allen's review of organizational design involved a series of interviews, working groups and workload inventory tasks focused on three key questions

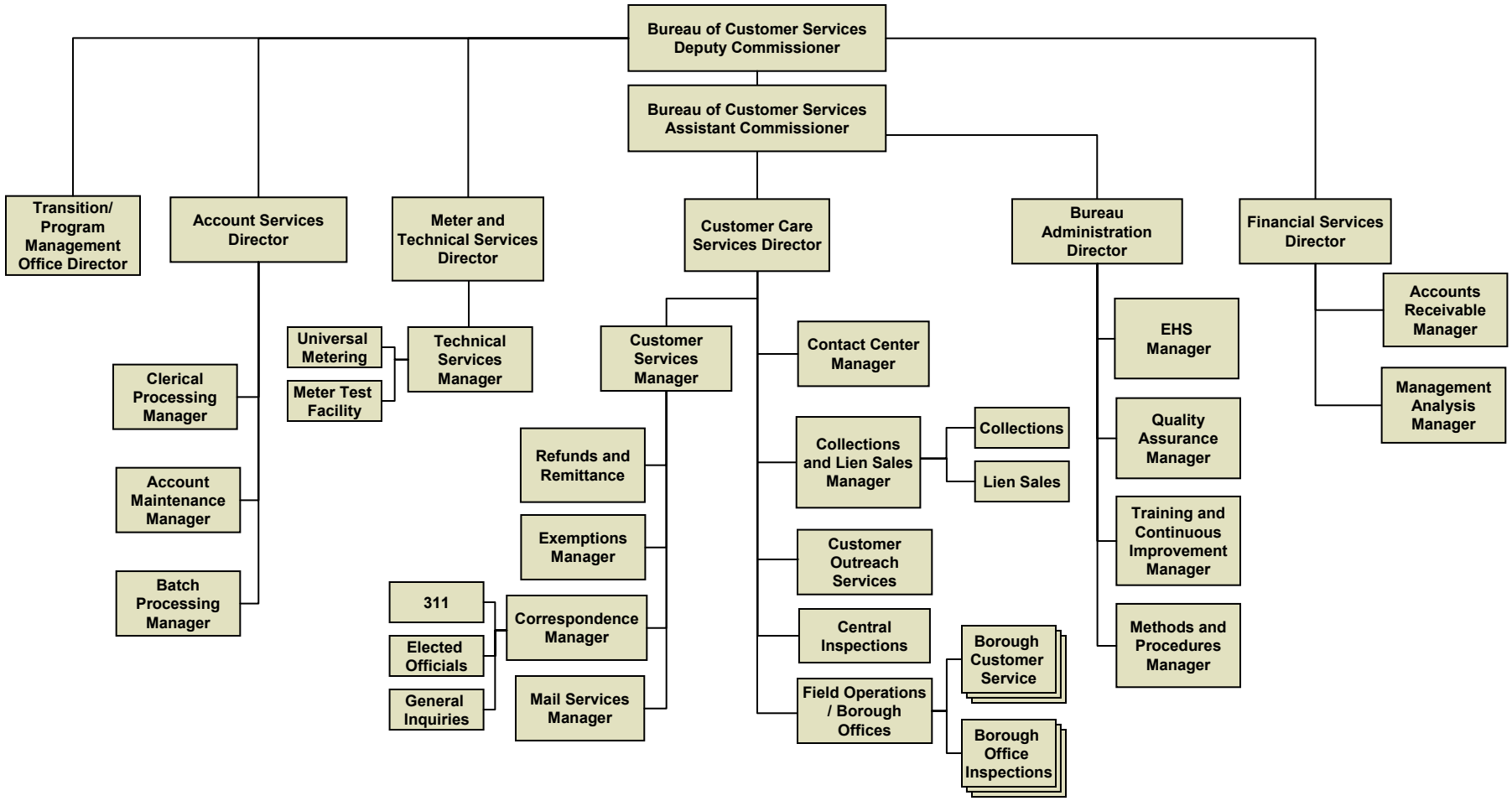
- What are the key issues associated with BCS' current organization structure, core operational processes and workforce?
- How do BCS operations compare to industry best practices, future operating vision and unique customer needs?
- How is workload allocated across BCS, and where are there potential opportunities for eliminating duplicate functions or streamlining current processes?

An analysis of existing organizational structures identified several key challenge areas

- **Workload Balancing:** Workload and staff not distributed proportionally across borough offices
- **Flexibility:** Inability to shift work between the central and borough offices
- **Best Practices Transfer:** Obstacles for knowledge transfer between borough offices
- **Process Standardization:** Variation in procedures and process implementation across borough offices
- **Management Structure:** Organizational structure with unnecessary layers of management

Based on these challenges, Booz Allen developed a proposed organization structure that combines industry best practices and employee feedback with a focus on customers

The new design will help BCS better perform water and sewer billing; water meter installation, replacement and inspection; and promotion of water conservation. Overall, it will support BCS in achieving world-class customer service



Key changes in the proposed design include the creation of new divisions to help BCS in its modernization efforts

Key Changes	Benefits
Creation of temporary Transformation/ Program Management office and director position	Enable BCS transformation through the designation of a principal change manager, responsible and accountable for the technology/ process redesign and implementation
Creation of Financial Services division and director position	Promote better integration and communication between finance functions by grouping linked functions together under the finance director
Clerical processing functions will be managed centrally under the Account Services division	Allow for more consistent processing and ability to distribute workload evenly
Establish Training and Continuous Improvement unit under Bureau Administration	Ensure that customer facing employees are appropriately trained, skilled, empowered and motivated
Collections will become a component of the Customer Care Services division	Promote customer handling strategy though alignment of all customer-facing operations under one centralized unit
Inspections will be managed centrally under the Customer Care Services Division	Reduce number of duplicate inspections
Consolidation of Inspections and Technical Services into one division	Allow for better coordination and more flexibility as new technologies are implemented

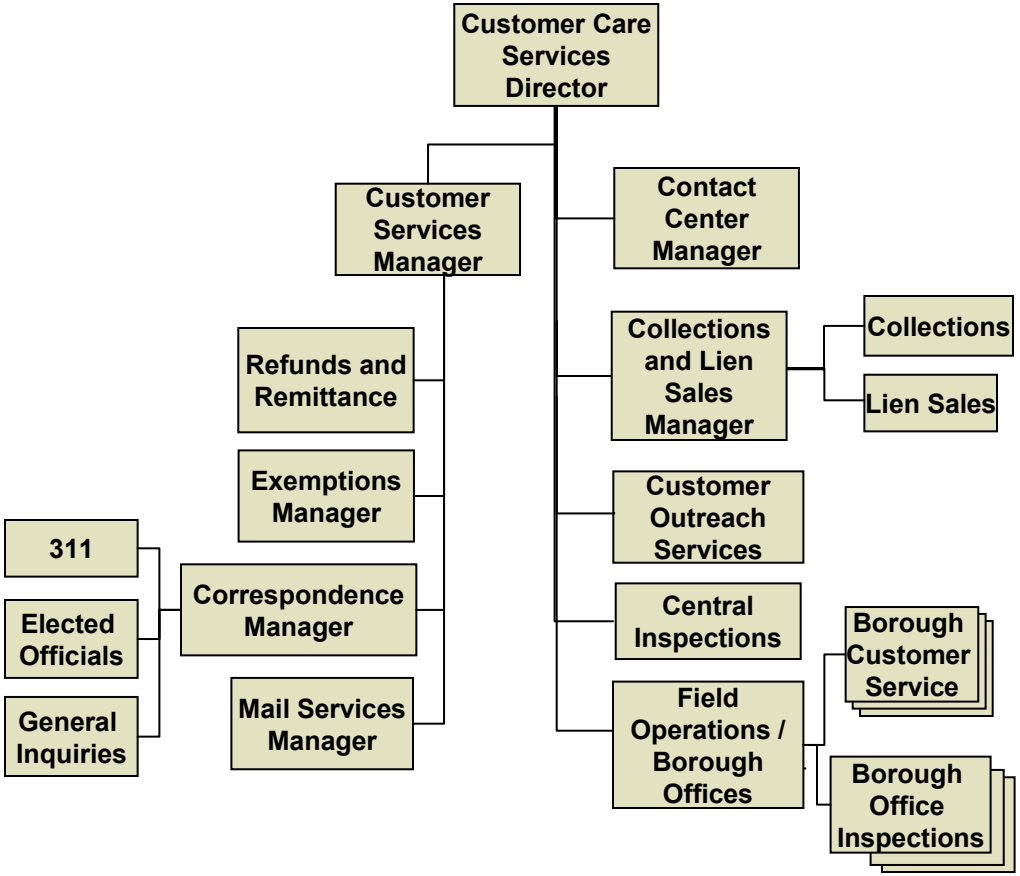
The centralized Customer Care Services division will be responsible for all customer-facing functions

Business Unit Responsibilities

- **Contact Center, Collections** - Responsible for handling all customer calls and managing and tracking problem resolution resulting from phone calls; Responsible for identifying past due balances, corresponding with customers regarding delinquent accounts and establishing and monitoring payment agreements
- **Correspondence -** Responds to and addresses customer inquiries and concerns
- **Mail Services -** Receives incoming mail, responds to simple inquiries and forwards more complex requests to correspondence, verifies and validates addresses, follows up on returned mail
- **Exemptions –** Enroll customers in special billing programs
- **Inspections-** Conduct inspections in response to customer requests or account issues, manage meter reading contract
- **Borough Office Customer Service** - Responsible for permit process and handling all walk-in customer payments and issues
- **Field Operations / Borough Offices**

Benefits

- A tiered customer service model, which most closely resembles how "best practice" organizations structure contact center operations to handle each inquiry with the best available resource (i.e., lowest cost or best skilled, etc.)
- Collections will integrate lien sales and foreclosures



The Finance division will be responsible for the new accounts receivable unit, which includes reporting and analysis functions, remittance, and refunds

Business Unit Responsibilities

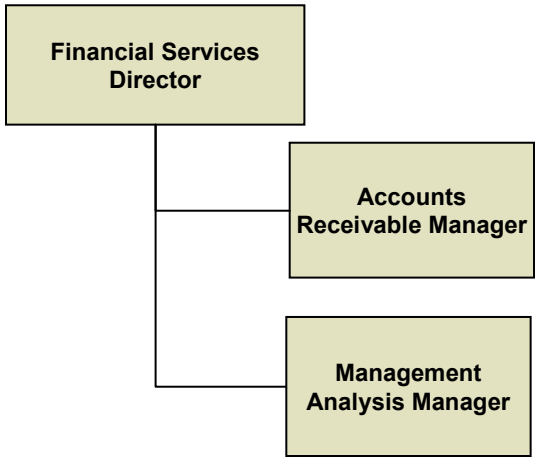
- **Accounts Receivable**
  - Conduct planning and decision making for A/R management strategies
  - Perform monthly A/R reconciliations. Develop monthly A/R management reports and distribute and communicate results to key BCS stakeholders

  Remittance and Refunds
  - Process refund applications and remittances

  Management Analysis
  - Resolve difficult or high-profile account issues, with a focus on delinquent accounts

Benefits

- Increase communication
- Facilitate financial reporting
- Facilitate performance measurement across key finance functions
- Facilitate rate and revenue generation processes
- Strategic approach to financial management



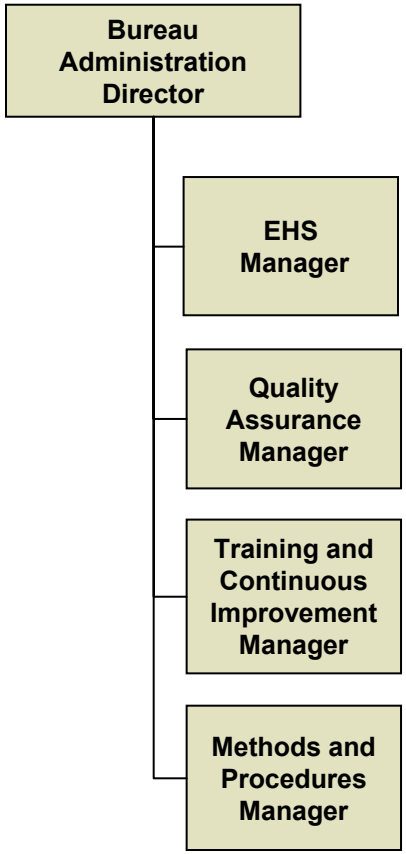
The Bureau Administration division will be responsible for quality assurance, methods and procedures, and training

Business Unit Responsibilities

- **Methods & Procedures -** Identify, document and disseminate standard operating procedures and BCS best practices
- **Training & Continuous Improvement -** Develop new hire and ongoing training, identify and address process improvement opportunities
- **Quality Assurance -** Conduct quality assurance reviews of manual billing adjustments (including activities across all units)

Benefits

- Standard Operating Procedures (SOPs) would be developed for key functions
- More robust quality assurance function would facilitate proper executing of SOPs
- Feedback from Quality Assurance would be incorporated into Training



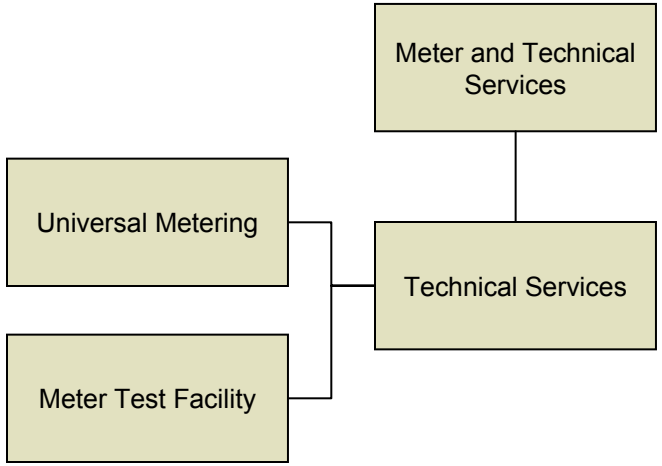
The Meter and Technical Services division will be responsible for water meter installation and replacement as well as R&D process management and new technology implementation

Business Unit Responsibilities

- **Technical Services –** Install meters and administer contracts for meter replacement, manage R&D and implementation of new technologies

Benefits

- Provides more flexibility of staffing as technology and responsibilities change



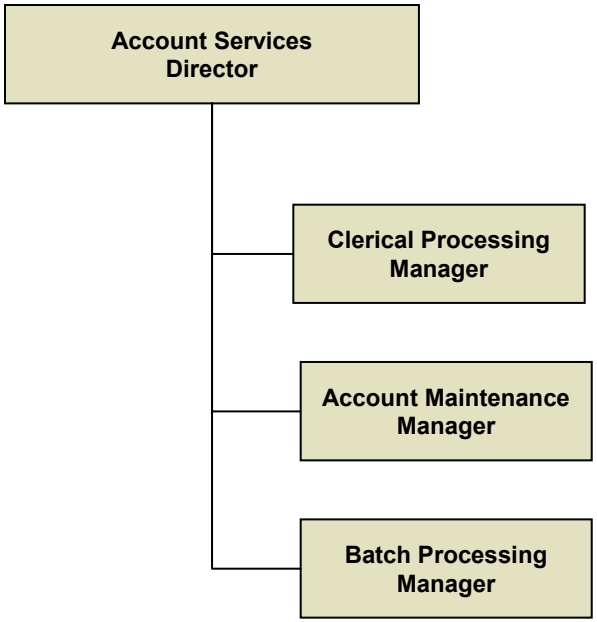
The Account Services division will be responsible for accuracy of customer account data, account management and clerical processing

Business Unit Responsibilities

- **Account Maintenance** - Handle complex account issues
- **Batch Processing -** Review and resolve exception reports generated for meter readings and posted bills
- **Clerical Processing** - Process and closeout work orders

Benefits

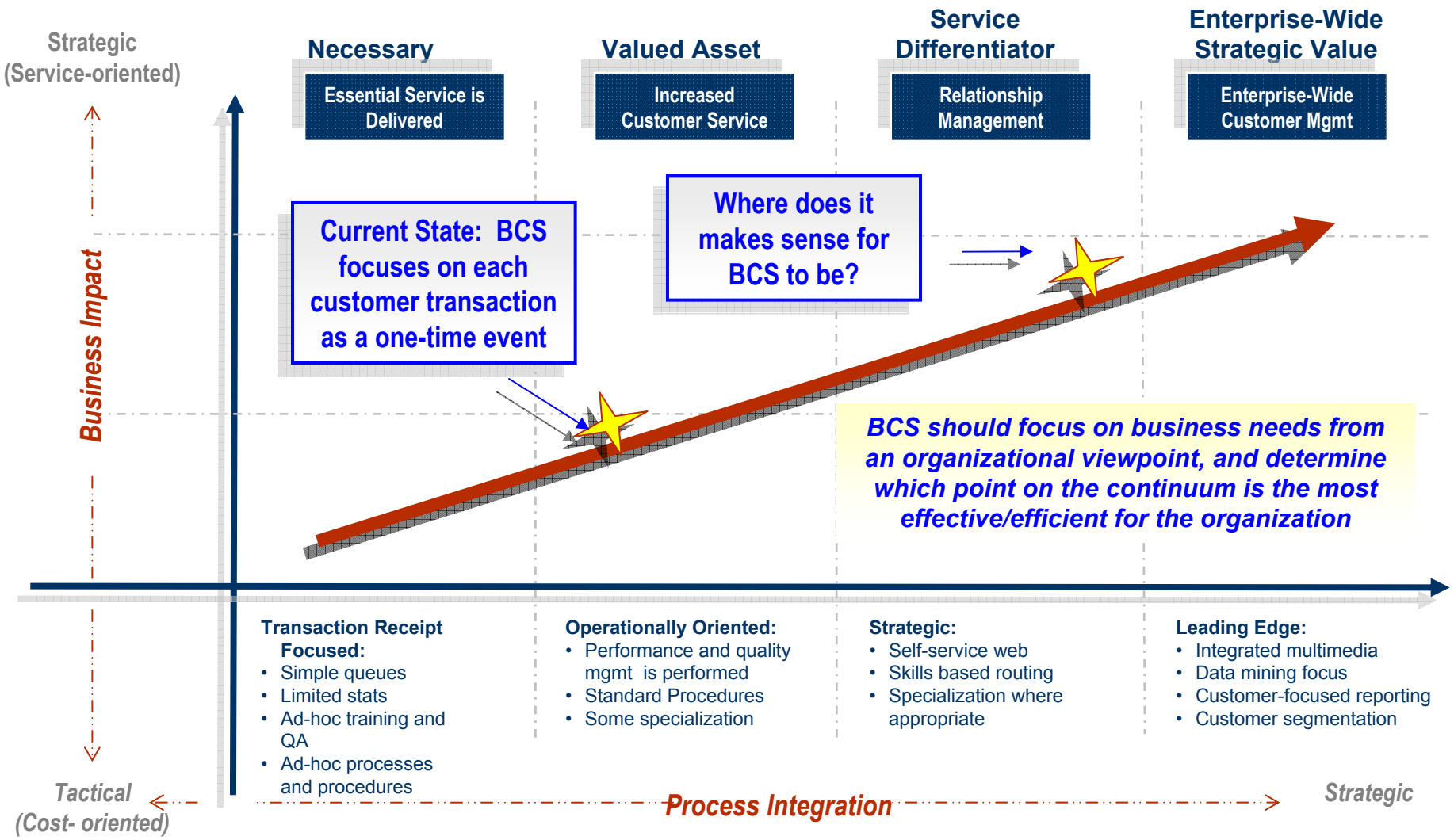
- More integrated account maintenance function which will handle complex cases
- Centralized clerical processing will allow for better controls over processing currently performed in the borough offices



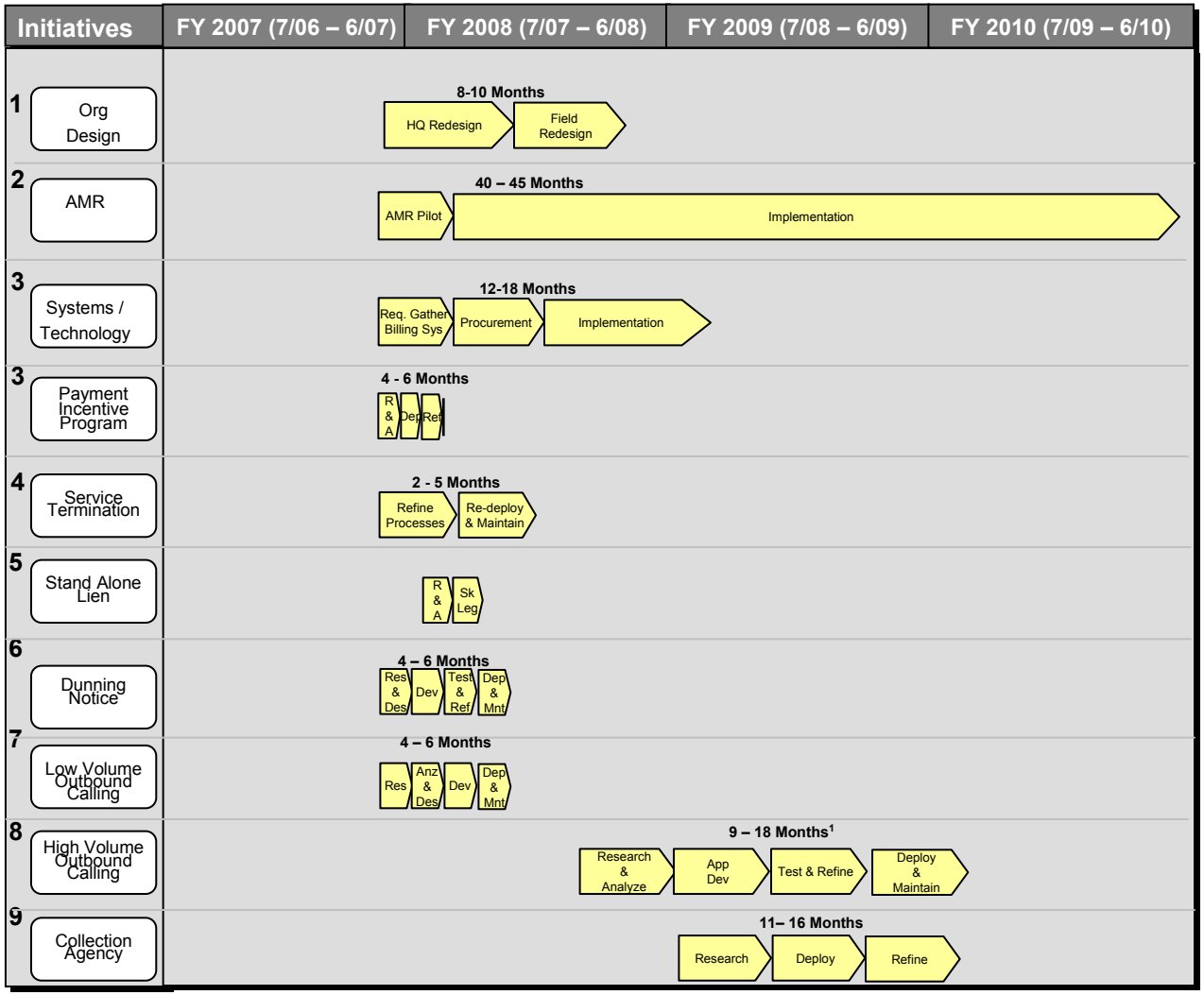
Summary of Organizational Design Observations and Recommendations

	Observed at BCS	Recommended Corrective Action
1.	**There is a lack of standardization for key customer service processes across the organization.** For example, although billing adjustments are performed by employees in five BCS divisions, the billing adjustments policy is not standardized, resulting in decisions about billing adjustment made at the discretion of each unit	**Establish training and continuous improvement as well as methods and procedures units to ensure customer-facing employees are appropriately trained, skilled, empowered and motivated.** Expand quality assurance reviews beyond billing adjustments. For example, a sample of inspections should be reviewed from the point of referral through closeout. Centralize complex billing adjustments via the account maintenance unit
2.	**BCS has limited ability to track and manage workload and staff across borough offices.** Due to the decentralized structure, each borough is responsible for processing any customer inquiries received at the individual borough office. The manual tracking process results in discrepancies between work performed and what is reported. There is also an inability to shift work between the central and borough offices, because manual, paper-based processes do not give the required flexibility to move work, records and staff between boroughs, and alleviate backlog	**Centralize clerical processing functions**, including work order processing and closeout, under account services to allow for more consistent processing and facilitate an even workload distribution. Implement technology solutions to support centralization
3.	**It is difficult to track and manage inspections, resulting in inefficient use of inspection resources.** Multiple inspections are being requested for the same property by different units within BCS, and inspectors frequently work overtime to keep up with the number of inspections. Revenue-generating inspections are not being performed consistently (e.g., re-inspections after violations notices)	**Centralize management of inspections under the field operations unit in the customer care division.** Conduct inspection scheduling through the centralized clerical processing unit and implement criteria that specifies when inspections will be assigned to certain inspection groups

As a next step, BCS should determine where it belongs on the service continuum



The consolidated multi-year collections plan will improve customer service, collection of outstanding receivables, and overall efficiency and effectiveness



(1) The proposed Road Map for the High Volume Outbound Calling treatment option (Auto Dialer) represents the timeline for implementation by DEP. By leveraging DOITT's 311 infrastructure, timeline for outsourcing this treatment option is shortened to two months for a pilot program