City of Philadelphia

Report on Findings

February 26, 2013

FTI CONSULTING

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Table of Contents

I. Executive Summary……………………………………………………………………………………(p.5)

II. Revenue Initiative………………………………………………………………………………………(p. 29)

- i. Revenue
- ii. Fire (EMS Transport Fee Collection)
- iii. Office of Innovation & Technology (Wireless Network)
- iv. Water (Revenue Collection)
- v. Streets (Refuse Collection Fee)
- vi. Police (Reimbursable Overtime Program)
- vii. OAR (Burglar, License, SWEEP)
- viii. Licenses & Inspections

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Table of Contents (cont'd)

III. Cost Initiative……………………………………………………………………………………………(p.75)

- i. Purchasing
- ii. Fleet (Fuel Cost Management)
- iii. Prisons (Act 22 Savings)
- iv. Office of Innovation & Technology
  - i. Verizon Bill Audit Results – Technolab
  - ii. Architecture Development
- v. Energy Office
  - i. Energy Efficiency Program
  - ii. Street Lighting
  - iii. PECO Bill Review
- vi. Department of Public Property
  - a. SEPTA Rebate
  - b. Capital Projects
  - c. Space

IV. Appendices……………………………………………………………………………………………(p.147)

- i. Revenue: Market Research on Best Practices for Collection
- ii. Energy Office: Alternative Lighting Program Research

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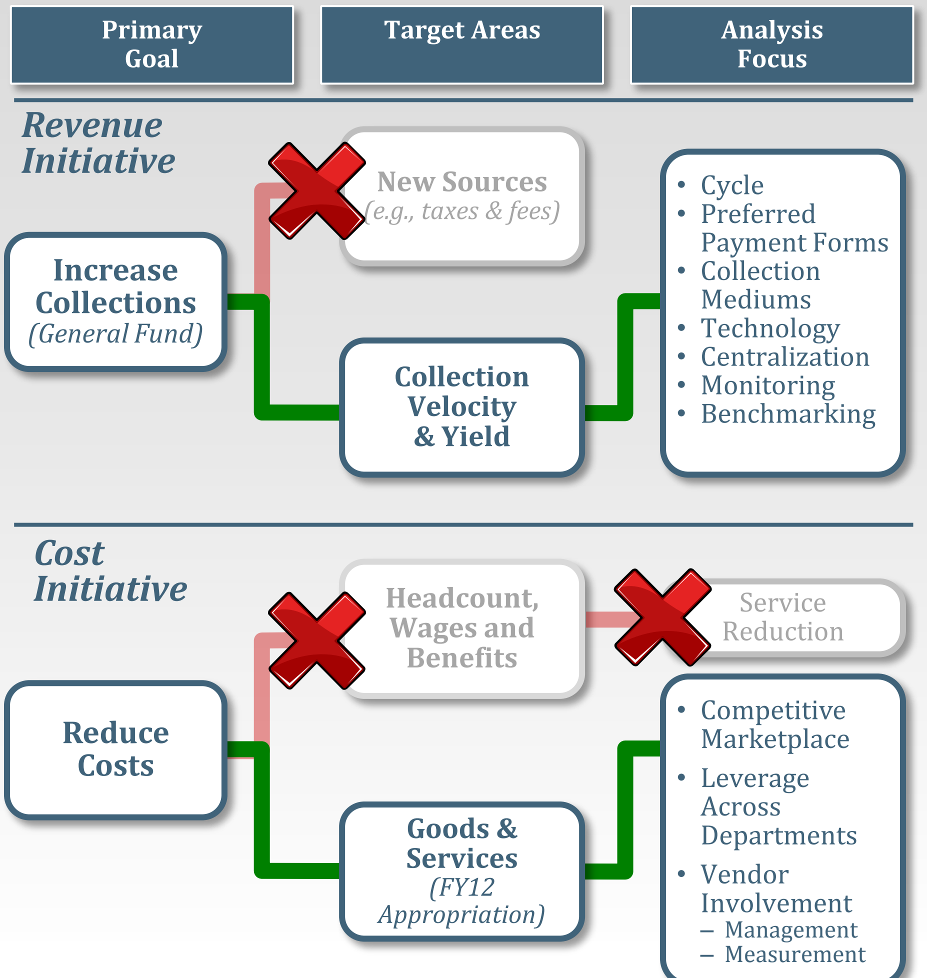
I. Executive Summary

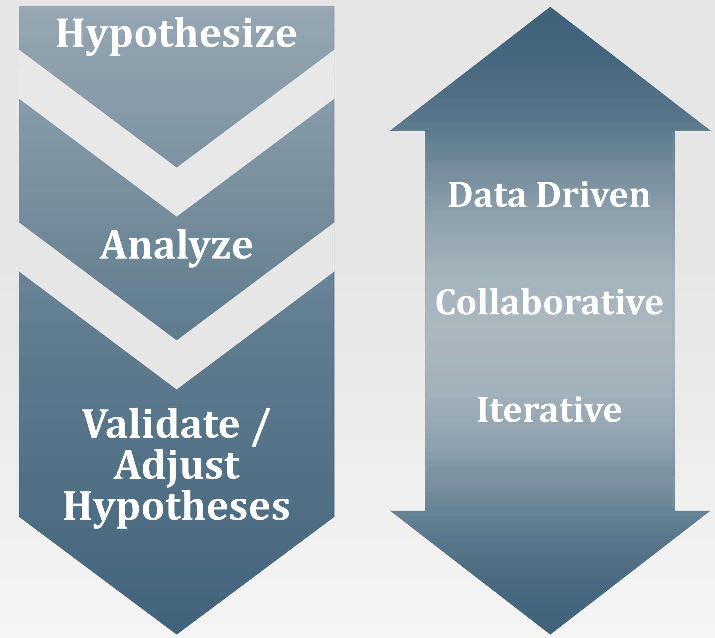
Executive Summary:

Our Scope and Approach

Scope



Approach



Categorize Recommendations

Prioritize Recommendations

Framework for Categorization of Recommendations

Identified savings and revenue improvement opportunities were categorized into three categories along a change continuum, distinguishing longer-term potential transformation changes that rely on further definition of the City's vision for a "re-invented" Philadelphia, from those shorter-term actions that can be more immediately realized within the existing organization, culture, policy directives and regulatory constraints.

Mayor's Goals

1. Philadelphia becomes one of the safest cities in America.
2. The education and health of Philadelphians improve.
3. **Philadelphia is a place of choice.**
4. Philadelphia becomes the greenest and most sustainable city in America.
5. **Philadelphia government works efficiently and effectively, with integrity and responsiveness.**

Our Scope

Our Recommendations – Revenue Improvements and Cost Reductions

Incremental | *Step Change* | *Transformational*

Short-term — *Change Continuum* → *Long-term*

	Short-term	Long-term
Nature of Change	• Discrete actions • Departmental processes • Departmental policy	• Integrated processes • Organizational • Cultural • City policy • Regulatory
Impact	• Immediately actionable • Quantifiable	• Pervasive and sustainable • Requires further definition of vision and parameters/ constraints

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Executive Summary:

Estimated Impact from Recommendations

The figures below represent the estimated impact from certain of FTI's recommendations where sufficient data was available for quantification. In addition to the amounts estimated below, FTI expects the City to realize substantial value from our other revenue and cost recommendations identified in this report deemed To Be Realized ("TBR")

$ in millions		Low		High	
Department (Category)	**Continuum**	**One-Time**	**Annual**	**One-Time**	**Annual**
Revenue Initiative					
1. Fire (EMS Transport Fee Collection)	Step Change	$ 2.0	$ 2.5	$ 5.0	$ 5.5
2. OIT (Spectrum Monetization)	Incremental	-	0.2	-	0.5
3. Streets (Refuse Collection Fee)	Incremental	3.2	-	3.2	1.5
4. Police (Reimbursable Overtime Program)	Incremental	-	1.4	-	2.7
Subtotal Revenue Initiatives		$ 5.2	$ 4.1	$ 8.2	$ 10.2
Cost Initiative					
1. Fleet (Fuel Cost Management)	Step Change	$ -	$ 4.3	$ -	$ 4.3
2. Prisons (Act 22 Savings)	Incremental	2.3	1.0	5.0	2.6
3. OIT (Verizon Bill Audit Results)	Incremental	0.7	-	0.7	-
4. OIT (Verizon Policy Changes)	Step Change	0.5	0.9	0.5	0.9
5. OIT (Repurpose Spectrum)	Step Change	-	0.3	-	1.0
6. OIT (Eliminate Tower/Backhaul Leases)	Step Change	-	1.0	-	1.0
7. Energy (Efficiency Incentive Program)	Step Change	-	0.2	-	0.5
8. Department of Public Property (SEPTA Rebate)	Incremental	5.0	-	5.0	-
9. Space (Reducing Existing Leased Footprint)	Step Change	(4.1)	3.4	(16.6)	9.9
Subtotal Cost Initiatives		$ 4.4	$ 11.1	$ (5.4)	$ 20.2
Total Revenue and Cost Initiatives		$ 9.6	$ 15.1	$ 2.8	$ 30.4
Annualized over 5-year Strategic Plan		$ 9.6	$ 75.6	$ 2.8	$ 152.1
Total over 5-year Strategic Plan for General Fund		**$85.2**		**$154.9**	
Non-General Fund Opportunities					
1. Water (Unbilled Usage)	Step Change	$ 2.0	$ -	$ 5.0	$ -
2. Water (A/R Amnesty Program)	Step Change	7.5	-	7.5	-
3. Energy (LED Street Lighting)	Step Change	-	1.0	-	1.0
Total Non-General Fund Opportunities		$ 9.5	$ 1.0	$ 12.5	$ 1.0
Annualized over 5-year Strategic Plan		$ 9.5	$ 5.0	$ 12.5	$ 5.0
Total over 5-year Strategic Plan for Non-General Fund		**$14.5**		**$17.5**	

Precision Key

- High
- Medium
- Low

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Notes:

- The figures above are based on the best available data and the achievement of these savings is based on successful implementation

Revenue Collection – Process Recommendation

Collection of revenue is spread across many different departments, and all departments (aside from Revenue) are focused on their core purpose (e.g. Police, Fire, Streets) and revenue collection is a secondary duty, often performed by a third party

Key Recommendations

A. Create a culture of accountability around collections (tax and non-tax)

1. Appoint a Chief Collections Officer whose duty is to increase collections
   - i. Collectors of revenue across departments will all be reporting to one person, whose sole duty is to maximize collections through efficient practices
   - ii. Quickly identify negative trends in collections for corrective action
   - iii. Share best practices among departments and third party vendors
2. Develop central reporting using uniform dashboards
3. Develop structures to incent departments to increase collections; tailoring incentives by department
   - i. Work with budget office to set stretch targets with “revenue-share” agreements
4. Require more explanation from departments on budget to actual variances in revenue collected

Estimated Impact

One-Time: N/A

Recurring:

A1 – A4: TBR

Subtotal: TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

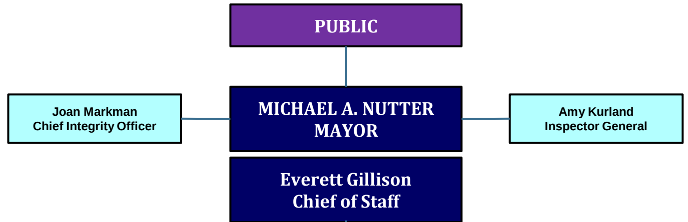
Source: FTI Analysis

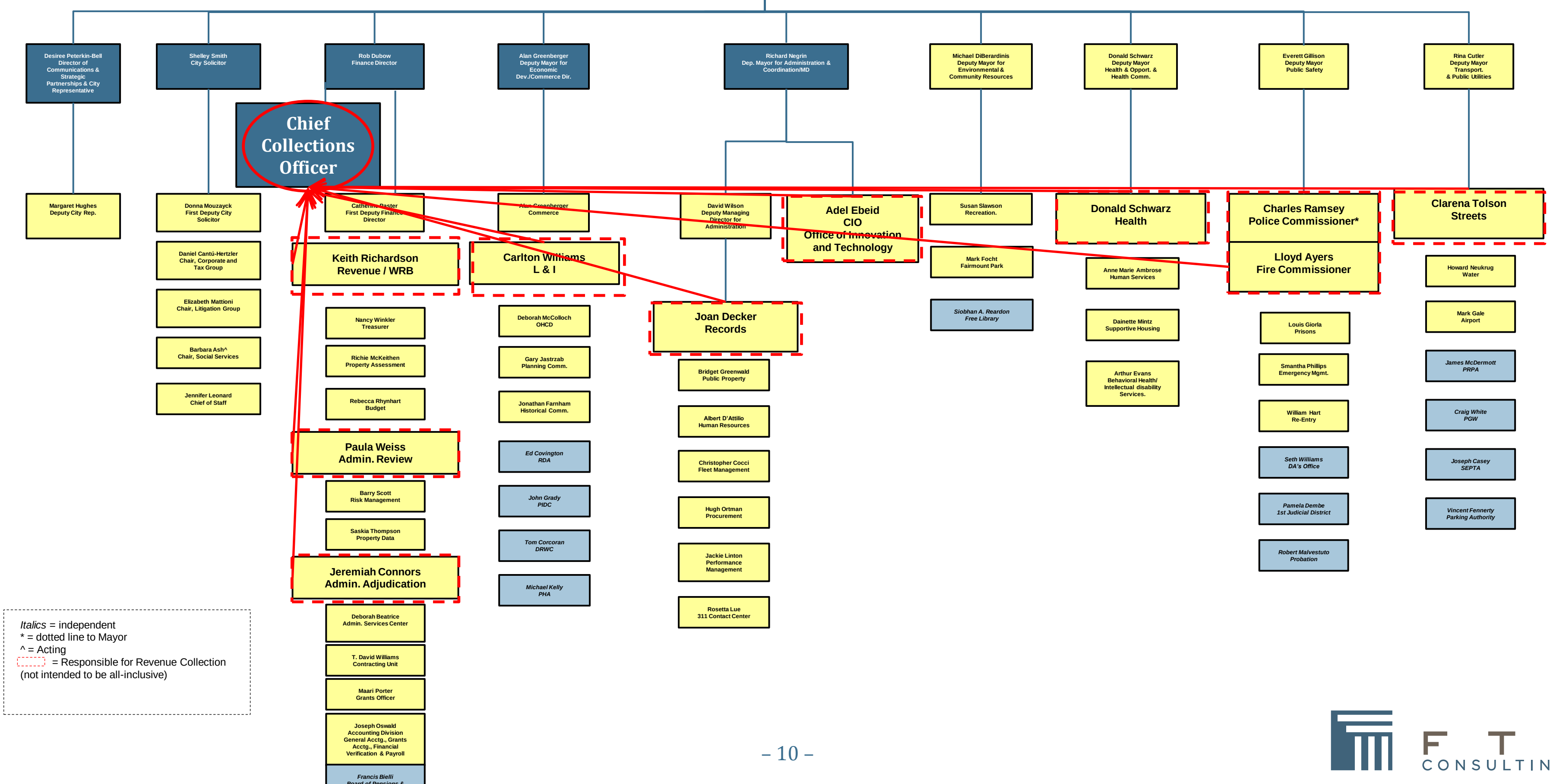
Executive Summary:

Proposed Organizational Chart with Chief Collections Officer (“CCO”)

Observation:
Under the proposed CCO, the collectors of revenue will all be reporting to one person, whose sole duty is to maximize collections through efficient practices *(note: tax lawyers would maintain existing reporting structure)*

Positioning & Title:
Initially, it is likely most effective to have the CCO report directly to both the Mayor’s office and the Finance Director with the intention of reverting back to the reporting structure outlined below once the role has been institutionalized





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Executive Summary:

Revenue – Department Specific

Key Recommendations

- **Background**
  - Detailed data requested from the Revenue Department by FTI (other than real estate tax data) was not provided by the department, which cited privacy concerns
  - As a result, FTI's observations with respect to the Revenue Department are limited to specific comments regarding collection improvement strategies with respect to real estate taxes

A. Additional real estate tax strategies

1. Coordinate with mortgage companies on collecting delinquent real estate taxes
2. Shorten on-time payment window and consider real estate taxes past due on 2/1 or 3/1 (vs. 3/31 today) – *(requires changes to the Code and potentially state law)*
3. Accelerate delinquency status timing (move up from 12/31 to 8/30, which is 5 months after the taxes are due) – *(requires changes to the Code and potentially state law)*
4. Publish delinquent taxpayer list and get press coverage

B. Bring best practices to collection of non-real estate taxes

1. Move more accounts down an enforcement path (86% of dollars are not with a collection agency, TRB, tax court, bankruptcy or payment agreement)
2. Explore the effect of offering discounts for prompt payment

Estimated Impact

One-Time:	Recurring:
A1 – B2: TBR	**A1 – B2:** TBR
Subtotal: TBR	**Subtotal:** TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

Fire – EMS Transport Fee Collection

EMS collected $34.3MM and $27.2MM in FY11 and FY12, respectively. EMS collections are 21% behind budget for the first four months of FY13 and close to $100MM in receivables billed by ACS (former collections vendor) in January 2012 and calendar year 2011 have not been actively chased as of November 2012. The City's collection rate through 10/12/12 was 12.9% vs. industry benchmarks of 45-60%

Key Recommendations

A. Intermedix (current collections vendor) Compensation Structure

1. Implement scaled pricing structure that increases the commission rate as Revenue to the City reaches certain thresholds
2. Require monthly meetings to set performance expectations and review results
3. Remove the fee cap (or increase cap if Charter prevents fee cap to incent Intermedix)

B. Go Forward Collections & Billing

1. Revise invoices to be more aggressive, encourage payment plans for uninsured, provide notice of referral to collection agencies
2. Employ collection agencies to collect receivables over 120 days old
3. Require outbound calling for uninsured; encouraging payment plans or potential settlement discounts
4. Increase contracting with more insurance companies to ensure payments are sent directly to the City and not through the patient (despite potential rate cap that may ensue)
5. Increase focus on self-pay, or uninsured, population to improve collections. Only 235 of 46,350 Self Pay accounts that have been billed since February 2012 have made a payment (as of 10/12/12)

C. Legacy ACS Outstanding Balances

1. Aggressively track the status of claims with Medicare, Medicaid and insurance companies related to ACS receivables
2. Offer a discount to uninsured accounts for prompt payment of ACS receivables through an outbound calling campaign

Estimated Impact

One-Time:	Recurring:
B1- B5: **$2.0MM - $5.0MM**	A1 – B5: **$2.5MM - $5.5MM**
C1, C2: **TBR**	
Subtotal: **$2.0MM - $5.0MM**	Subtotal: **$2.5MM - $5.5MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

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Executive Summary:

OIT – Wireless Network

The principal assets comprising the wireless network are spectrum (Public Safety Band Spectrum and 6 GHz backhaul spectrum) and the equipment previously purchased. The Public Safety Band has been allocated to the City by the FCC. The 6 GHz spectrum is unlicensed

Key Recommendations

A. Monetize / Utilize Idle Assets

1. Develop an RFI to determine interest from carriers to provide the City a managed network service using the 50 MHz of available spectrum (i.e., the Public Safety Band Spectrum), enabling new, high availability services for first responders while minimizing the capital outlay by the City
   i. Commercial carriers are interested in the spectrum to migrate video services from their current networks
   ii. FTI's estimates are based upon an estimated revenue-share model that would enable the carrier to use excess capacity within the Public Safety band for commercial purposes (no current comparable transactions exist)
2. Where appropriate, implement microwave links (6 GHz spectrum) to replace recurring costs with Verizon
   i. i.e., replace service currently provided by Verizon with existing City assets, which would entail implementation costs but yield recurring savings
   ii. The City must analyze the cost benefit on a building-by-building basis, to include the additional cost of site acquisition for antennas and radio systems

B. Eliminate carry costs for outdated technology whereby investments costs necessary to bring technology current outweigh benefit of network

1. Eliminate tower/site leases where possible (note - Some sites will have to be maintained to implement the microwave links listed above)
2. Eliminate Zayo (provider of fiber bandwidth services) internet backhaul contract; or repurpose the contract to eliminate other expense
   i. Current contract is unused as it was originally intended to support a City wide WiFi rollout

Estimated Impact

One-Time: N/A

Recurring:

A1: **$0.15MM-$0.5MM**

A2: **$0.25MM - $1.0MM**

B1: **$0.6MM**

B2: **$0.4MM**

Subtotal: **$1.4MM-$2.5MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Water – Increased Collections

The Water Revenue Bureau's A/R grew 12% over the past 2 years (excluding storm water charges and City accounts). Additionally, over 10,000 accounts have received at least four months of zero use bills (i.e., active accounts that are only being charged service fees and not for their water and sewer usage)

Key Recommendations

A. **Unbilled water usage**

1. Water Department should hire additional crews on a temporary basis to deal with with the backlog of zero-read meters, receive readings from these meters and bill for water that has been used
2. Waive 50% of charges related to usage over 12 months old (once a meter is properly read) and waive penalties

B. **Amnesty program** *(requires passing of an ordinance)*

1. Provide a one-time amnesty of penalties in exchange for paying the "principal" in full

C. **Shorten billing and shut off timeline**

1. Revise the billing timeline to payment due in 15 days, with penalties accruing after that point (vs. currently being due in 23 days and penalties accruing at 61 days) - *(requires passing of an ordinance)*
2. Revise the shut off timeline to 1 shut-off notice for residential properties (vs. 2 notices today) – *(requires changes to state law)*

D. **Review and publicize large delinquent accounts more frequently**

1. Monitor delinquent accounts over $15,000 more strategically
2. Publish a list of high dollar amount delinquent accounts once a quarter and create a press release for the media each time to help keep focus on the issue

E. **Encourage automatic monthly payment with Zipcheck**

1. Offer a one-time discount for signing up (with a 6 month commitment required)

F. **Explore termination or modification to moratorium** *(requires passing of legislation)*

Estimated Impact

One-Time:

A1 – A2: $2.0MM - $5.0MM

B1: $7.5

Subtotal: $9.5MM - $12.5MM

Recurring:

C1 – F: TBR

Subtotal: TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

Streets – Refuse Collection Fee

Key Recommendations	Estimated Impact: One-Time	Estimated Impact: Recurring
A. Changes to Billing Process 1. Switch from annual billing, primarily in arrears, to quarterly in advance 2. Decrease the time period between invoice date and the payment due date to 30 days (vs. 75 days provided in 2012 and 105 days in 2011 and 2010) 3. Add online payment instructions on the face of the bill 4. Add the amounts outstanding from prior periods on the face of the annual bill **B. Changes to the Streets website** 1. Add "Pay" button to the home page, similar to how it is presented on phila.gov, to prominently display the payment options for all Streets related fees and fines 2. Add "quick link" for the Refuse Collection Fee to provide an easy route for individuals to learn about the provisions, payment instructions, FAQs, etc. 3. Add online capability for the completion of the fee exemption form **C. Enforcement** 1. Continue path / initiative to try and assert liens on delinquent accounts 2. Consider usage of collection agency for amounts outstanding greater than 1 year 3. Report delinquent accounts to the credit bureau	**One-Time:** **A1: $3.2MM** **A2 – C3:** TBR **Subtotal: $3.2MM**	**Recurring:** **A1: $0.0MM - $1.5MM** **A2 – C3:** TBR **Subtotal: $0.0MM - $1.5MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Police – Reimbursable Overtime Program

The Reimbursable Overtime Program has been established to provide the opportunity for the Police Department to contract out sworn police personnel, not scheduled for district/unit assignment, and equipment at established rates ("cost" plus 10% administrative fee) to serve as an additional deterrent to crime through their presence

Key Recommendations

A. Changes to Billing Rate

1. Implement cost recapture adjustment to personnel hourly billing rate to include benefits cost (~20% increase); phased in ratably over two years beginning April 1, 2013
   - i. With this adjustment, the City's pricing structure will fully include the cost of putting an uniformed officer "on the street"
   - ii. Officers are made available for private hire as a result of their fully loaded cost being borne by the City
2. Communicate plan proactively to top 25 customers
3. Review pricing of vehicle / equipment rates annually, working in conjunction with the Fleet department and maintain the supporting records on file

B. Operational Changes

1. Implement system to improve controls and automate customer request-to-billing process
   - i. Currently this is handled through manual paperwork completion
2. Implement online payment function
   - i. Current ACH process is telephonic and prohibits customers from paying multiple invoices with ease (e.g., have to enter in payer information for each invoice, instead of entering once for all outstanding invoices)

Estimated Impact

One-Time: N/A

Recurring:

A1: $1.4MM - $2.7MM

A2 – B2: TBR

Subtotal: $1.4MM - $2.7MM

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

OAR – Revenue Streams

Key Recommendations	Estimated Impact	
	One-Time:	**Recurring:**
	A1 – C4: TBR	**A1 – C4:** TBR
	Subtotal: TBR	**Subtotal:** TBR

A. Increased Coordination

1. Increase coordination with alarm companies OR compel alarm companies to operate in compliance with Code (Burglar Alarm License)
   i. Philadelphia Code puts the onus for billing and collecting on the alarm company; however, in practice, the City is the party handling the billing / collecting without support from the alarm companies
2. Improve data capturing process at dispatch level to increase accuracy of billing information to translate into higher collections (False Alarm Fine)
   i. e.g., Provide 911 dispatch a formal guide on the specific information required to be captured

B. Collections and Billing

1. Offer a one-time increase in the ACS commission rate (e.g., 25%) for collections of accounts greater than 120 days outstanding as of a certain date (e.g., 12/31/12)
2. Require outbound calling, encouraging payment plans or potential settlement discounts
3. Employ collection agencies to collect receivables over 120 days old

C. Amend ACS Compensation Structure

1. Implement scaled pricing structure that increases the commission rate as annual revenue reaches certain thresholds
2. Require monthly meetings to review performance
3. Ensure ACS management is well aware of the City's revenue goals and stretch goals for these fees / fines
4. Remove the fee cap (or increase cap to improve optics if Charter prevents fee cap)

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

Licenses & Inspections

Key Recommendations	Estimated Impact	
	One-Time:	**Recurring:**
A. Operational Changes 1. In addition to the educational campaign on rationale/benefits of uniform licensing and inspection protocols, administer more aggressive public campaign on ramifications for non-compliance i. Effort will expand self-reporting population, where the overwhelming majority of revenue results from self-reporters and not through enforcement 2. Reorient agents to focus more on enforcement; consider assessing penalties on the operations-side to compel compliance 3. Ensure business transformation process is being actively managed in connection with systems upgrade i. i.e., the expected new system is not the sole solution – need to reform business process for effective implementation ii. L&I appears to be keenly aware of the change management aspects of this potentially multi-year project 4. Ensure linkage exists between new system and TIPS 1. e.g., automated flags in the system to alert L&I personnel when an application has been submitted do work at an address that is delinquent on its property taxes **B. Prohibit use of personal checks** 1. On average, approximately $255,000 in checks have bounced in each of the last four fiscal years from businesses and individuals 2. It is unlikely the City would be able to prohibit the use of business checks given the substantial volume of licenses and permits that are currently paid through check; however, the City may be able to incorporate such a policy change in connection with A2 above	**A1 – B2:** TBR **Subtotal:** TBR	**A1 – B2:** TBR **Subtotal:** TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

Purchasing

There may be a significant opportunity to reduce the cost of purchased goods and services by re-engineering the purchasing processes

Key Recommendations	Estimated Impact	
A. Expand charter of professional services group to include centralized vendor / contract management of Professional Services contracts and consider consolidating Professional Services and SS&E purchasing functions into a single organization – a *Purchasing Center of Excellence* – to capture benefits of shared learning, best practices, and organizational development B. Implement vendor / contract management best practices including ongoing compliance monitoring, establishment of key performance metrics for major vendors, linkage of key performance metrics to contracts, implementation of continuous improvement requirements, and implementation of vendor scorecards for key vendors C. Consider expanding the use of major category buyers (i.e., create category buyers for more categories) and continue leveraging in-house department knowledge by teaming with buyers in centralized purchasing functions (see page 81) D. Establish best practices to enhance market research process and capabilities to support major category buyers and process (e.g., conducting exit interviews, regular focus groups for major buying categories and across major buying categories) E. Support implementation of an eProcurement system to automate the purchasing process and provide a richer data environment for the analysis and management of competitively bid SS&E contracts, and to provide a substantially improved unified front-end for both Professional Services and SS&E vendors (see page 82) F. Continue to aggressively pursue co-operative SS&E purchasing opportunities G. Consider multiple rounds of bidding as part of the SS&E purchasing process (i.e., publish winning bid after round 1 and open bidding process again) H. Broaden composition and scope of the PhillyStat working group focused on increasing competition in purchasing 1. Add vendors to the working group 2. Establish a process and identify tools (e.g., "exit interviews" for vendors who elect not to pursue contract opportunities, focus groups, surveys) to understand key drivers of vendor behavior (i.e., decisions to pursue or not pursue opportunities and pricing decisions); utilize this process and toolkit to support the working group's analyses and transition to the City's purchasing functions to embed in their processes 3. Charter a sub-Committee to the PhillyStat working group to: (i) quantify the impact of suppressed competition on City costs resulting from social policies and practices; (ii) quantify the impact on City costs of each element of current standard terms and conditions and any other identified cost drivers affecting vendor pricing – build Vendor Cost Waterfalls (see page 79); (iii) utilize these cost assumptions to facilitate a comprehensive review of terms and conditions and other city policies and practices to recalibrate as appropriate	**One-Time:** **A-H:** TBR **Subtotal:** TBR	**Recurring:** **A-H:** TBR **Subtotal:** TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Executive Summary:

Fleet

Key Recommendations	Estimated Impact	
	One-Time: N/A	**Recurring:**

Key Recommendations

A. Fuel Cost Management

1. Implement hedging program by (i) contracting with a third party for this service (e.g., financial institution, hedging specialty firm), (ii) working with existing fuel supplier (in consultation with external advisor), or (iii) hiring an expert in-house
   - i. FTI's illustrative hedging program (using a financial hedge approach), if employed in FY12, would have reduced the fuel deficit by \$4.3MM (\$2.7MM related to gasoline and \$1.6MM related to diesel)
   - ii. Evaluate current and expected market prices when setting budgeted per gallon fuel costs
2. Form fuel-purchasing partnership with SEPTA to achieve lower per-gallon rates

B. Asset Life-Cycle Management (i.e., vehicles)

1. Develop monthly dashboard reporting through new system to track key metrics driving asset-management policies / targets
   - i. Asset management system overhaul is step in right direction to improving operations management

C. Asset Purchasing & Departmental Accountability for Usage

1. Explore budgetary mechanisms to hold departments accountable for the usage and replenishment of Fleet assets (e.g., vehicles) as these interests are currently not aligned

Estimated Impact

One-Time: N/A

Recurring:

A1: \$4.3MM

A2: TBR

B1: TBR

C1: TBR

Subtotal: \$4.3MM

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

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Executive Summary:

Prisons – Act 22 Savings

Key Recommendations

- **Background**
  - Act 22 caps the fees and rates that medical providers can charge for health care services provided to inmates in county and state correctional facilities; a portion of these costs are funded by the federal government ("Qualified Inpatient Match")
  - As a result of Act 22, the cost per inmate for inpatient care should decline by 50%, at the very minimum, with additional savings realized from Qualified Inpatient Match inmates

A. **Act 22 Savings**

1. Liquidate any encumbrances remaining from FY12 and FY13 to capture these savings
2. Decrease FY14 budget to reflect the decreased run-rate

Estimated Impact

One-Time:

A1: **$2.3MM - $5.0MM**

Subtotal: **$2.3MM - $5.0MM**

Recurring:

A2: **$1.0MM - $2.6MM**

Subtotal: **$1.0MM - $2.6MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

OIT – Verizon Voice and Data Charges

FTI partnered with Technolab Corporation to assist with the Verizon voice and data charge audit

Key Recommendations

A. Billing Errors

1. Enlist 3rd party specialist for comprehensive bill auditing at least annually
2. Include desired specifications to improve Verizon's online customer interface during the next contract renewal (or within the RFP) and explore expanding in-house applications to improve tools available to assist OIT with its monthly bill review

B. Policy Change / Enforcement

1. Track federal, state and local tax charges on a monthly basis, formally record amounts and require supervisor review / sign-off
2. Charge Pension, Aviation and Water for their telecom usage, formally record amounts and require supervisor review / sign-off
   - i. Charges related to the Pension and Aviation funds were identified and it is not clear how the charges compare with the Purchase Orders issued towards the beginning of the fiscal year to cover such charges
   - ii. Charges should be tracked on a monthly basis by OIT (e.g., 215-496 extensions and charges related to 215-937-6800)
   - iii. Require separate invoicing from Verizon on non-General Fund accounts
3. Block outbound 411 calls from City lines
4. Apply 3rd party billing block on all accounts that were "slammed" in the past year
5. Review usage by user periodically to ensure appropriate business usage
   - i. FTI noted there is a wide range of monthly charge amounts for individuals; this may be justified based on usage, but as a matter of policy the City should confirm via selected audits of employee usage
6. Verify Local Rate Discount is Being Applied

Estimated Impact

One-Time:

A1: **$0.7MM**

B2: **$0.5MM**

B5: TBR

B6: TBR

Subtotal: **$1.2MM**

Recurring:

A1: TBR

A2: TBR

B1: **$0.3MM**

B2: **$0.5MM**

B3: **$0.05MM**

B4: **$0.01MM**

B5: TBR

B6: TBR

Subtotal: **$0.9MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: Technolab & FTI Analysis

OIT – Architecture Development

FTI participated in an all-day working session with OIT and concurs with the current overall approach of prioritizing the architecture to gain key user awareness of the benefits of unified communications

Key Recommendations

A. Upgrade OC-48 systems with 10G MPLS systems, which will better support implementation of higher reliability network services later

B. Initiate site surveys to develop better understanding of both location and organizational communications requirements

C. Initiate the development of "On Demand" services RFP

1. On demand services would enable the City to minimize idle capacity; paying only for what the City uses rather than fixed "pipes"
2. Baseline architecture needs to be documented, as well as financially modeled, to best leverage the capabilities of on-demand and other cloud services

D. Concurrent with development of the RFP, OIT needs to refine key policies to ensure the City can support user requirements while managing costs

1. Policy definition and enforcement are equally important

E. Other Areas for Further Analysis

1. Implement process such that OIT can identify other City planned fiber builds to better leverage grants to other departments for telecom infrastructure
2. On-Demand RFP development
3. Creation of financial model to forecast both capital and operational costs of the targeted network
4. Opportunities to create value added services for City residents

Estimated Impact

One-Time:

A – E: TBR

Recurring:

A – E: TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Energy Office – Energy Efficiency

Key Recommendations

- **Background**
  - The City spends ~$21MM on electricity for the department's under the General Fund. Tracking and payment of energy bills is done centrally, therefore departments do not have an incentive to curb their day-to-day energy use
  - The City spends another ~$10MM on electricity for street lighting, with ~75% of this cost relating to distribution (including a monthly fee for poles), which depends on PECO's rates. The City has done extensive work to bring down these costs, even taking legal action. The other 25% of this cost relates to supply, which could be reduced through LED bulbs

A. **Energy efficiency measures**

1. Implement an Energy Efficiency Incentive Program
   - i. Begin a pilot program of a few departments and focus solely on electricity usage
   - ii. Split any savings 50/50 between the General Fund and the department
   - iii. Once all departments are participating, this could result in $0.2MM - $0.5MM in savings to the General Fund (assuming a 2% – 5% decrease from current usage)
2. Explore an LED lighting program for street lights
   - i. On average, other municipalities have experienced 43% energy savings annually by installing LED bulbs in street lights (which we understand to have an average useful life of 10 years, however, the technology is constantly improving)
   - ii. Financing for these programs are available through many sources, including Energy Funds, Federal Stimulus, and local tax dollars with many rebates and credits offered as an incentive to go with selected utility providers

Estimated Impact

One-Time: N/A

Recurring:

A1: **$0.2MM - $0.5MM**

A2: **$1MM**

Subtotal: **$1.2MM - $1.5MM**

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Energy Office – PECO Bill Review

Key Recommendations

- **Background**
  - The City tracks and pays for electricity centrally, though PECO provides a separate bill for each department in PDF and hard copy (and a combined excel version of the bill). Usage is billed monthly, by meter, based on kilowatt hours ("KWh")
  - Based on the sample comparison of excel and PDF bills, there are variances that need to be explored further by a dedicated energy bill auditor

A. **PECO bill auditor**

1. Finalize and issue an RFP for a PECO bill auditor
   i. Review past and incoming bills for overcharges, double billing, usage / metering errors, contract violations, improper application of public regulation, improper application of local, state or federal regulations and statutes, or other billing mistakes

Estimated Impact

One-Time:	Recurring:
A1: TBR	**A1:** TBR
Subtotal: TBR	**Subtotal:** TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Department of Public Property – SEPTA Rebate (Act 44 of 2007)

Key Recommendations

- **Background**
  - One of the provisions of the 2007 Act 44 is a requirement for government entities (federal, state and local) to fund SEPTA's expected operating deficit
    - Pennsylvania Act 44 of 2007 was implemented in July 2007; therefore, FY08 is the first fiscal year impacted by the legislation
    - The City's General Agreement with SEPTA provides a mechanism for SEPTA to refund any unused City-provided subsidies

A. SEPTA "Rebate"

1. Apply for refunds or credits against the next fiscal year's subsidy for the total annual contributions to SEPTA that have exceed the City's actual obligations since FY08
2. Perform this reconciliation on an annual basis for application to the following fiscal year's subsidy

Estimated Impact

One-Time:

A1: $5.0MM

Subtotal: $5.0MM

Recurring:

A2: TBR

Subtotal: TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Department of Public Property – Capital Projects

Key Recommendations

A. In-house design construction

1. Do not self-perform significant (parameters to be defined) construction projects given potential risks/responsibilities/costs
2. Consider alternate solutions instead, including: (i) bringing the design function in-house in the design phase, and (ii) reducing the overall process by eliminating non-value added steps and developing acceptable completion periods for remaining steps

B. Bid Estimate Accuracy

1. Ensure estimates are prepared using the same drawings the bid amounts are predicated on to allow for a meaningful comparison between bid estimate and bid amounts

C. Change Order Analysis

1. Implement project controls and provide a means for the project site to produce standardized, concise and timely reporting of the status of the project
2. Update outdated designs to current needs, conditions and level of technology available
3. Implement additional, or more aggressive, pre-design investigations for renovation projects
   i. Incorporate investigation results into design to decrease Change Orders classified as Unforeseen Conditions
4. Analyze performance of engineering firms with respect to errors & omission change orders
5. Include a representative of the user in the design process, especially in the schematic design phase to decrease Change Orders classified as DPP Scope Change
   i. Explore charging user department for user-driven scope changes after final design
6. Require contractors to submit/maintain project schedules detailing timing, start to finish
   i. Proper analysis of time impact is crucial to recovering funds for contractor delay

D. Contingency

1. Adopt a more standard approach to contingency calculation (typically 10% of the total project cost) and remove "available contingency" from external communications

E. Consider seeking waiver of Separations Act with respect to cost / timing of project concerns

Estimated Impact

One-Time:	Recurring:
A-E: TBR	**A-E:** TBR
Subtotal: TBR	**Subtotal:** TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations

TBR = To be realized

Source: FTI Analysis

Department of Public Property – Space

The Mayor's Task Force on City-owned Facilities will issue a report on City leases, potential real estate opportunities, maintenance strategies and on facilities that may be sold, closed or merged. FTI met with this Task Force and shaped our scope accordingly so that we would not overlap responsibilities

Key Recommendations

A. **Reduce Existing Leased Footprint**
   1. Move employees from leased to owned office space as feasible based on corporate measures of space utilization
      i. Corporates are now targeting 160-175 square feet per employee (some even less) vs. 250 sq. ft. where the City is today
   2. Implement "benching" or "hoteling" for field staff
      i. Several field staff work outside the office but have the same size office space dedicated to them as employees who work full-time from the office
      ii. It is becoming the norm in the private sector to deploy policies such as "hoteling" or "benching" for field staff; some companies are targeting square feet per employee ratios of ~60 as a result (moving towards cloud computing is also likely a factor)
   3. Review document retention policy and match department space requirements accordingly; including, migrating to more electronic delivery / retention of documents

B. **Conduct annual "census" through Budgeting Process**
   1. The City is not readily able to quantify the vacant square footage in owned or leased office space
   2. Departments do not regularly report changes in headcount / location and resultant space usage to Public Property

C. **Invest in space management / floor plan optimization software or engage service providers** to (i) dynamically capture existing footprint, headcount, etc. within the triplex, (ii) have concrete data to rely upon when faced with space decisions, and (iii) assist public property in pro-actively managing the City's office space

Estimated Impact

One-Time:

A1: **($4.1MM) to ($16.6MM)(1)**

A2: TBD

A3 – C: TBR

Subtotal: TBR

Recurring:

A1: **$2.3MM to $8.5MM(1)**

A2: **$1.1MM to $1.4MM**

A3 – C: TBR

Subtotal: TBR

Refer to the body of the report for the supporting analyses and expanded commentary / observations regarding our recommendations
TBR = To be realized
Source: FTI Analysis
(1) – Payback period ranges from 1.7 years to 1.9 years to recoup estimated moving / construction costs necessary to achieve go-forward savings

II. Revenue Initiative

Key Observations & Recommendations

Process changes for managing City-wide cash collections

Key Observations

- **Collection of revenue is spread across many different departments**
  - All departments (besides Revenue) are focused on their core purpose (e.g. Police, Fire, Streets) and revenue collection is a secondary duty, often performed by a third party
    - Even L&I's core mission is not to generate revenue for the City
  - Best practices are not shared among different departments
  - Tracking of performance and dashboards vary across different taxes and fees

Key Recommendations

- **Appoint a Chief Collections Officer ("CCO")**
  - Revenue Department and functions within all other departments responsible for collecting revenue have "dotted line" reporting to the CCO
  - Central reporting using uniform dashboards to quickly identify negative trends in collections for corrective action
  - Share best practices
    - Collection agencies that work well
    - Best compensation structure for third party collectors
    - Payment plan efficacy
    - Benefits of certain enforcement processes, timelines, penalties and interest
    - Ability to synchronize collection efforts (e.g., linkage between permitting and back-taxes)
  - Develop structures to incent departments to increase collections; tailoring incentives by department
    - Work with budget office to set stretch targets with "revenue-share" agreements
  - Require more explanation from departments on budget to actual variances in revenue collected

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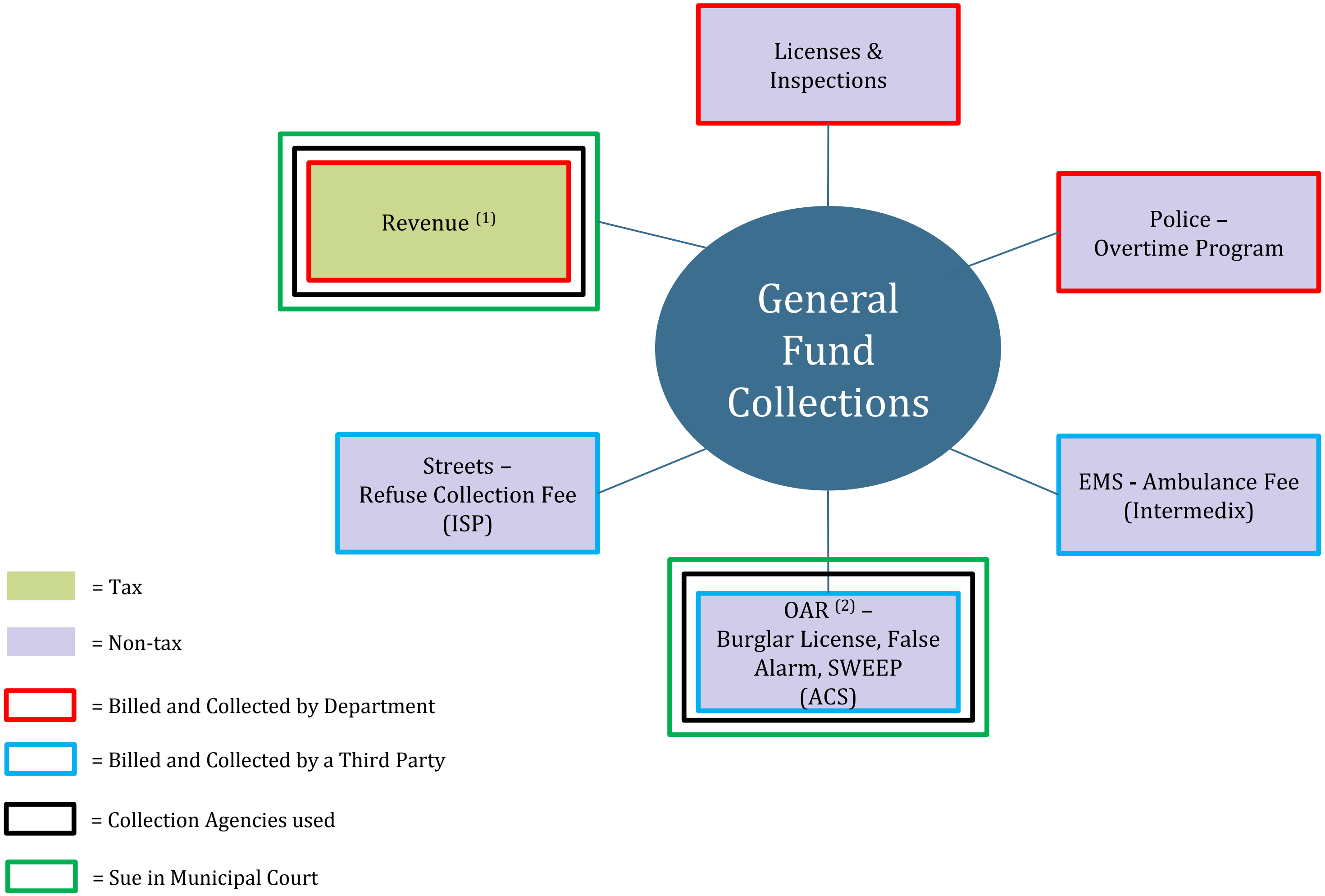
Source: FTI Analysis

Revenue Collection – Process Recommendation:

Current Billing and Collection of Revenue

There are currently a number of parties involved with billing and collecting revenue, with varying degrees of success. *Note: the list below is not intended to be all-inclusive from a revenue perspective*



Source: Interviews with departments

(1) While the 4 largest taxes use a collection agency and sue in municipal court, not all taxes are treated this way

(2) Only SWEEP Fines are brought to Court and utilize collection agencies for payment enforcement

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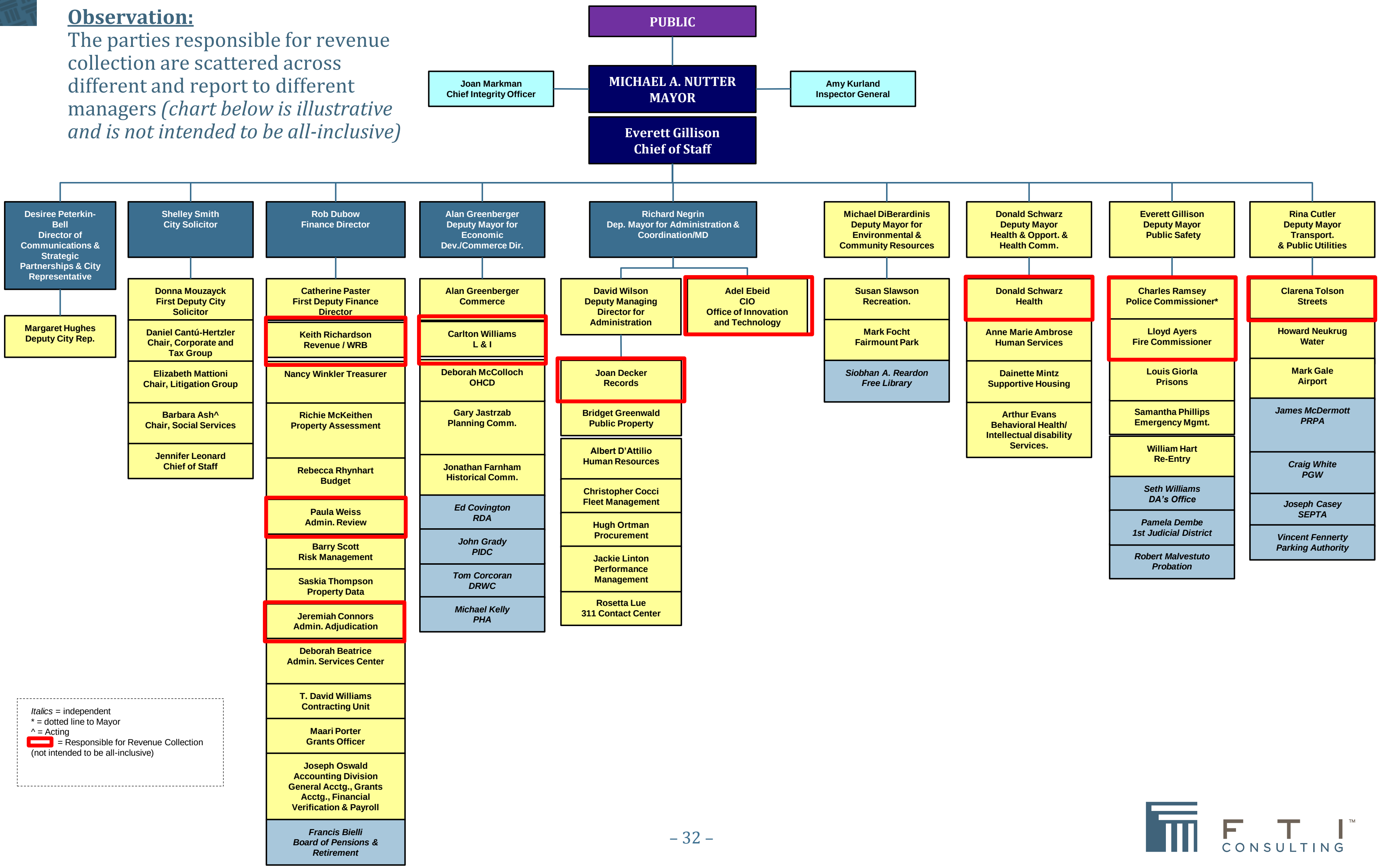
Revenue Collection – Process Recommendation:

Current Organizational Chart with Revenue Responsibilities

Observation:
The parties responsible for revenue collection are scattered across different and report to different managers *(chart below is illustrative and is not intended to be all-inclusive)*



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Revenue Collection – Process Recommendation:

Proposed Organizational Chart with Chief Collections Officer

Observation:

Under the proposed CCO, the collectors of revenue will all be reporting to one person, whose sole duty is to maximize collections through efficient practices *(note: tax lawyers would maintain existing reporting structure)*

Positioning & Title:

Initially, it is likely most effective to have the CCO report directly to both the Mayor's office and the Finance Director with the intention of reverting back to the reporting structure outlined below once the role has been institutionalized

- PUBLIC
  - MICHAEL A. NUTTER, MAYOR
    - Joan Markman, Chief Integrity Officer
    - Amy Kurland, Inspector General
    - Everett Gillison, Chief of Staff
      - Desiree Peterkin-Bell, Director of Communications & Strategic Partnerships & City Representative
        - Margaret Hughes, Deputy City Rep.
      - Shelley Smith, City Solicitor
        - Donna Mouzayck, First Deputy City Solicitor
        - Daniel Cantú-Hertzler, Chair, Corporate and Tax Group
        - Elizabeth Mattioni, Chair, Litigation Group
        - Barbara Ash^, Chair, Social Services
        - Jennifer Leonard, Chief of Staff
      - Rob Dubow, Finance Director
        - Chief Collections Officer
        - Catherine Paster, First Deputy Finance Director
        - Keith Richardson, Revenue / WRB
        - Nancy Winkler, Treasurer
        - Richie McKeithen, Property Assessment
        - Rebecca Rhynhart, Budget
        - Paula Weiss, Admin. Review
        - Barry Scott, Risk Management
        - Saskia Thompson, Property Data
        - Jeremiah Connors, Admin. Adjudication
        - Deborah Beatrice, Admin. Services Center
        - T. David Williams, Contracting Unit
        - Maari Porter, Grants Officer
        - Joseph Oswald, Accounting Division, General Acctg., Grants Acctg., Financial Verification & Payroll
        - *Francis Bielli, Board of Pensions & Retirement*
      - Alan Greenberger, Deputy Mayor for Economic Dev./Commerce Dir.
        - Alan Greenberger, Commerce
        - Carlton Williams, L & I
        - Deborah McColloch, OHCD
        - Gary Jastrzab, Planning Comm.
        - Jonathan Farnham, Historical Comm.
        - *Ed Covington, RDA*
        - *John Grady, PIDC*
        - *Tom Corcoran, DRWC*
        - *Michael Kelly, PHA*
      - Richard Negrin, Dep. Mayor for Administration & Coordination/MD
        - David Wilson, Deputy Managing Director for Administration
          - Joan Decker, Records
          - Bridget Greenwald, Public Property
          - Albert D'Attilio, Human Resources
          - Christopher Cocci, Fleet Management
          - Hugh Ortman, Procurement
          - Jackie Linton, Performance Management
          - Rosetta Lue, 311 Contact Center
        - Adel Ebeid, CIO, Office of Innovation and Technology
      - Michael DiBerardinis, Deputy Mayor for Environmental & Community Resources
        - Susan Slawson, Recreation.
        - Mark Focht, Fairmount Park
        - *Siobhan A. Reardon, Free Library*
      - Donald Schwarz, Deputy Mayor Health & Opport. & Health Comm.
        - Donald Schwarz, Health
        - Anne Marie Ambrose, Human Services
        - Dainette Mintz, Supportive Housing
        - Arthur Evans, Behavioral Health/ Intellectual disability Services.
      - Everett Gillison, Deputy Mayor Public Safety
        - Charles Ramsey, Police Commissioner*
        - Lloyd Ayers, Fire Commissioner
        - Louis Giorla, Prisons
        - Smantha Phillips, Emergency Mgmt.
        - William Hart, Re-Entry
        - *Seth Williams, DA's Office*
        - *Pamela Dembe, 1st Judicial District*
        - *Robert Malvestuto, Probation*
      - Rina Cutler, Deputy Mayor Transport. & Public Utilities
        - Clarena Tolson, Streets
        - Howard Neukrug, Water
        - Mark Gale, Airport
        - *James McDermott, PRPA*
        - *Craig White, PGW*
        - *Joseph Casey, SEPTA*
        - *Vincent Fennerty, Parking Authority*

Italics = independent
* = dotted line to Mayor
^ = Acting
= Responsible for Revenue Collection
(not intended to be all-inclusive)

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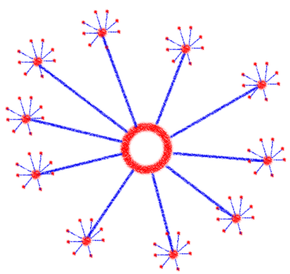
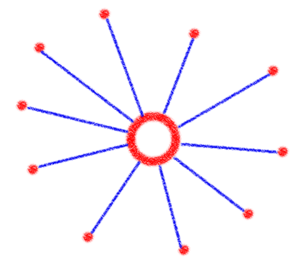
Best Practices of Collection

Best practice for successful revenue collection is related to timely contacts, up-to-date information about the delinquent taxpayer, good account management, and effective use of technology, applications, and resources. Whether a municipality is utilizing a decentralized system or centralized system for revenue collections, its primary goal is to timely and effectively collect and distribute all revenues owed to them. Provided below, best practices for revenue collection as researched by FTI, the structure of such common methods, and the most practical methods for enforcement of revenue collections.



Decentralized Revenue Collection

- Decentralization of revenue collection can serve to increase the costs of collection and compliance, both for the public sector and for the private sector.
- Most governments have this system, yet it poses many inconsistences and timing of collections of revenues.



Centralized Revenue Collection

- States have been consolidating, streamlining, and downsizing the agencies, procedures, and employees that make up state governments.
- In addition, with these efforts having already been implemented for several years, states are looking at revenue management resources and leveraging private companies to get the job done.
- A recent survey of members of the National Association of State Auditors, Comptrollers, and Treasurers ("NASACT") showed that 35 percent of members have considered or have recently implemented a centralized collection program.

Note: Results of research indicated much more data present on state best practices

Revenue – Department Specific:

Key Observations & Recommendations

Key Observations

- **Detailed data requested from the Revenue Department by FTI (other than real estate tax data) was not provided by the department, which cited privacy concerns. As a result, FTI's observations with respect to revenue are limited to specific comments regarding collection improvement strategies with respect to real estate taxes**

Key Recommendations

- **Real estate tax strategies**
  - Coordinate with mortgage companies on collecting delinquent real estate taxes
  - Shorten on-time payment window and consider real estate taxes past due on 2/1 or 3/1 (vs. 3/31 today)
  - Accelerate delinquency status timing (move up from 12/31 to 8/30, which is 5 months after the taxes are due)
  - Publish delinquent taxpayer list and get press coverage
- **Bring best practices to collection of non-real estate taxes**
  - Move more accounts down an enforcement path (86% of dollars are not with a collection agency, TRB, tax court, bankruptcy or payment agreement)
    - Quantify the cost and expected incremental revenue
  - Explore the effect of offering discounts for prompt payment

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Source: FTI Analysis

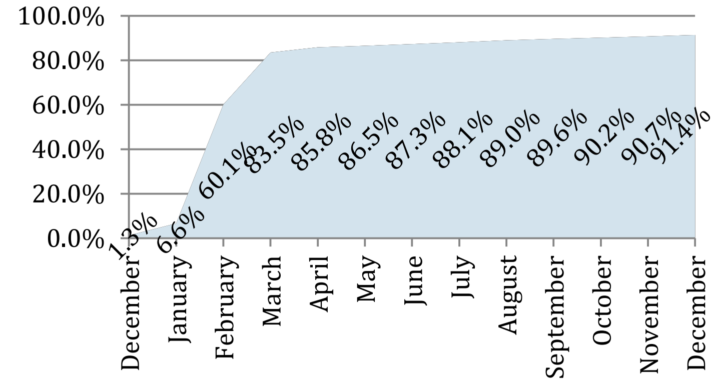
Revenue – Real Estate Taxes:

Payment Patterns

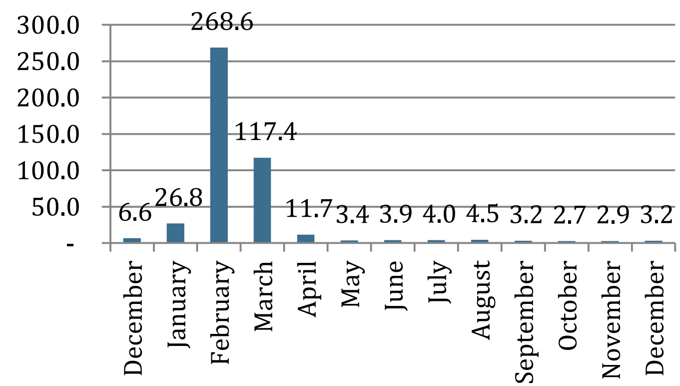
It's clear that the discount in February and due date in March drive payment behavior; however, the threat of becoming "delinquent" by not paying as of calendar year-end does not appear to compel payment

- Real estate taxes are issued as follows:
  - Notices mailed in December for the following calendar year;
  - 1% Discount by 2/28;
  - Due by 3/31 to avoid being "past-due" and incurring "additions";
  - 1st time delinquent letters mailed in November;
  - Deemed "delinquent" post-12/31 and incur interest and penalties (required by statute)
- The charts at right demonstrate the payment pattern over the first 13 months related to 2011 real estate taxes
- On average, during the past five years:
  - The City received 6.5% of payments in January
  - Another 55% received during February. Customers that pay before February 28th receive a 1% discount ($8.69 on average for 2012)
  - During March another 19% of payments was received, as taxes are due by April 1st (80% on average are paid by this point)
  - Payments trickle-in during the next 8 months
  - **Despite the risk of accounts becoming delinquent in January (and are charged penalties and interest), there is no spike in payments in December suggesting the delinquent tag is not an effective enforcement tool**

% Taxes Collected in First 13 Months
Calendar Year 2011



Taxes Collected in First 13 Months
Calendar Year 2011 *(in millions)*



Note:
- 2012 data is only through September

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Revenue – Real Estate Taxes:

Accounts Receivable

Commercial accounts represent 17% of the A/R balance and 6% of the accounts with a delinquent real estate balance. 77% of these Commercial accounts do not have a payment plan and the market value of the property is greater than the receivable amount.

- Piers, hotels and banks represent a large opportunity as these types of properties have large receivables (12% of the Commercial dollars) contained within only 27 accounts (0.4% of Commercial accounts)

Building Description	Count	Principal Receivable	Interest Receivable	Penalties Receivable	Other Receivable	Total Receivable	Average Receivable
Piers	5	$ 6,438,129	$ 1,593,688	$ 451,651	$ 510,989	$ 8,994,457	$ 1,798,891
Hotel	16	904,800	156,996	56,272	75,761	1,193,830	74,614
Bank	6	87,206	33,401	6,178	14,642	141,426	23,571
Office Building	91	1,404,307	189,543	104,546	185,592	1,883,988	20,703
Apartment - Large	393	4,602,458	1,468,693	367,948	760,816	7,199,914	18,320
Industrial	1,036	11,578,555	4,295,172	870,354	1,963,608	18,707,689	18,058
Utility	4	28,215	33,858	1,975	4,243	68,292	17,073
Restaurant/Bar	208	2,093,660	725,695	155,641	297,134	3,272,130	15,731
Non-Profit	463	3,854,304	1,563,680	276,306	705,981	6,400,270	13,823
Theater/Stadium/Amusement	85	720,318	253,467	52,491	139,020	1,165,297	13,709
Retail	587	3,746,655	1,523,357	287,041	632,946	6,189,999	10,545
Vacant Land	1,156	5,145,825	3,600,136	373,425	1,256,444	10,375,830	8,976
Parking Lot	505	2,194,737	1,033,441	153,989	446,967	3,829,133	7,582
Miscellaneous Commercial	1,655	7,348,453	2,855,940	540,891	1,415,231	12,160,514	7,348
Parking Garage	288	922,845	367,324	68,171	190,781	1,549,121	5,379
Commercial Total	6,498	$ 51,070,465	$ 19,694,390	$ 3,766,878	$ 8,600,155	$ 83,131,887	$ 12,793

Note:
- Amounts above were provided by Revenue Department through its "public file" as of August 31, 2012, which include all amounts owed including those that have been written off for accounting purposes.

Real Estate Tax Receivables

Residential accounts represent 82% of the A/R balance and 93% of the accounts with a delinquent real estate balance

- Approximately 69% of these residential accounts do not have a payment plan and the market value of the property is greater than the receivable amount
  - **Market value < taxes owed** – City should move quickly to sheriff sale as it is unlikely the market situation will improve in the near term and, therefore, bidding at an auction may create enough value to cover the taxes owed
  - **Market value > taxes owed** – City should focus on coordination with mortgage companies as there is positive equity with respect to the taxes owed

Building Description	Count	Total Receivable	Average Receivable	Payment Agreement In Place	Mkt Val > Owed	Count of Mkt Val > Owed And No Pmt Agrmnt	RCV $ of Mkt Val > Owed And No Pmt Agrmnt	% of Total (Count)	% of Total (RCV Amount)
House	64,093	$ 291,028,447	$ 4,541	12,495	60,031	47,770	$ 178,572,737	*74.5%*	*61.4%*
Vacant Land	17,484	78,395,147	$ 4,484	113	8,136	8,042	16,045,147	*46.0%*	*20.5%*
Apartment - Small	4,910	25,900,751	$ 5,275	930	4,710	3,793	17,359,360	*77.3%*	*67.0%*
Condo	1,237	4,700,798	$ 3,800	124	1,234	1,110	4,092,145	*89.7%*	*87.1%*
Gargage	361	1,254,856	$ 3,476	18	319	302	795,233	*83.7%*	*63.4%*
Miscellaneous Residential	309	415,753	$ 1,345	1	301	300	383,695	*97.1%*	*92.3%*
Residential Total	88,394	$ 401,695,752	$ 4,544	13,681	74,731	61,317	$ 217,248,316	*69.4%*	*54.1%*

Note:
- Amounts above were provided by Revenue Department through its “public file” as of August 31, 2012, which include all amounts owed including those that have been written off for accounting purposes.
- RCV = Receivable

Fire - Emergency Medical Services Transport Fee Collection:

Key Observations & Recommendations

Key Observations

- **Collections**
  - EMS collections are 21% behind budget for the first four months of FY13, which comes on the heels of a 21% decrease in FY12 from FY11
  - Close to $100MM in receivables billed by ACS in January 2012 and calendar year 2011 were not actively chased for collection as they were not transferred into Intermedix's system until November 2012
  - City is collecting de minimis amounts from transports for the uninsured ("Self Pay" category), which constitute nearly one third of transports
    - Of the 46,350 Self Pay accounts that have been billed since February 2012, only 235 have made a payment (as of 10/12/12); with 148 paying their full invoice and the remaining paying less than 50% of their invoice
- **Vendor Compensation Structure / Communication**
  - City does not actively manage / direct Intermedix (particularly with respect to collections) and as a result, disconnects in expectations / performance have occurred
  - The flat commission structure for Intermedix may not provide the appropriate incentives to increase collections
  - The fee "cap" included in the Intermedix contract likely anchors their target to meet the City's budget, instead of exceed the City's revenue budget

Key Recommendations

- **Legacy ACS Outstanding Balances**
  - Aggressively track the status of claims with Medicare, Medicaid and insurance companies related to ACS receivables
  - Offer a discount to uninsured accounts for prompt payment of ACS receivables through an outbound calling campaign
- **Go Forward Collections & Billing**
  - Revise invoices to be more aggressive, encourage payment plans for uninsured, give notice of referral to collection agencies
  - Require outbound calling for uninsured, encouraging payment plans or potential settlement discounts
  - Employ collection agencies to collect receivables over 120 days old
- **Amend Intermedix Compensation Structure**
  - Implement scaled pricing structure that increases the commission rate as annual revenue reaches certain thresholds
  - Require monthly meetings to review set performance expectations and review results
  - Remove the fee cap (or increase cap to improve optics if Charter prevents fee cap)

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Source: FTI Analysis

Background

The City's Emergency Medical Services ("EMS") are part of the Fire Department. Their primary duty is to respond to 9-1-1 calls for medical emergencies

- Philadelphia dispatched an average of 15,000 ambulances per month between February and August. One percent of this volume does not result in a transport to the hospital as the patient is treated on the scene
- To offset the cost of this service, the City charges a fee for the transport, which depends on whether it is advanced life support ("ALS") or basic life support ("BLS"), with a mileage fee of $10 per mile, $40 if oxygen is used or $80 if an EKG is used
- The transports fall into 4 payment categories, those covered by Medicare, Medicaid or Private Insurance companies and those that have no insurance coverage
- Medicare and Medicaid cap the amount they will pay for an ambulance ride (as do certain insurance companies). Depending on the patient's plan, this capped amount may be split between the provider and the patient. For Medicare and Medicaid, Intermedix writes off the difference between the maximum rate and the amount billed once a payment is received for the account
- One factor affecting whether providers will pay the claim is whether the transport was medically necessary ("MN") (i.e. the patient required an ambulance ride). Not Medically Necessary ("NMN") dispatches account for about 12% of Philadelphia's volume (as coded by Intermedix)
- The chart below shows the current rates, caps and the average amounts Intermedix has collected as of 10/12/12

	Rate Charged			Maximum Rate Paid			Avg Payment
Payer Type	**ALS**	**BLS**	**Mileage**	**ALS**	**BLS**	**Mileage**	**All Accounts**
Insurance	$1,050	$950	$10	Varies	Varies	Varies	$504
Medicaid	$1,050	$950	$10	$200	$120	$0 - $2	$152
Medicare	$1,050	$950	$10	$433	$364	$7	$349
Self Pay	$1,050	$950	$10	N/A	N/A	N/A	$408
Total	**$1,050**	**$950**	**$10**				**$372**

Notes:
- Average payment amount for all accounts that were billed from February through September, as of 10/12/12

Source: FTI Analysis; Intermedix and Fire provided information

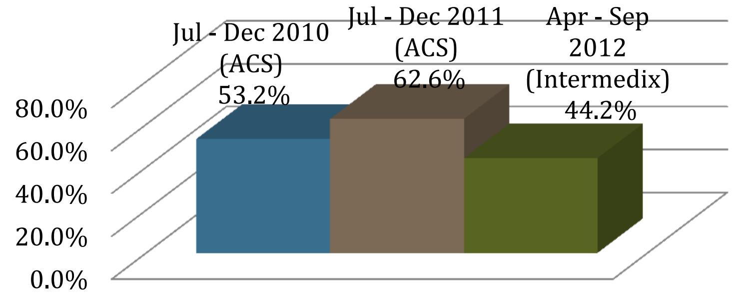
Fire - Emergency Medical Services Transport Fee Collection:

Collection Rates

The City uses a third party vendor to bill and collect from the citizens it transports. ACS held this contract for nearly 20 years, prior to Intermedix taking over in February 2012. Collections have suffered due to the transition, although they are improving as time goes on. The City should continually evaluate Intermedix's performance against other municipalities

- Collection rates are well below where they were in recent years under the ACS contract *(see comparison in chart at right based on best data available)*
- Intermedix believes their system of capturing patient information will provide better results. According to the data at right, Intermedix has been billing more accounts, though it is unclear if less transports were made during the ACS contract
- Intermedix expects collections to improve over time as they become more familiar with the City's needs. However, they are currently well behind industry benchmarks, see below

Collection Rates - % of Accounts Billed that Made a Payment



Payer Type	*Jul - Dec 2010 (ACS)*	*Jul - Dec 2011 (ACS)*	*Apr - Sep 2012 (Intermedix)*
Insurance	59.8%	71.4%	49.8%
Medicaid	95.6%	95.7%	66.7%
Medicare	84.6%	92.6%	73.1%
Self Pay	1.5%	2.5%	0.7%
Total	53.2%	62.6%	44.2%
Absolute % Chg.	*na*	*9.4%*	*(18.4)%*
# of Accounts Billed			
Insurance	19,037	20,912	11,471
Medicaid	19,687	23,242	27,285
Medicare	11,667	12,106	19,493
Self Pay	25,568	21,908	28,441
Total	75,959	78,168	86,690
% Change	*na*	*2.9%*	*10.9%*

Notes:
- The Jul - Dec 2010 and 2011 figures are from an ACS report, the methodology of which has not been explained to FTI, therefore it may differ from Intermedix methodology

Collection Rates - % of Gross Dollars Billed

Payer Type	*Mar - Aug 2012*	*Benchmark*
Insurance	26.8%	N/A
Medicaid	10.6%	N/A
Medicare	25.8%	N/A
Self Pay	0.3%	5-15%
Total	**12.9%**	**45-60%**

Notes:
- Benchmark: EMS In Critical Condition: Meeting the Challenge, 2005

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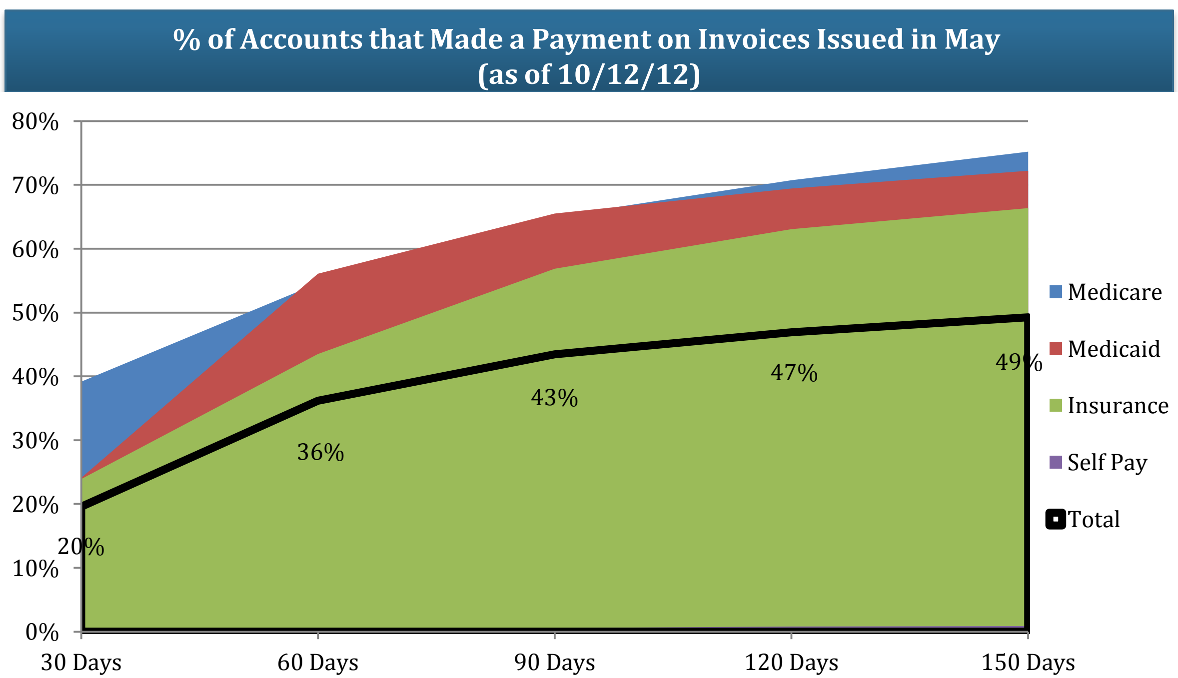
Source: FTI Analysis; Intermedix and Fire Department provided information

Payment Patterns

Intermedix payment patterns are improving, however they should be reviewed as more months of data are available

- There has been marked improvement in the percent of accounts that make a payment within 60 days
  - Only 11% of accounts issued a bill in February fell into this category, whereas 36% of accounts issued a bill in May made a payment within 60 days
- At this time, there are not enough months of bills that were issued over 150 days ago to make concrete conclusions on payment patterns. The graph below shows the collection of bills issued in May as of 10/12/12. Note, not all bills issued in May have reached 150 days as of 10/12/12

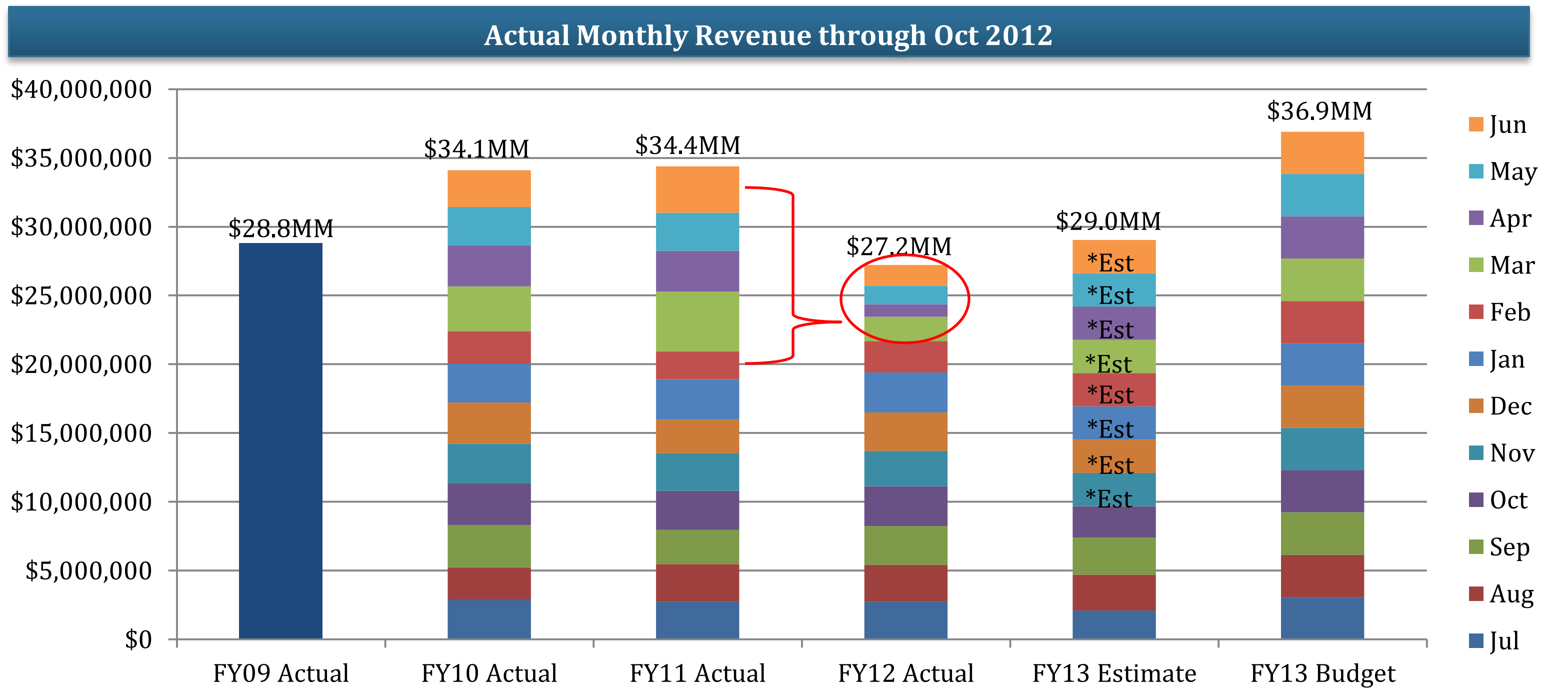


Source: FTI Analysis; Intermedix provided information

Note: The amount of self-pay accounts that make a payment are so small that they are not visible on the graph above

Revenue

Revenues topped $34MM in FY10 after a rate increase and continued to grow in FY11. However, due to transition issues, revenue has dropped off since February 2012, affecting FY12 and FY13. The City must work with Intermedix to increase collections to pre-transition levels



- Pricing and Revenue
  - The City increased transport rates by 88-100% in FY10 (from $505 per transport) and revenue increased 18% over FY09
  - FY12 revenue was $27.2MM, a 21% decrease from FY11, due to low collections in February through June
  - In FY13, Intermedix collected $9.5MM in July through October, an average of $2.4MM per month
    - The City will only collect $29.0MM in FY13 (21% behind budget of $36.9MM) if this monthly collection run-rate continues. The City met with Intermedix on 11/27/2012 and communicated the expectation that $36.9MM will be collected in FY13, which will result in $7.2MM in additional revenue (net of Intermedix 0.9% fee)

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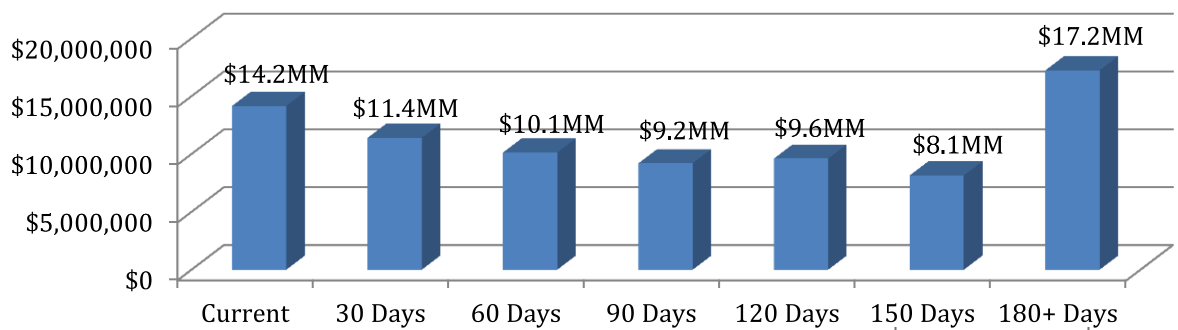
Source: FTI Analysis; Intermedix and Budget Office provided information

Fire - Emergency Medical Services Transport Fee Collection:

Accounts Receivable – *Intermedix Only*

As of 9/30/12 the City had an A/R balance of $79.9MM [(1)], a result of $122MM in billings, $12MM payments and $30MM in write-offs by Intermedix. The write-offs are due to Medicare and Medicaid rate caps, as more of these bills are paid, the write-off amount will increase.

Accounts Receivable (as of 9/30/12)



Collectability doubtful under current procedures

- While collections from Insurance, Medicare and Medicaid need improvement, the Self Pay population offers the biggest revenue opportunity for the City
  - Self Pay represents 35% of all patients that were billed by Intermedix through 10/12/12
- Of the 46,350 Self Pay accounts that have been billed since February 2012, only 235 have made a payment (as of 10/12/12); with 148 paying their full invoice and the remaining paying less than 50% of their invoice
- The sensitivity table at right assumes 60,000 uninsured accounts are billed every year and that each account is charged $1,000 (in line with the data from May through September)
  - **If the City can collect from 5% of accounts (the low end of the benchmark), it can increase collections by $0.6MM - $3.0MM annually depending on the average amount paid by each account (thus allowing for flexibility to offer payment discounts to this group)**

Incremental Annual Revenue from Self Pay - Sensitivity ($MM)

		Average Payment Amount				
		$200	**$400**	**$600**	**$800**	**$1,000**
% of Paid Accounts	**2.5%**	$0.3	$0.6	$0.9	$1.2	$1.5
	5.0%	$0.6	$1.2	$1.8	$2.4	$3.0
	7.5%	$0.9	$1.8	$2.7	$3.6	$4.5
	10.0%	$1.2	$2.4	$3.6	$4.8	$6.0
	12.5%	$1.5	$3.0	$4.5	$6.0	$7.5
	15.0%	$1.8	$3.6	$5.4	$7.2	$9.0

Notes:
(1) – Excludes accounts receivable from ACS pre-transition to Intermedix
Source: FTI Analysis; Intermedix and Budget Office provided information

Fire - Emergency Medical Services Transport Fee Collection:

Recommendations

We recommend taking a more aggressive collection policy and active management of the Intermedix contract

	Current Status	Recommendations
ACS Receivables	▪ ACS data is currently being brought into Intermedix system (> 6 months after the transition) ▪ 2012 AR $7MM ▪ 2011 AR $91MM *(after ACS write-offs)* ▪ Unquantifiable amounts pre-2011	▪ Once data is captured analyze Self Pay receivables and launch an outbound calling campaign, offering discounts (e.g., 50-75%) for prompt payment ▪ Dedicate a resource to working with Medicare, Medicaid and each of the insurance companies to track the status of valid claims
Enforcement Process	▪ After the original invoice is sent, another is sent every 30 days for 4 months, the customer is then reported to a credit bureau (this step is currently in process of being set up). No outbound calling	▪ Revise invoices to be more aggressive, explaining the account will go to collections if unpaid and encourage customers to call in for a payment plan if needed ▪ Explore outbound calling campaigns, particularly to Self Pay
Use of Collection Agency	▪ No collection agencies used	▪ Refer accounts to a collection agency after 4 months when collections appear to trail off
Payment Plans	▪ Payment plans are issued on an ad hoc basis, with the aim of monthly payments >$50	▪ Issue more payment plans to Self Pay accounts to encourage more accounts to make payments and offer discounts for prompt payment
Contracts with Insurance Companies	▪ The City has a contract with Blue Cross to receive the Medicare rate for accounts and receive payments directly (rather than having checks go to the patient, who must then forward the check to Intermedix)	▪ Review collection rates for other insurance providers and explore whether this type of contract would result in more revenue being collected (instead of remaining with the patient) or if the City is losing money by locking into the Medicare rates with Blue Cross ▪ Intermedix calling campaign once a month to patients that received checks and have not forwarded to Intemedix

Fire - Emergency Medical Services Transport Fee Collection:

Recommendations (cont'd)

	Current Status	Recommendations
Management of Contract	▪ Intermedix takes direction from the City on pricing, collection process and reporting	▪ Meet regularly with Intermedix to discuss new solutions to increase collections, particularly for the Self Pay population and to understand payment patterns, results of collection policies and best practices in other cities ▪ Agree upon regular reporting with dashboards tailored specifically to the City's needs
Contract Renegotiation	▪ Intermedix receives 8.99% of its net collections, capped at $3.24MM, which can be revised upward, but via a City administrative process. This structure effectively disincentivizes Intermedix from collecting over $36MM and they receive the same payoff for the first dollar they collect to the thirty-sixth millionth	▪ Before signing on for an additional year of the Intermedix contract, the City should amends its terms, including a scaling commission concept - see example below: – 8% of collections under the $20MM threshold; – 9% of collections between $20MM and $30MM *($1.5MM above FTI's estimated FY13 outcome)*; – 13% of collections between $30MM and $35MM *(as expected given FY10 and FY11 revenue)*; – 20% on each dollar they collect above $35MM – If collections reach $36.9MM *(as budgeted)*, the overall rate will be 9.57%

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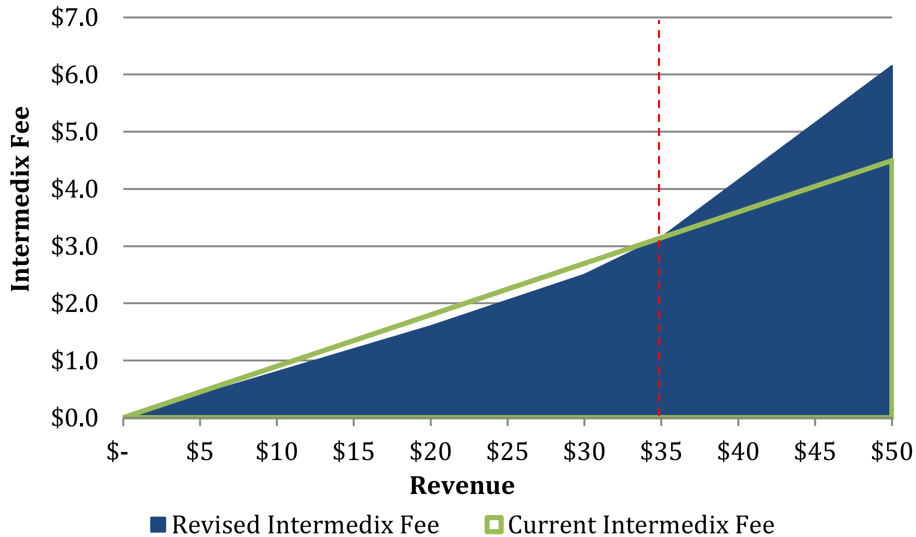
Intermedix Fee Structure

Under the revised fee structure, Intermedix will be compensated at a higher rate for collecting more difficult receivables

Current Intermedix Fee Structure vs. Proposed Structure ($ in MM)



$ in MM	Revenue				Total	Overall
% of Net Collections	$1-20MM	$20-30MM	$30-35MM	$35-37MM	$36.9MM	Rate
8.0%	$ 1.6				$ 1.6	8.00%
9.0%		$ 0.9			$ 0.9	8.33%
13.0%			$ 0.7		$ 0.7	9.00%
20.0%				$ 0.4	$ 0.4	9.57%
Total Payment to Intermedix	**$ 1.6**	**$ 2.5**	**$ 3.2**	**$ 3.5**	**$ 3.5**	**9.57%**
Net Revenue to City	**$ 18.4**	**$ 27.5**	**$ 31.9**	**$ 33.4**	**$ 33.4**	**na**

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Key Observations & Recommendations

The City has the opportunity to generate revenues (approximately $150k - $500k) annually through a partnership with a commercial carrier leveraging the public safety spectrum. Furthermore, there is an opportunity to save $2MM in direct costs a year, as well as increase revenues associated with telecom and cable franchises

Key Observations

- **Background**
  - The principal assets comprising the wireless network are spectrum (Public Safety Band Spectrum and 6 GHz backhaul spectrum) and the equipment previously purchased. The Public Safety Band has been allocated to the City by the FCC. The 6 GHz spectrum is unlicensed
- **City currently has idle assets that can be monetized or used to offset recurring costs**
  - 50 MHz of Public Safety designated spectrum, which could be monetized by partnering with a carrier, having the carrier provide public safety related services on the spectrum, and allowing the carrier to utilize excess spectrum capacity in a revenue share model
  - 6 GHz spectrum which can be used to eliminate approximately $1MM in annual recurring telecom costs
- **Recurring costs for outdated wireless network infrastructure**
  - $600K in annual site lease costs (antennas and equipment)
  - $400K in annual internet backhaul costs (which is currently unused)

Key Recommendations

- **Monetize 50 MHz of spectrum**
  - 4.940-4.990 GHz spectrum is currently unused
  - Commercial carriers are interested in the spectrum to migrate video services from their current networks
  - Develop an RFI seeking interest in carriers who would provide Public Safety related services to the city while utilizing excess capacity for commercial purposes. Optimally the city should seek also seek revenue share model (note – this will require close coordination with the FCC)
- **Implement microwave links (6 GHz spectrum) to replace recurring costs with Verizon**
  - Initiate a process to identify specific locations where the microwave systems could be installed (optimally limiting last mile links)
  - Equipment exists to support high speed (45 Mb/s) links to City offices not currently on the City's fiber infrastructure
- **Eliminate tower/site leases where possible and the Zayo internet backhaul**
  - Some sites will have to be maintained to implement the microwave links listed above
  - Current contract is unused, as it was originally intended to support a City wide WiFi rollout

Source: FTI Analysis

OIT – Wireless Network:

Overview

The City's Wireless Network assets provide both savings and revenue opportunities for the City

- The Office of Information Technology (OIT) has stated it is considering activating the wireless network for the following purposes:
  - Providing data services to emergency services agencies
  - Supporting other Municipal Services
  - Delivering broadband to the 41% of the population that currently does not have access to broadband services due to lack of access to the embedded infrastructure or for financial reasons
- The principal assets comprising the wireless network are spectrum (Public Safety Band Spectrum and 6 GHz backhaul spectrum) and the equipment previously purchased. The Public Safety Band has been allocated to the City by the FCC. The 6 GHz spectrum is unlicensed
- **Rather than spend significant dollars in activating the network, FTI recommends the City of Philadelphia consider alternate approaches to maximizing the benefit of the available spectrum and network infrastructure currently in place**
- Summary of Assets
  - Public Safety Band (4.940-4.990 GHz)
    - Propagation within this band is characterized by short range and poor in-building coverage
    - To effectively deploy services over this band, the City will have to revise its physical architecture to ensure adequate coverage
      - In June 2012, the FCC is sought public comment on use of the 4.940GHz – 4.990GHz spectrum
      - The FCC added that the spectrum holds "great potential" for backhaul services in support of a nation wide, public safety network
      - Commercial use of the spectrum (primarily to offload video services from the current carrier network) is also being considered
  - 6 GHz Band Spectrum
    - The primary use of the 6 GHz band has been medium (45 mb/s) and high speed (150 mb/s) backhaul
    - Recently, the FCC has modified rules to allow smaller antennas within this band, which will decrease lease costs (due to a decrease in required footprint)
    - While equipment exists for implementation of WiMax services in this band, the spectrum is best suited for point to point vs. point to multi-point

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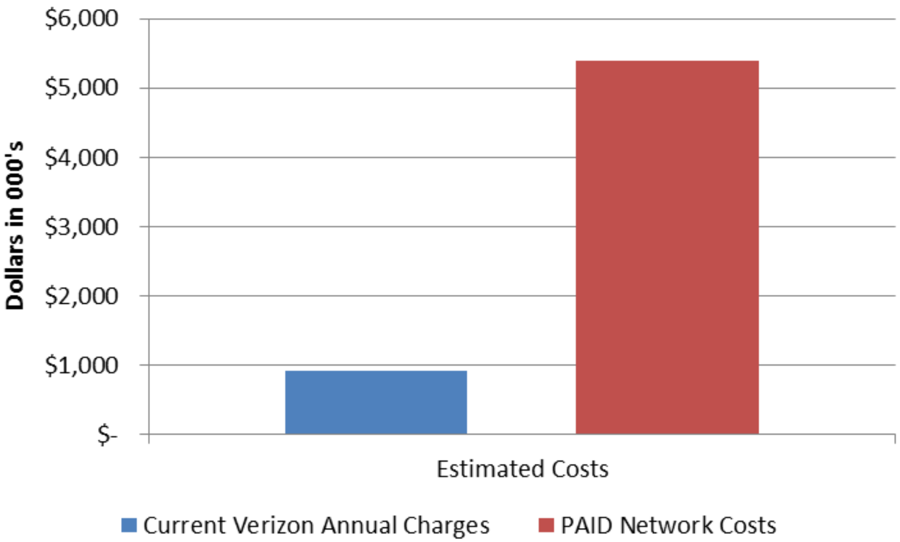
Sources: www.fcc.gov, www.dailywireless.org; FTI Analysis

OIT – Wireless Network:

Cost Estimates

- Activating the wireless network is not as simple as "flicking a switch;" substantial investment and recurring costs are involved with limited benefit to the City
- Rough estimations indicate operating a wireless network will **cost the City over $5MM annually**
- In addition, the City **will have to invest between $10MM - $18MM** in additional capital to refresh the technology and develop a suitable back office system for the administration, operation and maintenance of the network as well as expand geographic coverage
- The current annual cost of wireless digital services for the City Police Department are less than 20% of the recurring cost of implementing a stand alone network



Source: FTI Analysis

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OIT – Wireless Network:

Recommendations (In More Detail)

Wireless Network

- Actively engage with prospective carriers interested in the Public Safety (4.940-4.990 GHz) via a Managed Services RFI
  - Allow the carriers to carry the necessary lobbying costs
  - There are no comparables available to provide an accurate estimation of savings and revenue opportunities for the City
  - Several carriers, such as T-Mobile and Verizon have stated publically their interest in utilizing this spectrum to offload video traffic. The City should consider allowing a carrier which the most flexible arrangement in providing Public Safety related services for the City lobby the FCC to arrange a government-commercial partnership which would enable new public safety services for the City and provide additional bandwidth for the carrier
- Focus on technology utilizing the 4.9GHz band for ad hoc mobile networks rather than a mobile network with a fixed infrastructure
- Eliminate recurring costs associated with the wireless network
  - Allow leases to expire or, alternatively, seek to sever the existing tower/antenna leases
  - Integrate Zayo into the overall City's architecture plan to "unpin" this service from the wireless network

Other Areas

- City Franchise Agreements
  - Municipal franchise agreements are complex documents with many requirements levied upon the franchisee, most of which are rarely enforced
  - In 2009, the City of New York audited franchise agreements for Time Warner Cable and IDT, resulting in the identification of an additional $400,000 in previously unknown franchise revenues
  - The City would benefit by hiring a firm specializing in auditing compliance to franchise agreements
  - While FTI does not endorse any specific company to perform this work, representative firms performing audits include:
    - Troy Banks, Inc.
    - Utility Audit, Inc.
    - Azavar Audit Solutions

Key Observations & Recommendations

Key Observations

- **Large, growing A/R balance**
  - The Water Revenue Bureau's A/R has been growing over the past 2 years from $178MM in Aug. 2010 to $200MM in Aug. 2012 (excluding City accounts and storm water charges)
  - 88% of all non-current receivables are over 120 days old ($180MM as of 8/31/12)
- **Large, growing amount of unbilled water usage charges**
  - There over 10,000 accounts that have received at least four months of zero use bills (i.e., active accounts that are only being charged service fees and not for their water and sewer usage)
  - **FTI estimates there is $2MM – $5MM of water that has been used, but not billed, due to this issue**
  - The Water Revenue Bureau ("WRB") is actively trying to reach out to these accounts, however not all accounts have responded
  - Additionally, the Water Department crews are responsible for fixing these meters are working at full capacity and cannot handle all of these accounts in a timely manner

Key Recommendations

- **Unbilled water usage**
  - Water Department hire additional crews on a temporary basis to deal with the backlog of over 10,000 zero-read meters. Inspect all meters showing no usage, not just the customers that reach out for an inspection
  - Waive 50% of charges related to usage over 12 months old (once a meter is fixed) and waive penalties
- **Amnesty program** (requires ordinance)
  - Provide a one-time amnesty of penalties in exchange for paying the "principal" in full
- **Shorten billing and shut off timeline** (require legislative changes)
  - Bill due in 15 days, with penalties accruing after that point (vs. being due in 23 days and penalties accruing at 61 days)
  - 1 shut off notice for residential properties (vs. 2 notices)
- **Review and publicize large delinquent accounts more frequently**
  - There are nearly 500 accounts with over $15,000 delinquent and though they are reviewed from time-to-time, they should be more strategically monitored
  - Publish a list of high dollar amount delinquent accounts once a quarter and create a press release for the media each time to keep focus on the issue
- **Encourage automatic monthly payment with Zipcheck**
  - Offer a one-time discount for signing up (with requirement that Zipcheck account must be maintained for 6 months)
- **Explore termination or modification to moratorium** *(requires passing of legislation)*

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Source: FTI Analysis

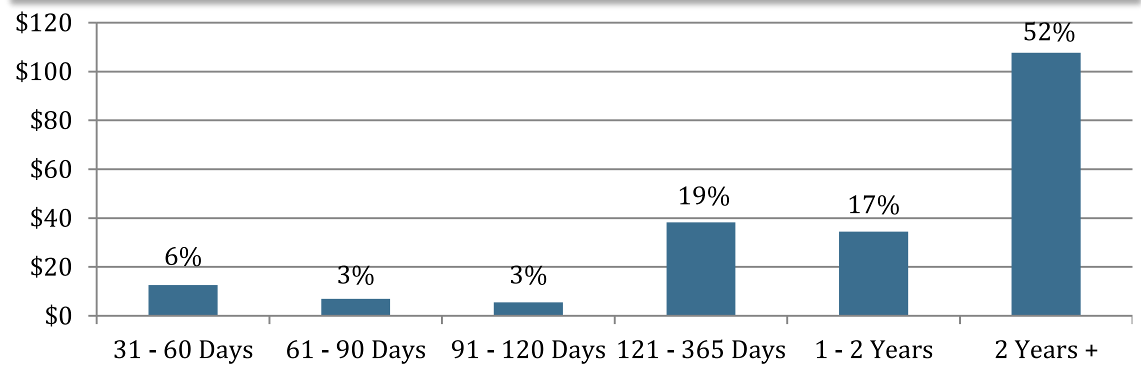
Water – Background:

Receivable Aging

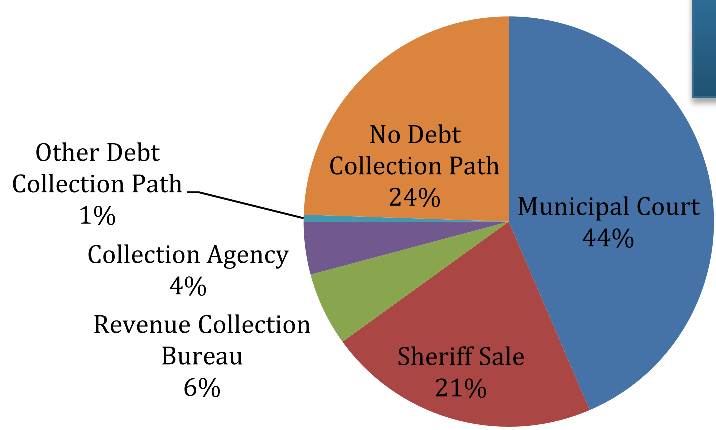
The Water Department serves nearly 600,000 accounts across the City. Monthly bills are sent to each account for their water usage in hundreds of cubic feet ("CCF"), a flat fee for sewers and a stormwater charge based on square footage of the impervious area relative to gross area of the property

- The WRB's A/R (excluding City accounts and storm water charges) has been growing over the past 2 years from $178MM in Aug. 2010 to $200MM in Aug. 2012 (12% increase)
- The WRB's receivables become difficult to collect after 120 days
  - 88% of all non-current receivables fall into this bucket ($180MM as of 8/31/12)
- By 121 days past due accounts should be eligible for shut off and referred to a collection agency (per City policy), yet A/R balances grow
- A large percentage of these dollars are not under a debt collection path (as coded in the WRB's billing system, basis2)
  - Of the $44MM in this bucket, $15MM relates to 121-365 days, $9MM relates to 1-2 years and $20MM to over 2 years old
- Excluded from the A/R balance are amounts related to vacant properties ($11.6MM), amounts protected by bankruptcy ($7.7MM) and amounts under the Water Revenue Assistance Program ("WRAP") ($28.1MM)

Gross Accounts Receivable as of 8/31/12



Debt collection path for Gross A/R over 120 Days As of 8/31/12



Note:
- The law department's billing system does not automatically update basis2, therefore it's possible that an account's debt collection path is slightly different than the chart at left

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Source: basis2 A/R reports, FTI analysis

Water – Collections:

Enforcement Process

The enforcement process varies depending on whether an account is residential or commercial. The chart below shows the payment enforcement timeline for delinquent bills

- For simplicity, this timeline assumes that only the amount owed from Month 1 is not paid and that it is greater than $75 (the minimum for shut-off), but less than $12K (the process varies for delinquencies above this threshold). In practice, the process is often complicated by different amounts being owed for different months, however only one bill is printed per account per month. It is also assumed that this timeline is not affected by the moratorium (December 1st through March 31st), during which residential accounts cannot be shut off.

	Day 1	Day 23	Day 31	Day 61	Day 76	Day 91	Day 241	Day 242-Day 607	
Residential	Month 1 bill is printed	Payment is due	Month 2 bill is printed. Month 1 amount is shown as "Previous Balance."	First shut off notice sent. Month 3 bill is printed. Month 1 is now delinquent, and the amount is shown as "Previous Balance," which now includes penalties.	Second shut off notice is sent related to Month 1 delinquency.	Account is now eligible for shut off and may be referred to a collection agency. Month 4 bill is printed with the Month1 amount in "Previous Balance" and additional penalties.	The collection agency will have 5 months to collect (with additional penalties accruing each month). The account will then be eligible for municipal court.	The municipal court can only handle 240 cases per week, which are chosen based on highest dollar value. An account can be available for municipal court for one year.	Amounts that are uncollected after returning from municipal court (the judgment amount was not paid or the one year time period has elapsed) are either sent to the law department to enter the Sheriff Sale process (if the uncollected amount is $5,000 or more), or are returned to the beginning of the arrears process (if the amount is less than $5,000).
Commercial	See above	See above	See above	See above	This account is now eligible for shut off and may be referred to a collection agency.		See above	See above	

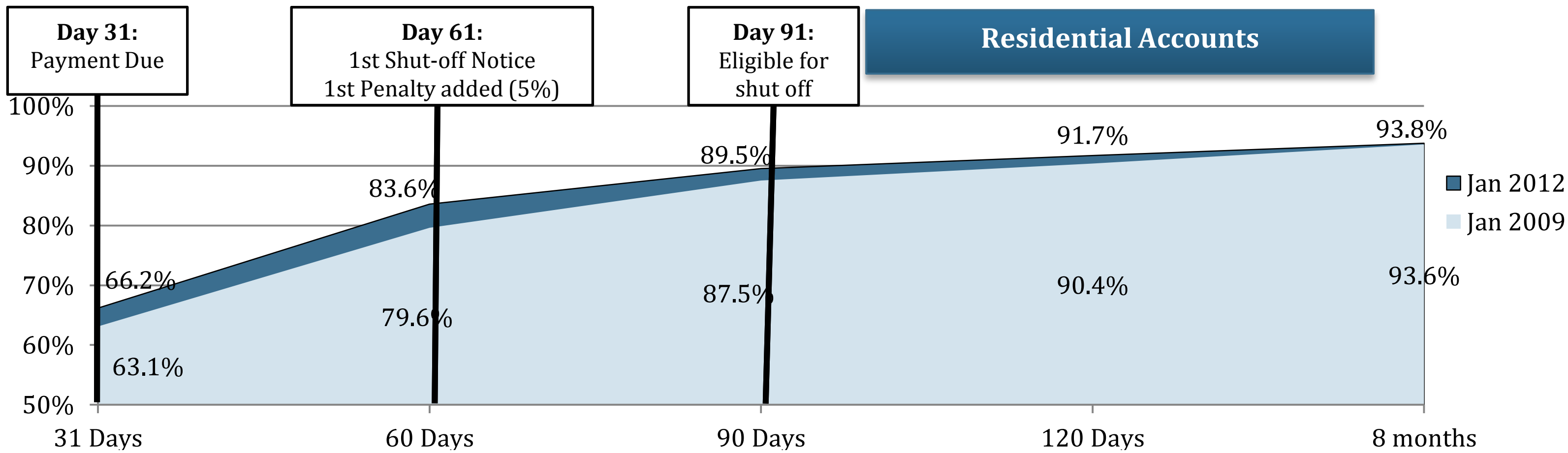
Note:

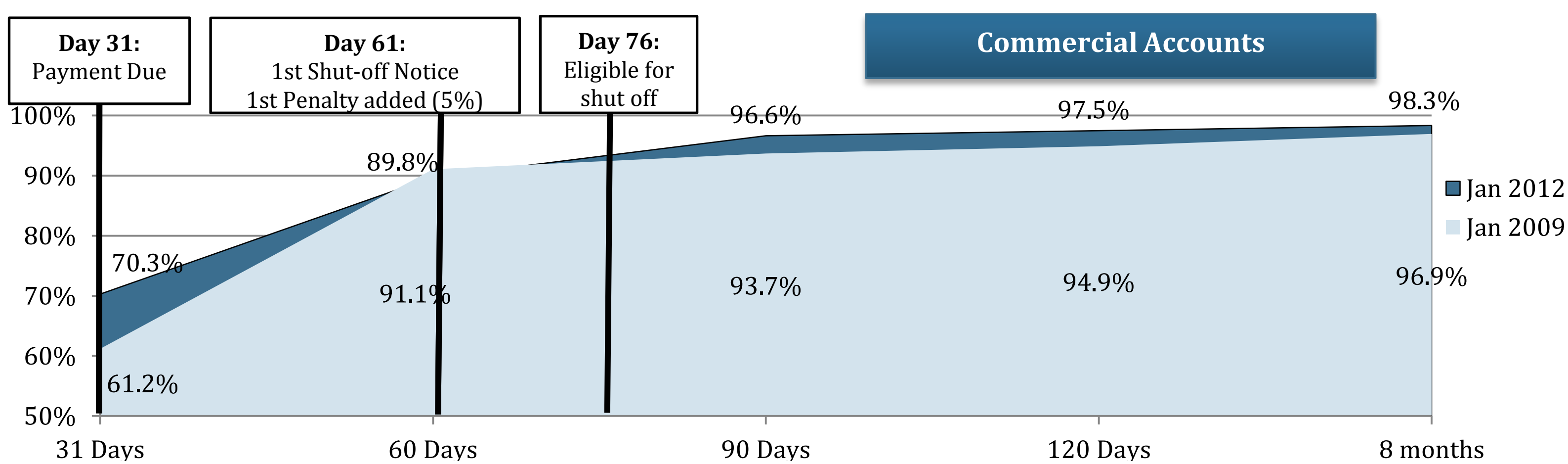
- The bill for month 2 may happen on day 31, day 32 or day 33, accounts are billed according to a schedule of routes. For example, routes 001, 021, and 041 are always billed on the first business day of the month. This can be anywhere from the 1st through the 4th calendar day of the month, depending on weekends and holidays.
- Penalties – upon delinquency (61 days), 5% is added to the current charges and 0.5% is added to the delinquent charges each month

Water – Collections:

Payment Patterns

The graphs below show the percent of dollars paid within 8 months of bill issuance for bills issued in January 2009 and January 2012. Note the marked improvement in payment speed and overall compliance from 2009. Also, note the effectiveness of the commercial account policies which accelerate the shut-off period relative to the residential accounts. FTI recommends taking action to move the residential shut off timeline to be in line with the commercial timeline (requires legislative changes).





Notes:

- The payment percentages above are based on the net amount billed, not the gross amount. The net amount excludes the following accounts that do not follow normal collection processes: wholesale, City, bankruptcy protected, payment agreements, vacant and all adjustments and penalties

Water – Collections:

Past Improvements to Enforcement Process

As mentioned on the previous page, overall accounts have seen an uptick in the percent of dollars collected and speed of those collections since 2009. Below is a listing of enhancements the Water Department and WRB made from 2009 to 2012 contributing to this improvement:

Improvements	Details
Shut offs happen sooner after accounts become eligible	More crews were hired. There is currently a team of 28 that shut off meters and restore them once payment has been received (must be done within 24 hours). There are 6 geographic districts, each with its own team, which shut off accounts based on the highest delinquent amount. On average, an account is shut off 10 days after it becomes eligible (and no payment is received in the interim). This is longer during April and May as the crews work through the moratorium backlog.
Use of collection agencies	After an account moves past shut off (91 days for residential, 76 days for commercial), the remaining balance is referred to a collection agency. The agency typically handles the account for 5 months (one year for accounts over $12,000), working to recover as much as possible. As of 10/31/12, total payments as percent of average inventory over the previous 3 months was 9% for the collection agencies.
Litigation in municipal court	After an account has been handled by a collection agency it is eligible for litigation in municipal court. The court is handling more cases now, 240 per week. The cases with the highest dollar value are chosen each week. An account may be eligible for selection for a year (at which point it moves back through the arrears process).
Outbound calling	The department organizes ad hoc outbound calling campaigns to encourage payment.
Online list of top delinquent accounts	Beginning in 2011, the Revenue Commissioner's office began posting the names and addresses of top delinquent accounts (WRB provided the list). It was envisioned this would be updated monthly, but we understand it has been more ad hoc due to personnel constraints.

New Recommendation – Amnesty Program

- In 2010, Revenue enacted an amnesty program that waived penalties if the principal on accounts was paid in full. The program was extremely successful, bringing in $60MM. If Water developed a similar program and collected 5% of A/R over 60 days (excluding penalties), the result would be $7.5MM.

Source: *Water Revenue Bureau*

Water – Collections:

Background – Unbilled Water

Meter issues result in customers receiving water and being billed the wrong amount or not being billed at all until the meter is fixed, often for many months, creating an issue of "unbilled receivables"

- Zero use accounts are those where the meter is read every month and shows zero CCF's used. Based on the WRB's guidance, FTI reviewed accounts with at least 4 months of zero usage reads based on Water's experience of these accounts having a meter issue
- Once the meters for these accounts are properly read, their next bill will have a true-up to the actual amount of water used during their zero use period, generally resulting in very large bills
- FTI reviewed accounts that had at least 4 months of zero use bills looking back from 10/2/2012 and had a battery exchange on or after 1/1/2005, therefore the issue with these meters should not be battery-related. We estimated the amount of water used by these 9,805 meters in the 4 months based on average usage by meter code
- It would be extremely time consuming to pull the exact number of months each of these accounts has had zero use. Without this information, it is only clear that each account had 4 months of zero use.
  - Therefore, $1.9MM of estimated unbilled fees (for water that has already been provided) is the minimum estimate
  - If (on average) these accounts received zero use bills for 10 months, the result is an estimated unbilled receivable of $4.8MM
- Additionally there are 1,709 accounts with at least 2 months of estimated bills looking back from 10/2/2012 and a battery exchange after 1/1/2005. Estimated invoices occur when a signal cannot be picked up from meter at a property, this can occur due to tampering by the customer, issues with the meter's battery or other meter issues
- While these accounts are billed every month, it is only an estimate and may result in additional unbilled receivables once these meters are fixed. On average, the 1,709 estimated accounts had received 10 months of estimated bills

Zero Use Accounts for at least 4 Months

Meter Code	# of Accounts	Avg Mthly Qty Per Meter Code (CCF)	Avg Mthly Charge per CCF	Min Mths of Zero CCF Bills	Total Est Unbilled Amount
R	9,589	7	$ 5.50	4	$ 1,476,438
Z	1	9	5.50	4	198
Q	145	35	4.88	4	98,983
P	21	76	4.88	4	31,128
X	29	164	4.88	4	92,761
O	13	403	4.88	4	102,181
W	6	703	4.88	4	82,268
N	1	1,855	4.66	4	34,555
Total	9,805	9	$ 5.49	4	$ 1,918,512
10 months of Zero Use (estimated)					*$ 4,796,280*

Source: basis2 reports

Water – Collections:

FTI Recommendations – Unbilled Water

The Water Department and WRB recognize that unbilled water is a large issue and has taken steps to decrease the number of accounts affected. However, the Water Department does not currently employ sufficient resources and, therefore, cannot fix every broken meter in a timely manner. FTI recommends taking a more active approach to fixing these meters and changing public perception of how these accounts are handled

	Current Status	Recommendations	Expected Outcome
Revenue	Estimated $2-5MM of unbilled revenue and little certainty this will be collected once meters are fixed	WRB proposed waiving 50% of fees related to usage over 12 months old (once a meter is fixed). FTI agrees and suggests publicizing the offer	Large true-up bills are often difficult to collect and result in payment plans. More accounts will pay, and sooner, than if no waiver program was instituted
Crews	Working at full capacity	Hire additional crews on a temporary basis to deal with the backlog of over 10,000 zero-read meters. Fix all meters, not only the ones that reach out for a fix	Fix meters, bill for usage and shift public perception that there's no consequence to getting zero use bills
Zero-Read Meters	Letter campaign to encourage accounts to call in for a meter fix	Hold a press conference and bring media attention to the waiver program, additional crews and decision to proactively fix meters of all customers	A backlog of zero-read meters and millions of dollars in unbilled water will not occur, as the City initiates fixes

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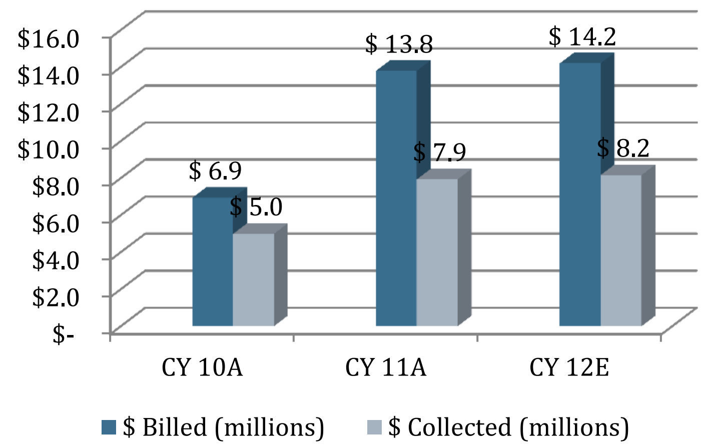
Streets – Refuse Collection Fee:

Background

The Refuse Collection Fee (synonymous to Solid Resources Fee and Commercial Property Collection Fee) is assessed on any commercial establishment or multi-unit property receiving City collection of rubbish and recycling materials, subject to certain exemptions. Owners of these premises may elect to continue receiving the City's services for the annual fee or obtain collection services from a private hauler

- Refuse Collection Fee was implemented in calendar year 2010
- Invoices are distributed in June/July for services performed during the calendar year
- Payments are due by September 30th, or 75 days after being invoiced [1]; resulting in 9 months of service being paid for in arrears
- The City doubled this fee, from $150 to $300, in calendar year 2011 (one year after its initial launch)
  - While overall collections increased $2.9MM, the number of accounts paid decreased by ~24%; resulting in a 14.4 percentage point decrease in the collection rate
  - Only ~55% of the accounts billed in calendar 2011 have paid
- The City outsources most of the billing and record keeping functions to Information Services Partner ("ISP")
- The current enforcement procedures in place for non-payment are as follows:
  - Accrual of interest and escalating penalties
  - Mailing of follow-up notices (once in November at least)
    - Includes total delinquencies itemized by year and type
  - Beginning in FY13, City Code was amended to allow citations to be issued if trash is placed out at delinquent residences
  - Streets has made policy decision to not shut-off service (despite allowance for shut-off in City Code)
  - Streets is exploring the possibility of asserting liens on delinquent accounts if greater than 6 months delinquent

Historical Collection Trends



Memo:	CY 10A	CY 11A	CY 12E
Collection Rate	71.9%	57.5%	*57.5%*
% Point Change	*na*	*(14.4)%*	*0.0%*
Accounts Paid	34,327	26,017	*27,207*
% Change	*na*	***(24.2)%***	*4.6%*
% of Accounts Paid	70.0%	54.5%	*57.5%*

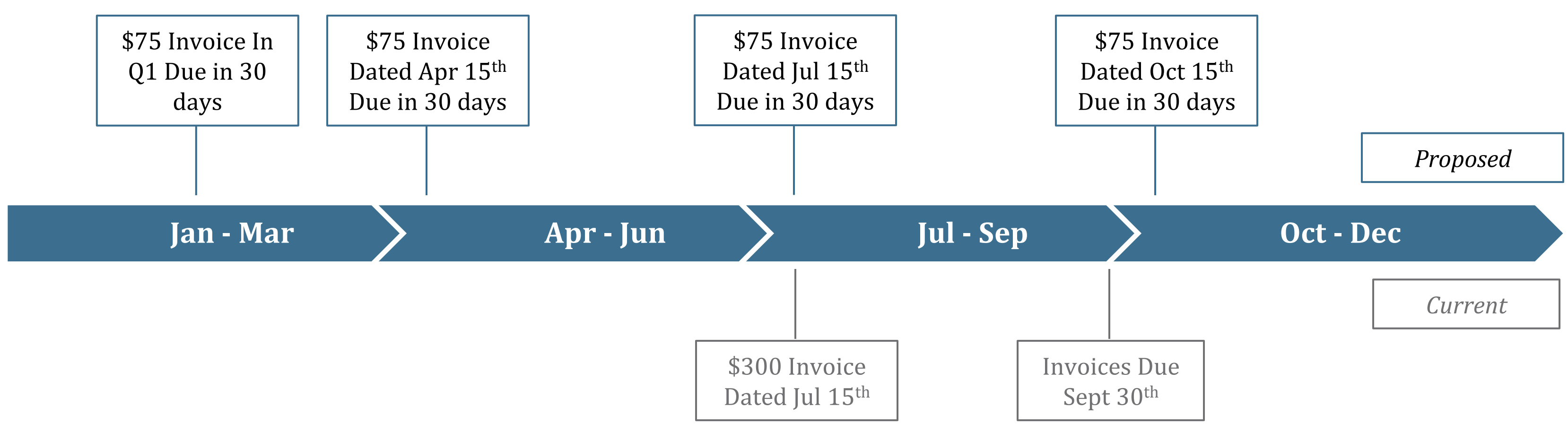
Notes:
- CY = Calendar Year
- CY12 $ Billed represents actual amounts billed in July 2012
- All other CY12 information is estimated by FTI based on trend analysis
- Source information provided by the Streets Department; FTI Analysis

[1] *The 2012 invoice was distributed in July of 2012 with payments due by September 30th*

Streets – Refuse Collection Fee:
Billing Cycle Recommendations

By switching from annual billing, primarily in arrears, to quarterly in advance, and by decreasing the time period between invoice date and the payment due date, the City will put itself in a better position to increase compliance with this fee

- Annual to Quarterly
  - Beginning in calendar year 2013, the City should switch from annual to quarterly billing with the first invoices distributed by January 15th for the three-month period ending March 31, 2013
  - Invoices for each subsequent quarter would be distributed by the 15th of the first month of the quarter
- Payment Due Date
  - Payments should be due 30 days from the invoice date
  - The 75 days provided in 2012 (105 days in 2010 and 2011) between the invoicing and due dates creates an unnecessary delay in receiving the funds and is potentially an inadvertent contributor to poor collection rates
    - Commercial payment terms are routinely between 10 and 30 days. Utilities tend to provide less than 30 day payment terms as well. There is no justification for the extended payment terms currently offered by the City



Billing Cycle Recommendations (cont'd)

By implementing the billing cycle changes in Q12013, we believe the City will generate an incremental $3.2MM of revenue in FY13 and lay the foundation to improve collections beyond the current budget for FY14 and beyond. Our recommended changes should translate into increased compliance for the following primary reasons: (i) invoices are in more manageable increments (i.e., $300 may be provide "sticker-shock" resulting in non-payment), (ii) shortening the time between invoice and payment due dates lessens the chance of invoices getting "lost in the shuffle", and (iii) requiring payments in advance, coupled with stronger communication on the potential for service refusal in the event of non-payment, will help create a stickiness beyond providing a one-time benefit in the implementation year

- Key assumptions
  - Collection rate for calendar year 2012 holds constant from 2011 at 57.5%
  - City must achieve a 54.5% collection rate in calendar 2013 in order to break even relative to budget in FY14, which we view as a low case
  - Refuse Collection Fee remains at current level of $300 per annum, but billed quarterly ($75 per quarter)
  - Savings in FY15 and FY16 assume an annual 5 percentage point improvement in the collection rate
- Potential to lower fee
  - We would expect increased compliance if the overall fee was lowered given the drastic decline in compliance subsequent to the 100% increase implemented in calendar 2011
  - The sensitivity table at right quantifies the impact on collections relative to the FY14 budget at varying fee levels and collection rates
- Implementation costs
  - Any costs from switching to quarterly billing (invoice generation, postage, temporary staff) are assumed to be immaterial

$ in millions

Comparison to Budget	FY13	FY14	FY15	FY16
FTI Estimated Collections	$ 11.2	$ 7.9	$ 8.7	$ 9.4
City Budgeted Collections	7.9	7.9	7.9	7.9
FTI Relative to Budget	**$ 3.2**	**$ -**	**$ 0.8**	**$ 1.5**

$ in thousands

Sensitivity Analysis - Impact on FY 14 Collections Relative to Budget

Assumed Annual Fee (Billed Quarterly)	*Assumed Collection Rate on Calendar Year 2013 Fee*				
	54.5%	57.5%	60.8%	65.8%	71.9%
$ 300	-	416	880	1,584	2,436
$ 290	(264)	138	587	1,267	2,091
$ 280	(528)	(139)	293	950	1,746
$ 270	(792)	(417)	-	634	1,401
$ 260	(1,056)	(695)	(293)	317	1,056
$ 250	(1,320)	(973)	(587)	-	710
$ 240	(1,584)	(1,251)	(880)	(317)	365
$ 230	(1,848)	(1,529)	(1,173)	(634)	20

Notes:
- Does not include any incremental billing costs

Source: *FTI Analysis; Information provided by Streets Department*

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Streets – Refuse Collection Fee:

Other Recommendations

- Changes to face of invoice
  - Include online payment instructions on the face of the bill
    - The sample invoice we reviewed did not make mention of the online payment capability
  - Include the amount outstanding for the prior period
- Changes to the Streets website
  - Add "Pay" button to the home page, similar to how it is presented on phila.gov, to prominently display the payment options for all Streets related fees and fines
  - Add quick link for the Refuse Collection Fee to provide an easy route for individuals to learn about the provisions, payment instructions, FAQs, etc.
  - Add online capability for the completion of the fee exemption form
- Enforcement
  - We agree with the Streets Department's initiative to try and assert a lien on delinquent accounts
  - Consider usage of collection agency for amounts outstanding greater than 1 year
  - Report delinquent accounts to the credit bureau
  - Revisit policy regarding service shut-off at least annually

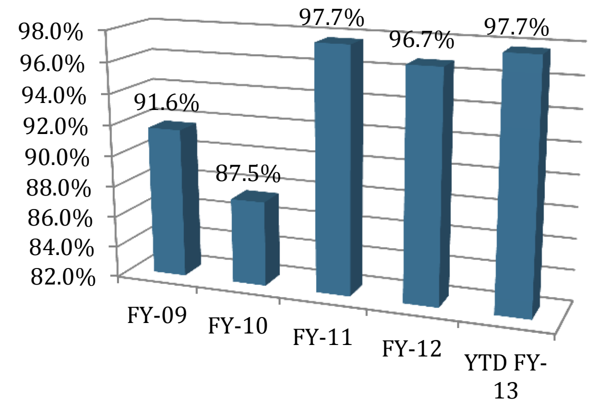
Police – Reimbursable Overtime Program:

Background

The Reimbursable Overtime Program, which has collected approximately $17MM of revenue annually since FY09, has been established to provide the opportunity for the Police Department to contract out sworn police personnel, not scheduled for district/unit assignment, and equipment at established rates ("cost" plus 10% administrative fee) to serve as an additional deterrent to crime through their presence

- Program utilizes a decentralized invoicing and collection process but has yielded a strong collection rate historically
- Police Department uses certain techniques that we believe contribute to the strong collection rate:
  - First time customers that are not expected to be repeat customers must pay in full in advance;
  - First time customers that are expected to be repeat customers must pay 50% in advance;
  - Customers that are delinquent will be refused service;
    - This process is not system driven as it relies upon the district to check with police finance prior to approving a detail (or reviewing the prior month's static delinquent report)
- FTI notes that the favorable collection rate is also an indication of the highly valued nature of this service and the resultant "stickiness" of customers

Historical Collection Rates



Source: Police reimbursable overtime collection trends provided by Police Finance

Police – Reimbursable Overtime Program:

Police Officer Cost Recapture

The City prices the charges to customers of this service based on the estimated incremental cash cost to the City for an officer working overtime (i.e., time and a half, meal money) and excludes its fully loaded costs of uniformed officers

- Cost recapture: The City is not fully recapturing the cost of putting an uniformed officer "on the street" through its current pricing structure by excluding benefits from the calculus
  - Officers are made available for private hire as a result of their fully loaded cost being borne by the City
- Pricing power: The City has substantial pricing power due to its significant competitive advantage for this service
  - Customers can hire a service that has to call the police in order to resolve an issue, or they can simply hire the police initially for issues to be resolved immediately
- Market pricing
  - FTI's market research yielded varied results, however, the City's current pricing was in the range of comparably sized cities and with proposed adjustments, the City's pricing structure remains within the range
  - Informal quotes solicited from private security firms were more expensive than the City's rates
  - The City's program contains best practice elements (e.g., payments routed through City and not directly to officers, details are staffed by Police Department and not directly by officers)

Police Officer	Hourly Rates				
	Rate	Pension	Benefits	Admin	Total
Current Pricing	$ 45.86	$ -	$ -	$ 4.59	**$ 50.45**
Full Cost Recapture	$ 45.86	$ 2.45	$ 7.95	$ 5.63	**$ 61.89**
$ Increase	$ -	$ 2.45	$ 7.95	$ 1.04	**$ 11.44**
% Increase	0.0%	100.0%	100.0%	22.7%	**22.7%**
FTI Suggested Cost Recapture Increase %					**20.0%**
FTI Suggested Cost Recapture Increase $					**$ 10.09**
FTI Suggested Cost Recapture Rate					**$ 60.54**

Notes:

- Information received from Police Finance; *Police Department Average Sworn Salaries*

Recommendations

Our recommendations are included below along with the associated quantification of the expected financial benefit

- Implement cost recapture adjustment to personnel hourly billing rate of 20%, phased in ratably over two years beginning April 1, 2013
  - Include communication plan to top 25 customers
- Revisit pricing of vehicle / equipment rates
  - Patrol car rates have not changed since April 2004 despite rising fuel costs, increased replacement cost of patrol cars, increased hourly labor cost for maintenance, etc.
  - The City should review its equipment rates annually, working in conjunction with the Fleet department and maintain the supporting records on file
- Non-quantifiable areas
  - Online payment function
    - Current ACH process is telephonic and prohibits customers from paying multiple invoices with ease (e.g., have to enter in payer information for each invoice, instead of entering once for all outstanding invoices)
  - Implement system to improve controls and automate customer request to billing process (currently this is handled manually through filling out paperwork)
    - Including the replacement of ROSW, the system used for traffic related details
    - We noted differences in reported total billings, revenue, etc. on various reports provided in connection with this analysis which may be rectified through automation

$ in millions	Actual	Estimated		
	FY12	FY14	FY15	Thereafter
Officer Hours Billed	222,300	222,300	222,300	222,300
Officer $ Billed	$ 14.1	$ 15.5	$ 16.9	$ 16.9
Collection Rate	96.7%	96.7%	96.7%	96.7%
Officer $ Collected	$ 13.6	$ 15.0	$ 16.3	$ 16.3
Incremental Collections vs. FY12		**$ 1.4**	**$ 2.7**	**$ 2.7**

Notes:
- Information received from Police Finance and Revenue
- Assumes hours billed are flat from FY12 onward
- Assumes collection rate is unchanged from FY12 onward
- Assumes cost recapture charge is phased-in over two fiscal years
- FY13 information not available at the time this report was prepared
- Actual FY12 figures exclude amounts billed to the Department of Recreation and the School District

Source: FTI Analysis; Information provided by Police Finance

Police – Reimbursable Overtime Program:

Customer Impact from Recommendations

When implementing the cost recapture charges, the City should implement a communication plan for its top 25 customers given their magnitude and use of this service as shown below

- Recommended Steps in Communication Plan
  - Notify these 25 customers 2-3 months prior to the effective implementation date April 1, 2013
  - Likely best if communicated in person communications explaining the change and related rationale

Top 25 Customers in FY 2012					
#	Name	Amount Billed	Cumulative Amt to Population	Cumulative Count to Population	Est. $ Impact from 20% Increase
1		1,694,151	10.3%	0.1%	$ 278,415
2		1,135,986	17.2%	0.3%	186,687
3		1,044,104	23.5%	0.4%	171,587
4		901,897	29.0%	0.5%	148,217
5		746,611	33.5%	0.6%	122,697
6		681,338	37.6%	0.8%	111,970
7		456,977	40.4%	0.9%	75,099
8		456,798	43.2%	1.0%	75,070
9		432,183	45.8%	1.1%	71,025
10		404,108	48.3%	1.3%	66,411
11		378,881	50.6%	1.4%	62,265
12		349,098	52.7%	1.5%	57,370
13	Redacted	294,503	54.5%	1.7%	48,398
14		289,131	56.2%	1.8%	47,516
15		228,858	57.6%	1.9%	37,610
16		209,067	58.9%	2.0%	34,358
17		185,126	60.0%	2.2%	30,423
18		180,887	62.2%	2.4%	29,727
19		177,332	63.3%	2.5%	29,143
20		172,636	64.3%	2.7%	28,371
21		166,278	65.3%	2.8%	27,326
22		155,751	66.3%	2.9%	25,596
23		150,500	67.2%	3.1%	24,733
24		138,650	68.0%	3.2%	22,786
25		138,608	68.9%	3.3%	22,779
Total for Top 25		$ 11,169,457	68.9%	3.3%	$ 1,835,577

Notes:
- Estimated impact from the 20% increase assumes 82% of the amounts billed in FY12 related to officer hours, which is based on the aggregate mix of type of service for all of FY12. Hours by type of service by were not available on a customer level.
- Further investigation necessary regarding impact of price caps for certain government agencies.

Source: Police Finance; FTI Analysis

Key Observations & Recommendations

Key Observations

- **Burglar Alarm License Philly Code Non-Compliance**
  - The billing, collecting and enforcement of the Burglar License Fee does not comply with the Philadelphia Code
  - The Code requires the onus for billing and collecting from the alarm user to be on the alarm company; however, in practice, the City is the party handling the billing / collecting without support from the alarm companies
  - Furthermore, alarm companies are not supposed to activate the user's alarm until the registration fee is paid; this does not happen in practice
- **Coordination with 911 Dispatch for False Alarm Fines**
  - OAR relies upon information captured by 911 dispatch and police officer regarding the false alarm (i.e., address, name) in order to generate the summons; as a result of the person-to-person communication there are inevitable differences between the information reported to the 911 dispatcher and data OAR has in its system with respect to alarm users
    - No incident file is obtained from alarm companies as part of this process

Key Recommendations

- **Increase coordination with alarm companies OR compel alarm companies to operate in compliance with Code**
  - Alarm companies hold the keys to activating the service to users which is the ultimate leverage to induce alarm users to pay the registration fee
  - Substantial alarm user concentration exists within a few alarm companies making such coordination feasible
    - ~60% of users are covered by 10 alarm companies
- **Improve data capturing process at dispatch level to increase accuracy of billing information to translate into higher collections**
  - Provide 911 dispatch a formal guide on the specific information that needs to be captured
  - For example, the dispatch could receive the account number from the monitoring or alarm company that is reporting the alarm activity. A checklist should be provided to the dispatchers at a minimum
    - A more comprehensive solution would be to enhance the systems to require the capturing of this specific data

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Source: FTI Analysis; OAR provided information

Key Observations & Recommendations (cont'd)

Key Observations (cont'd)

- **ACS Arrangement**
  - The flat commission structure (10.93%) for ACS may not provide the appropriate incentives to increase collections
  - The fee "cap" included in the ACS contract likely anchors their target to meet the City's budget, instead of exceed the City's revenue budget
    - This structure effectively disincentivizes ACS from collecting over the budgeted amount as they receive the same payoff for the first dollar they collect to the ten-millionth

Key Recommendations (cont'd)

- **Outstanding Accounts Receivable**
  - Offer a one-time increase in the ACS commission rate (e.g., 25%) for collections of accounts greater than 120 days outstanding as of a certain date (e.g., 12/31/12)
- **Go Forward Collections & Billing**
  - Require outbound calling, encouraging payment plans or potential settlement discounts
  - Employ collection agencies to collect receivables over a certain number of days old (e.g., 120 days)
- **Amend ACS Compensation Structure**
  - Implement scaled pricing structure that increases the commission rate as annual revenue reaches certain thresholds
  - Require monthly meetings to review performance
  - Ensure ACS management is well aware of the City's revenue goals and stretch goals for these fees / fines
  - Remove the fee cap (or increase cap if Charter prevents fee cap to further incent Intermedix)

Source: FTI Analysis; OAR provided information

Revenue Matrix

The City outsources its billing and collection services to ACS for each of these revenue streams in exchange for a flat 10.93% commission on all collections. ACS has held this position for a number of years; however, the current contract expires in June 2013

- The matrix below compares and contrasts the various enforcement tools used by the City (and ACS) with respect to the OAR revenue streams

Revenue Stream	FY12 Revenue	A/R	FY12 Closure Rate	Reminder Mailings	Outbound Calls	Penalty / Interest Assessed	Credit Bureau Reporting	Collection Agency Involved	Sue in Municipal Court
Burglar Alarm Licenses	$3.1MM	$5.8MM	71.9%	Delinquent accounts sent 1 reminder in mail	No	No	No	No	No; stopped in 2009 after practice was ineffective
False Alarm Fines	$1.9MM	$23.1MM	68.1%	Delinquent accounts sent 2 reminders in mail; each with penalties ($25 on 1st and $50 on 2nd)	No	Yes	No	No	No; stopped in 2009 after practice was ineffective
SWEEP Fines	$4.5MM	$56.2MM	57.4%	Delinquent accounts sent 2 reminders in mail; each with penalties ($25 on 1st and $15 on 2nd)	No	Yes	No	Yes; but have not had much success	Yes; but still have trouble collecting post-judgment

Source: FTI Analysis; OAR provided information

Note: Accounts Receivable includes amounts over 3 years old that have been written-off for accounting purposes

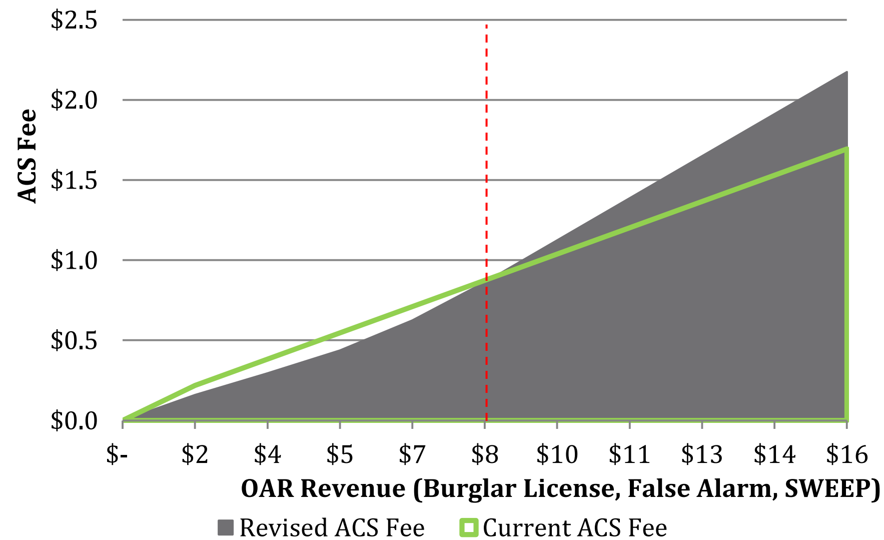
Closure rate: Includes dismissed / canceled / collected; all of which would be at a less than a $1 balance, which is the official definition of "closed.

ACS Fee Structure – Proposed Revisions

Under the proposed revised fee structure, ACS will be compensated at a higher rate for collecting more difficult receivables

- Before signing on for an additional year of the ACS contract, the City should amend its terms, including a scaling commission concept - see example below:
  - 8% of collections under the $2.5MM threshold;
  - 9.5% of collections between $2.5MM and $5.0MM;
  - 12.5% of collections between $5MM and $7.0MM;
  - 17.5% on each dollar they collect above $7.0MM
  - If collections reach $8.85MM *(as budgeted)*, the overall rate will be 11.46% (vs. 10.93% currently earned)

Current ACS Fee Structure vs. Proposed Structure ($ in MM)



$ in MM	Revenue				Total	
% of Net Collections	$0-2.5MM	$2.5-5MM	$5-7.0MM	$7.0-8.9MM	$8.9MM	Overall Rate
8.0%	$ 0.2				$ 0.2	8.00%
9.5%		$ 0.2			$ 0.2	8.75%
12.5%			$ 0.3		$ 0.3	9.82%
17.5%				$ 0.3	$ 0.3	11.46%
Total Payment to ACS	**$ 0.2**	**$ 0.4**	**$ 0.7**	**$ 1.0**	**$ 1.0**	**11.46%**
Net Revenue to City	**$ 2.3**	**$ 4.6**	**$ 6.3**	**$ 7.9**	**$ 7.9**	**na**

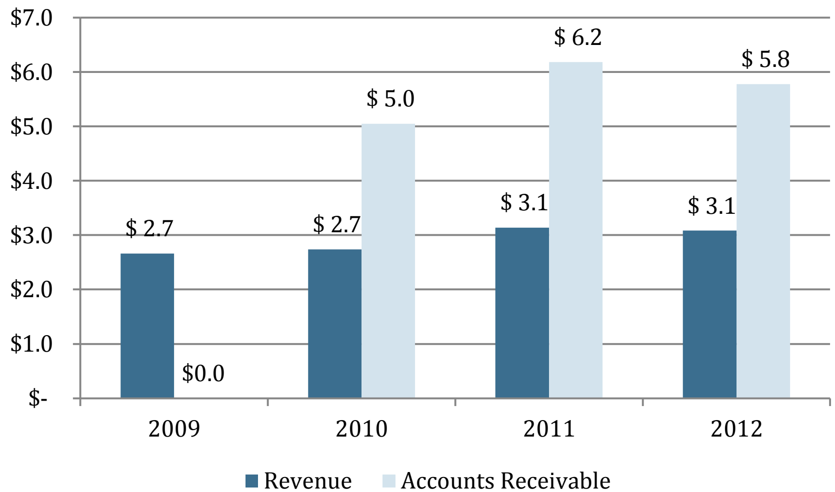
Source: FTI Analysis; OAR provided information

OAR – Burglar License:

Collection Rates

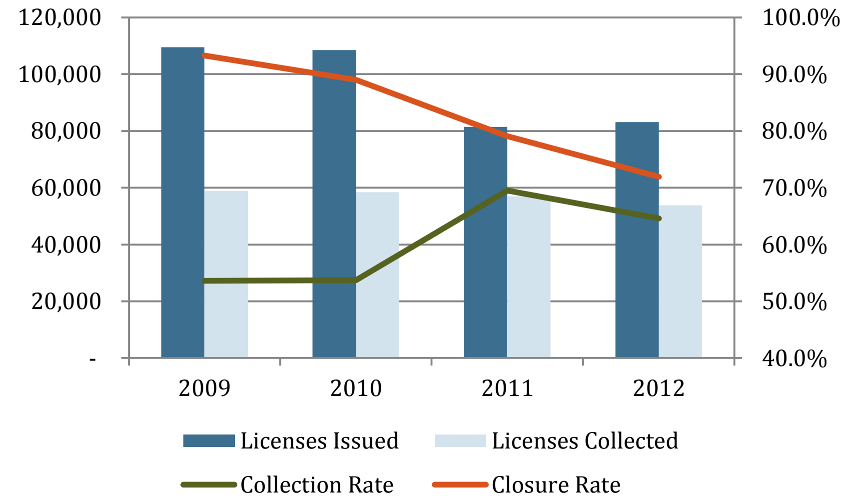
FTI believes the collection rates would improve through increased coordination with the alarm companies, and would certainly increase through compliance with the Philadelphia code

Revenue (Collections) & Accounts Receivable



Description	2009	2010	2011	2012
Accounts Receivable	*na*	$ 5.0	$ 6.2	$ 5.8
% Change	*na*	*na*	*22.5%*	*(6.6)%*
Revenue	$ 2.7	$ 2.7	$ 3.1	$ 3.1
% Change	*na*	*2.9%*	*14.7%*	*(1.8)%*

License Volume & Collection / Closure Rates



Description	2009	2010	2011	2012
Licenses Issued	109,432	108,449	81,416	83,091
% Change	*na*	*(0.9)%*	*(24.9)%*	*2.1%*
Licenses Collected	58,860	58,421	56,979	53,801
% Change	*na*	*(0.7)%*	*(2.5)%*	*(5.6)%*
Collection Rate	53.6%	53.7%	69.5%	64.6%
Absolute Change	*na*	*0.1%*	*15.8%*	*(4.9)%*
Closure Rate	93.3%	89.0%	79.1%	71.9%
Absolute Change	*na*	*(4.3)%*	*(9.9)%*	*(7.2)%*
Diff b/n Coll. & Clos.	39.7%	35.3%	9.6%	7.3%
Improvement	*na*	*4.4%*	*25.7%*	*2.3%*

Notes:

- *Source: FTI Analysis; OAR provided information*
- *$ in millions*
- *Accounts Receivable includes amounts over 3 years old that have been written-off for accounting purposes*
- *Closure rate: Includes dismissed / canceled / collected; all of which would be at a less than a $1 balance, which is the official definition of "closed.*
- *Note: collection and closure rate data is as of October 2012 (i.e., 2009 data should inherently look more favorable to 2012 data given the additional collection periods through October 2012)*

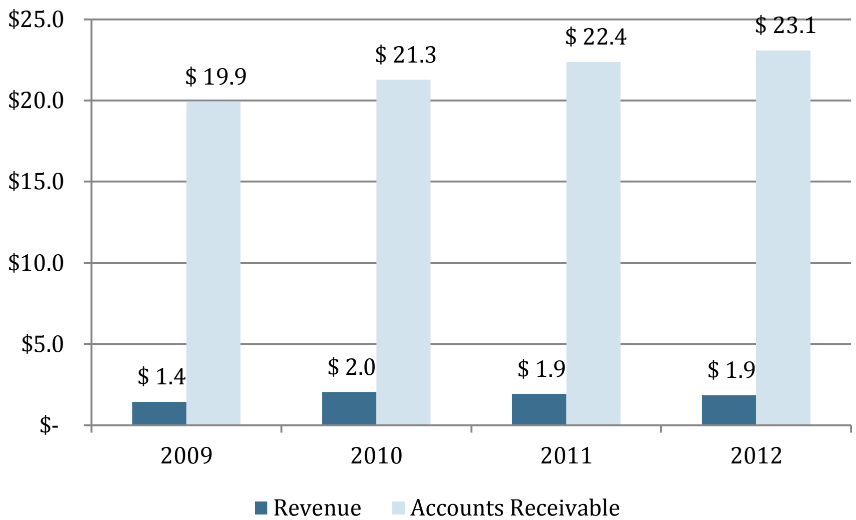
F T I CONSULTING

OAR – False Alarm Fines:

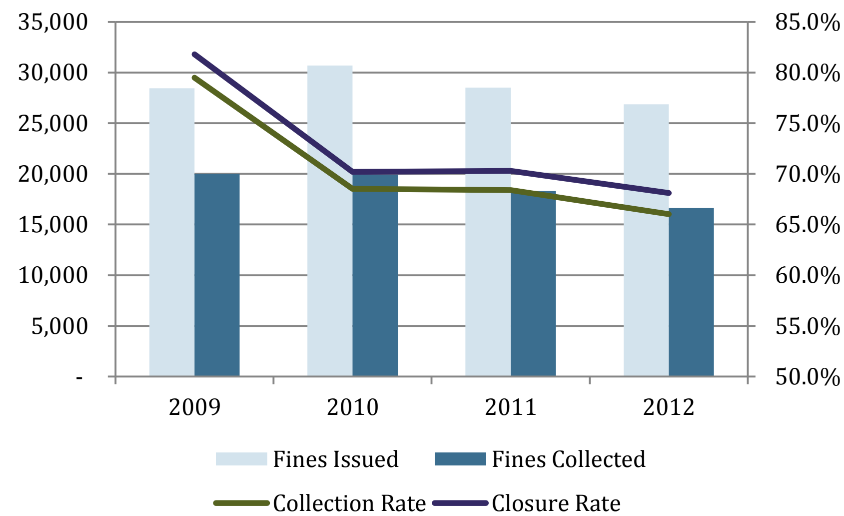
Collection Rates

False Alarm Fine revenue has been relatively stable over the last several fiscal years. *Note that approximately $16MM of the $23.1MM accounts receivable balance is greater than 3 years past due and has been written-off for accounting purposes*

Revenue (Collections) & Accounts Receivable



False Alarm Fine Volume & Collection / Closure Rates



Description	2009	2010	2011	2012
Accounts Receivable	$ 19.9	$ 21.3	$ 22.4	$ 23.1
% Change	*na*	*na*	*5.1%*	*3.2%*
Revenue	$ 1.4	$ 2.0	$ 1.9	$ 1.9
% Change	*na*	*42.5%*	*(6.1)%*	*(3.2)%*

Notes:
- *Source: FTI Analysis; OAR provided information*
- *$ in millions*
- *Accounts Receivable includes amounts over 3 years old that have been written-off for accounting purposes*
- *Closure rate: Includes dismissed / canceled / collected; all of which would be at a less than a $1 balance, which is the official definition of "closed.*
- *Note: collection and closure rate data is as of October 2012 (i.e., 2009 data should inherently look more favorable to 2012 data given the additional collection periods through October 2012)*

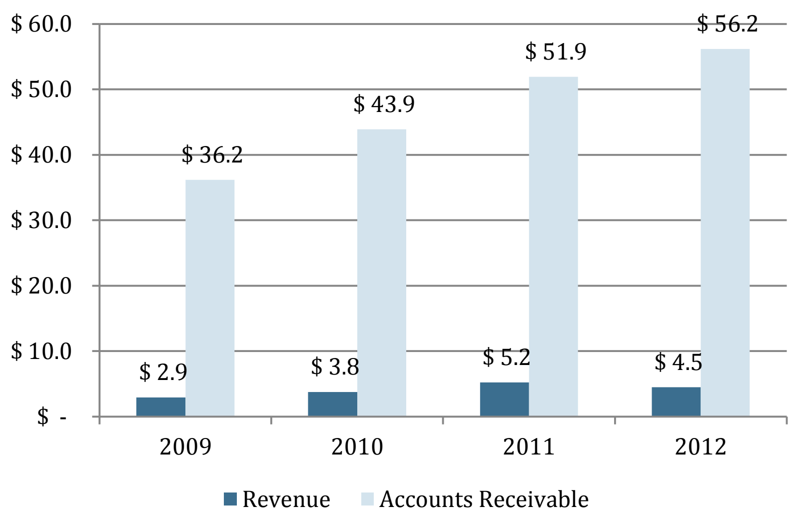
Description	2009	2010	2011	2012
Fines Issued	28,440	30,701	28,522	26,872
% Change	*na*	*8.0%*	*(7.1)%*	*(5.8)%*
Fines Collected	20,004	19,915	18,308	16,616
% Change	*na*	*(0.4)%*	*(8.1)%*	*(9.2)%*
Collection Rate	79.5%	68.5%	68.4%	66.0%
Absolute Change	*na*	*(10.9)%*	*(0.1)%*	*(2.4)%*
Closure Rate	81.8%	70.2%	70.3%	68.1%
Absolute Change	*na*	*(11.6)%*	*0.1%*	*(2.2)%*

OAR – SWEEP:

Collection Rates

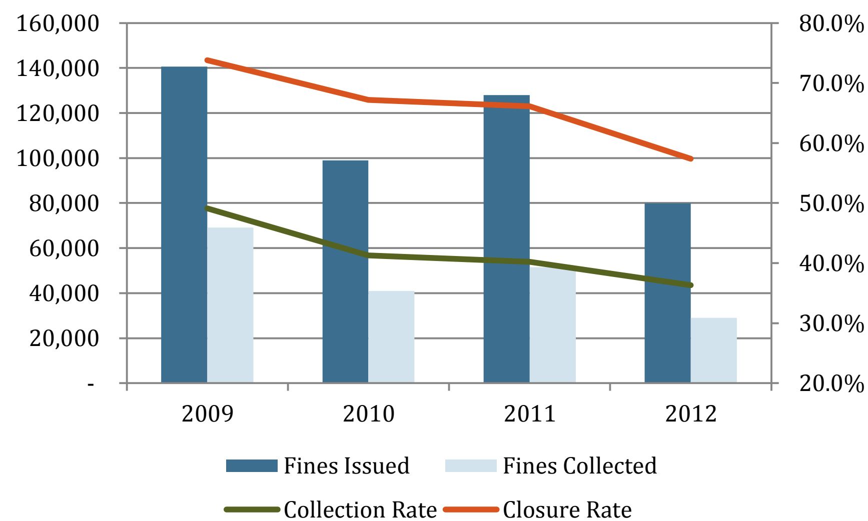
The City has experienced very poor closure rates on these fines despite the ability to sue in municipal court for non-payment, the issuance of judgments compelling citizens to pay and the use of collection agencies to enforce judgments

Revenue (Collections) & Accounts Receivable



Description	2009	2010	2011	2012
Accounts Receivable	$ 36.2	$ 43.9	$ 51.9	$ 56.2
% Change	*na*	*21.4%*	*18.2%*	*8.2%*
Revenue	$ 2.9	$ 3.8	$ 5.2	$ 4.5
% Change	*na*	*28.7%*	*39.1%*	*(14.4)%*

Fine Volume & Collection / Closure Rates



Description	2009	2010	2011	2012
Fines Issued	140,566	99,032	127,916	79,871
% Change	*na*	*(29.5)%*	*29.2%*	*(37.6)%*
Fines Collected	69,150	40,946	51,446	29,006
% Change	*na*	*(40.8)%*	*25.6%*	*(43.6)%*
Collection Rate	49.1%	41.3%	40.2%	36.3%
Absolute Change	*na*	*(7.8)%*	*(1.1)%*	*(3.9)%*
Closure Rate	73.8%	67.2%	66.1%	57.4%
Absolute Change	*na*	*(6.6)%*	*(1.1)%*	*(8.7)%*

Notes:

- *$ in millions*
- *Accounts Receivable includes amounts over 3 years old that have been written-off for accounting purposes*
- *Source: FTI Analysis; OAR provided information*
- *Closure rate (per OAR): Includes dismissed CVNs, canceled or permanently suspended CVNs (such as Streets Error) as well as CVNs closed out for CE, all of which would be at a less than a $1 balance, which is the official definition of "closed." CVNs which go to CE are totally different from those dismissed, canceled or permanently suspended, because we are still trying to collect on the CE.*
- *Note: collection and closure rate data is as of October 2012 (i.e., 2009 data should inherently look more favorable to 2012 data given the additional collection periods through October 2012)*

Observations & Recommendations

Observations

- **Expanding self-reporting population is crucial to increasing compliance**
  - Overwhelming majority of revenue results from self-reporters and not through enforcement
- **Hansen System Replacement**
  - L&I's RFP to replace its legacy Hansen system highlights its vision for the environment the new system will provide, such as:
    - Online customer interface; cloud computing; 100% applications online; usage of kiosks; 100% drawings submitted electronically; IVR implementation; mobile devices for inspectors syncing with system; reducing number of business licenses; streamlining renewal process; dashboard reporting; among others
  - FTI is in agreement with these aspirational goals but makes the observation that a transformational change in business processes must also take place in order for this vision to be realized (i.e., the new system is not the sole solution – need to reform business process for effective implementation)
- **Bounced Checks**
  - On average, approximately $255,000 in checks have bounced in each of the last four fiscal years

Recommendations

- **Expand self-reporting population**
  - City has launched new website and is exploring advertising mediums to get the message out to citizens in addition to expanding usage of 311
  - In addition to the educational campaign on rationale/benefits of uniform licensing and inspection protocols, administer more aggressive public campaign on ramifications for non-compliance
    - Including the potential for assessing penalties on the operations-side to compel compliance
- **Ensure business transformation process is being actively managed in connection with systems upgrade**
  - Can be managed in-house or through hiring a third party (L&I is keenly aware of this need)
- **Ensure linkage exists between new system and TIPS**
  - For example, there should be automated flags in the system to alert L&I personnel when an application has been submitted to work at an address that is delinquent on its property taxes
- **Prohibit usage of personal checks**
  - While this is a relatively small number, it is potentially indicative of attempts to game the system and at a minimum the City should impose fines / fees and prohibit paying via check for past offenders

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Source: FTI Analysis; L&I provided information

III. Cost Initiative

Purchasing:

Key Observations

The purchasing of professional services ("Professional Services") is managed de-centrally by the respective "buying" department with section 17-1400 compliance managed centrally by the Finance Department. The purchasing of commodity goods and services ("SS&E") is managed centrally by the Procurement Department

- Many hurdles / obstacles / constraints exist in today's purchasing processes that likely increase cost to the City in two ways:
  - Limits competition by dissuading or disallowing vendors from participating in bids; and
  - Increases vendor pricing for those who choose to participate to compensate for "cost of doing business with the City"
- The City lacks a sufficient professional services contract management process, other than for 17-1400 compliance purposes
- The City only deploys category buying and co-operative purchasing in select cases (e.g., OIT and Energy for category buying and the Staples contract for co-operative purchasing)
- Several examples were identified where a vendor contracted with multiple departments under different contracts, some of which had different terms across contracts that the City was not aware of
- The PhillyStat working group is already focused on making improvements in the contracting process, focusing heavily on streamlining the process to improve efficiency and speed, ensuring contracts are executed by contract start dates, and increasing participation in bid opportunities for both SS&E and pursuit of Professional Services contracts
  - Acquisition and implementation of an eProcurement system will address multiple issues:
    - Provides a vehicle to fix the front-end interface (which is currently severely flawed) for SS&E vendors
    - Provides the capability to mine procurement data – a capability that limits the City's ability to manage the purchasing process today for SS&E and limited FTI's ability to conduct analysis in this area
    - Additionally, provides an opportunity to implement a substantially improved single interface for both Professional Services and SS&E vendors
  - The PhillyStat working group lacks an external perspective – no vendors are in the working group and limited qualitative and no quantitative research has been done to understand key drivers of vendor behavior to build market intelligence in key categories

Purchasing:

Key Recommendations

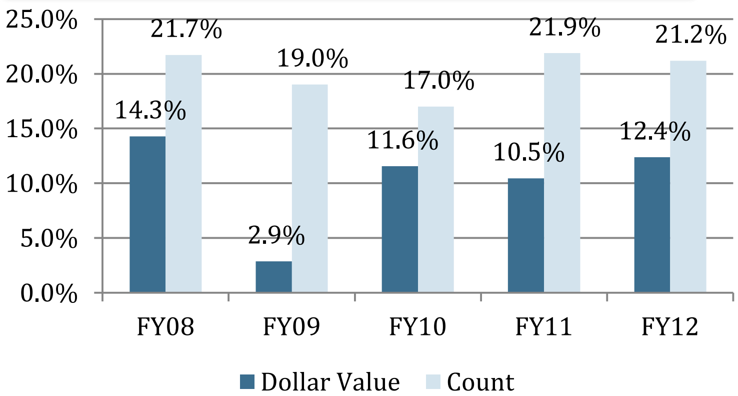
There may be a significant opportunity to reduce the cost of purchased goods and services by re-engineering the purchasing processes

- Expand charter of professional services group to include centralized vendor / contract management of Professional Services contracts and consider consolidating Professional Services and SS&E purchasing functions into a single organization – a Purchasing Center of Excellence – to capture benefits of shared learning, best practices, and organizational development
- Implement vendor / contract management best practices including ongoing compliance monitoring, establishment of key performance metrics for major vendors, linkage of key performance metrics to contracts, implementation of continuous improvement requirements, and implementation of vendor scorecards for key vendors
- Consider expanding the use of major category buyers (i.e., create category buyers for more categories) and continue leveraging in-house department knowledge by teaming with buyers in centralized purchasing functions (see page 81)
- Establish best practices to enhance market research process and capabilities to support major category buyers and process (e.g., conducting exit interviews, regular focus groups for major buying categories and across major buying categories)
- Support implementation of an eProcurement system to automate the purchasing process and provide a richer data environment for the analysis and management of competitively bid SS&E contracts, and to provide a substantially improved unified front-end for both Professional Services and SS&E vendors (see page 82)
- Continue to aggressively pursue co-operative SS&E purchasing opportunities
- Consider multiple rounds of bidding as part of the SS&E purchasing process (i.e., publish winning bid after round 1 and open bidding process again)
- Broaden composition and scope of the PhillyStat working group focused on increasing competition in purchasing
  - Add vendors to the working group
  - Establish a process and identify tools (e.g., "exit interviews" for vendors who elect not to pursue contract opportunities, focus groups, surveys) to understand key drivers of vendor behavior (i.e., decisions to pursue or not pursue opportunities and pricing decisions); utilize this process and toolkit to support the working group's analyses and transition to the City's purchasing functions to embed in their processes
  - Charter a sub-Committee to the PhillyStat working group to: (i) quantify the impact of suppressed competition on City costs resulting from social policies and practices; (ii) quantify the impact on City costs of each element of current standard terms and conditions and any other identified cost drivers affecting vendor pricing – build Vendor Cost Waterfalls (see page 79); (iii) utilize these cost assumptions to facilitate a comprehensive review of terms and conditions and other city policies and practices to recalibrate as appropriate

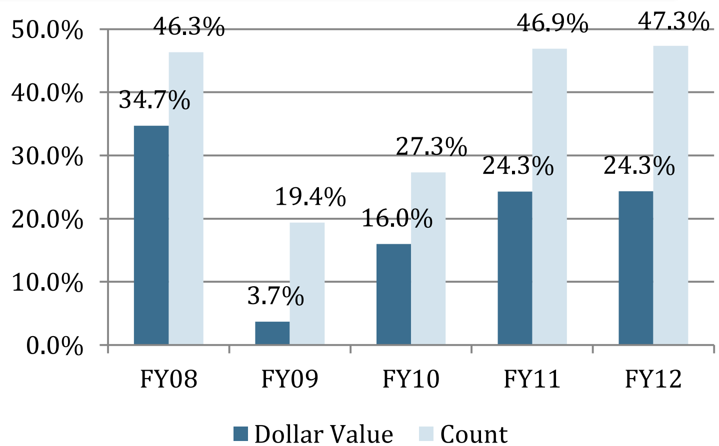
Lack of Competition – "Competitive" Bid Opportunities

Nearly half of the SS&E contracts awarded in each of the last two fiscal years had only 1 or 2 bidders

% of Contracts Awarded to Single Response Bidders



% of Contracts Awarded with 2 Responses or Less



- FTI reached out to multiple vendors that the Procurement Department indicated expressed a lack of desire to conduct business with the City
- There may be multiple factors suppressing competition
  - Poor website design and interface
  - Negative perceptions of the integrity of the process
    - "system is rigged"
    - "[the City] sole sources"
  - Vendor bids are available to the public (i.e., pricing is eventually seen by competitors)
  - Slow payment by the City (perceived or based on experience)
  - Bonding requirements and other standard terms and conditions
  - Preferences
    - OEO ranges
    - SBA or OEO requirement for contracts less than $30K
    - Local preferences
  - State-imposed separation of duty requirements in public works (electrician, plumbing, mechanical, etc.)
- Participation of fewer bidders is likely to result in higher prices
  - Even though bidders may not know how many bidders are competing, over time the expectation of competition (or lack thereof) influences behavior
  - Long-time vendors to the City learn over the time the degree to which they have to compete to win bids – undermining the very principle of competitive bidding
- Many of the same hurdles that may suppress competition for competitively bid SS&E opportunities likely suppress competition for Professional Services contracts
- Many factors that suppress competition may also build cost into bids for those vendors who do participate

Source: FTI Analysis; Contracting information provided by the Procurement Department regarding SS&E contract opportunities; SS&E Vendor interviews

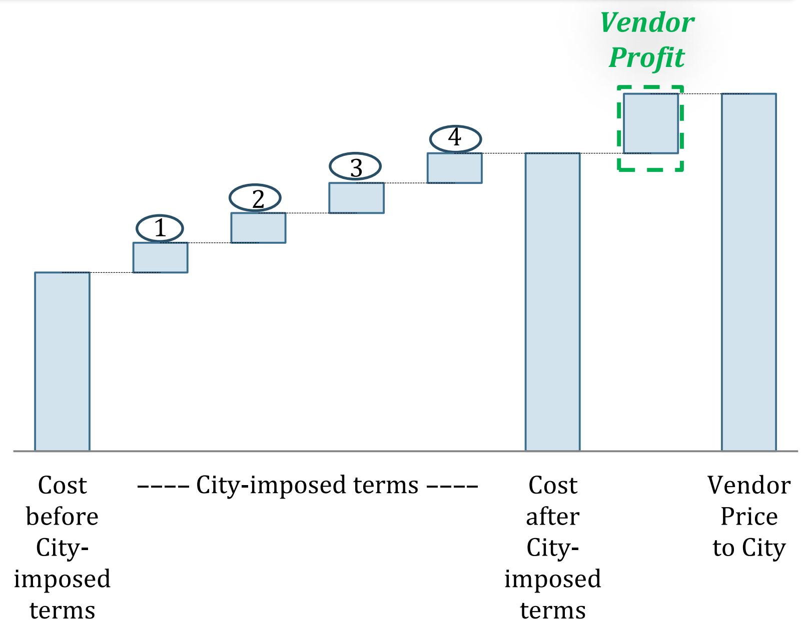
Purchasing:

City Requirements/Operations Build Cost

Many of the same hurdles/obstacles that suppress competition may also build additional cost in vendor pricing for those vendors who choose to conduct business with the City

- Vendors are likely to build costs imposed by the requirements and operational issues of the City into their assumptions and increase price rather than reduce margin, thereby driving up cost to the City
- There may be multiple layers of costs added to vendor pricing as a result of City requirements, including but not limited to:
  1. **Bonding Requirements and other Terms & Conditions:** Costs to add protection by guaranteeing services; limitations of liability and indemnification requirements; etc.
  2. **Preferences / Social Policy:** Subcontracting fees incurred by vendors who need to subcontract a portion of their work to comply with preference requirements (e.g., OEO, local) or other social policy (e.g., wage requirements)
- There may be multiple layers of costs added to vendor pricing as a result of City operational issues, including but not limited to:
  3. **Slow Payment of Invoices:** Costs associated with the additional cost of working capital and other interest charges;
  4. **Contracting Delays:** Timing uncertainty could affect vendor cost assumptions by impacting capacity planning and may increase a vendor's risk with respect to some of their input costs

Illustrative Build-up of a Vendor Cost Waterfall



"It's just the cost of doing business with the City of Philadelphia"
-- Water Department supplier

Key Issues:

- **To what extent do vendors pass these costs along to the City?**
- **Are the costs to the City worth the benefits?**

Source: FTI Analysis

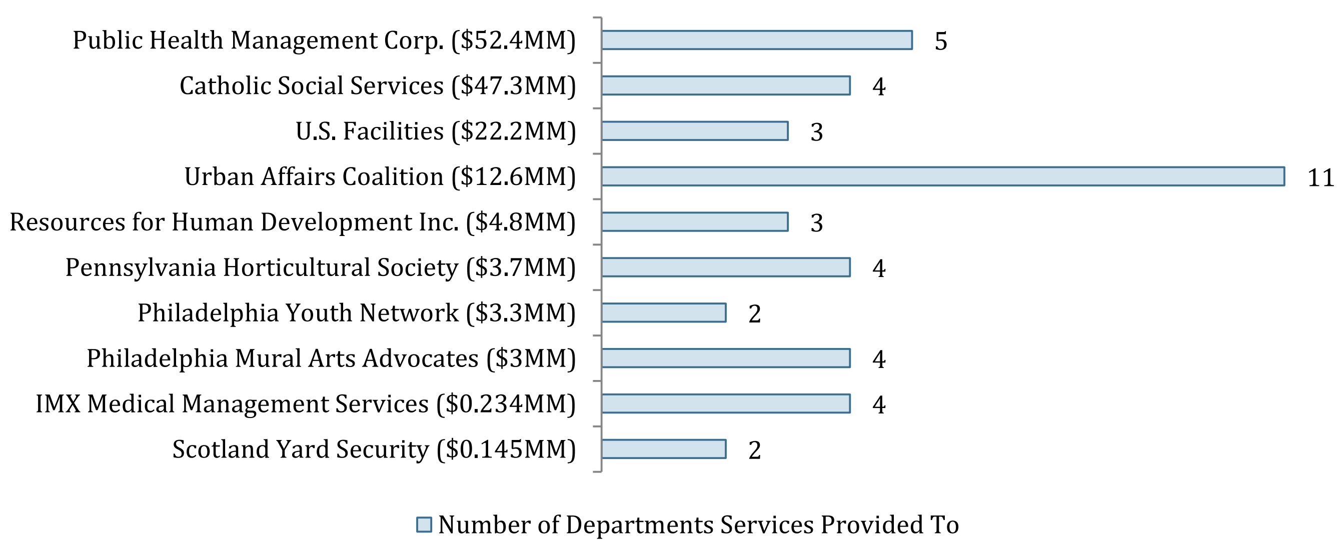
Purchasing:

Purchasing in Silos

The City should continue to explore, and even mandate, major category buyers for all contracts (professional services and SS&E)

- Potential purchasing power may be enhanced if departments coordinate and purchase collectively with common vendors (see graphic below with respect to Professional Service contracts)
- Category managers could improve this coordination and, at the same time, ensure that RFPs define requirements in a way that optimize the balance between meeting the City's need and maximizing competition so as to lower costs, including:
  - Exerting greater leverage with vendors who would otherwise be contracting with multiple departments
  - Ensuring consistent terms are being agreed to across departments with individual vendors
- There is likely substantial benefit to the knowledge-share of best practices that would germinate if the professional service and procurement groups were consolidated into a single organization – a Purchasing Center of Excellence

Examples of vendors with multiple contracts across different departments (FY12 awarded spend, # of departments)



Note: The above is not intended to be an all-inclusive list

Source: FTI Analysis; "Active Contracts FY 10, 11, 12.xls" provided by the Deputy Finance Director (professional service contracts)

Utilization of Major Category Buyers

Major category buyers possess deep purchasing expertise in specific categories of spend, lead purchasing efforts in those categories, liaise with departmental resources / users of the services being sought, hold vendors accountable for performance through active contract management (leveraging departmental resources), with the overall goal of procuring the highest quality of goods and services at the lowest price for the City *

Purchasing Center of Excellence

- IT Buyer
- Energy Buyer
- Buyer
- Buyer
- Buyer
- Buyer

- Identify major categories of spend which, by virtue of their size and or importance / complexity warrant the assignment of a dedicated purchasing professional – a Major Category Buyer
- Build major category expertise in other Buyers by assigning other key categories consistently to the same Buyer

Major Category Buyers

- Possess real expertise and in-depth knowledge in the category
- Follow industry dynamics
- Know key industry players
- Drive thinking around key performance metrics and contract requirements
- Liaise/team with department resources on specific contract efforts
- Ensure maximum leverage of total City purchasing in any given category and best purchasing terms and conditions across multiple contracts in a category and or with vendors contracting with multiple City departments
- The City has major category buyers for IT and Energy today

Expert Departmental Resources

- Team with professional buyers in centralized purchasing organization(s)
- Lead development of requirements/specifications
- Contribute expertise in category and knowledge of vendors to specific contract efforts
- Manage contract performance and compliance locally, as required, for those smaller contracts that are not centrally managed and team with professional buyers to support management of major contracts

Source: FTI Analysis

** Other criteria may override price for Professional Services contracts*

e-Procurement Vendors

- A list of major e-Procurement Vendors is provided below. These software advances greatly enhance the vendor management process and have proven to increase efficiency in purchasing organization. Some other benefits include cost savings from reducing paperwork errors, increased competition from vendors, easy tracking of each bid, and the ability to stay current with technology to boost efficiency and reduce time spent on unnecessary paperwork
- An e-Procurement system could be put in place to easily monitor the bids and bid process on a continual basis, a lack of an e-services solution poses efficiency challenges and a lack of control on data integrity and could provide a substantially improved common interface to the public for SS&E and Professional Services vendors
    - We also understand the benefit of including Public Works contracts within this same common interface / e-Procurement system
- SEPTA runs its own online procurement system internally with a staffed IT department; however, its design, simplicity, and lack of comparability to other major cities' procurement systems, do not make it a recommended e-Procurement Application System for use to the City of Philadelphia

City	Company/Application	Company Website	Application Website
Los Angeles, CA	O&PEN	http://www.ogmaconsulting.com/	http://www.ogmaconsulting.com/about_open.html
Phoenix, AZ	BuySpeed	http://www.periscopeholdings.com/	http://www.buyspeed.com/
San Diego, CA	DEMANDSTAR by ONVIA	www.onvia.com/	http://www.demandstar.com/
Dallas, TX	CGI	http://www.cgi.com/	http://www.cgi.com/en/governments/advantage-erp-procurement
San Jose, CA	BIDSYNC	http://www.bidsync.com/	http://www.bidsync.com/bidsync-eprocure/why-bidsync-eprocure
Miami, FL	ORACLE	http://www.oracle.com/index.html	https://imiami.miamigov.com/OA_HTML/AppsLogin
Pittsburgh, PA	iPT Interactive Procurement Technologies by BidNet	http://www.bidnet.com/	http://www.iptbybidnet.com/

Procurement Website

NOTICES

- Chapter 17-1600 "Economic Opportunity Plans"
- Certified Contract Renewals
- Internet Surplus Auction
- Debarment List

City-wide Right to Know Policy
Staff List

Public Information Unit
City of Philadelphia
1401 JFK BLVD, Suite 170
Philadelphia, PA 19102-1685
Phone: 215-686-4720
Fax: 215-686-4767
Bid.info@phila.gov

LOCAL BUSINESS ENTITY CERTIFICATION (LBE)

- LBE Application
- LBE Regulations
- LBE Continuing Eligibility Affidavit

MASTER BID SECURITY

- July 1, 2012 to June 30, 2014

PUBLIC WORKS

- Standard Contract Requirements
- Notice to Public Works Vendors
- Public Works Bid Results
- Public Works Bidding Opportunities

SERVICE, SUPPLIES & EQUIPMENT

- SBA Registration through CCR

NON-COMPETITIVELY BID CONTRACTS

- eContract Philly

FORMS

- BID LIST APPLICATION
- Bid List Update Form
- Public Works QUESTIONNAIRE & FINANCIAL STATEMENT FOR QUALIFYING BIDDERS
- Bond Preparation Fee Schedule
- BID BOND
- PERFORMANCE BOND
- PAYMENT BOND
- ACH VENDOR ENROLLMENT AND CHANGE FORM
- Vendor Information Payment System

Links

- Vendor's Guide - How to do Business with the City of Philadelphia
- OFFICE OF ECONOMIC OPPORTUNITY (OEO) – Registration and Information
- FINANCE
- Phila.Gov
- Minority Vendor Directory

DISCLAIMER

With the existing procurement website, a brief run-through of the links within the webpage revealed 4 inactive links and 4 out-of-date links *(as of November 2, 2012)*. A screenshot of the existing website shows the inactive links highlighted in red and the out-of-date links highlighted in yellow:

Inactive Link	Website
Certified Contract Renewals	http://ework.phila.gov/acisweb
PUBLIC WORKS	http://./forms/scr2004.pdf
SERVICE, SUPPLIES & EQUIPMENT	http://./forms/scr2004.pdf
SBA Registration through CCR	https://www.bpn.gov/ccrupdate/NewRegistration.aspx

Out-of-Date Link	Website	Last Revised Date
Standard Contract Requirements	http://mbec.phila.gov/procurement/forms/scr2007.pdf	September 2007
Public Works QUESTIONNAIRE & FINANCIAL STATEMENT FOR QUALIFYING BIDDERS	http://mbec.phila.gov/procurement/forms/QUESTION.PDF	October 1995
PERFORMANCE BOND	http://mbec.phila.gov/procurement/forms/PERFORMA.PDF - April 2003	October 2003
PAYMENT BOND	http://mbec.phila.gov/procurement/forms/PAYMENTB.PDF	October 2003

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Fleet – Executive Summary:

Key Observations & Recommendations

Key Observations

- **Fuel Cost Management**
  - Fleet does not possess in-house expertise, nor is a third-party engaged, to effectively manage fuel costs using a risk-mitigation approach (i.e., hedging)
  - City does not partner with other entities like SEPTA to maximize fuel purchasing power
  - Imputed per gallon budgeted amount of fuel costs are well below market prices and the upward trajectory of market prices has caused (i) Fleet to not pursue hedging, and (ii) exacerbated budget deficits
- **Asset Life-Cycle Management (i.e., vehicles)**
  - Fleet does an effective job of ensuring vehicles are on the street, ready for use
  - Fleet does not formally track / monitor several key metrics essential for effective data-driven asset life-cycle management primarily due to system constraints
- **Systems**
  - Operations system was built in-house and is now behind contemporary technology. RFP process is underway to implement new asset management system
- **Asset Purchasing**
  - Vehicle replacement funds are not budgeted as costs to the primary users of the assets; these interests are not aligned

Key Recommendations

- **Fuel Cost Management**
  - Implement hedging program by (i) self-managing a hedging program (e.g., exchange based or broker/dealer based), (ii) contracting with a third party for this service and working with existing fuel supplier (such as the City currently does with electricity purchases), or (iii) hiring an expert in-house
    - FTI's illustrative hedging program (using a self-managed financial hedge approach), if employed in FY12, would have reduced the fuel deficit by 60% to $2MM
    - Evaluate current and expected market prices when setting budgeted per gallon fuel costs
  - Form fuel-purchasing partnership with SEPTA to achieve lower per gallon rates
- **Asset Life-Cycle Management**
  - Asset management system overhaul is step in right direction
  - Develop monthly dashboard reporting through new system to track key metrics driving asset-management policies / targets (i.e., a data-driven approach)
- **Asset Purchasing & Department Accountability for Usage**
  - Explore budgetary mechanisms to hold departments accountable for the usage and replenishment of Fleet assets

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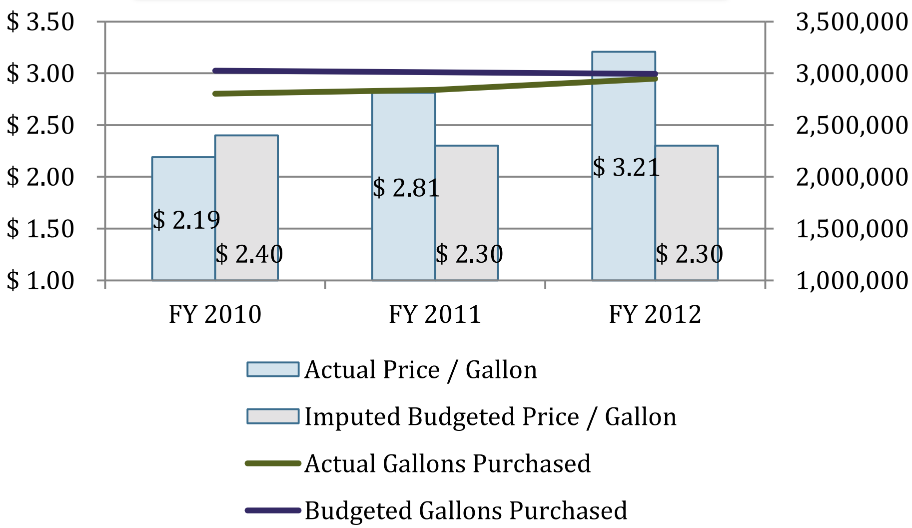
Source: FTI Analysis

Fuel Cost Management Performance

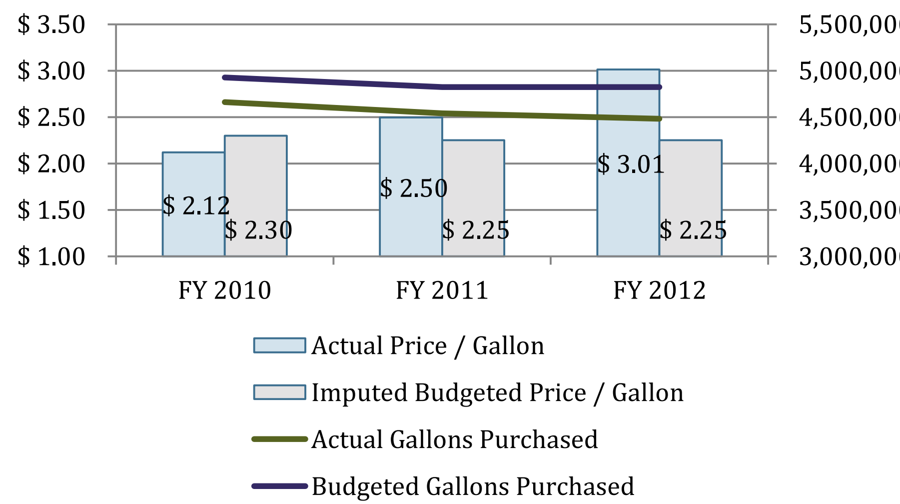
"Fleet Management had a historically strong track record of negotiating fixed cost of fuel as an effective management against variations in price. In FY12, Fleet Management did not successfully negotiate a fixed price and fuel costs were $5.0 million over budget"- PICA staff report

- Analysis of historical data highlights that the imputed budgeted prices per gallon have decreased since 2010 based on across the board cuts despite market pricing increasing dramatically over that time period – while the deficits that have been reported could have been mitigated through hedging as discussed later in this section, it is important to note that more realistic budgeting of fuel costs must be adopted by the City
- The Fleet Department has been successful at conserving volume below budgeted levels in each of the last three fiscal years

Diesel



Gasoline



$ in thousands

Diesel $	**FY 2010**	**FY 2011**	**FY 2012**
Actual	6,139	7,985	9,457
Budget	7,262	6,923	6,885
Fav / (Unfav) vs. Budget	1,124	(1,062)	(2,572)
Volume Variance	**535**	**392**	**105**
Price Variance	**589**	**(1,454)**	**(2,677)**

$ in thousands

Gasoline $	**FY 2010**	**FY 2011**	**FY 2012**
Actual	9,887	11,331	13,510
Budget	11,330	10,854	10,854
Fav / (Unfav) vs. Budget	1,442	(477)	(2,656)
Volume Variance	**609**	**641**	**768**
Price Variance	**833**	**(1,118)**	**(3,424)**

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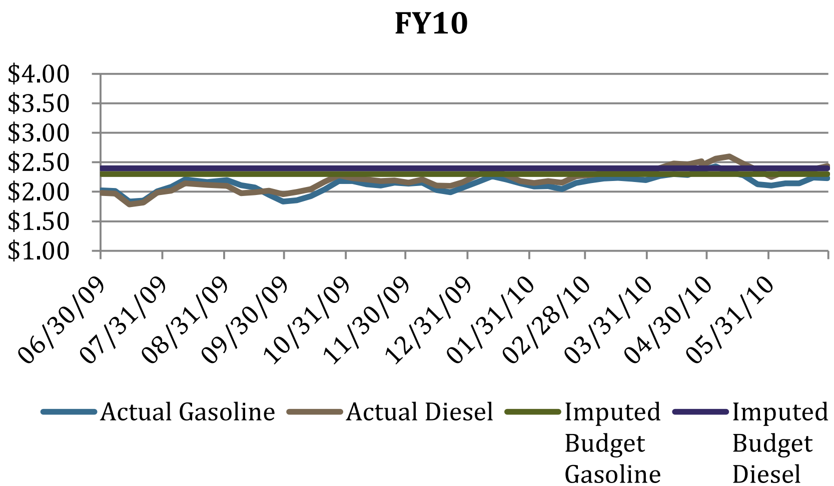
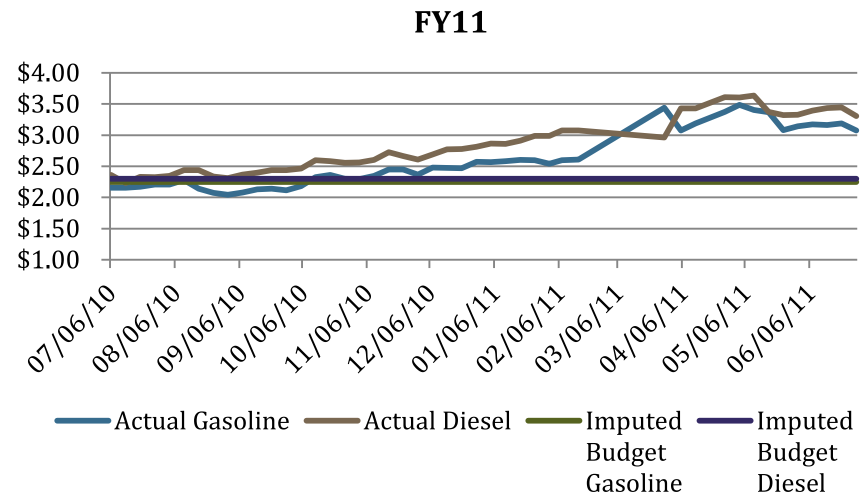
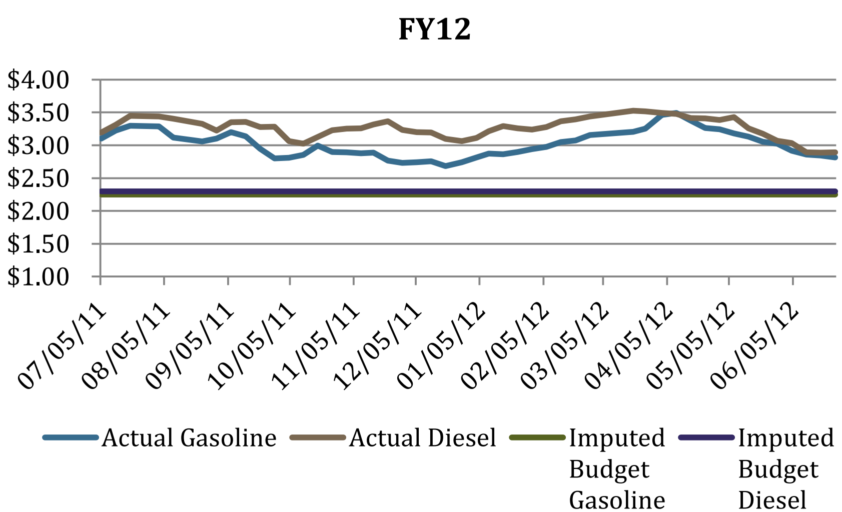
Source: FTI Analysis; Fleet provided documentation; PICA Staff Report on FY13-FY17 Five Year Plan; Amounts include School District and Housing Authority

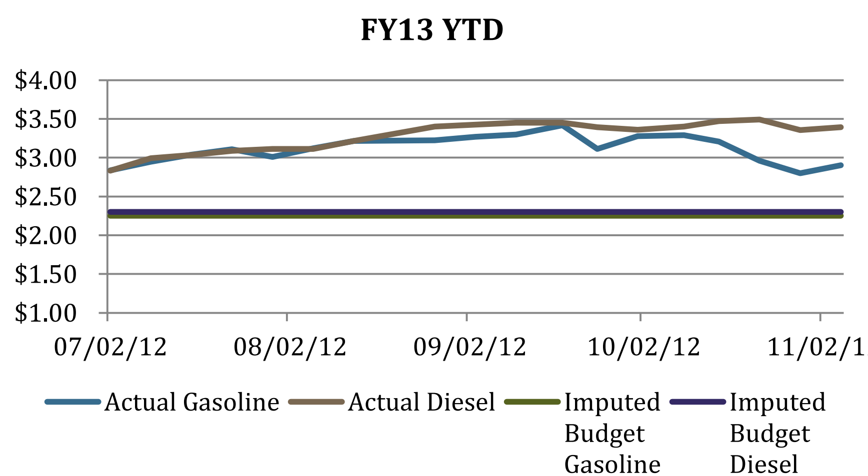
Fuel Cost Management Performance (cont'd)

Fuel costs have risen substantially over the last several years; however, the Fleet department has been challenged, through the budget, to hold its costs steady









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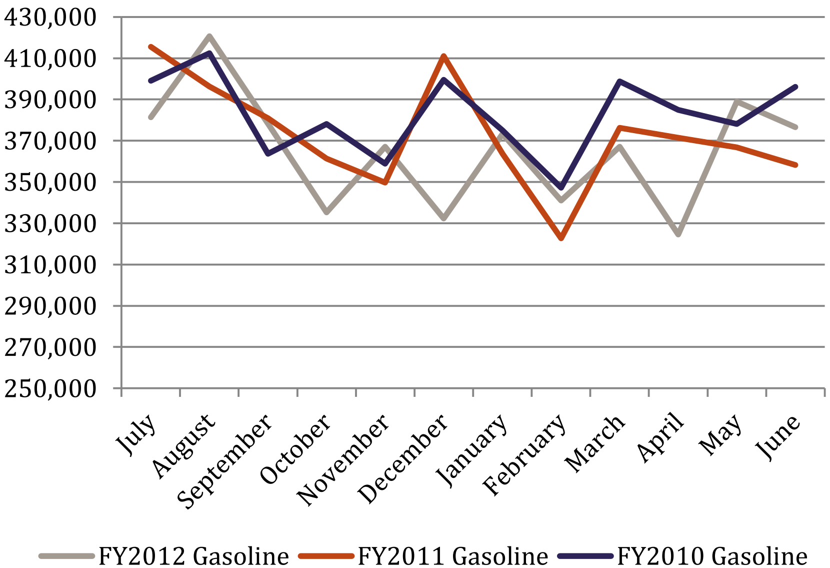
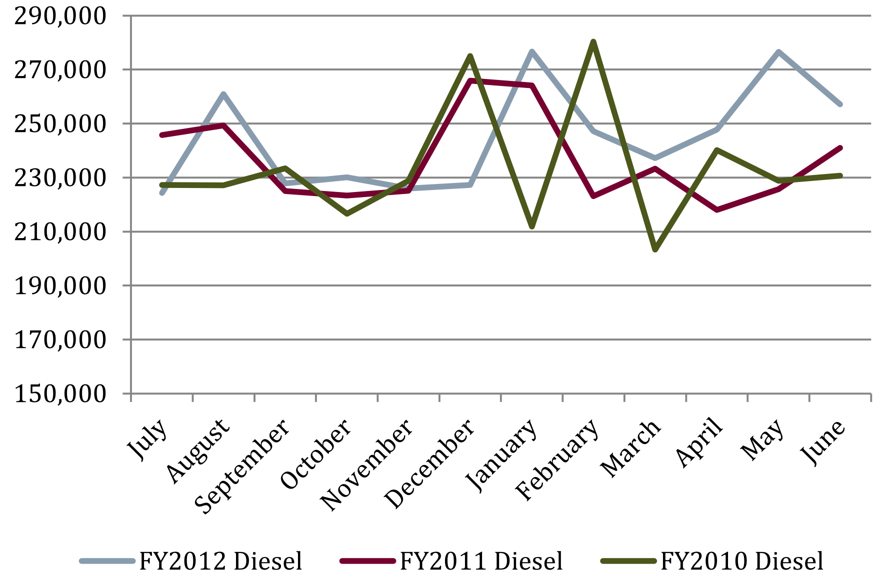
Source: *Fleet and Budget Office; FTI Analysis*

Fleet – Fuel Cost Management:

Monthly Fuel Purchases (gallons)





Fiscal Year	Diesel	Gasoline	Total
2010	2,803,275	4,661,245	7,464,520
2011	2,839,564	4,539,258	7,378,822
2012	2,947,603	4,482,490	7,430,093
Average	**2,863,481**	**4,560,998**	**7,424,478**

Note:
- *Actual gallons include Truck-to-Truck / Fuel Credit Card Purchases and School and Housing Authority*

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Source: Fleet and Budget Office; FTI Analysis

Fleet – Fuel Cost Management:

Hedging Background and Benefits

Background

- Fleet entered into a new fuel supply arrangement with Mansfield Oil Company in October of 2011 (during FY12); replacing Sunoco, who had been the prior supplier for a number of years prior
- Prior to switching to Mansfield, the City leveraged its relationships with Sunoco in order to determine whether or not to hedge; this practice was effective in providing stability to fuel costs despite it not being a "formal" hedging program
- Since entering into the Mansfield contract, the Fleet department has purchased all of its fuel in the spot market without analyzing the potential benefits of hedging
- The upward trajectory of market prices has caused (i) Fleet to not pursue hedging, and (ii) exacerbated budget deficits
- The Mansfield contract includes the following provision with respect to hedging:
  - "The Buyer's [City's] intent is to purchase product on a floating price basis that varies with the spot market price for the specific product, while also retaining the ability to "lock-in" a fixed price at any time prior to, or during the contract period, for all or for a portion of the contracted quantity"

Benefits of Hedging

- **Predictability / Risk Management Tool**
  - The implementation of a hedging program is not intended for speculative purposes, or as a revenue generator, but solely to help mitigate the risk of negative surprises
- **Interests Aligned**
  - Fleet's fuel budget is set annually using an overall targeted spend on gasoline and diesel
    - Per gallon budget rates can be derived from this overall targeted spend
  - In FY13 the imputed budgeted per gallon rates for diesel and gasoline are $2.30 and $2.25, respectively
  - Currently Fleet views the imputed budgeted levels as the targeted prices at which to lock-in purchases through fixed contract purchases through its supplier

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Source: FTI Analysis; Fleet provided documentation

Fleet – Fuel Cost Management:

Self-Managed Hedging Program

The City could implement a self-managed hedging program within its Finance Department (working in conjunction with Fleet). There are two primary ways to accomplish this:

Exchange Based

- **Characteristics**
  - Liquid instruments traded on futures exchange (e.g., NYMEX, CME, ICE)
  - Lock-in monthly contracts for fiscal year during budgeting process (6-8 months prior to start of fiscal year); OR
  - 3 month "exposure" rolling monthly
    - Front months provide higher volume, higher liquidity, lower bid/ask spread
  - Generally requires entering into offsetting position prior to expiration; however, there is potential for cash settlement provisions
- **Costs**
  - Margin requirements (10-20% of notional) – use of capital
- **Risks**
  - Basis risk (characteristics of product hedged vs. product delivered)
  - Volume mismatch (contracts are for 42,000 gallons; will not be able to place perfect gallon hedge)
  - Counterparty risk is low due to exchange traded (clearinghouse involvement)
  - Execution risk based on in-house expertise / appropriate risk management oversight

Broker / Dealer Based

- **Characteristics**
  - Not exchange traded; less observable
  - Use 3 – 4 banks and hold auctions each month (period)
    - Requires ISDAs being in place
  - More flexibility in sculpting program; tailored to meet specific needs on maturity, volume, etc.
    - Eliminate basis risk
  - Cash settlement
- **Costs**
  - Increased costs relative to exchange (legal, financial advisors to assess bank proposals)
  - Margin requirements negotiated
- **Risks**
  - Counterparty risk is higher; no clearinghouse; may be mitigated through collateral posting

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Source: FTI Analysis; Fleet provided documentation

Fleet – Fuel Cost Management:

Illustrative Review of Hedging-Driven Budgeting

Futures prices can be used a tool to understand the market's expectation for gas and diesel prices during the upcoming budget year. FTI performed illustrative analyses to identify / quantify the effects of a hedging program involving the use of futures during historical and prospective fiscal years

- Methodology
  - City is considered to be "short" gasoline and diesel given that it's a consumer of fuel (i.e., City benefits when price of fuel decreases); therefore, to hedge using futures contracts, the City must go "long," or purchase, the futures contracts
  - Obtained futures prices for gasoline and diesel as of November, for the upcoming fiscal year on a monthly basis (e.g., buy futures in November 2010 to hedge fuel purchases made in Fiscal Year 2012)
    - Gasoline futures using RBOB[1] USD/gallon contract pricing on the New York Mercantile Exchange ("NYMEX") per Bloomberg
    - Diesel futures using Heating Oil USD/gallon contract pricing on the New York Mercantile Exchange ("NYMEX") per Bloomberg
  - Obtained actual closing prices for these contracts to quantify the illustrative gain or loss from buying such contracts
  - Obtained the actual average purchase price realized by the City pursuant to its supply agreement with Mansfield (and formerly Sunoco)
  - Assumed zero basis risk (difference between futures underlying asset and physical underlying asset)
  - Assumed ability to purchase fractioned contracts to match volume
  - Assumed minimal hedging transaction costs
- Results / Observations
  - Spot prices ended up greatly exceeding expectations resulting in large gains realized on futures contract purchases (i.e., gain on long futures contract position results from spot prices closing higher than the futures contract price)
  - A correlation appears to exist between the closing price of the futures quoted and the grades of gasoline and diesel purchased by the City
    - However, there is a slight basis difference between the futures used and the grade purchased; thus, creating complications for a "perfect hedge"
  - **But most importantly, the hedged strategy provides certainty to a material Fleet budget line item**

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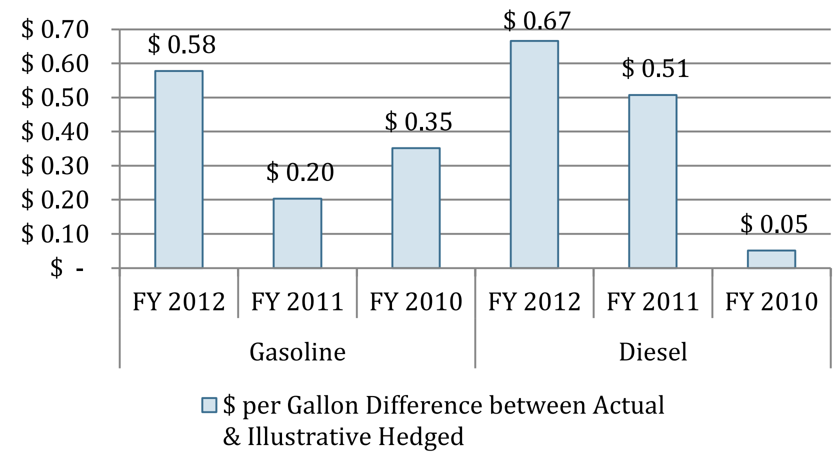
(1) - RBOB = Reformulated Blendstock for Oxygenate Blending

Fleet – Fuel Cost Management:

Illustrative Results from Hedging in FY10 – FY12

- We performed the following analysis to identify / quantify the effects of a hedging program involving the use of futures in fiscal years 2010 through 2012
  - For each year reviewed, the actual fuel costs per gallon were higher than they would been had the hedged strategy been employed (based on our illustrative assumptions) because futures prices were less than the actual prices paid
  - Additionally, given the way spot prices moved, the City would have realized gains on their futures contracts in each year, except FY10 for Diesel
    - In FY10, the City would have incurred a loss on its futures position as spot prices moved downward from expectations during the year

Hedged Strategy Lowered Costs per Gallon in each FY



	FY 2012			FY 2011			FY 2010		
$ in thousands	Gasoline	Diesel	Total	Gasoline	Diesel	Total	Gasoline	Diesel	Total
Actual	$ 13,510	$ 9,457	$ 22,967	$ 11,331	$ 7,985	$ 19,316	$ 9,887	$ 6,139	$ 16,026
Budget	$ 9,870	$ 6,760	$ 16,629	$ 10,066	$ 6,531	$ 16,597	$ 10,561	$ 6,728	$ 17,289
Surplus/(Deficit) Excluding Volume Variances	$ (3,640)	$ (2,697)	$ (6,337)	$ (1,265)	$ (1,454)	$ (2,719)	$ 674	$ 589	$ 1,263
Illustrative Gain/(Loss) on Long Future Position	$ 2,709	$ 1,586	$ 4,294	$ 1,901	$ 1,106	$ 3,007	$ 1,997	$ (178)	$ 1,820
Illustrative Hedged Surplus/(Deficit)	**$ (932)**	**$ (1,111)**	**$ (2,043)**	**$ 636**	**$ (348)**	**$ 288**	**$ 2,671**	**$ 411**	**$ 3,082**
% Change from Unhedged Surplus/(Deficit)	***(74)%***	***(59)%***	***(68)%***	***(150)%***	***(76)%***	***(111)%***	***297%***	***(30)%***	***144%***
$ per Gallon									
Actual	$ 3.01	$ 3.21		$ 2.50	$ 2.81		$ 2.12	$ 2.19	
Budget	$ 2.25	$ 2.30		$ 2.25	$ 2.30		$ 2.30	$ 2.40	
Illustrative Hedged Strategy	$ 2.28	$ 2.46		$ 2.13	$ 2.22		$ 1.61	$ 2.05	
Plus: Maximum Supplier Delivery Costs	$ 0.16	$ 0.09		$ 0.16	$ 0.09		$ 0.16	$ 0.09	
Adjusted Illustrative Hedged Strategy	$ 2.44	$ 2.54		$ 2.29	$ 2.30		$ 1.77	$ 2.14	
Difference b/n Actual & Adj. Illust. Hedged	**$ 0.58**	**$ 0.67**		**$ 0.20**	**$ 0.51**		**$ 0.35**	**$ 0.05**	

Avg. total gain of $3MM for 3 years reviewed

Notes:

- *Actual Gallons used in calculation of Budget spend in order to remove impact of volume variances; the aggregate variance vs. budget was ($5.2MM), ($1.5MM), and $2.6MM in FYs 2012, 2011 and 2010, respectively; gasoline gallons exclude immaterial Truck-to-Truck / Fuel Credit Card Purchases (60,000 gallons), but include School and Housing Authority*
- *Actual gasoline costs are the complete cost, including immaterial Truck-to-Truck / Fuel Credit Card Purchases;*
- *Actual gasoline and diesel costs also include delivery charges*
- *Actual $ per gallon are per Fleet on all purchases*
- *Gasoline, RBOB (NYMEX) 11/15/20XX USD/gallon per Bloomberg*
- *Heating Oil (NYMEX) 11/15/20XX USD/gallon per Bloomberg*

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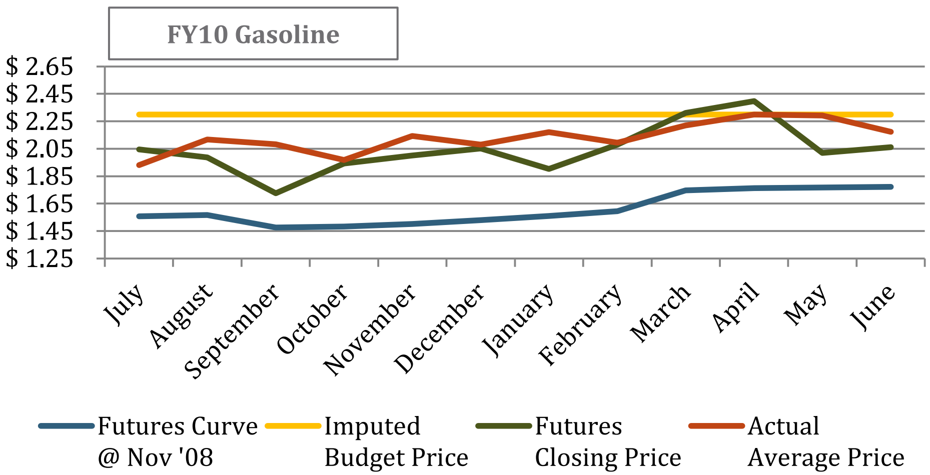
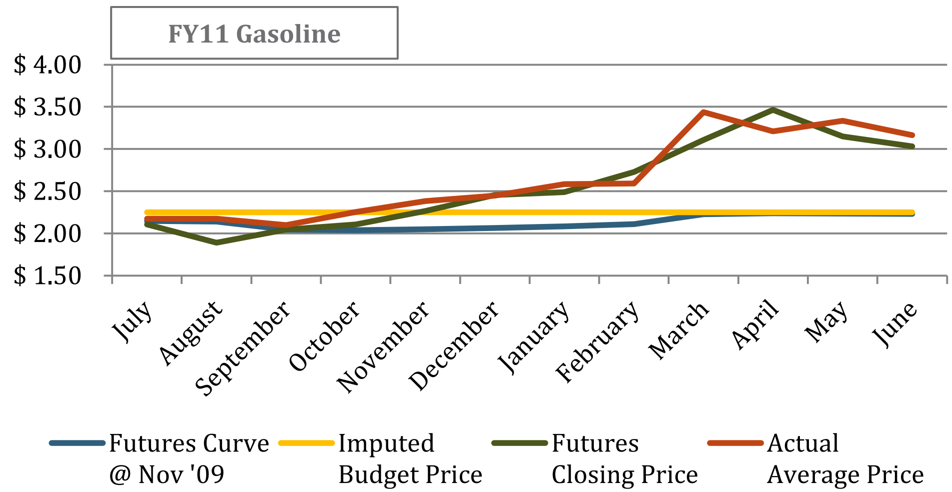
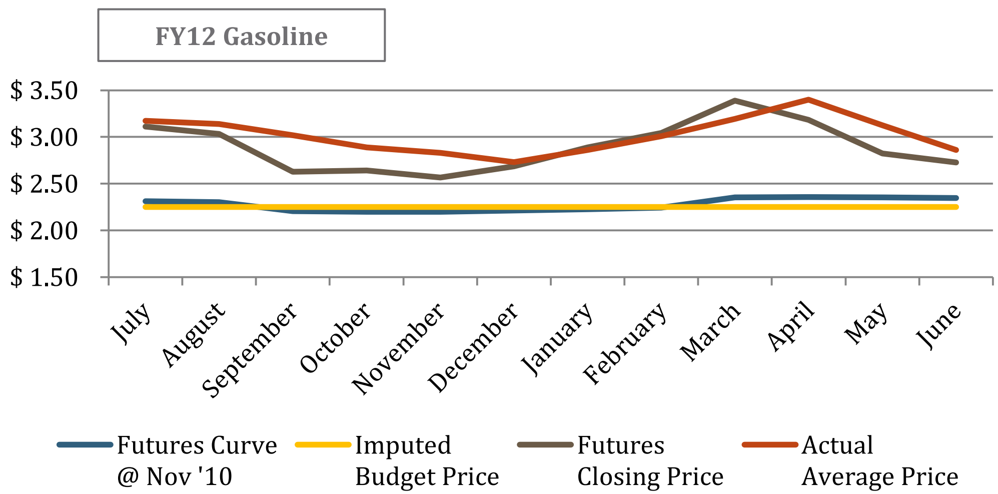
Fleet – Fuel Cost Management:

Illustrative Results from Hedging in FY10 – FY12 (cont'd)

Below are graphic presentations of the illustrative hedging analysis for **Gasoline**





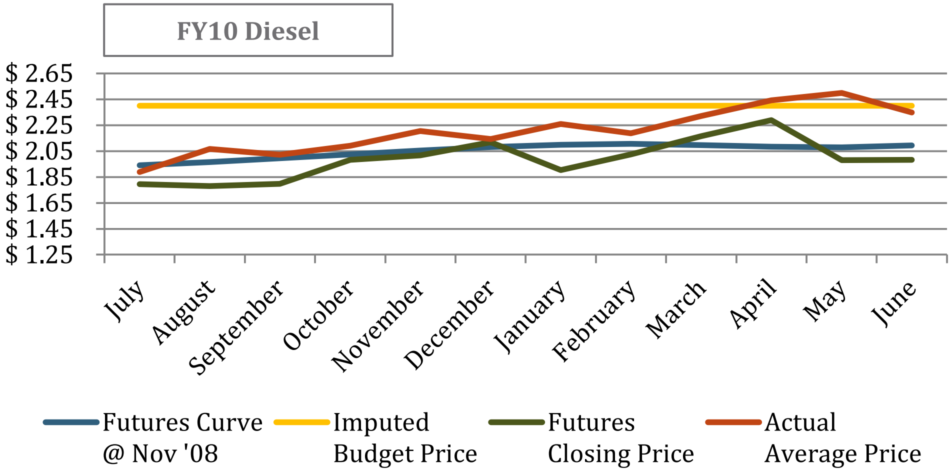


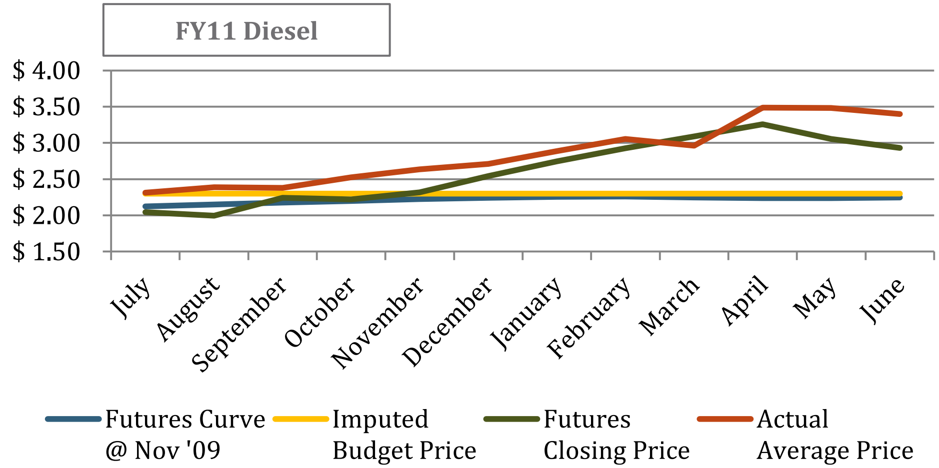
Note: Gasoline analysis uses RBOB (NYMEX) futures contracts

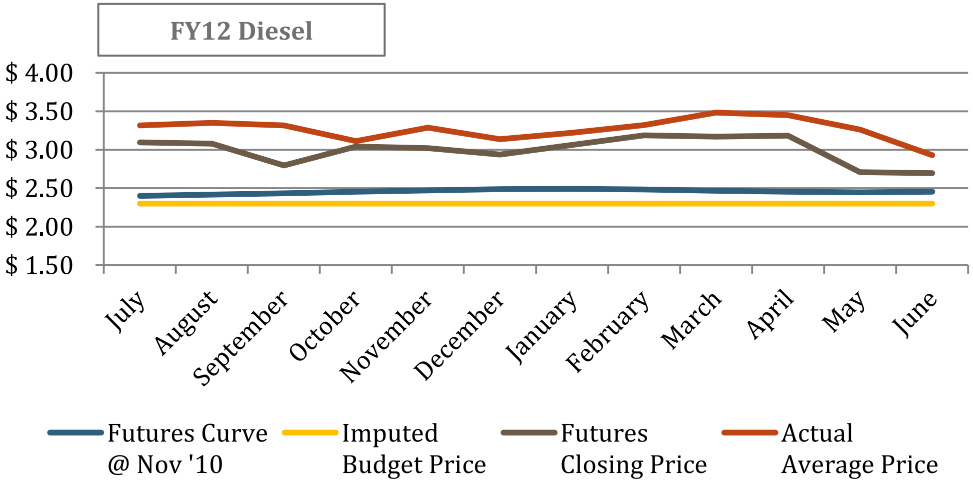
Fleet – Fuel Cost Management:

Illustrative Results from Hedging in FY10 – FY12 (cont'd)

Below are graphic presentations of the illustrative hedging analysis for **Diesel**







Note: Diesel analysis uses Heating Oil (NYMEX) futures contracts

Fleet – Fuel Cost Management:

Illustrative Review of FY13 Budgeting with Hedging - Gasoline

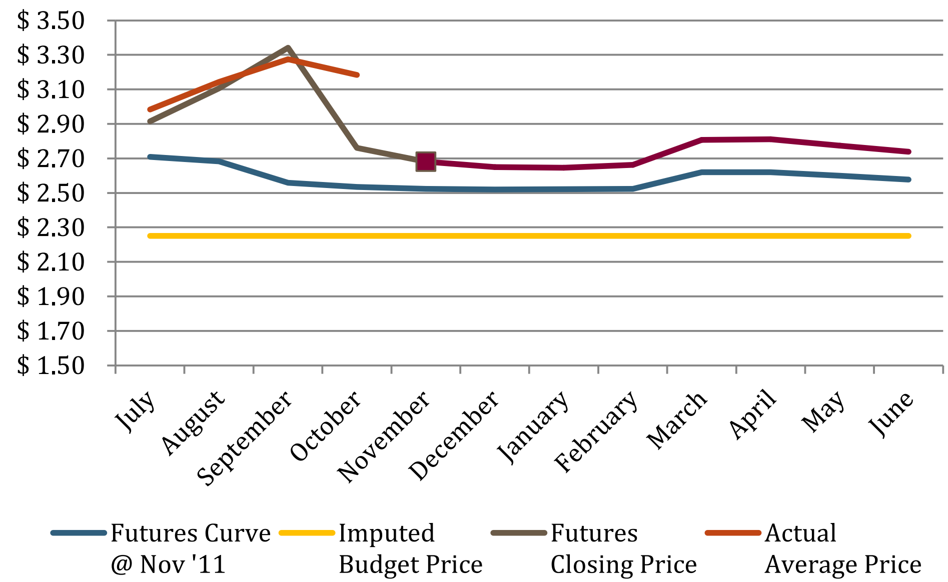
Below are the results of a similar analysis applied to FY13 YTD using futures prices[1] as of November 2011

$ in thousands

FY 2013 YTD	Rate	Amount
Actual	$ 3.14	$ 4,775
Budget	$ 2.25	$ 3,419
Surplus/(Deficit)		$ (1,356)
Illustrative Futures Contract Purchases	$ 2.62	$ 3,986
Illustrative Futures Contract Closing	$ 3.03	$ 4,599
Illustrative Gain on Long Future Position		$ 613
Illustrative Hedged Surplus/(Deficit)		**$ (744)**
% Change from Unhedged Surplus/(Deficit)		***(45)%***

Notes:
- Actual Gallons used in calculation of Budget spend to remove impact of volume variances
- Actual Rate in FY13 is estimated based on pricing quotes provided by Fleet
- Actual costs are estimated based on assumed volume and pricing quotes provided by Fleet
- YTD is through October 2012

FY13 Gasoline Pricing Trends



NOTE: "Futures Closing Price" from November to June is the current futures curve (11/15/12) for these contracts (i.e., market price)

Remainder of FY13

- Futures contracts are available to be entered into today (Nov 2012) for November through June
- Applying similar methodologies, we make the following observations:
  - Represents per gallon pricing of $2.72 / gallon for remainder of FY13
  - Would result in a FY13 budget deficit of approx. $2.7MM for gasoline

(1) - Gasoline, RBOB (NYM) 11/15/2011 USD/gallon per Bloomberg

Fleet – Fuel Cost Management:

Illustrative Review of FY13 Budgeting with Hedging - Diesel

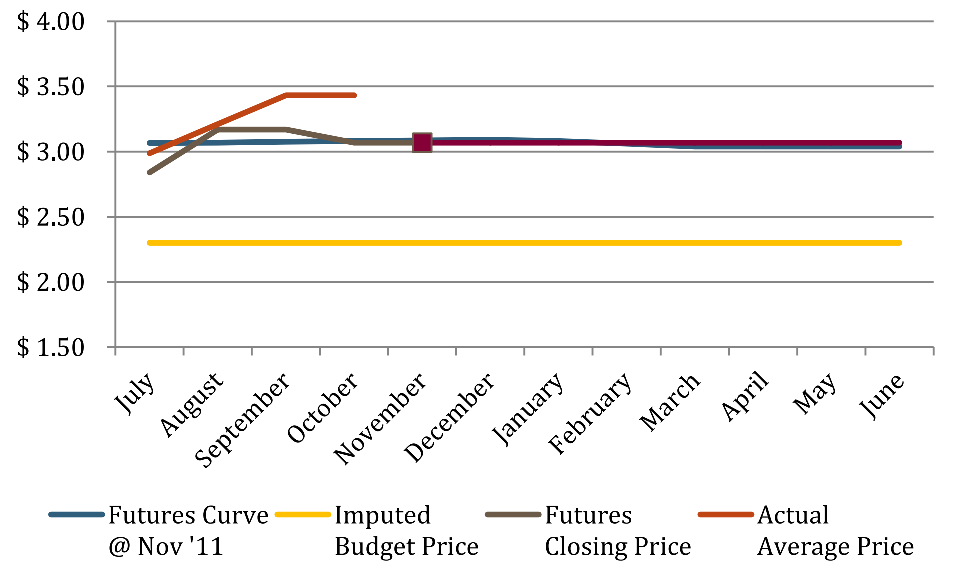
Below are the results of a similar analysis applied to FY13 YTD using futures prices[(1)] as of November 2011

$ in thousands

FY 2013 YTD	Rate	Amount
Actual	$ 3.27	$ 3,281
Budget	$ 2.30	$ 2,309
Surplus/(Deficit)		$ (972)
Illustrative Futures Contract Purchases	$ 3.07	$ 3,085
Illustrative Futures Contract Closing	$ 3.06	$ 3,074
Illustrative Gain/(Loss) on Long Future Position		$ (11)
Illustrative Hedged Surplus/(Deficit)		**$ (983)**
% Change from Unhedged Surplus/(Deficit)		***1%***

Notes:
- Actual Gallons used in calculation of Budget spend to remove impact of volume variances
- Actual Rate in FY13 is estimated based on pricing quotes provided by Fleet
- Actual costs are estimated based on assumed volume and pricing quotes provided by Fleet
- YTD is through October 2012

FY13 Diesel Pricing Trends



Remainder of FY13

- Futures contracts are available to be entered into today (Nov 2012) for November through June
- Applying similar methodologies, the hedging strategy would result in a FY13 diesel budget deficit of approximately $2.5MM

NOTE: "Futures Closing Price" from November to June is the estimated current futures curve for these contracts (i.e., market price). Further note there is a gap in pricing available on Bloomberg for these contacts; therefore, FTI has assumed the closing rate in October 2012 continues for the remainder of the fiscal year for illustrative purposes

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(1) - Heating Oil (NYM) 11/15/2011 USD/gallon per Bloomberg

Illustrative Review of FY14 Budgeting with Hedging - Gasoline

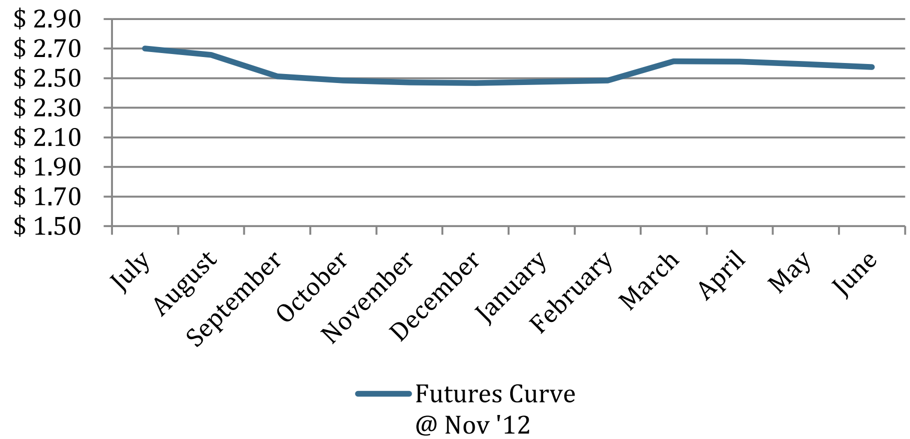
By employing a similar methodology to FY14, the futures prices indicate market pricing of $2.72 per gallon, or an estimated cost of $11.9MM (based on FY12 volume and assuming the high end of Mansfield's spread)

FY14

Related Month	Futures Curve @ Nov '12	Mansfield Spread	Estimated Volume	Extended (thousands)
July	$ 2.70	$ 0.16	381,377	$ 1,091
August	$ 2.66	$ 0.16	420,705	1,185
September	$ 2.51	$ 0.16	378,204	1,010
October	$ 2.48	$ 0.16	335,290	886
November	$ 2.47	$ 0.16	367,040	965
December	$ 2.47	$ 0.16	332,279	873
January	$ 2.48	$ 0.16	373,304	983
February	$ 2.49	$ 0.16	340,989	902
March	$ 2.61	$ 0.16	367,158	1,018
April	$ 2.61	$ 0.16	324,550	899
May	$ 2.59	$ 0.16	389,037	1,071
June	$ 2.57	$ 0.16	376,563	1,029
Totals (avg)	$ 2.55	$ 0.16	4,386,496	$ 11,913

Weighted Average Price, including Mansfield	$ 2.72

FY14 Gasoline Pricing Trends



Notes:
- Futures: Gasoline, RBOB (NYM) 11/15/2012 USD/gallon per Bloomberg
- Estimated volume based on FY12 actuals
- Budgeted Price is assumed to be equivalent to FY13
- In estimating Mansfield's spread for delivery charges, FTI assumes all deliveries are less than 6,000 gallons and therefore the $0.159 per U.S. Gallon spread is incurred. To the extent that some deliveries are more than 6,000 gallons the spread of $0.104 per U.S. Gallon would be incurred; thus lowering the City's total fuel spend

Fleet – Fuel Cost Management:

Illustrative Review of FY14 Budgeting with Hedging - Diesel

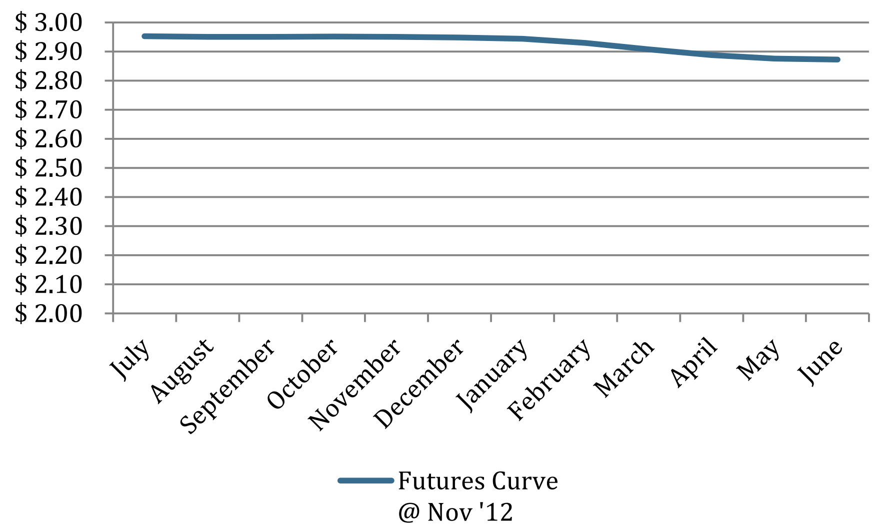
By employing a similar methodology to FY14, the futures prices indicate market pricing of $3.01 per gallon, or an estimated cost of $8.9MM (based on FY12 volume and assuming the high end of Mansfield's spread)

FY14

Related Month	Futures Curve @ Nov '12	Mansfield Spread	Estimated Volume	Extended (thousands)
July	$ 2.95	$ 0.09	224,328	$ 682
August	$ 2.95	$ 0.09	260,865	792
September	$ 2.95	$ 0.09	227,820	692
October	$ 2.95	$ 0.09	230,151	699
November	$ 2.95	$ 0.09	225,976	686
December	$ 2.95	$ 0.09	227,254	690
January	$ 2.94	$ 0.09	276,702	839
February	$ 2.93	$ 0.09	247,211	746
March	$ 2.91	$ 0.09	237,264	710
April	$ 2.89	$ 0.09	247,746	737
May	$ 2.88	$ 0.09	276,598	820
June	$ 2.87	$ 0.09	257,122	761
Totals (avg)	$ 2.93	$ 0.09	2,939,037	$ 8,854

Weighted Average Price, including Mansfield	$ 3.01

FY14 Diesel Pricing Trends



Notes:
- Futures: Heating Oil (NYM) 11/15/2012 USD/gallon per Bloomberg
- Estimated volume based on FY12 actuals
- Budgeted Price is assumed to be equivalent to FY13
- In estimating Mansfield's spread for delivery charges, FTI assumes all deliveries are in less than 6,000 gallons and therefore the $0.087 per U.S. Gallon spread is incurred. To the extent that some deliveries are more than 6,000 gallons, the spread of $0.003 per U.S. Gallon would be incurred; thus lowering the City's total fuel spend

Fleet – Fuel Cost Management:

Recommendations

Hedging Program Options

- **Self-Managed Options (see prior pages)**
- **Contracting Service through 3rd Party**
  - Several companies offer these services to the private and public sectors
  - Pro(s): Ability to align incentives through pricing scheme
  - Con(s): Duration of RFP process to select a vendor (may not be applicable for parties already under contract with the City)
- **Explore Mansfield Arrangement**
  - Fleet should inquire through their customer account representative regarding Mansfield's internal resources to assist its customers with hedging decisions
  - The City should also considering leveraging its existing relationship with EnerNoc to help advise on fixed price quotes received from Mansfield
  - Pro(s): Already under contract; would not negatively impact their economics
  - Con(s): Mansfield's economic interests may not be aligned with the City's
- **Hiring Hedging Expert**
  - The City could recruit an in-house hedging expert by using an industry-specialized staffing agency
  - Pro(s): Skilled resource in-house
  - Con(s): Generally would require $80-90K salary; would require subscribing to expensive market services (e.g., Bloomberg)

Other Recommendations

- **Co-operative Purchasing**
  - The City should explore the opportunity for SEPTA and Fleet to leverage their combined purchasing power by partnering in co-operative purchasing arrangements with fuel suppliers

FTI CONSULTING

Source: FTI Analysis; Fleet provided documentation

Operational Metrics

Proactive asset life cycle management and related analysis is crucial to managing a fleet the size of the City's

- Fleet does a good job with respect to keeping vehicles on the road (evidenced by its >95% availability rate), ready for use
- On other measures of data-driven advanced fleet management, Fleet is challenged due to the following factors
  - (i) lack of tools,
    - Primarily as a result of system constraints, Fleet does not formally track / monitor several key metrics essential for effective life-cycle management (e.g., asset reliability, asset usage (mileage, years), asset condition, asset investment (total dollars invested in asset), mechanic efficiency, mechanic effectiveness)
  - (ii) lack of funding, and
  - (iii) lack of existence of a business case for making changes
- The RFP process for an asset management system is a step in the right direction regarding tools to assist in data-driven management

Market Benchmarks

Various Sources	Benchmark	Philly
Fleet Availability	> = 95%	Exceeds
Returns for Rework	< 2%	Not Tracked
Unscheduled Repairs (work orders)	< 60%	Not Met
% of time to Scheduled Maintenance	> = 70%	Not Met
Preventative maintenance	~ 50%	Not Met
Other scheduled maintenance	~ 20%	Not Met
Preventative Maintenance Work Orders	> = 50%	Not Met
Labor hours - scheduled work	~ 70%	Not Met
Labor hours - unscheduled work	~ 30%	Not Met

Fleet Availability - City of Philadelphia
For the 12 month period ended 10/31/12

Dept	Vehicle Days	Days Down	Availabily
Police Department	730,689	21,782	97.0%
Department of Streets	441,177	22,077	95.0%
Philadelphia Water Department	368,855	7,452	98.0%
Fire Department	131,889	4,018	97.0%
Department of Recreation	113,244	3,530	96.9%
Department of Commerce / Aviation Division	107,048	5,315	95.0%
Office of Fleet Management	89,812	1,525	98.3%
District Attorney's Office	81,345	217	99.7%
Department of Health	49,039	766	98.4%
Managing Director's Office	42,446	1,879	95.6%
Total for Top 10	**2,155,544**	**68,561**	**96.8%**
% of total	*89.9%*	*92.7%*	

Maintenance - City of Philadelphia
For the 12 month period ended 10/31/12

	Unscheduled	Scheduled	Total
Work Orders	40,286	17,411	57,697
% of Total	*69.8%*	*30.2%*	*100.0%*
Labor Hours	119,892	152,652	272,544
% of Total	*44.0%*	*56.0%*	*100.0%*
Hours per Work Order	3.0	8.8	4.7

Source: FTI Analysis, Fleet provided documentation; Various market sources for benchmarking data including information available through the American Public Works Association

Act 22 Background

Pennsylvania Act 22 of 2011, which became effective July 1, 2011, provided the following two savings opportunities for the City:

Inpatient / Outpatient Fee Cap

- Caps the fees and rates that medical providers can charge for health care services provided to inmates in county and state correctional facilities
  - **Inpatient Services:** Cap for services is the same as the rate/fee allowed by the Medicaid program
    - Medicaid rates are approximately 50% lower than the rates Philadelphia Prisons was paying for inpatient services prior to Act 22
  - **Outpatient Services:** Cap for services is the same as the rate/fee allowed under the Medicare program
    - Such rates are not materially different from the rates Philadelphia Prisons was paying for outpatient services prior to Act 22

Federal Match Opportunity

- Allows for most inmates, who are admitted as inpatients to standard tertiary care hospitals, to become qualified for Medical Assistance, and have their charges paid through that program
- The Medical Assistance qualification can result in a portion of the bill being paid by the federal government
- Medical Assistance is a federal program administered by the state that is based on a shared cost between states and the federal government
- The shares are usually around 50% state, 50% federal
- The rate / fee allowed under the Medical Assistance qualification is equivalent to the Medicaid program
- **Therefore, the cost to Philadelphia Prisons of inpatient care for inmates qualifying under this program will decline by approximately 75% from pre-Act 22 levels**
  - For example, assume pre-Act 22 commercial rates were $10,000 per visit for inpatient care. The rate would fall to $5,000 as a result of Act 22 (Medicaid cap) and the City's portion could be as low as $2,500 if the inmate qualifies for the federal match

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Source: CCAP issued "Act 22 and the PIMCC Act 22 Service" www.pacounties.org; FTI Analysis

Prisons – Act 22 Savings:

Savings Impact

Due primarily to a delay in receiving invoices for inmates receiving inpatient care, the City has not reflected the Act 22-driven savings within the FY12 and FY13 budgets. As a result, these encumbrances should be liquidated and the FY14 budget should be decreased to capture these savings

- At the very minimum, the cost per inmate for inpatient care should decline by 50%, with additional savings realized from inmates who qualify for the federal match
- Savings Calculation Assumptions
  - Expected number of inmates admitted for inpatient care remains constant with FY12 (531), which represents the low point from FY09 to FY12. *The number of admittances does not appear to be strongly correlated to the prison census based on our review of FY09 to FY12 activity*
  - Pre-Act 22 cost per admission was assumed to be the average of actual rate incurred from FY09 to FY11 (approximately $18,800 per inmate)
  - Medicaid rates are 50% of commercial rates
  - Qualified rates are 75% of commercial rates (given federal match)
  - 50% of the inmates admitted for inpatient care are assumed to qualify for the federal match
    - This is based on several data points, including the rate the state has experienced, the Prison Department's analysis of the hospitalizations (for which invoices have not been received), and the rate observed for invoices received to-date
    - The table at right provides sensitivity analyses of savings at varying levels of inmates qualifying for the federal match; **even if no inmates qualify for the federal match the savings should be at least $2.3MM**

$ in millions

Description	Analysis
Assumed Hospital Admission Costs - Qualified	$ 1.2
Assumed Hospital Admission Costs - Non-Qualified	2.5
Total Pro Forma Annual Run Rate	$ 3.7
FY12 Budget	$ 6.0
FY13 Budget	$ 6.3
Decrease from FY12 Budget	$ (2.3)
Decrease from FY13 Budget	$ (2.6)
Total Savings	**$ (4.8)**

Sensitivity Analysis	
% Qualified Federal Match	FY12 & FY13 Savings
80.0%	$ (6.3)
70.0%	$ (5.8)
60.0%	$ (5.3)
50.0%	**$ (4.8)**
40.0%	$ (4.3)
30.0%	$ (3.8)
20.0%	$ (3.3)
10.0%	$ (2.8)
0.0%	$ (2.3)

Notes:
- Qualified = qualifies for federal match
- Non-qualified = does not qualify for federal match

Source: FTI Analysis, FTI Interviews with Prison personnel

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OIT – Verizon Voice and Data Charges:

Key Observations & Recommendations

FTI partnered with Technolab Corporation to assist with the Verizon voice and data charge audit

Key Observations

- **Lack of Comprehensive Bill Review In-House**
  - The City does not currently perform a comprehensive review of their monthly voice and data charges in relation to their contract
    - Limitations of the Verizon online customer interface and OIT's resource limitations (primarily technology / application related) impact OIT's ability to conduct a comprehensive monthly review. Specifically, OIT currently lacks the tools to run automated exception reports from the Verizon bills and underlying data
  - No unused-line assessment has been performed from start-to-finish in recent years to ensure the City is not paying for lines that are no longer in use, which cost at least $7 per month each
  - Approximately 6.5% savings were identified through review of the October 2012 bill alone (or ~$63,500); which was estimated to be a total of $719 thousand in savings
- **Non-General Fund Related Charges**
  - Charges related to the Pension and Aviation funds were identified despite the policy that requires these funds to pay the bills directly (or through expenditure transfers)
    - We understand there are examples of the non-General Funds being "charged" for these items, however, we understand these charges to be estimates
  - Approximately $4,340 of Aviation charges were identified in July 2012 ($52,000 annualized) and $410,000 of charges related to the Pension fund were identified from December 2011 to November 2012

Key Recommendations

- **Enlist 3rd Party for Bill Auditing at least Annually**
  - Technolab performed a detailed audit of the October and September 2012 bills and will work with the City on determining the best way to seek recovery of any over-charges from Verizon
  - The City should issue a RFP for this service to be performed on a regular basis
  - OIT's suggested specifications for Verizon's online customer interface should be included in the contract during the next renewal (or baked into the RFP)
  - An unused line assessment should be conducted in conjunction with the bill audit process as well
- **Charge Pension and Aviation for their Telecom Usage**
  - Charges should be tracked on a monthly basis by OIT (215-496 extensions and charges related to 215-937-6800)
  - Require separate invoicing from Verizon on non-General Fund accounts
  - Issue separate purchase orders for directly to those funds, or transfer charges manually an expenditure transfer initiated by OIT
  - Perform, and retain, formal reconciliation between estimated and actual non-General Fund charges to incorporate any true-ups in the next period's purchase order

Source: Technolab & FTI Analysis

Key Observations & Recommendations (cont'd)

Key Observations

- **City is Paying Federal, State and Local Taxes**
  - We understand the City is exempt from these taxes; however, may be subject to the PA Gross Receipts Tax
  - Approximately $22,750 of these taxes were paid in October 2012 alone ($273,000 annualized)
    - *$17,600 ($211,000 annualized) of the amounts above relate to the PA Gross Receipts Tax*
- **Local Rate Discount**
  - Pursuant to the Verizon agreement, we understand local rates charged by Verizon are required to be at a 40% discount from local tariff rates
  - Based on the information reviewed, FTI and Technolab were not able to conclude whether the local rates were in fact 40% lower than local tariff rates
  - Charges for regular local calls in July 2012 totaled $73,767, or $885,201 annually – thus representing a potential annual opportunity of $354,080 if the 40% discount has not been applied
    - Note: FTI and Technolab have not included savings from these amounts in our savings summary as we were not able to verify whether the City was receiving the discount
- **Approximately $55,000 of "411" charges were identified between November 2011 and October 2012**

Key Recommendations

- **Track Federal, State and Local Tax Payments**
  - If not performed already, OIT should keep track of these amounts on a monthly basis in order to assist the third party consultant in recovering such payments
  - OIT should also receive formal documentation from legal confirming which taxes the City is exempt from paying and which taxes the City is required to pay
- **Verify Local Rate Discount is Being Applied**
  - The City should verify the local rates being charged by Verizon are in fact at a 40% discount to local tariff rates as specified in the contract
- **Enact Sample Policy Changes to Reduce Costs**
  - Block outbound 411 calls from City lines
  - FTI also noted there is a wide range of monthly charge amounts for individuals; this may be justified based on usage, but as a matter of policy the City should review usage by user periodically to ensure appropriate business usage

Source: Technolab & FTI Analysis

Results of Bill Audit

Slightly over 6.5% savings were identified based on Technolab's detailed Verizon Voice and Data bill audit

- The City does not currently perform a comprehensive review of its monthly voice and data charges in relation to its contract
- As a result, the City would benefit from enlisting a third party to perform this audit function at least annually going forward
  - *Note: Prior to gaining online access for Technolab's review, which was not immediately available, FTI electronically converted each of the PDF bills (over 100 individual bills, each several hundred pages in total) into an excel database to facilitate the review. Online access was ultimately gained through numerous inquiries from Technolab and FTI; however, the online access provided still had several limitations which impacted the ability of Technolab to conduct its audit over multiple months*

Item #	Item Description	Qty	Billed Amount	Contract Rate	Deviation	Estimated Refunds
1	Centrex - Summary Over billing	20,851	$ 143,181	$ 140,749	$ 2,432	$ 87,552
2	Business dial tone line - overbilling	839	$ 11,272	$ 9,103	$ 2,169	$ 78,091
3	PRI Trunking and DID numbers	241	$ 4,530	$ 4,168	$ 362	$ 13,032
4	TLS Port with Access Line - Contract Violation	116	$ 191,800	$ 159,775	$ 32,025	$ 224,175
5	Third Party Charges	55	$ 1,052	$ -	$ 1,052	$ 12,627
6	Firm Rate Plus - LD Plans	2	$ 118	$ -	$ 118	$ 1,420
7	Wire maintenance	2	$ 13	$ -	$ 13	$ 156
8	Tax Violations - Tax Exempt Entity	800	$ 22,748	$ -	$ 22,748	$ 272,975
9	Long distance rate violation (each min billing in range of 18-21 cents per min)	24,730	$ 3,117	$ 813	$ 2,303	$ 27,640
10	Long distance - High call duration (stuck calls)	12,956	$ 259	$ -	$ 259	$ 1,555
Total		60,592	$ 378,091	$ 314,608	**$ 63,482**	**$ 719,223**

Memo:

Total 2013 Verizon Voice and Data Budget	$ 10,958,034
Estimated Refunds as % of 2013 Budget	**6.6%**

Notes:
Deviation – represents monthly observed deviation from the October 2012 bill
Estimated Refunds – represents the estimated refunds if the observed deviation occurred every month subsequent to the execution of the current contract, or most recent amendment if applicable. The exception to this is the Tax Violations, which are assumed to be for 12 months

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Source: Technolab & FTI Analysis

OIT – Verizon Voice and Data Charges:

Policy Recommendations & Related Savings

There are a number of policies that can be implemented (or enforced) to save costs to the General Fund

- Below is a listing of recommendations and related estimated annual savings as a result of enforcing such policies
- The over $800 thousand of savings represents approximately 7.3% of the FY13 budgeted Verizon Voice and Data Spend

Item #	Item Description	Annual Billed Amount		Recommendation
1	Directory Assistance Usage (Nov 11 - Oct 12)	$ 54,678		City employees should be blocked from using directory assistance ("411") given the ubiquitous access to computers
2	Pension Fund Long Distance Usage (215-496 extensions Dec 11 - Oct 12)	$ 10,081		Charges outside the General Fund should have a separate purchase order and be charged directly to those funds.
3	Pension Fund Local Call Usage (215-496 extensions Jan 12 - Nov 12)	$ 400,108		""
4	Airport - Local Calls [(215) 937-6800]	$ 8,530	*	""
5	Airport - Direct Dial Calls [(215) 937-6800]	$ 43,542	*	""
6	Federal Excise Tax	$ 2,540	**	We assume City is federal, state and local tax exempt. We understand OIT personnel responsible for reviewing the bill exclude certain taxes from payments to Verizon. Additionally, we understand from OIT personnel that a refund of ~$76K for taxes paid from July 2010 to Oct 2012 is currently being reviewed by Verizon.
7	PA Gross Receipts Tax	$ 211,211	**	See Federal Excise tax comment; although OIT personnel has indicated this is a surcharge whereby Verizon passes this cost through to their customers - therefore the City has never contested these charges. This policy should be reviewed for validity in conjuction with the Law Department.
8	PA Local Sales Tax	$ 15,039	**	See Federal Excise tax comment
9	PA State Sales Tax	$ 44,185	**	See Federal Excise tax comment
10	Third Party Slamming/Cramming Charges	$ 12,627	**	It is recommended to apply a 3rd party provider billing block on all the accounts that were slammed in the past year. Also, obtain 100% refunds since inception of such charges by various third party providers
Total		$ 802,542		

Notes:
** Estimated annual charge based on July 2012 actual charges*
*** Estimated annual charge based on October 2012 actual charges*

Network Opportunities

Key Points

- **40% of the network is located on city-owned fiber; 60% served by Verizon**
- **Approximately 22 buildings are connected to the City's fiber ring**
- **Network reliability requirements vary**
  - .99999 for Emergency services and Public Health services (5 minutes of down time per year)
  - .999 for administrative staff (8.8 hours of downtime per year)
- **User requirements by location are not fully known**
- **Due to fiscal constraints and the need to shift funds, OIT has decided to initially deploy unified communications services to certain administrative currently served by city fiber/city transport equipment**
  - Current plan:
    - Deploy NEC 8500 to serve the MSB (currently on net)
    - Deploy hot standby at DIS (location currently single honed – no alternative route)
    - Maintain current OC-48 infrastructure on inter-city ring
    - Benefit is key users will recognize flexibility of new services and create the necessary "pull" for further implementation

FTI Recommendations

- **FTI concurs with the current overall approach of prioritizing the architecture to gain key user awareness of the benefits of unified communications, but also recommends the following:**
  - Upgrade OC-48 systems with 10G MPLS systems, which will better support implementation of higher reliability network services later
  - Initiate site surveys to develop better understanding of both location and organizational communications requirements
  - Initiate the development of "On Demand" services RFP
  - Concurrent with development of the RFP, OIT needs to refine key policies to ensure the City can support user requirements while managing costs
- **Deploy 6 GHz microwave systems to offload capacity from Verizon leased services**
- **Implement process such that OIT can identify other City planned fiber builds to better leverage grants to other departments for telecom infrastructure**
- **Creation of a financial model to forecast both capital and operational costs of the targeted network, which takes into account**
  - Reliability/SLAs
  - ROI on CAPEX and serve as a program baseline

FTI CONSULTING

Source: FTI Analysis

Key Observations and Recommendations

The City has the opportunity to save ~$1MM on electricity each year by focusing on energy efficiency with a two pronged approach. First, incentivizing departments to curb energy use in their buildings and second, replacing current street light bulbs with LED bulbs

Key Observations

- **Tracking and payment of energy bills is done centrally, with the aid of energy management software**
  - Departments do not have an incentive to curb their day-to-day energy use
- **There is enthusiasm within the energy team to reduce usage and costs**
  - By working with departments to reduce usage during power shortages and emergencies, the City has earned rebates from PECO
  - The City has also reduced its energy bills by actively managing its peak load contribution
  - The energy team has created a memo with high level constructs of how a departmental energy reduction program could work
- **The City has converted all traffic lights to LED bulbs, with expected savings of up to $1MM per year over an expected life of 12 – 15 years**
  - The City has not undertaken a program to install LED bulbs in street lights
  - Street lighting (as compared to other General Fund departments) accounts for the largest portion of electricity use, costing ~$10MM per year

Key Recommendations

- **Implement an Energy Efficiency Incentive Program**
  - Begin a pilot program of a few departments and focus solely on electricity usage
  - Create benchmarks based on average KWh usage
  - Track actual results in 6 month increments and compare to a weather normalized benchmark
  - Split any savings 50/50 between the General Fund and the department
- **Explore an LED lighting program for street lights**
  - On average, other municipalities have experienced 43% energy savings annually by installing LED bulbs in street lights
  - Financing for these programs are available through many sources, including Energy Funds, Federal Stimulus, and local tax dollars with many rebates and credits offered as an incentive to go with selected utility providers

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Source: FTI Analysis

Energy Efficiency Incentive Program:

Key Program Terms

The General Fund ("GF") spent $29MM on energy in FY12 (excluding street lighting) in the form of electricity ($21MM), natural gas ($6MM) and steam ($2MM). The tracking of usage and payment of bills is done centrally by the energy office. By implementing this program, the City has an opportunity for cost savings by incentivizing departments to curtail electricity consumption and conforming with the Mayor's goal of transforming the City into the country's greenest and most sustainable city

Key Terms	Description
Pilot Program	▪ Focus on electricity usage (~230MM KWh, or $21MM per year) of select departments with varied electricity usage patterns: – Health, Libraries, Parks and Recreation ("P&R"), Public Property ("DPP"), Fire and Police
Benchmark Metric	▪ Electricity usage measured in KWh
Benchmark Determination	▪ The benchmark usage for each department was determined using an average of the past 5 years usage ▪ Meters with less than 2 years of activity or those with no activity in last year were excluded
Energy Saving Measures	▪ Each department will be given a report of their benchmark and an illustrative example of savings assuming a decrease in usage (e.g., 3%) ▪ The department will also be given a fact sheet detailing changes that can affect KWh usage (i.e. shutting of lights, unplugging electronics, among others) ▪ The department will be responsible for encouraging employees and users of electricity in their facilities to adopt energy efficient practices
Measurement Period	▪ Benchmarks and results will be measured on the following basis: January – June and July - December
Results	▪ Measure the department's net actual KWh usage for the period (except the accounts excluded from the benchmark as well as any new meters added since the benchmark was calculated)
Weather Normalization	▪ Using the FTI regression and the actual number of cooling degree days ("CDD") each month, normalize the benchmark for the actual weather pattern experienced during the period

Notes:

- *CDD = Cooling Degree Days, which are measured by calculating the difference between the average temperature for a day and the balance point, then summing this variance for every day in the period*

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Key Program Terms (cont'd)

Key Terms	Description
Savings	▪ Calculate the variance between the weather normalized benchmark and the actual results (in KWh) ▪ Calculate the actual average $ per KWh for the results period ▪ Calculate the $ savings (actual $ per KWh x KWh difference between actual and benchmark usage)
Distribution of Savings	▪ The GF will benefit real time from any decrease in electricity costs resulting from decreased consumption ▪ The GF will provide 50% of the amount of calculated savings to the department – This amount will be *deposited* in the department's "Energy Bank" – 50% of this amount will be available for immediate use – 50% must remain *banked* in the Energy Bank until the Energy Bank reaches 5% of the prior year's electricity spend, at which point the department can use funds for energy efficiency projects
Penalties	▪ If the department goes over the benchmark, their Energy Bank will be charged for 50% of their overage ▪ If their Energy Bank does not have sufficient funds, the balance will be negative until savings are generated in future periods to build up the Energy Bank's balance, excluding Year 1 when it will remain $0
Future Periods	▪ Benchmarks will be calculated every November for the upcoming year ▪ The energy group will conduct meetings with the departments involved every 3 months to determine any issues with the program and possible solutions

Energy Efficiency Incentive Program:

Illustrative Program Time Line

The chart below lays out the timeline of events for the Energy Efficiency Incentive Program assuming a January 1, 2013 start date which can be adjusted based on the actual implementation time frame

Dec 2012	**Jan - Jun 2013**	**Jul 2013**	**Jul – Dec 2013**	**Dec 2013**	**Jan 2014**	**Jan - Jun 2014**	**Post FY14 Measurement**
Present electricity program to pilot departments, finalize calculations and receive buy-in	Period 1 – Energy Efficiency Incentive Program for electricity use for the pilot departments	Calculate savings from Period 1 and deposit in each of the pilot department's Energy Bank	Period 2 – Energy Efficiency Incentive Program for electricity use for the pilot departments	Update calculations to set benchmarks for the upcoming calendar year and include all departments	Calculate savings from Period 2 and deposit in each department's Energy Bank	Period 1 - Energy Efficiency Incentive Program for all departments for electricity	Contemplate inclusion of natural gas and steam in program

Illustrative Measurement Example

The analysis below walks through the steps for the setting the benchmark, measuring results and allocating savings for one 6-month measurement period. These steps are laid out with numerical examples on the following page

Setting the Benchmark - December

Step 1: Determine benchmark for 6 month period based on average actual usage for the past 5 years (excluding meters with less than 2 years of activity or no activity in last year)

Step 2: Develop weather normalization regression based on 5 years of historical usage and CDDs for Period 1 and 2. If the regression indicates the variation in actual usage is explained by variation in cooling degree days (1), this department will be weather normalized when calculating savings for the period

Measuring Results – July and January

Step 3: For departments with a significant regression for the period, calculate weather normalized benchmark using the actual CDDs during the period and the intercept and coefficients calculated in December

{Weather normalized benchmark = y-intercept + actual degree days 65 (65 coefficient)

Step 4: Exclude meters from actual results that were excluded from benchmark

Step 5: Compute difference in usage between weather normalized benchmark and actual results

Saving Allocation – July and January

Step 6: Calculate actual $ per KWh for the period (delivery and supply)

Step 7: Calculate the $ savings (actual $ per KWh x KWh difference between actual and benchmark usage)

Step 8: If the department's usage was over benchmark (i.e. negative savings), remove 50% of the overage from the department's Energy Bank

Step 9: If the department's usage was under benchmark, deposit 50% of the calculated savings into its Energy Bank account

Step 10: 50% of the amount deposited into the department's account is for immediate use, 50% will be held as its Energy Bank. Once this bank reaches 5% of the prior year's annual spend, any new deposits can be used immediately

Notes:

(1) – Measured by adjusted R^2 of regression being greater than 80%

Illustrative Measurement Example (cont'd)

The charts below walks through the calculations for the benchmark, weather normalization and savings allocation using the steps explained on the previous page

Benchmark Calculation of KWh for Health

Time Period	Jan - Jun 2008	Jan - Jun 2009	Jan - Jun 2010	Jan - Jun 2011	Jan - Jun 2012	Median	High	Low	*STEP 1* Average
1. Jan-Jun 2013	7,349,310	7,142,494	7,401,910	7,381,340	7,318,740	7,349,310	7,401,910	7,142,494	7,318,759
Time Period	Jul - Dec 2007	Jul - Dec 2008	Jul - Dec 2009	Jul - Dec 2010	Jul - Dec 2011	Median	High	Low	Average
2. Jul-Dec 2013	8,020,055	7,717,302	7,679,016	7,780,926	7,805,607	7,780,926	8,020,055	7,679,016	7,800,581

Illustrative Weather Normalization for Health

Time Period	Benchmark	*STEP 2* Adj R Squared	*STEP 2* A Y intercept	B Illustrative CDD Over 65 °	*STEP 2* C 65 ° Balance Point Coefficient	*STEP 3* A + (B x C) Weather Normalized Benchmark
1. Jan 2013	1,099,576	0.019	1,083,330	0	(1,027)	1,099,576
2. Feb 2013	1,025,510	0.019	1,083,330	0	(1,027)	1,025,510
3. Mar 2013	1,008,813	0.019	1,083,330	0	(1,027)	1,008,813
4. Apr 2013	1,103,213	0.019	1,083,330	23.8	(1,027)	1,103,213
5. May 2013	1,441,383	0.807	1,209,129	88.6	1,070	1,303,935
6. June 2013	1,640,264	0.807	1,209,129	276.8	1,070	1,505,317
Total	**7,318,759**					**7,046,364**

FTI ran regressions for 2 periods, winter (Nov – Apr) and summer (May – Oct). As expected, none of winter regressions were significant (see page 115), as the usage by each department during these months was not explained by the number of CDDs. For this reason the benchmarks for Jan – Apr were not adjusted, while the benchmarks for May and June were adjusted (the Health summer regression was significant)

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Notes:

- Weather normalization is only calculated for periods where adjusted $R^2 > 0.80$ (i.e., there is a significant relationship between CDD and KWh usage)

Illustrative Measurement Example (cont'd)

The charts below walks through the calculations for the benchmark, weather normalization and savings allocation using the steps explained on the previous page

Illustrative Savings Allocation for Health

		STEP 4	***STEP 5***	***STEP 6***	***STEP 7***	***STEP 9***	***STEP 10***	***STEP 8/10***	***STEP 10***
	A	**B**	**A - B = C**	**D**	**C x D = E**	**E x 50%**	**E x 25%**	**E x 25% + Balance**	**5% Annual Spend**
Time Period	Weather Normalized Benchmark	Results for Included Meters	KWh Savings	$ per KWh	Calculated Savings	Savings Retained by General Fund	Savings to Department	Savings to Department's Energy Bank	Deposit Maximum on Energy Bank
1. Jan-Jun 2013	7,046,364	6,905,437	140,927	$ 0.09	$ 12,331	$ 6,166	$ 3,083	$ 3,083	$ 66,169
2. Jul-Dec 2013	8,247,260	8,329,733	(82,473)	$ 0.09	$ (7,216)	$ (3,608)	$ -	$ (525)	$ 66,169
Total					**$ 5,115**	**$ 2,557**	**$ 3,083**	**$ (525)**	

Notes:
- Weather normalization is only calculated for periods where adjusted $R^2 > 0.80$ (i.e., there is a significant relationship between CDD and KWh usage)
- Energy Bank deposit maximum amount assumes annual spend for Health of $1.3MM

Energy Efficiency Incentive Program:

Illustrative 3 Period Measurement Example

The chart below lays out the potential dollar impact of the energy efficiency program for six possible pilot departments

Time Period	Benchmark (KWh)	Weather Normalized Benchmark (KWh)	Illustrative Results (KWh)	Variance to Normalized Benchmark (KWh)	Variance to Normalized Benchmark (%)	$ per KWh	Calculated Savings	Savings to Department	Savings to Department's Energy Bank	Energy Bank Balance
Health										
1. Jan-Jun 2013	7,318,759	7,046,364	6,905,437	140,927	2%	$ 0.09	$ 12,331	$ 3,083	$ 3,083	$ 3,083
2. Jul-Dec 2013	7,800,581	8,247,260	8,329,733	(82,473)	(1)%	$ 0.09	$ (7,216)	$ -	$ (3,608)	$ (525)
3. Jan-Jun 2014	7,142,494	7,187,291	6,971,672	215,619	3%	$ 0.09	$ 18,867	$ 4,717	$ 4,717	$ 4,191
Library										
1. Jan-Jun 2013	7,115,707	6,883,524	6,745,854	137,670	2%	$ 0.09	$ 12,046	$ 3,012	$ 3,012	$ 3,012
2. Jul-Dec 2013	7,791,721	8,161,245	8,242,858	(81,612)	(1)%	$ 0.09	$ (7,141)	$ -	$ (3,571)	$ (559)
3. Jan-Jun 2014	6,884,163	7,021,195	6,810,559	210,636	3%	$ 0.09	$ 18,431	$ 4,608	$ 4,608	$ 4,049
Parks & Recreation										
1. Jan-Jun 2013	15,186,394	15,186,394	14,882,666	303,728	2%	$ 0.09	$ 26,576	$ 6,644	$ 6,644	$ 6,644
2. Jul-Dec 2013	16,011,054	16,011,054	16,171,165	(160,111)	(1)%	$ 0.09	$ (14,010)	$ -	$ (7,005)	$ (361)
3. Jan-Jun 2014	14,195,201	14,195,201	13,769,345	425,856	3%	$ 0.09	$ 37,262	$ 9,316	$ 9,316	$ 8,955
Department of Public Property										
1. Jan-Jun 2013	25,932,607	25,932,607	25,413,955	518,652	2%	$ 0.09	$ 45,382	$ 11,346	$ 11,346	$ 11,346
2. Jul-Dec 2013	27,842,386	27,842,386	28,120,809	(278,424)	(1)%	$ 0.09	$ (24,362)	$ -	$ (12,181)	$ (836)
3. Jan-Jun 2014	24,459,323	24,459,323	23,725,543	733,780	3%	$ 0.09	$ 64,206	$ 16,051	$ 16,051	$ 15,216
Police										
1. Jan-Jun 2013	8,597,001	8,393,651	8,225,778	167,873	2%	$ 0.09	$ 14,689	$ 3,672	$ 3,672	$ 3,672
2. Jul-Dec 2013	9,443,232	9,560,165	9,655,766	(95,602)	(1)%	$ 0.09	$ (8,365)	$ -	$ (4,183)	$ (510)
3. Jan-Jun 2014	8,487,959	8,561,524	8,304,678	256,846	3%	$ 0.09	$ 22,474	$ 5,619	$ 5,619	$ 5,108
Fire										
1. Jan-Jun 2013	3,263,498	3,163,892	3,100,614	63,278	2%	$ 0.09	$ 5,537	$ 1,384	$ 1,384	$ 1,384
2. Jul-Dec 2013	3,540,732	3,639,542	3,675,937	(36,395)	(1)%	$ 0.09	$ (3,185)	$ -	$ (1,592)	$ (208)
3. Jan-Jun 2014	3,131,278	3,227,170	3,130,355	96,815	3%	$ 0.09	$ 8,471	$ 2,118	$ 2,118	$ 1,910
Total							**$ 221,993**	**$ 71,568**	**$ 39,429**	**$ 65,570**

Notes:

- *The benchmark for time period 1 and 2 is the average actual usage from the past 5 years*
- *The benchmark for time period 3 is the minimum actual usage from the past 5 years*
- *The usage results and CDDs (for weather normalization) are illustrative*
- *$ per KWh is based on the locked-in FY13 for delivery (PPL - $0.075) and an estimate for supply (PECO - $0.0125), which is based on demand. Actual savings will be calculated using the actual rates charged for the 6 month period*

Illustrative Weather Normalization Methodology

It is important to build in a mechanism for normalizing results for actual weather experienced during the measurement period to the extent a significant relationship exists between weather (measured in cooling degree days) and usage for that specific department. Nearly all of the City's buildings use electricity to cool and natural gas to heat, therefore we did not explore the relationship between heating degree days and electricity usage

Avg CDD per month for 2007-2011 (Used as the illustrative actual CDDs for normalized benchmark)	
65 degree balance point	
January	0.0
February	0.0
March	0.0
April	23.8
May	88.6
June	276.8
July	420.8
August	338.4
September	163.8
October	27.2
November	0.2
December	0.0

Comments

- The weather normalization regressions are based on actual KWh usage and CDD data for 2007 – 2011
- Each November these regressions will be revised to include the past 5 years of data
- Weather normalization is only applied to periods where the correlation between usage and CDDs is at least 80%, thus supporting the relationship is statistically significant
- Additionally, the normalized benchmark for Jan-Jun 2013 time period on the previous page assumes the Jan – Jun 2012 normalized benchmark increased by 2%

Weather Normalization Regression Results	Health		Library		P&R		DPP		Police		Fire	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Intercept	1,209,129	1,083,330	1,201,122	1,011,347	2,240,639	2,753,245	4,330,745	4,240,371	1,451,169	1,306,200	521,810	487,541
65° Balance Point Coefficient	1,070	(1,027)	1,283	857	1,660	(15,986)	1,689	(8,311)	1,001	977	628	124
R Squared	**0.814**	**0.053**	**0.878**	**0.019**	**0.678**	**0.345**	**0.372**	**0.111**	**0.888**	**0.025**	**0.895**	**0.002**
Adjusted R Squared	**0.807**	**0.019**	**0.874**	**(0.016)**	**0.666**	**0.322**	**0.349**	**0.080**	**0.884**	**(0.010)**	**0.892**	**(0.033)**

= Weather normalize months within this period

Source: CDD data - www.weatherdatadepot.com

Energy Efficiency Incentive Program:

Key Terms for Implementation

The terms below must be agreed upon by the budget team, energy team and pilot departments before implementation of the program

PROPOSED KEY TERMS	
Resource(s)	One member of the energy team will work on the benchmark and savings calculation (estimated at 100 hours for the year). With review from a senior team member (estimated 15 hours per year)
Advisory committee	Comprised of a representative from the energy team, each of the participating departments and the budget team. Meet once every 3 months to discuss recommendations/issues with the program
Measurement Period	January – June and July - December
Benchmark	Average usage for the past 5 years
Excluded Meters	Those with less than 2 years of activity or no activity in last year
CDD Balance Point(s)	65 degrees
Regression Significance	Adjusted $R^2 > 0.80$
$ per KWh calculation	Calculate the average cost of delivery and supply (PPL and PECO) across all City accounts for the period
Savings retained by GF	50%
Savings to department for immediate use	25%
Savings to department's Energy Bank	25%
Deposit maximum on Energy Bank	5% of the prior year's annual spend
Penalty for usage over benchmark	50% of calculated dollar overage is deducted from the department's Energy Bank

Alternative Lighting Strategies

Street lighting makes up ~$10MM of the City's electricity costs, with ~75% of this cost relating to distribution (including a monthly fee for poles), which depends on PECO's rates. However, reducing usage (through more efficient bulbs) could still decrease the City's annual electricity spend by ~$1MM (assuming 43% reduction in usage based on savings garnered in comparable cities)

- The anticipated energy and maintenance reduction for implementing an alternative lighting program ranges from approximately 30 - 50%, or 43% on average
- Financing for these programs are available through many sources, including Energy Funds, Federal Stimulus, and local tax dollars with many rebates and credits offered as an incentive to go with selected utility providers
- The average payback period for the cities with available data was 5 years (depending on the size of the lighting program)

City	Program	Anticipated Energy & Maintenance Reduction	Financing	Payback Period	Other Notes
Philadelphia, PA	**Greenworks- LED Traffic Signals**	**$700K -$1MM/year (30 percent energy savings)**	**Energy Efficiency Fund**	**4.8 years**	**n/a**
New York City, NY	FDR Drive LED Roadway Lighting Program	26-57 percent reduction	Mayor's Energy Fund	LED Lighting Program expected to be 9 years (assuming a $0.15/kWh electricity rate)	Annual NYC Streetlight budget: $40 million.
Los Angeles, CA	LED Energy Efficient Street Lighting Program	$10MM/year (40 percent energy savings)	Loan provided by the City Utility (LADWP), City Funds, and the Bureau of Street Lighting	7 years	Annual LA electric bill: $15MM.
Santa Rosa, CA	Street Light Reduction Program	$400K/year (50 percent energy savings following implementation)	Federal Stimulus in replacement of new 150-watt induction bulbs; Remaining costs and labor paid with tax dollars	Program phased over an extended time period; No payback period analysis identified	Annual streetlight costs - prior to program: $800K
San Diego, CA	Light Replacement Program	$2.2MM/year (40 percent energy savings)	Funded by a financing package from federal grant stimulus and a rebate for the lighting change provided by San Diego Gas & Electric.	5.75 years	Former streetlight annual costs: $4.7MM
Broken Bow, NB	Installation of New LED lights in City	$20K/year	Nebraska Energy Office grant	2 years	n/a

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Notes:

- *Further details and sources provided in the appendix*

Key Observations & Recommendations

FTI reviewed three months of PECO bills (June 2011, December 2011 and July 2012) to understand whether the PDF bills and the E-Bill the City receives match

Key Observations

- **Background**
  - The City tracks and pays for electricity centrally, though PECO provides a separate bill for each department in PDF and hard copy (and a combined excel version of the bill). Usage is billed monthly, by meter, based on KWh
- **Variances**
  - Minor variances were discovered between the specific accounts included in the E-Bills and PDF bills
  - Large variances in the amounts charged in the E-Bill vs. the PDF bill for a number of accounts in the June and December 2011 bill. This issue is not nearly as large in July 2012

Key Recommendations

- **Issue an RFP for PECO bill auditor**
  - Based on the sample comparison of E-Bills and PDF bills, there are variances that need to be explored further by a dedicated energy bill auditor
  - The current scope of the RFP (detailed below) should meet the City’s auditing requirements
    - Review past bills up to the statute of limitations for errors, such as overcharges, double billing, usage / metering errors, contract violations, improper application of public regulation, improper application of local, state or federal regulations and statutes, or other billing mistakes
    - Review past bills for future savings opportunities such as rate changes or other potential cost saving amendments
    - Review incoming bills for billing errors as well as future savings opportunities
    - Visit specific sites to verify any meter information and readings if necessary
    - Provide ongoing customer service and support to explain any audit findings, as well as provide the City with advice and recommendations related to implementing the audit findings as needed to achieve the maximum return

Source: FTI Analysis

PECO Bill – Comparison of PDF to E-Bill

The results of FTI's PECO bill review to check consistency between the PDF bills and the E-Bill are included below:

- The City uploads the E-Bill into its energy management software, Hara, and uses it to track errors (e.g. inclusion of meters that are no longer in service, duplicate charges for the same account, etc.)
  - However, according to PECO, the City is bound to the PDF version of the bill should a legal dispute arise
- FTI electronically converted each of the PDF bills (several hundred pages in total) into excel to facilitate the comparison
- The variances FTI found are summarized at right, with the E-bill (excluding street lighting) always being higher
- FTI has documented the account numbers, addresses, service dates and charges related to the variances and has provided this data to the City's energy team

June 2011	E-Bill	PDF Bill
Total current charges	**$ 1,646,491.92**	**$577,886.33**
Total charges for street lighting accounts (no PDF provided)	$ (840,730.89)	
Error charge (1)	$ (94,655.92)	
Total charges for accounts not in PDF's	$ (3,429.68)	
Total charges for accounts not in E-bill		($2,648.48)
Total variance in charges for accounts in both files (2)	$ (132,437.58)	
Adjusted Total	**$ 575,237.85**	**$ 575,237.85**

December 2011	E-Bill	PDF Bill
Total current charges	**$ 1,525,202.52**	**$ 566,141.88**
Total charges for street lighting accounts (no PDF provided)	$ (838,467.88)	
Total charges for accounts not in PDF's	$ (4,461.39)	
Total variance in charges for accounts in both files (2)	$ (116,131.37)	
Adjusted Total	**$ 566,141.88**	**$ 566,141.88**

July 2012	E-Bill	PDF Bill
Total current charges	**$1,564,337.73**	**$731,681.08**
Total charges for street lighting accounts (no PDF provided)	($797,147.70)	
Total charges for accounts not in PDF's	($21,424.23)	
Total variance in charges for accounts in both files (2)	($7,102.02)	
Amounts from duplicate accounts (3)	($6,982.70)	
Adjusted Total	**$731,681.08**	**$731,681.08**

Notes:

(1) Error Charge – The City identified this charge as an error

(2) Variance in charges in both files – Relates to accounts that appear in both forms of the bill in different amounts,. Most of these charges in the PDF's do not list dates of service, therefore it is unclear if they relate to the same time period as the charges in the E-Bill

(3) Duplicate Accounts – These accounts are listed more than once in the E-Bill, the amounts captured in this line are in excess of the amount that matches the PDF

Department of Public Property – SEPTA Rebate (Act 44 of 2007):

Background

Pennsylvania Act 44 of 2007 was implemented in July 2007; therefore, FY08 is the first fiscal year impacted by the legislation

Background

- One of the provisions of the 2007 Act 44 is a requirement for government entities (federal, state and local) to fund SEPTA's expected operating deficit
- The amount of funding, and required calculations, are detailed within Act 44
- As a result, the City along with 4 other counties, are required to provide a local match on annual basis to help, in essence, "cure" the expected operating deficit
- While Act 44 governs the specific calculation for how the local match is determined, all other aspects of the funding arrangement between the City and SEPTA map back to the City's General Agreement with SEPTA *(City/SEPTA General Agreement on Operating Subsidies dated 3/28/91)*
- The General Agreement includes the following provision providing a mechanism for SEPTA to refund any City provided subsidies not used:
  - "In the event the City should provide funds to SEPTA in excess of the amount pursuant to this Agreement, as determined in accordance with independent certified audit report of SEPTA's operations for the fiscal year, SEPTA shall, as soon as feasible, repay such excess to the City or the City, at its option, may deduct such excess from any future amounts otherwise payable to SEPTA." - Paragraph 10(b)

Impact on General Fund

- FTI's analysis of SEPTA's financial results from FY08 to FY12 indicate that SEPTA has outperformed relative to budget on several occasions
- As a result, the City's annual contributions to SEPTA have exceeded its actual obligations in certain years; therefore, such amounts should either be repaid to the City or used as a credit against next fiscal year's subsidy
- The City has not performed this analysis since the enactment of Act 44 (and perhaps before Act 44 to our knowledge) and has therefore not petitioned for this rebate
- **The cumulative savings since FY08 are estimated to be approximately $5.0MM**
  - Refer to the supporting analysis on the following page for further details

Source: FTI Analysis;

Cumulative Rebate Calculation

Below is an analysis of SEPTA's reported Budget and Actual results in terms of local match funding (operating subsidy) and the resultant estimated refund owed to the City as a result of overfunding

$ in thousands

	Local Match				
Fiscal Year	**City Transit**	**Victory**	**Frontier**	**Railroad**	**Total**
Budget					
FY 2012	59,383	7,812	2,671	12,038	81,904
FY 2011	55,553	7,420	2,586	15,533	81,092
FY 2010	51,315	7,217	2,408	14,517	75,457
FY 2009	50,159	7,020	2,411	12,626	72,216
FY 2008	44,978	6,063	1,970	12,726	65,737
Actual					
FY 2012	57,961	8,236	2,992	13,074	82,263
FY 2011	54,531	7,115	2,744	14,390	78,780
FY 2010	53,474	7,324	2,720	15,723	79,241
FY 2009	49,762	7,222	2,463	13,344	72,791
FY 2008	43,799	6,360	2,096	12,456	64,711
Difference					
FY 2012	1,422	(424)	(321)	(1,036)	(359)
FY 2011	1,022	305	(158)	1,143	2,312
FY 2010	(2,159)	(107)	(312)	(1,206)	(3,784)
FY 2009	397	(202)	(52)	(718)	(575)
FY 2008	1,179	(297)	(126)	270	1,026
Total	1,861	(725)	(969)	(1,547)	(1,380)
City's Portion	99.5%	0.0%	0.0%	70.0%	
FY 2012	1,415	-	-	-	**1,415**
FY 2011	1,017	-	-	800	**1,817**
FY 2010	-	-	-	-	-
FY 2009	395	-	-	-	**395**
FY 2008	1,173	-	-	189	**1,362**
Total	**3,999**	**-**	**-**	**989**	**4,988**

Notes:

- *Local Match in total, from all 5 counties*
- *Difference = Over / (Under) Performance vs. Budget. Over performance results in a rebate opportunity for the General Fund*
- *Budget and Actual results sourced from SEPTA Operating Budget Reports Section IV. "Budget Detail"; information is posted on SEPTA's website*

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Overview of Analyses Performed

- As part of its engagement, FTI reviewed certain aspects of the Capital Project design, bid and construction process. FTI performed several analyses, including:
  - Review of City Public Works and Regulatory Process Charts to identify time/process alternatives
  - Review of Bid Estimate vs. Bid Amounts for projects bid in 2011 and 2012 to identify variances and implications of such discrepancies
  - Review of Contractor Bids for projects in 2011 and 2012 to assess competitive trends
  - Review of project change orders to assess justifications for changes and compliance with guidelines
  - Review of use of project contingency funds to assess trends and implications

- FTI's observations and recommendations are set forth on subsequent pages of this section

Department of Public Property – Capital Projects:

Key Observations & Recommendations

Key Observations

- **Review of Public Works Process Charts**
  - Process for design, bidding and construction phases (and required approvals along the way) appears unwieldy and subject to significant delay
    - Stated overall project timeline is from 74 to 498 weeks
  - Steps in the process have broad ranges for completion, but no indication as to target completion period
- **Bid Estimate vs. Bid Amount**
  - The bid amount for slightly over half of the projects reviewed exceeded the bid estimates by approximately 44%
  - Approximately half of the projects were renovations and the other half new construction; while approximately one third of the projects were bid by general contractors

Key Recommendations

- **In-house design and Construction**
  - While frustration with the capital process is warranted, FTI does not recommend that the City self-perform significant (parameters to be defined) construction projects given potential risks/responsibilities/costs
  - Instead, the City should consider alternate solutions, including: (i) bringing the design function in-house in the design phase and (ii) reducing the overall process by eliminating non-value added steps and developing acceptable completion periods for the remaining steps
- **Bid Estimate Accuracy**
  - The Bid Estimate should be prepared by the engineer. The final engineer's estimate should be based on the advertised contract bid documents (preferably based upon the "100%" design submittal)
  - The estimate should be performed on the same drawings that the bid amounts are predicated on to allow for a meaningful comparison between the bid estimate and bid amounts

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Source: FTI Analysis

Key Observations & Recommendations

Key Observations

- **Bid Process Review**
  - 76 different contractors bid on 79 contracts; 33 contractors never won a contract
  - 3 contractors identified within the Top 10 Contractors to (i) submit the most bids, (ii) win the most bids and (iii) have the highest % of winning bids, have no interests that overlap or are held in common
- **Change Order Analysis**
  - Change Orders were reviewed and signed-off by designated representatives. However, FTI noted <u>potential issues with upfront design</u> could be impacting the volume of requested changes
  - The majority of Change Orders were classified as either Unforeseen Conditions or Scope Change <u>which is not unusual for renovation projects</u>

Key Recommendations

- **Bid Process Review**
  - Consider interviewing vendors, obtaining "voice of customer", to help identify impediments to competition
  - As part of the determination of whether a contractor is "responsive", FTI suggests that a background check be performed on contractors for which the City has no history
- **Change Orders – Internal Controls**
  - Implement project controls and provide a means for the project site to produce standardized, concise and timely reporting of the status of the project
- **Change Orders – Minimize "expensive outcome"**
  - Update outdated designs to current needs, conditions and level of technology available
  - Implement additional, or more aggressive, pre-design investigations
  - Inspections should occur with the results being incorporated into design to decrease Change Orders classified as Unforeseen Conditions
  - A representative of the user should be part of and contribute to the design process, especially in the schematic design phase to decrease Change Orders classified as DPP Scope Change
  - Explore charging user department for user-driven scope changes after final design

Source: FTI Analysis

Key Observations & Recommendations (cont'd)

Key Observations

- **Change Order Time Impacts**
  - Some change orders failed to note Time Impact, which may result in unintentional time extensions, disputes and increased costs to the City
- **Contingency**
  - For those projects that expended over 50% of the contingency, 44% expended 90% or more
  - The contingency allowed by the City is based on the difference between the Original Contract Limit and the Bid Amount, which <u>provides more than double the amount of contingency typically allowed</u>

Key Recommendations

- **Change Order Time Impacts**
  - Require the contractor to submit and maintain a project schedule that details the timing for construction operations from start to finish
  - The project schedule should depict the plan and may take the form of a critical path, with identified controlling operations. If work covered by a change order affects a controlling operation, a change in the contract time may be warranted
  - **Proper analysis of a time impact on the schedule can be the difference between owing a contractor time and money for a delay or having the ability to assess Liquidated Damages to recover money for contractor delay**
- **Contingency**
  - Adopt a more standard approach to contingency calculation, which is <u>typically 10% of the total project cost</u> based on the final engineer's estimate
  - Further investigation should be performed to determine if certain contractors or project management personnel tend to "create" opportunities to spend the contingency. <u>Initial analysis did not point to this occurring for the projects reviewed</u>
  - Re-consider whether it is necessary for contingency (or original contract limits) to be published or known by contractors

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Source: FTI Analysis

Analysis of (Public Works) Bidding Process

Given frustration with the duration of capital projects, the possibility of bringing the capital workforce in-house (i.e., hiring teams of workers and buying materials and supplies) is being discussed within the City

Background:

- FTI reviewed the City's Public Works Process chart to determine whether performing in-house design work or bringing the capital workforce in-house would decrease the process duration
- The overall process from Pre-Design through Construction Complete is 74 to 489 weeks, consisting of:
  - PD-Pre-Design Process (19 to 96 weeks)
  - D-Design Phase Services (18 to 198 weeks)
  - R-Regulatory & Permits
  - Utility Coordination
  - Public Works Bid (17 to 57 weeks)
  - Construction (20 to138 weeks)

Source: FTI Analysis;

Analysis of (Public Works) Bidding Process (cont'd)

In-house Design Observations

- In-house design can potentially decrease the duration of the Pre-Design and Design phase of the process as in-house designers will be more intimately familiar with the capital process over time vs. external design vendors
- In-house design would eliminate the external designer selection process, which by itself is lengthy. Steps that could be eliminated include: RFP Posting (5 to 9 weeks); Proposal Selection (3 to 7 weeks); and Award (5 to 30 weeks)
- Further process review can be performed independent of the designer selection process, including:
  - Reviewing activities along the process of actual projects to determine which part of the process is the cause for the wide range of "accepted" durations
- Potential risks/responsibilities/costs:
  - Professional liability exposure and insurance
  - Litigation and financial exposure
  - Safety and environmental concerns
  - No opportunity to recover Change Orders characterized as Errors/Omissions
- Potential alternative recommendation
  - To potentially minimize cost and time, provide only interior design services to departments (users of buildings) to select the furnishings and equipment needed in order to operate a building. This is done by the Dormitory Authority of the State of NY (DASNY)

Source: FTI Analysis;

Analysis of (Public Works) Bidding Process (cont'd)

In-house Capital Workforce Observations

- Construction by an in-house capital work force can potentially decrease the duration of the Public Works process by:
  - Eliminating all bidding steps (a duration of 17-57 weeks)
  - Eliminating or minimizing the Construction Startup phase, potentially decreasing the overall process from 3 to 11 weeks or less.
  - Eliminating or minimizing the Construction Closeout phase, potentially decreasing the overall process from 5 to 14 weeks or less
- Potential risks/responsibilities/costs:
  - Eliminating bidding would eliminate competition and may affect cost
  - Any delay by the contractor and associated damages will be borne by the City; no opportunity to collect Liquidated Damages to recover contract cost overruns due to delays
  - The Bid Estimate must be accurate as there will be no external bids for which to compare/assess the potential project cost
  - Fully loaded personnel costs
  - Equipment costs – purchase, materials, storage, etc.
  - The following additional risks/responsibilities/costs are typical of a construction force, but may or may not be applicable to the City:
    - The workforce would have to meet MBE/WBE etc., requirements
    - Union issues
    - Training, insurance, dues, etc.
    - Permitting and insurance
    - Need for all trades and/or procedures to hire subcontractors or specialty contractors

Source: FTI Analysis;

Analysis of (Public Works) Bidding Process (cont’d)

In-house Capital Workforce Observations (cont’d)

- Potential alternative recommendation
  - With the exception of possibly maintaining an in-house laborer contingent, FTI’s reaction is that the City should not self-perform significant construction projects
    - Threshold parameters to consider include: number of trades, job category coverage, overall project cost, etc.
  - Instead, the City could offer a full range of construction management services in-house, effectively in a construction management / general contractor role (“CM/GC”), acting as the customer's (user’s) agent to protect the customer's interests during both design and construction phases
    - Use the CM/GC project delivery system where the design professional and the CM/GC are retained under separate contracts to the owner
    - The CM/GC is typically retained at the start of the design phase to provide pre-construction services, including: estimating, budgeting, scheduling, constructability reviews and other construction input. The CM/GC is then typically retained to construct the project as designed based on a Guaranteed Maximum Price (GMP).
    - The success of the CM/GC model is dependent on the collaboration between the designer and the CM/GC as early in the design phase of the project as possible. While the more commonly used method is for the designer to be selected before the CM/GC, a successful alternative that should be considered is to select the CM/GC first, and for the owner to seek its input into the selection of the designer

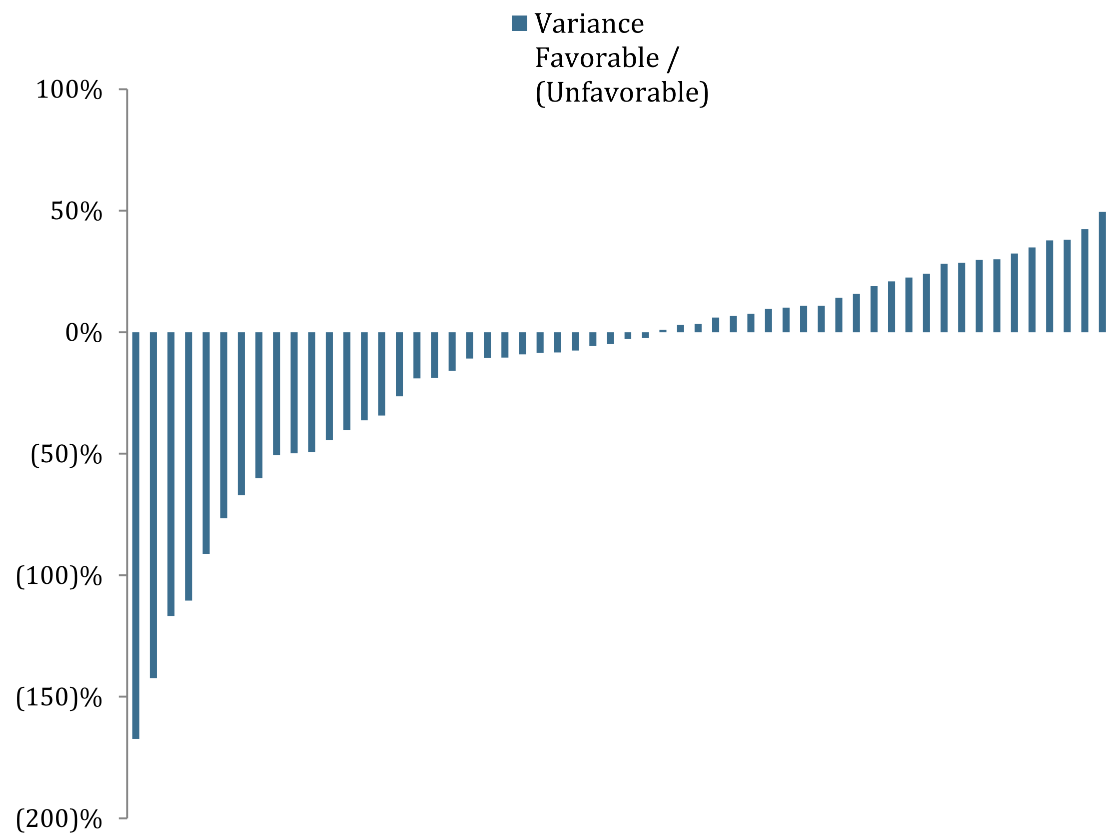
Source: FTI Analysis;

Department of Public Property – Capital Projects:

Comparison of Bid Estimates vs. Bid Amounts - 2011

Observations:

- 54% of projects had Bid Amount > Bid Estimate (30 of 56)
  - 26 were renovations; 4 were construction *(based on FTI assessment on type of construction)*
  - 33% of overages are General Construction projects
  - 23% of overages are Electrical projects
  - 20% of overages are Mechanical projects
- In dollar terms, 43% of projects the Bid Amount exceeded the Bid Estimate



Source: FTI Analysis; Bid data provided by the City for select projects

Notes: All 2011 projects included (56 in total)

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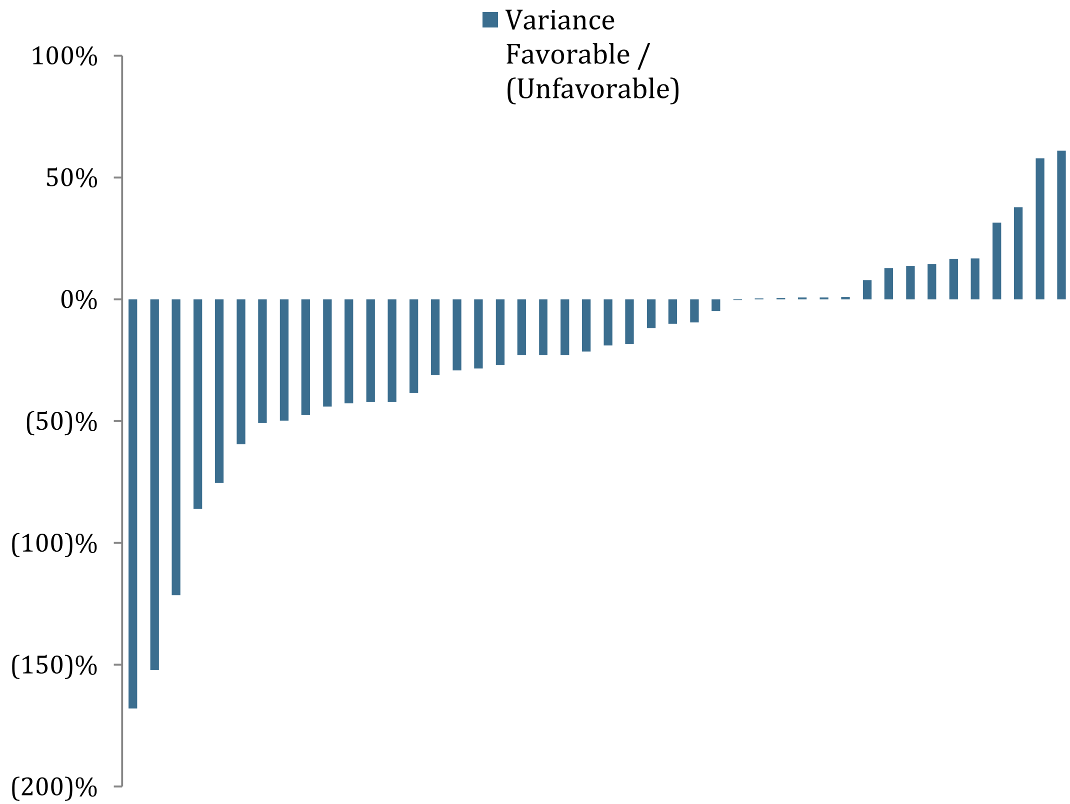
Department of Public Property – Capital Projects:

Comparison of Bid Estimates vs. Bid Amounts - 2012

Observations:

- 66% of projects had Bid Amount > Bid Estimate (29 of 44)
  - 15 projects are renovations and 14 are new construction *(based on FTI assessment on type of construction)*
  - 38% of overages are General Construction projects
  - 17% of overages are Electrical projects
  - Plumbing and Roofing projects each accounted for 10% of the overages
  - Elevator and Sprinkler projects each accounted for 3% of the overages
- In dollar terms, 45% of projects the Bid Amount exceeded the Bid Estimate



Source: FTI Analysis; Bid data provided by the City for select projects

Notes: All 2012 projects included (except Bid #4623GCON) (44 in total); Bid #4623GCON excluded because of large difference: Bid Estimate Amount = $7.3MM, Bid Estimate = $2.5MM

Department of Public Property – Capital Projects:

Contractor Bid Analysis

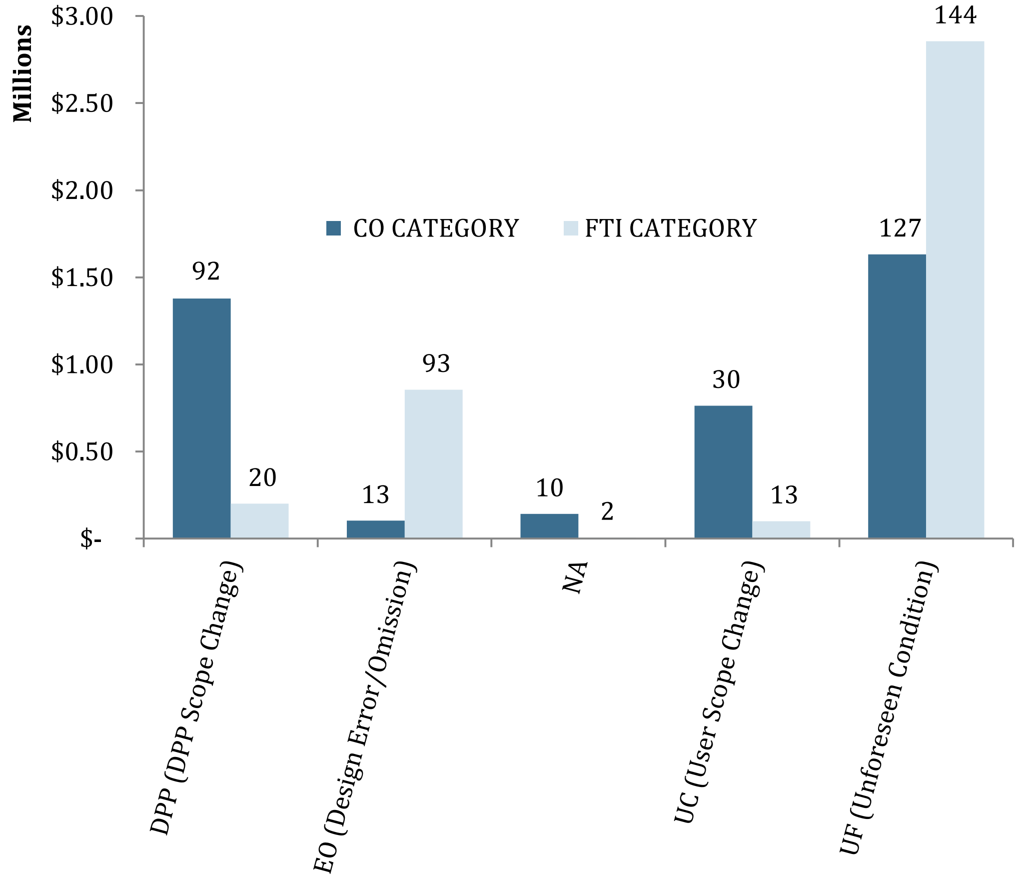
- **Reviewed select contractor bids for projects bid in fiscal years 2011 (56) and 2012 (44)**
- **Observations:**
  - 76 different contractors bid on 79 contracts; 33 contractors never won a single contract
  - FTI identified Top 10 Contractors to submit the most bids, win the most bids and have the highest winning %
  - 3 contractors stood out as winning the most bids
    - Contractor A:
      - among the top 10 firms to submit the most bids (15 Bids); of those-Contractor B bid 13 of them, Contractor C bid on 7
      - among the top 10 contractors to have the highest winning percentage (60%)
      - won the most bids (9 contracts total)
      - lowest bidder 8 times, second lowest bidder once (Contractor B lowest)
      - Of the 6 bids lost-Contractor B won 4
    - Contractor B:
      - appears alongside Contractor A's bids multiple times
      - among the top 10 contractors to submit the most bids (20 Bids)-lowest bidder chosen 17 times
      - among the top 10 contractors to have won the most bids (5 contracts total) -20% winning percentage
      - Of the 15 bids lost, Contractor A won 7; Contractor C won 3
    - Contractor C:
      - appears alongside Contractor A's bids and Contractor B's bids multiple times
      - among the top 10 contractors to submit the most bids (15 Bids)
      - among the top 10 contractors to have won the most bids (3 contracts total)- 20% winning percentage
      - Of the 12 bids lost, Contractor A won 3; Contractor B won 2

Source: FTI Analysis; Bid data provided by the City for select projects

Project Change Order Analysis

Observations:

- In compliance with Change Order form, Change Orders reviewed by Contractor and Construction Representative and approved by Project Coordinator/Manager, Project Director, and Deputy Commissioner (all manually via physical signature)
- 88% of 269 Change Orders were negotiated, remaining were "Force Account"
- 12% of 269 Change Orders indicated a Time Impact (over 6 contracts – see page 135 for further details)
- 3 projects had Change Orders with a substantial amount of total Time Impact
  - 17-09-4726-01: 300 days; 16-09-4708-01: 74 days; 16-07-4318-01: 86 days
- Since most of the projects are renovations, it is not unusual that the type of Change Orders are Unforeseen Conditions or Scope Change



Source: FTI Analysis; Change order data provided by the City

Notes: The population analyzed consisted of change orders for contracts that were completed projects (or close to completed) in 2011 and 2012; Note information for 15 projects selected could not be readily located by the City

Project Change Order Analysis (cont'd)

Contribution of Change Orders to "expensive outcome" of projects and how to minimize

- Outdated design
  - One of the projects (17-09-4726-01) was being constructed with a design that was 10 years old, resulting in:
    - $200k in Change Orders
      - Majority classified as DPP Scope Change or Unforeseen Condition
    - 300 days of Time Impacts
- Change Orders Classified as Unforeseen Conditions
- Change Orders classified as DPP Scope Change

Recommendations on how to minimize "expensive outcome"

- Outdated design
  - Update designs to current needs, conditions and level of technology available
- Change orders Classified as Unforeseen Conditions
  - Perhaps additional, or more aggressive, pre-design investigations and inspections should occur and be implemented into design
- DPP Scope Change
  - A representative of the user should be part of and contribute to the design process, especially in the schematic design phase

Source: FTI Analysis; Bid data provided by the City for select projects

Project Change Order Analysis (cont'd)

Improper recording of expected contract timeline impact from Change Orders may result in unintentional time extensions, contractor disputes and increased costs to the City

Change Order Time Impacts

- Any change, extended or reduced, in the contract time should be agreed and entered into the change order form. If there is no change in time then the change order should state, "No change in Contract Time" or Zero (0) Days. It is a mistake to leave the time blank, as it will often result in a dispute. The client will assume that the blank means no change in time, while the contractor reasons that the blank means it will be discussed later
  - The majority of Change Orders reviewed did contain a number of days (or 0, "No Time Impact"). However, there were some Change Orders that left this blank
- Most State standard specifications require the contractor to submit and maintain a project schedule that details the timing for construction operations from start to finish. Reasonably, this schedule should depict the as-planned timeline and may take the form of a critical path. A trace of the critical path identifies the controlling operations. If work covered by a change order affects a controlling operation, a change in the contract time may be warranted. If the controlling operation is unaffected, a change in the contract time is not warranted.
  - For the Change Orders that FTI reviewed, there was no indication that:
    - Substantiating schedule analyses were required to request time extension and to support the Time Impacts noted on the Change Orders
    - Time extensions were granted for the projects where Change Orders indicated a Time Impact
  - **Without substantiation of a Time Impact, the City may have unintentionally granted time extensions to contractors for Change Orders that did not affect the controlling operation of the critical path. Since most Change Orders are considered non-excusable and compensable, contractors granted time extensions for Change Orders may be due incremental compensation from the City**

Source: FTI Analysis; Bid data provided by the City for select projects

Project Change Order Analysis (cont'd)

Proper analysis of a time impact on the schedule can be the difference between owing a contractor time and money for a delay or having the ability to assess Liquidated Damages to recover money for contractor delay

Analyzing the Effects of Change Orders on Schedule

- Schedule impact analysis is defined as the process of quantifying and apportioning the effect of delay or change on a project schedule
  - This analysis will determine if a contractor is due time and compensation for delays caused by the City, or if the City can assess Liquidated Damages against a contractor for contractor-caused delays
- To determine if a project was delayed, a comparison between the Baseline (As-Planned) schedule and the Actual (As-Built) schedules is required to compare critical milestone dates and the date of Project Completion
  - After the amount of delay is quantified, it is necessary to speak with project personnel and review contemporaneous documentation (meeting minutes, correspondence, daily reports, etc.) to determine reasons for delay and liability

Source: FTI Analysis; Bid data provided by the City for select projects

Contingency Analysis – % Contingency Allowed

Contingency is a financial reserve to cover construction and engineering change orders. Typically, 10% of the total project cost is a reasonable amount to allow for this item. Construction Contingency applies only to the Final Engineer's Estimate

Analysis Performed:

- Analyzed allowable % of contingency based on comparison of the contingency $ amount to the Bid Estimate
- This assumes that the Bid estimate is equivalent to the Final Engineer's Estimate
- 2011: 53 projects reviewed:
  - 45 (85%) had contingency over 10%
  - The average contingency across all 53 projects: 21%
  - The average contingency across 45 projects over 10%: 24%
- 2012: 39 projects reviewed:
  - 33 (85%) had contingency over 10%
  - The average contingency across all 39 projects: 25%
  - The average contingency across 33 projects over 10%: 29%

Conclusion:

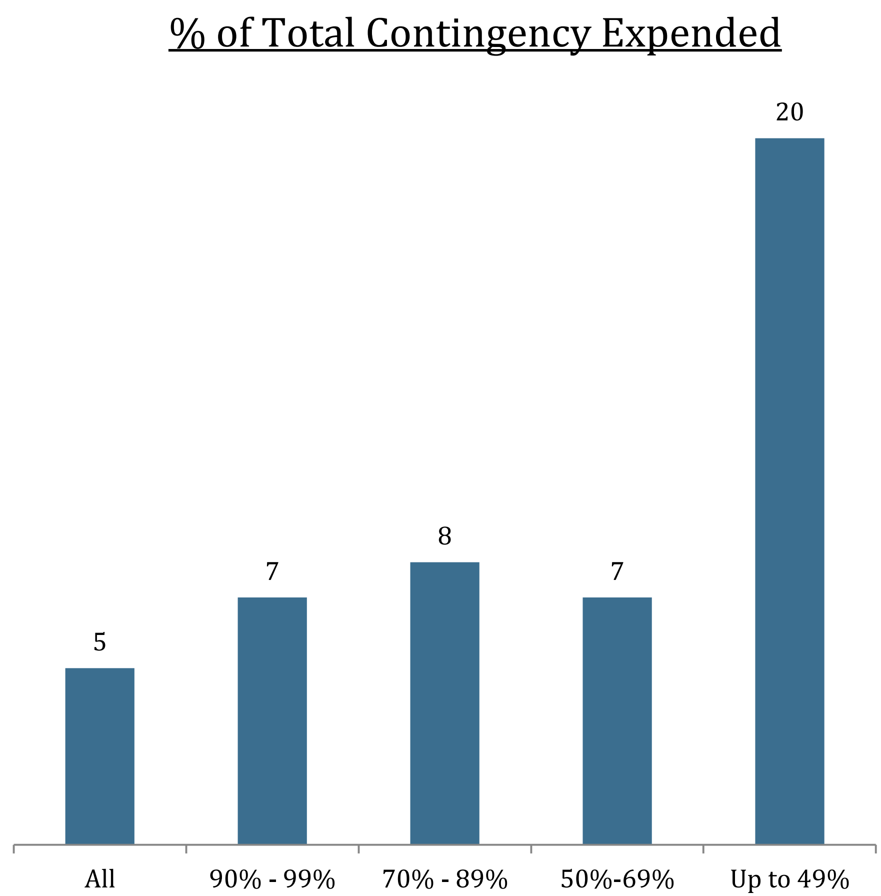
- The contingency allowed by the City is based on the difference between the Original Contract Limit and the Bid Amount, which provides more than double the amount of contingency typically allowed

Source: FTI Analysis; Capital Project Database 2011 and 2012

Contingency Analysis – % Contingency Expended

Conclusions:

- Our analysis of the contingency (original contract limit less prior amendments and bid amount) expended after Change Orders yielded the following observations:
  - More than half (58%) of the projects analyzed expended over 50% of the contingency
  - Of the 27 projects that expended over 50% of the contingency, 12 (44%) expended 90% of more of contingency
  - Of the 20 projects that expended less than 50% of the contingency, the median and average spend were 74% and 76%, respectively
- Regarding Project Coordinators:
  - PC1 *(name redacted)*: 7 of the 9 contracts are over 70% (contingency used)
- Regarding Project Directors:
  - PD1 *(name redacted)*: 6 of the17 contracts are over 70% (contingency used)
  - PD1 and PC1 did not work together on any of these projects



Source: FTI Analysis; Change order data provided by the City; "Active project" spreadsheets for the 4th Qtr of FYs 2012 and 2011

Recommendations – *in more detail*

Recommendations

Overall Recommendations

- Implement project controls and provide a means for the project site to produce standardized, concise and timely reporting of the status of the project
- Prepare periodic standard reports regarding the status of safety, quality, cost and schedule
- Consider construction project management software that includes ability to capture construction costs, scope and project schedules to provide a complete system of record for managing project information. Benefits of such software include:
  - Optimized human resource allocation. Successful project management gets the most out of each worker
  - Relevant and timely management information that should in turn create increased efficiency
  - Access to all pertinent, updated project data from one source will allow project managers to anticipate risk and guide a project to best avoid it. While there are some financial metrics for placing a tangible value on risk, active project management also provides the intangible benefit of taking on risks only when they are necessary in the first place

Recommendations

Capital Project Process

- Regarding the process maps provided by the City's capital projects division, the following should be performed in an effort to determine whether the process is efficient and can be streamlined:
  - Check against City or state mandates to determine which items are really necessary
  - Walk through a typical project to see:
    - Whether these processes are actually implemented
    - The actual timing of the processes
- Potential alternative recommendation to an in-house capital workforce
  - With the exception of possibly maintaining an in-house laborer contingent, FTI does not recommended that the City self-perform significant construction projects
  - Offer a full range of construction management services in house, acting as the customer's (user's) agent to protect the customer's interests during both design and construction phases. Similar to CM
  - Use the Construction Management/General Contractor (CM/GC) project delivery system where the design professional and the CM/GC are retained under separate contracts to the owner

Department of Public Property – Capital Projects:

Recommendations – *in more detail* (cont'd)

Recommendations

Capital Project Process (continued)

- Potential alternative recommendation to in-house design
  - To potentially minimize cost and time, provide only interior design services to departments (users of buildings) to select the furnishings and equipment needed in order to operate a building. This is done by the Dormitory Authority of the State of NY (DASNY)

Bid Estimate Accuracy

- Ensure that the bid estimate is accurate
  - The City process chart (Public Works Process) indicates that a cost estimate is prepared during the schematic design phase and again during the design development phase after the development of coordinated technical plans and specs but before Value Engineering which mat affect estimate
  - The Bid Estimate should be prepared by the Engineer. The Final Engineer's Estimate should be based on the advertised contract bid documents, preferably based upon the "100%" design submittal
  - Ensure bid estimate is based on the same stage design documents that the contractor bids on so that meaningful comparisons can be made
  - Costs evaluated at any % less than 100% should include Risk-Based Allowances

Recommendations

Contractor Bid Process

- Based on several circumstances (market, economy, resources etc.) bid amounts can vary by different degrees of magnitude. While the City has no control over bids submitted by contractors, the City's Vendor Guide allows that "bids are awarded to the lowest responsive, responsible bidder." Our analysis indicated that the City did award contracts to bidders that were not the lowest bidder. In instances where bid estimates and bid amounts differ greatly, this is a good mechanism to minimize potential exposure

- As part of the determination of whether a contractor is "responsive", FTI suggests that a background check be performed on contractors for which the City has no history

Change Orders

- Although the majority of Change Orders were classified as either Unforeseen Conditions or Scope Change which is not unusual for renovation projects which made up the project sampling, FTI's review indicated (with limited information) that Change Orders may have been categorized incorrectly (increase of Error/Omissions in particular). It is unclear from the Change Order form as to which party determines the category
- Additional review of the process should be performed to ensure that the Change Orders are correctly classified

Recommendations – *in more detail* (cont'd)

Recommendations (cont'd)

Change Orders (continued)

- To the extent that the cost of Change Orders classified as Design Error/Omission can be recovered from the A/E errors and omissions policy or other means may be beneficial to the City. This requires a review of the A/E contract to determine if this recover method is allowable. To accurately determine whether a Change Order is a Design Error/Omission requires a thorough review of project specs and drawings
- The total $ value of changes classified as Design Error / Omission in our sample was $ $102,303 (CO Categorization); $854,980 (FTI Categorization)
- Change order forms should be revised to capture indication of whether contract is (i) new construction or (ii) renovation
  - Renovation projects average a higher increase in costs over original contract amounts than new projects
  - As such, when evaluating the cost overruns, this information can help normalize the data when comparing projects or reviewing performance of City project managers and project coordinators.

Recommendations (cont'd)

Change Orders (continued)

- To potentially minimize "expensive outcome" of projects:
  - Update outdated designs to current needs, conditions and level of technology available
  - Perhaps additional, or more aggressive, pre-design investigations and inspections should occur and be implemented into design to decrease Change Orders classified as Unforeseen Conditions
  - A representative of the user should be part of and contribute to the design process, especially in the schematic design phase to decrease Change Orders classified as DPP Scope Change
- With respect to delayed projects, FTI suggest s that:
  - A schedule delay analysis be performed on one or more of the 3 projects that had Change Orders with a substantial amount of total Time Impact to determine the effect of Change Orders on the project schedules
  - A schedule delay analysis be performed on any projects as determined by the City that have experienced substantial delays to determine reasons for delays an liability to determine whether the City is at risk for a delay claim from the contractor or if the City can assess Liquidated damages against the contractor for contractor delay

Recommendations – *in more detail* (cont'd)

Recommendations (cont'd)

Contingency

- Further investigation should be performed to determine if certain contractors or project management personnel tend to "create" opportunities to spend the contingency. Initial analysis did not point to this occurring for the projects reviewed
- Re-consider whether it is necessary for contingency (or original contract limits) to be published or known to contractors
- Adopt a more standard approach to contingency calculation, which is typically 10% of the total project cost based on the Final Engineer's Estimate

Systems Related

- FTI noted several processes within Capital Projects are manual and could be system-driven, thus, allowing for the ability to quickly run analytics, such as:
  - Change Order documentation, sign-off and retention is only available in physical paper form
  - Bid results are documented in excel spreadsheets and saved in separate folders for each project number. As a result, any data analysis covering multiple projects on bidders (# and name), bid amounts, etc. is extremely cumbersome
  - Project status is updated using excel spreadsheets
  - System queries on project details for last two years were unnecessarily cumbersome to run and not user friendly

Key Observations & Recommendations

The Mayor's Task Force on City-owned Facilities will issue a report on City leases, potential real estate opportunities, maintenance strategies and on facilities that may be sold, closed or merged. FTI met with this Task Force and shaped our scope accordingly so that we would not overlap responsibilities

Key Observations

- **Leased vs. Owned Space**
  - City dedicates significantly more space to its employees than the private sector
    - Corporates are now targeting 160-175 square feet per employee(1) vs. 250 sq. ft. where the City is today
  - The City's primary office space in the triplex is owned (2,000,000 sq. ft.(2)); however, substantial office space is leased as well at average annual cost per square foot of just under $25 (at least 720,000 sq. ft. of *comparable* office space(3))
  - Accordingly, a material cost saving opportunity exists move employees from leased to owned space (even after incurring moving / construction costs)
- **Office Space Dedicated to Field Staff**
  - Several field staff work outside the office but have the same size office space dedicated to them as employees who work full-time from the office
  - It is becoming the norm in the private sector to deploy policies such as "hoteling" or "benching" for field staff; some companies are targeting square feet per employee ratios of ~60 as a result *(moving towards cloud computing is also likely a factor)*

Key Recommendations

- **Move Employees from Leased to Owned Office Space**
  - On a conservative basis, the annual opportunity cost incurred for the extra space within the MSB and OPB is estimated to be over $2.0MM alone; with the payback period estimated to be 1.5 years to recoup estimated moving / construction costs
- **Document Retention Policy**
  - There is likely excess office space being occupied by physical documents which may not be in compliance with the Department's document retention policy
  - Departments should review their document retention policy and match their space requirements accordingly; including, migrating to more electronic delivery / retention of documents
- **Implement "Benching" or "Hoteling" for Field Staff**
  - There are over 315 employees within 5 departments that spend the majority of their time outside the office, on average
  - The annual opportunity cost associated with not pursuing a benching policy, which is the more contemporary of the two concepts (and results in the highest savings opportunity), is estimated to be in excess of $1.4MM *prior to the consideration of implementation costs*
  - Note: The above amounts exclude field staff within DPP, Police, Streets and OPA where the information was not provided to FTI

Notes:
(1) – All-in square footage that includes all amenities – conference rooms, reception areas, etc.
(2) – City Hall (1,202,000 square feet); MSB (491,000 square feet); OPB (502,000 square feet)
(3) - 1234 Market; 15th & 18th Flrs.; 100 S. Broad St. 3,4,5,6 Flrs.; 3 Parkway, 7th & 9th Flrs.; One Reading 2-5, 7-11 fls.; 1327-39 Chestnut St, 8,11-14,17,18; 990 Spring Garden St. 2,3, 4,7 Flrs.; 601 Walnut St., 3rd floor; 111 S.15th St., Packard Bldg.2&3 fl
Source: FTI Analysis; DPP provided information

Key Observations & Recommendations (cont'd)

Key Observations (cont'd)

- **Insufficient Space Management Tools**
  - The City is not readily able to quantify the vacant square footage in owned or leased office space
  - Information is not captured in a system and compilation of this type of information is not mandated (or enforced)
  - Departments do not regularly report changes in headcount / location and resultant space usage to Public Property
  - The limitations lead to lost opportunities and higher costs – for example, the City cannot efficiently capitalize on space re-shuffling as an expiring lease approaches to move employees from leased to owned space
  - In the past, Public Property has utilized university interns to take an inventory of the headcount, by office location, within the triplex; including updating the floor plans of each department and physically mapping employees to office locations, or cubicles
    - Occurred in 2009 and may occur again in FY13

Key Recommendations (cont'd)

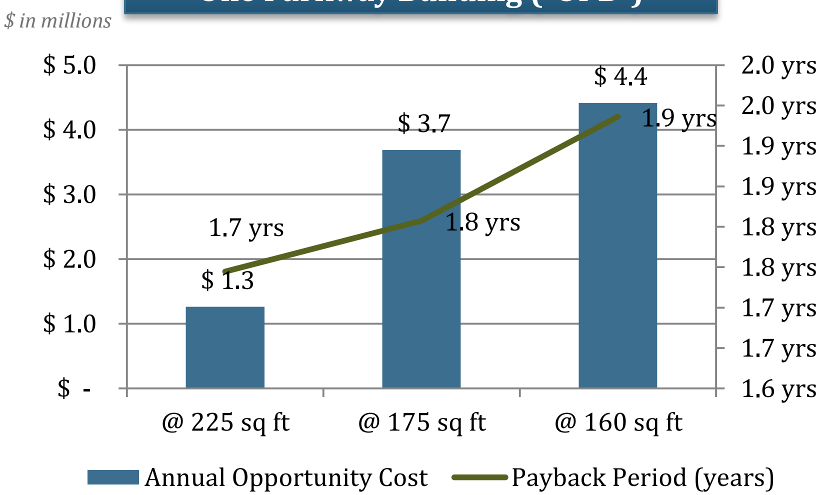
- **Conduct Annual "Census" through Budgeting Process**
  - Require departments to provide an updated listing of headcount by location (including other characteristics) through the annual budgeting process
  - This data could then be provided to public property for reference (and ideally be uploaded into any space management software program discussed below)
- **Invest in Space Management Application**
  - City should explore space management / floor plan optimization software and service providers in order to (i) dynamically capture existing footprint, headcount, etc. within the triplex, (ii) have concrete data to rely upon when faced with space decisions and (iii) assist public property in pro-actively managing the City's office space
  - Application Types
    - Service Providers (monthly cost for service; managed by provider, including back-end infrastructure)
      - Gensler's "4-1-Where" is an example with pricing typically ranging from $0.10 to $0.15 per square foot for (i) one-time implementation and (ii) a similar range for ongoing annual subscription
    - Software Providers (one-time purchase; requires City management of software)

Source: FTI Analysis

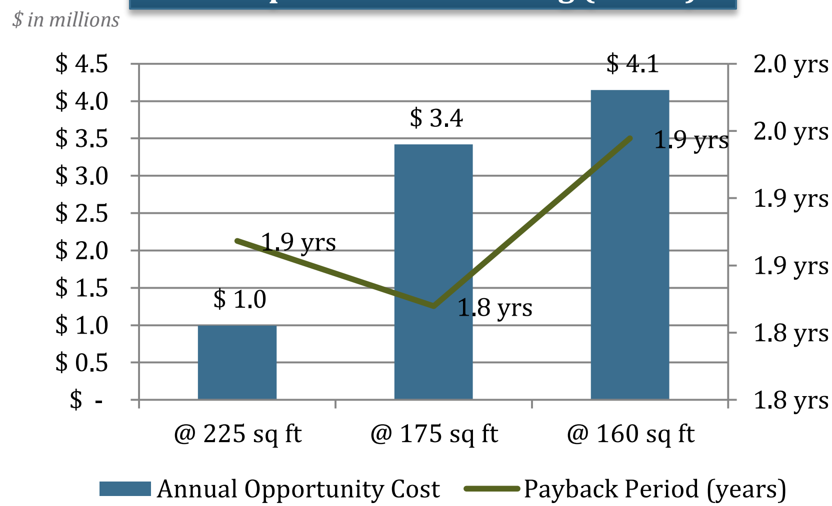
Leased vs. Owned Space

The analysis below estimates the annual opportunity cost to the City for leasing office space despite having sufficient space in its owned office buildings based on a range of private sector square footage per employee standards (i.e., 225 – 160 sq. feet per employee)

One Parkway Building ("OPB")



Municipal Services Building ("MSB")



One Parkway Building (OPB)	@ 225 sq ft	@ 175 sq ft	@ 160 sq ft
Annual Opportunity Cost	$ 1.3	$ 3.7	$ 4.4
Moving / Construction Costs	$ (2.2)	$ (6.7)	$ (8.5)
Payback Period (years)	1.7 yrs	1.8 yrs	1.9 yrs
Extra Square Feet	52,000	152,000	182,000
Extra Employees	231	869	1,138

Municipal Services Building (MSB)	@ 225 sq ft	@ 175 sq ft	@ 160 sq ft
Annual Opportunity Cost	$ 1.0	$ 3.4	$ 4.1
Moving / Construction Costs	$ (1.9)	$ (6.2)	$ (8.1)
Payback Period (years)	1.9 yrs	1.8 yrs	1.9 yrs
Extra Square Feet	41,000	141,000	171,000
Extra Employees	182	806	1,069

Notes:
- *Assumes 2,000 current employees in MSB and OPB based on latest estimates; however, no official current count exists*
- *Assumes $7,000 in construction / moving costs per employee; in 2012, 70 law department employees moved to MSB at ~$6,200 per employee*
- *Construction / moving costs include $582,000 of "swing costs" – assuming 24,000 square feet leased for 1 year at just under $25 / square foot based on existing lease agreements*
- *Opportunity cost quantified assuming average downtown office lease rate of just under $25 / square foot based on existing lease agreements*
- *Payback period calculation does not factor in any rent escalation that would shorten the payback period*
- *Source: FTI Analysis; DPP provided information*

Department of Public Property – Space:

Field Staff Occupancy

The City should explore opportunities to implement "benching" or "hoteling" for its field staff

- Several employees work outside the office ("field staff") but have the same size office space dedicated to them as employees who work full-time from the office
- It is becoming the norm in the private sector to deploy policies such as "hoteling" or "benching" for field staff; some companies are targeting square feet per employee ratios of ~60 as a result (moving towards cloud computing is also likely a factor)
- The table below quantifies the potential savings opportunity if the City were to reduce the existing space allocated to field staff assuming (i) 60 square feet per employee (benching), and (ii) 100 square feet per employee (hoteling)

Department	Building	Rent per Square Foot	Employees	Excess Sq. Ft @ 60	Excess Sq. Ft @ 100	Savings Opp @ 60	Savings Opp @ 100
Parks & Recreation	OPB	$ 24.25	26	4,940	3,900	$ 119,794	$ 94,575
Revenue	MSB	$ 24.25	11	2,090	1,650	$ 50,682	$ 40,012
L&I	Several	$ 21.45	106	20,140	15,900	$ 431,990	$ 341,045
Health Department	Several	$ 24.25	146	27,740	21,900	$ 672,692	$ 531,073
OIT	Several	$ 24.50	27	5,130	4,050	$ 125,690	$ 99,229
Police	Several			--- *Information not provided* ---			
DPP	Several			--- *Information not provided* ---			
OPA	Several			--- *Information not provided* ---			
Streets	Several			--- *Information not provided* ---			
Totals			**316**	**60,040**	**47,400**	**$ 1,400,849**	**$ 1,105,933**

Notes:

- *Rent per square foot for owned buildings is presumed to be the opportunity cost of renting office space in the City. This has been quantified assuming average downtown office lease rate of just under $25 / square foot based on existing lease agreements*
- *For those buildings where the actual current rental costs were not provided to FTI, FTI assumed average downtown office lease rate of just under $25 / square foot based on existing lease agreements*
- *Source: FTI Analysis; DPP provided information*

IV. Appendices

Appendix I:

Revenue - Best Practices of Collection

Revenue collection best practices for other municipalities are examined below:

City of Los Angeles Best Collection Practices:

- Departments should require advance payments or deposits as a condition for providing a service
- Consider as many payment options possible
- Consolidate tax payer debts across departments
- Avoid a decentralized system, as it can create fragments of collection and reporting differences
- Invoices should be uniform and clear with written instructions on payment process
- Pre-print return envelopes
- Maintain an automated lockbox processing policy and record cash received daily
- Use ACH for payments over $50K
- Use Payment Plans
- Set interest penalties at a level that is fair (i.e., cost of borrowing, non-punitive)
- Maintain a 'City Attorney' who goes through debts that may require a write-off annually

Santa Clara County, California and the State of Ohio Attorney General's Office Best Practices

- Maintain a Centralized Revenue Collection Agency within its Department of Revenue
- Comprise a large team of experienced and qualified staff members that handle professional collection services, including billing and collection, negotiating payment, delinquent noticing, and client follow-ups
- Utilize a third-party software and consulting service to improve collections by leveraging collection tools, techniques, and other technologies

FTI CONSULTING

Appendix I:

Revenue - Best Practices of Collection (cont'd)

Revenue collection best practices for other municipalities are examined below:

Preventative Measures

- Tie Tax Compliance to the ability to renew licenses. Examples of states that have enacted this policy include Massachusetts, Louisiana, Michigan, and Iowa.
- Massachusetts - According to the Massachusetts State Department, the state collected more than $17 million during its last budget year by withholding drivers' and other licenses.
- Louisiana - A permit can be denied if the taxpayer has exhausted appeals on an income tax debt greater than $1,000.
- Michigan – Hunting licenses can be denied as a result of delinquent taxpayers.
- Iowa – License plates can be denied as a result of delinquent taxpayers.

Tax Amnesty Programs

- Rhode Island offers a Tax Amnesty Program that grants delinquent taxpayers the right to a fresh start if they pay their back-owed state taxes. In response, the Division of Taxation will reduce the amount of interest charged and not seek civil or criminal prosecution for the period of taxation. The period is offered for during a window of 75-days from September through November 2012.
- The City of Philadelphia offered a tax amnesty program in 2010 and brought in over $60 million in back taxes, exceeding expectations by $30 million. The City waived all late filing penalties and one-half of the interest charged to delinquent payers.
- The State of Pennsylvania ran the same program in 2010 and brought in over $260 million.

Appendix I:

Revenue - Applications

Below are examples of technology solutions FTI found in a cursory web review. A full RFP for the new tax system, data warehouse or business tax software should produce a great deal of competition

Data Optimization and Enhancement

Dunn & Bradstreet has developed the Data Optimization and Enhancement ("DOE") revenue collection application to allow municipalities and other state and local governments to better help agencies prioritize cases to investigate and contact high-priority businesses to bring them into compliance. It assists in streamlining the discovery, audit, and collections processes as well as increasing revenue. In addition, DOE enables agencies to see linkages across the enterprise and realize previously uncollected revenue.

DOE utilizes a matching process to focus on prioritizing revenue sources for timely collection and only pursue companies who owe tax while deciding on which cases to pursue. This prioritization technique improves the pipeline of revenue collection and helps reduce the tax-gap. As a result of its implementation, it can lead to improved discovery, streamlined process, improve productivity, and standardization across the collection process.

CGI
Centralized Debt-Management System

The program allows Internet tax registration, filing and wage reporting solutions through CGI's web-based application iReg and iFile. Companies can file and pay sales taxes when a municipality implements its CCO (Centralized Collection Operation). It is a cost-effective solution to collect more, and accelerate the debt receivables collection process. Consolidating the collection functions can reduce redundancy, increase collections, and streamline and standardize the collections process at a high level of efficiency. Several states have centralized collection functions for tax and non-tax debt within various departments. For example:

- Michigan centralizes this function in the Michigan Department of Treasury
- Ohio centralizes this function to the Attorney General
- California centralizes this to the Franchise Tax Board
- Colorado centralizes this function in its Department of Personnel and Administration

RevQ
Revenue Results Debt Collection Program

Program allows small to large size municipalities to collect delinquent revenues with ease. It allows the user to manually or automatically to run the program and populate work lists, debt forwarding to outside agencies, collection of payments, and many more. Some examples of states who have implemented the software include Alaska, Arizona, California, and Texas.

Appendix I:

Revenue Collection - Sources

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6. Rhode Island Division of Taxation, *Department of Revenue, Tax Amnesty 2012*, <http://www.taxamnesty.ri.gov/documents/Amnesty%20FAQs%202.4.0.pdf>, 2012.

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9. NGA Center for Best Practices, *Redesigning State Government*, <http://www.nga.org/files/live/sites/NGA/files/pdf/1109REDESIGNINGSTATEGOVT.PDF>, 2011.

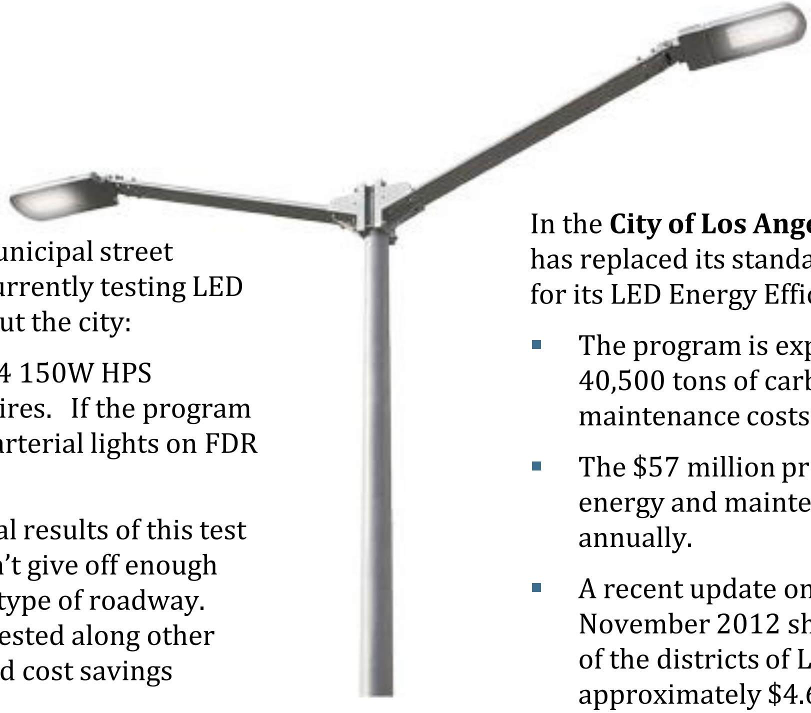
10. Dun & Bradstreet, Whitepaper: *Increasing Revenue Performance*, *Best Practices Using Data Optimization and Enrichment*, 2011.

11. CGI Group, Inc. Whitepaper: *Centralized Collections Management*, 2010.

12. RevQ, A Columbia Ultimate Company*, Revenue Software for Government Agencies*, Success Story, 2006.

Energy Office - Alternative Lighting Strategies

In a challenging, uncertain economic environment for municipalities, cities have begun addressing cost savings measures to help ease budget shortfalls and accelerate savings for the City. One key strategy is to focus on savings on streetlights, as these costs can be a large portion of the cities' electric bill and can amount up to one-third of a city government's utility bill. As a result, alternative lighting strategies are being implemented from small cities, such as Broken Bow, Nebraska with a population of over one-thousand to the largest of cities, including Los Angeles and New York City. Seven cities are examined, herein, which include costs savings measures of transitioning old streetlights into more sustainable lighting sources, primarily LEDs. LED lighting has a life expectancy of 2 to 3 times that of standard bulbs. The use of LED lighting on highways provides many savings, because of anticipated reductions in the frequency of service and maintenance, as well as lower energy output.



New York City operates the largest municipal street lighting system in the country and is currently testing LED lighting at multiple locations throughout the city:

- FDR Drive: The city has replaced 24 150W HPS luminaires with 108W LED luminaires. If the program proves successful, all 1,200 of the arterial lights on FDR may be converted to LED lights.
- Long Island Expressway: The initial results of this test indicate the 78W LED fixtures didn't give off enough light to replace 150W HPS for this type of roadway. Higher wattage LED lights will be tested along other roadways with the same output and cost savings requirements.
- Eastern Parkway: NYC DOT is planning to replace 142 175W metal halide pedestrian lights with 90W LED luminaires. The cost of the plan is expected to be approximately $270,000.

In the **City of Los Angeles**, the Bureau of Street Lighting has replaced its standard HPS lights to LED white lighting for its LED Energy Efficient Street Lighting Program:

- The program is expected to save energy 40 percent, 40,500 tons of carbon emissions per year, and lower maintenance costs.
- The $57 million project is expected to translate into energy and maintenance savings of $10 million annually.
- A recent update on the progress of the program as of November 2012 shows the energy cost savings for all of the districts of Los Angeles combined are on pace for approximately $4.6 million in annual savings.

Energy Office - Alternative Lighting Strategies (cont'd)

A Street Light Reduction Program in **Santa Rosa, California** cut energy costs and lowered greenhouse gas emissions by using Photocell timers. The timers, which have the ability to cut electric costs in half, shut the lights off from 12 a.m. to 5:30 a.m.

- The program is expected to result in an annual energy cost savings of $400,000 (or approximately 50% following implementation). This will be achieved by turning off some street lights, equipping lights with timers, and leaving only some lights to operate throughout the night.
- Lights that are selected to remain on throughout the night include:
  - Safety lighting
  - Lighting associated with pedestrian crosswalks
  - Lighting within high pedestrian zones
  - One light will remain on at all un-signalized intersections
  - One light will remain on at key traffic safety locations where there has been a documented history of traffic safety issues
- Lights that will operate with a photocell timer include all lights along street segments where the elimination of all street lighting would be inappropriate.

In **San Diego, California**, the City began an initiative to replace approximately 90 percent of its streetlights. They will replace the old low-pressure sodium lights with induction bulbs that use about 40 percent less energy.

As a result of the transition, the city will reduce its costs from $4.7 million to $2.8 million per year. The new bulbs can last more than a decade versus the older models lasting 3 to 4 years.

The City of Broken Bow, Nebraska recently installed 550 new street lights through an energy Efficiency Conservation Block Grant from the Nebraska Energy Office. Details of the program include:

- Replacing the current street lights with LED lights. This is expected to result in an estimated savings of 284 MW hours/year.
- With a total project cost of $189,580.00 the city feels it will recover the investment in a few years in electricity alone. In the past, the old city lights had to be replaced every few years, whereas now, the new LED lights are expected to last 14-15 years and reduce replacement costs and manpower.

Energy Office - Alternative Lighting Strategies (cont'd)

Alternative Lighting Programs

To help address diminished sales tax revenues and a $28 million budget gap in 2010 and a general fund budget gap, the **City of Colorado Springs** turned off approximately 8,000 to 10,000 streetlights to lower costs.

- The City has more than 24,000 streetlights within its limits and the energy costs to run those lights is approximately $3.2 million per year. By turning off the most inefficient lights, the City expects to save slightly over $1.2 million annually.
- The City targeted the least energy efficient streetlights, which include lights that have the standard mercury vapor bulbs.
- In addition, areas with high ambient lighting, which includes parking lots and buildings, will have adjacent streetlights turned off, as well as half of downtown. However, streetlights will remain on for intersections with traffic signals, crosswalks, school districts, and hospital emergency entrances.

The **City of Myrtle, Oregon** City Council reduced its street light inventory. The City's pressure to save money and its interest in energy and resource conservation initiated the program.

- The City identified 90 lights for reduction, however it will maintains lights in cul-de-sacs, dead ends, school zones, pedestrian walk ways, and cross walks.
- Adopt-A-Light Program: The Adopt-A-Light program allowed for the public to sponsor one or more of the 90 lights to be turned off. Sponsorship cost $146 annually.

Appendix II:

Energy Office - Alternative Lighting Strategies - Sources

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