

Performance Audit

DEPARTMENT OF PUBLIC WORKS
Environmental Services
Refuse Division

Report by the
Office of City Controller

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To the Honorables: Mayor Luke Ravenstahl and
Members of Pittsburgh City Council:

The Office of City Controller is pleased to present this Performance Audit of Department of Public Works Environmental Service Refuse Division, conducted pursuant to the Controller's powers under Section 404(c) of the Pittsburgh Home Rule Charter.

EXECUTIVE SUMMARY

The Bureau of Environmental Services Refuse Division collects solid waste and recyclable waste from City residences and enforces City Ordinances for refuse violations. This audit evaluates the Bureau's efforts to improve the efficiency and economy of its refuse and recycling operations.

Findings and Recommendations

Work-Related Injuries Decrease and Expanded Collection Service

Finding: One successful tool used by Pittsburgh ES Management to reduce lost time injuries and worker compensation claims has been the return to three person truck crews in 2003 for bulk pickup and for all pickups in 2006.

Finding: Replacing rotating three person crews with all three person crews and reducing the number of daily solid waste routes has allowed the Bureau to offer bulk item pickup each week instead of once per month. These personnel changes resulted in more effective and expanded collection services with no increase in cost to residents.

Intergovernmental Contracted Refuse Services

Finding: The refuse collection Agreement between the City and the adjacent Borough of Wilkinsburg is of mutual benefit to both parties. City Environmental Services provides efficient and cost effective refuse collection services for the Borough while generating an income source for the City. The contract is projected to save the Borough between one quarter and one half million dollars annually and provide the City \$722,112.00 annual general fund revenue.

Recommendation: The City should pursue the cost/benefit of additional Intergovernmental Cooperation Agreements for refuse collection with other adjacent municipalities.

Recycling

Pittsburgh Code Chapter 619.05 and State Act 101 mandate recycling for city residents and businesses. The State provides performance and program grants based on reported tonnage from commercial, institutional and residential recyclables.

Finding: Besides the obvious environmental advantages, recycling is an economic benefit to the City. Economic benefits include State grants, reduced landfill costs and income from recyclables.

Finding: Recycling grant revenue is increasing. The City General Fund received \$220,857 performance grant funds in 2006 and \$347,850 in 2007. Similarly, Environmental Services received \$234,522 902 program grants in 2006 and \$499,695 in 2007.

Residential Recycling

The Controller's 2003 audit found that residential recycling had been steadily declining from 1999 to 2003.

Finding: Since 2007, residential recycling is on the rise. Data supplied by the Recycling Division show a 29% increase in recyclables tonnage from 2007 to 2008 and a 4.4% increase in household participation. ES personnel attribute these increases to implementation of a single stream recycling system.

Finding: Bureau initiatives such as single stream recycling, expanded recycling venues and education efforts and enforcement are expected to further increase residential recycling.

Pittsburgh Housing Authority Communities

Finding: The Controller's 2009 audit on Housing Authority Spending found that the City provides trash pick up services to Pittsburgh Housing Authority (HACP) communities but the communities are not recycling.

Finding: The City's current Solid Waste Collection Agreement with the Housing Authority is silent on recyclables collection. An argument could be made that the contract language requiring the City to furnish services "equal" to those provided to other City dwellings and inhabitants implies that the City must pickup recyclables at Housing Authority complexes.

Recommendation: There is no reason why tenants of Housing Authority multi-family housing complexes cannot put recyclables into large blue dumpsters next to existing trash dumpsters. The City Law Department should make a determination as to whether recycling pick up is required under the current collection agreement. If recycling pickup is not required under the current agreement, future collection agreements should be amended to include a recycling mandate.

Non Residential Recycling

Finding: The amount of recyclables collected by outside haulers from commercial and institutional establishments has increased 73.83% from 28,846.01 tons in 2007 to 50,142.64 tons in 2008.

Finding: The Recycling Division is trying to increase business recycling compliance by direct mailings and recycling verifications.

Pittsburgh Public Schools

Finding: The Pittsburgh School District does not appear to have a comprehensive recycling program. Recycling policy is set for individual schools by facility administrators and teachers.

Finding: Poor recycling compliance by the City public schools not only violates City and State law but sets a bad example for students.

Finding: City recycling personnel have been talking to Pittsburgh Public School administrators for 5 years about improving the district's recycling compliance with little success.

Recommendation: City Environmental Services should adopt the same approach to the Pittsburgh School District that is used for households and businesses that do not recycle, i.e., warnings and citations for violating the City code.

City Government

The last audit found recycling by City departments, bureaus and facilities inconsistent, in need of improvement, and recommended that the Recycling Division make recycling by City government a top priority.

Finding: Recycling in City facilities appears to be a priority for the Ravenstahl Administration. A December 8, 2008 memo issued by the Mayor directed all department directors and bureau chiefs to improve recycling in City facilities.

City County Building (CCB)

Finding: The current cleaning contractor appears to be complying with contract requirements for recyclables. Auditor inspection of the CCB basement trash holding areas and discussions with building security indicate that paper from recyclable containers is separated and picked up weekly by ES blue recycling trucks.

Finding: The Sustainability Coordinator and Recycling Coordinator plan to add more recyclable containers throughout the City-County Building. There appears to be some confusion that increasing the number of recyclable containers will conflict with the current cleaning contract.

Finding: A review of the contract indicates there is no language regarding a set number of recyclables bins to empty.

Recommendation: The Director of Public Works should inform Department of Finance personnel who monitor the CCB cleaners that there is no contractual limit to the number of blue recycle bins the cleaners can empty.

City Recyclables Contracts

Environmental Services oversees four contracts for recyclables processing that pay the City for collected paper, single stream recyclables and scrap metals.

Finding: The significant increase in revenue from blue bag/co-mingled recyclables indicates an increase in residential recycling.

Finding: Entering into multiple year contracts has ensured an income stream despite the global downturn in the recycled materials market. The Recycling Division is anticipating an excess of \$700,000.00 from sale of recyclables in 2009, mainly due to City-wide single stream residential recycling.

Recommendation: The Recycling Division is hopeful that the market for recyclables will improve when the current contract for single stream recyclables expires next year. Because recycling is mandated, the Bureau should explore the most cost effective options for best and worst case market conditions.

Electronic Waste

Electronic waste (e-waste) is unwanted electronic equipment such as televisions, computers, monitors, printers and audio equipment. Electronic equipment contains hazardous metals such as cadmium, lead and mercury.

Finding: The City of Pittsburgh has no recycling policy for residential electronic waste (e-waste). Computers, televisions and other electronic items are picked up with other solid waste, compacted and sent to the landfill.

Finding: The Pennsylvania Department of Environmental Protection (DEP) promotes periodic electronic waste recycling events and electronics collection programs on its website. According to the DEP website, unwanted computers can be taken to numerous Goodwill locations in Allegheny County for recycling. For a fee, Construction Junction provides an ongoing e-waste recycling option for City residents.

Recommendation: The Refuse Division should include information about computer recycling at Goodwill and e-waste recycling at Construction Junction in its bi-annual newsletter to City residents. This could help reduce the amount of computers taken to the landfill and reduce refuse workers exposure to toxic metals.

Recommendation: Until e-waste recycling legislation is passed in Pennsylvania, the Refuse Division should partner with the State DEP, Allegheny County and local environmental organizations to organize more e-waste drop off events. A nominal drop off charge could offset recycling charges.

City Government Generated E-Waste

Finding: The City has a policy for recycling old City owned computers but not for other types of electronic equipment.

Recommendation: The City should develop a comprehensive recycling policy for all electronic waste generated by City departments and bureaus.

Landfill Contracts

Finding: All contracts for disposal of municipal solid waste must be competitively bid and awarded to the lowest responsible bidder. The City's landfill transport costs were added to the vendor's per tonnage waste disposal bids to calculate a total cost to the City. The vendor with the lowest total cost to the City (vendor waste disposal charge + Environmental Services transportation cost) was awarded the contract.

Finding: The Refuse Division was able to reduce drive times for Eastern and Central Division trucks while awarding the contract to the lowest bidder. Although the BFI per ton bid for Eastern and Central Division was lowest, the contract was awarded to Waste Management when drive time cost calculations were included.

Finding: The landfill contract for the Northern/Southern Divisions is the most cost effective but not drive time effective.

Code Enforcement

Finding: The purpose of code enforcement is compliance, not taking people to court or making money. The division supervisor or foreman gives oral warnings or leaves notices to comply at the property. The supervisor or foreman issues citations after prior attempts to obtain compliance have failed.

Finding: There seems to be some erroneous data entered into the ES database. For example, in the Section Subsection field 113 records were empty and 2 were entered incorrectly from a total of 1,251 records.

Recommendation: The clerk should try to be more accurate in entering data into the database.

Finding: The Southern Division had the highest percentage of fines collected (14.24%). No fines were collected from citations issued in the Eastern Division.

Finding: The number of citations issued in 2008 was significantly less than the number issued in 2007 but a higher percentage of fines was collected in 2008.

311 Complaint Analysis

Finding: The majority of Environmental Services 311 complaint calls concern problems caused by residents. The relatively few complaint calls about ES personnel indicate effective and satisfactory trash pickup performance.

Sincerely,

Michael E. Lamb
City Controller

INTRODUCTION

This performance audit of the Bureau of Environmental Services Refuse Division was conducted pursuant to Section 404(c) of the Pittsburgh Home Rule Charter. This is a follow up report to the Controller's 2005 audit of the Refuse Division. That audit examined the Bureau's efforts to improve the efficiency and economy of its refuse and recycling operations and evaluated the feasibility of Act 47 mandates on Bureau operations. This audit examines the effectiveness and economy of Bureau operations and compliance with previous audit recommendations.

OVERVIEW

The Refuse Division is administered by the Director of Public Works, the Bureau of Environmental Services Assistant Director, three Supervisors and twelve Foremen who oversee 158 Refuse Workers, 11 less than the 169 workers budgeted for FYI 2009.

Refuse collection is organized into four geographic zones. The Northern, Central, Eastern and Southern Divisions are responsible for collecting solid waste, bulk waste and recyclable trash from houses and apartment buildings of 6 units or less. Significant route changes have occurred since the 2005 audit. In 2006 the number of daily City trash pickup routes was reduced from 44 to 34. Two routes were added for the Borough of Wilksburg in 2007. The number of route stops per truck increased from 550 to 700. Routes are relatively equal regarding number of stops and trash tonnage collected. Although the number of City crews has been reduced, staffing per truck has increased from a two to three person crew. This has enabled weekly versus monthly bulk item pickup. With three man crews, all trucks now pick up bulk items on a weekly basis.

The Division's current fleet consists of 52 refuse trucks and 14 recycling vehicles ranging from 1992 to 2008 models with an average age of 8 years. According to ES administrators, each truck costs \$4000 per month to maintain.

In addition to trash and recyclables pickup, the Division enforces City Ordinances for refuse violations such as early set out of trash and accumulation of waste or bulk items on the sidewalk. Division foremen issue warnings or citations. The foremen respond to Mayor Service Center Complaints or to violations observed by Bureau employees. One employee works a 3:00 to 11:00 P.M. shift and canvasses street prior to the next day pickup. Warnings are issued orally to residents, leaving notices to comply on doors or sending letters. If the violation persists, a citation is issued. Citation fines are paid or contested in Housing Court. Although Environmental Services does not pick up trash in large residential or commercial establishments, they do enforce the City Code against these entities.

OBJECTIVES

1. To evaluate the Bureau's efforts to improve the effectiveness, efficiency and economy of its refuse and recycling operations.
2. To evaluate the Bureau's compliance with previous audit recommendations.
3. To evaluate the Bureau's efforts to increase recycling participation.

METHODOLOGY

The auditors met with the Assistant Director of Public Works for Solid Waste and Recycling, the Recycling Supervisor and Assistant Supervisor and discussed Bureau staffing, work force distribution, refuse and recyclables collection and non-residential recycling. The City contract with the Borough of Wilkinsburg for trash pickup and the landfill services contracts with Waste Management and BFI were discussed. Also discussed was the cleaning contract for the City-County Building as it relates to sorting recyclables. These contracts were later obtained from the Controller's Contracts Section and reviewed. Also reviewed were the contracts for recyclable paper, single stream recyclables, scrap metal and yard debris.

The Bureau's code enforcement process was discussed. The auditors requested and received the Environmental Services Citation Data Base for the years 2007 and 2008 for sorting.

Initially, the auditors were sent a database without the Zone information. Because there was no field in the database for division where the citation was written, the auditors decided to add a field for Division and enter this field based on the address. For those addresses where it was not clear where the Division was, the auditors used the County Web site to determine its location. Some addresses which could not be found were given an X and some records had an empty field. Only later on did the auditors receive from the ES clerk the Zone information after the testing had been completed.

In order to determine the accuracy of the database, i.e. how accurately the ES staff is entering data from the citations into the database, the auditors picked a random sample of 5 % from each of the divisions, Northern, Central, Eastern and Southern. The total number of records in the sample was 63. They then compared the database entries with the information on the actual citations. The Fine could not be verified as this is an estimate done by the ES clerk. The Total Fine could not be verified as this was not on the citation or the trial summaries received from housing court. The Judgment amount could be checked with the trial summaries from housing court. The auditors created several tables for analysis including: Distribution of citations; Distribution of citations by Division; and distribution of citations by 2007 and 2008.

The auditors obtained the 2007 and 2008 Refuse Division complaint histories from the City 311 Center. The complaints were organized by refuse division and 21 problem types. The auditors grouped the problem types into three categories: complaints about ES personnel, complaints about or caused by resident behavior and tote/info requests/thank you for analysis.

Other Refuse Division data requested and reviewed include: summaries of Private Haulers recyclable tonnage reports for 2007 and 2008, curbside and drop off/office paper recycling tonnage for 2007 and 2008, 2007 revenue from sale of recyclables and 2 and 3 person crew work injuries histories.

The auditors reviewed Act 101, PA's "Municipal Waste Planning, Recycling and Waste Reduction Act" and Chapter 619.05 of the Pittsburgh City Code and pending state e-waste legislation SB 816 and HR 708.

The University of Pittsburgh and Carnegie Mellon University websites were searched for information about university recycling programs. Information about Pittsburgh Public Schools recycling was obtained from the Internet. The PA Department of Environmental Protection website and other websites were researched for e-waste disposal management and applicable legislation.

The auditors met with the City's Sustainability Coordinator to discuss efforts to improve recycling by City Government and the City's electronic waste disposal practices.

SCOPE

The audit scope includes City Refuse and Recycling program and organizational changes since the 2005 audit, 2007 and 2008 citations issued, 311 calls and the Bureau of Environmental Services 2008 contracts.

FINDINGS AND RECOMMENDATIONS

Work-Related Injuries Decrease

According to the Florida Center for Solid and Hazardous Waste Management, the sanitation or refuse worker occupation is riskier than that of an airline pilot or a taxi driver. Refuse collectors sustain five to seven times more injuries than the average worker. Causes of injuries include exposure to hazardous chemicals, slipping on leaking waste and lifting heavy items. One successful tool used by Pittsburgh ES Management to reduce on the job injuries has been the return to three person truck crews for bulk pickup in 2003 and for all pickups in 2006.

Finding: Overall, the return to three person crews has significantly reduced lost time work related injuries and the Bureau's workers compensation claims.

The injury history below compares injuries and lost time injuries of two person and three person truck crews.

TABLE 1
INJURY HISTORY
DIFFERENCES BETWEEN
TWO PERSON CREW TO THREE PERSON CREW

YEAR	INJURIES	LOST TIME INJURIES	LOST TIME CHANGE FROM PREVIOUS YEAR	NUMBER IN CREW
2000	121	29	--	2-person crews
2001	120	40	+38%	2-person crews
2002	103	48	+20%	2-person crews
2003	118	40	-17%	2 person crew; 3 person bulk rotating
2004	86	24	-40%	2 person crew; 3 person bulk rotating
2005	70	17	-18%	2 person crew; 3 person bulk rotating
2006	73	20	+18%	3 person crew
2007	74	9	-55.0%	3 person crew
2008	57	6	-33.3%	3 person crew

Solid and Bulk Waste Pickup

Prior to 2006, rotating three person truck crews were used only for monthly bulk pick up. Since 2006, three person crews man all refuse vehicles. Each day Refuse Division vehicles cover the City's 34 solid waste routes, 10 residential recycling routes and 1 paper/cardboard pickup route. This latter route offers service to businesses, offices and apartment buildings by request.

Finding: Replacing rotating three person crews with all three person crews and reducing the number of daily solid waste routes has allowed the Bureau to offer bulk item pickup each week instead of once per month. These personnel changes resulted in more effective and expanded collection services with no increase in cost to residents.

Contracted Refuse Services

As noted previously, the City has an intergovernmental cooperation agreement ("Agreement") with the Borough of Wilkinsburg to collect a portion of the Borough's municipal waste. The original 2007 one year contract was extended for an additional three years effective January 1, 2008 through December 31, 2010. The refuse collection contract does not include recyclables. The Borough has its own recycling program.

Finding: The refuse collection Agreement is of mutual benefit to the City and the adjacent Borough of Wilkinsburg. City Environmental Services provides efficient and cost effective refuse collection services for the Borough while generating an income source for the City.

The contract is projected to save the Borough between one quarter and one half million dollars annually and provide \$722,112.00 annual general fund revenue for the City. The success of this arrangement had led to discussions with other municipalities including Churchill, Swissvale, Forest Hills and Mt. Oliver. The cost savings to Wilkinsburg Borough are not surprising, given the Bureau's previous in-house and contracted refuse collection cost analysis.

That analysis was based on Request for Proposal (RFP) responses from City Environmental Services and two local refuse companies that offer private refuse collection. The RFP was issued in 2005 at behest of the Act 47 oversight team. Comparing responses, the City found it more cost effective, i.e., cheaper, to continue in-house refuse collection than to contract it out to private haulers.

RECOMMENDATION NO 1:

The City should pursue the cost/benefit of additional Intergovernmental Cooperation Agreements for refuse collection.

Recycling

Statutory Mandates

Recycling is mandated in Pittsburgh by City code and State statute. Chapter 619.05 of the Pittsburgh City Code mandates separation of recyclable materials from municipal waste. Recycling is mandatory for every resident, business, office and institution in the City of Pittsburgh. Act 101, Pennsylvania's Municipal Waste Planning, Recycling and Waste Reduction Act, mandates recycling in the Commonwealth's larger municipalities and provides grants to offset expenses. Recycling mandates apply to residents and businesses.

The goals of the Act are to reduce Pennsylvania's municipal waste generation; recycle at least 25% of waste generated; procure and use recycled and recyclable materials in state governmental agencies; and educate the public as to the benefits of recycling and waste reduction. The benefits of recycling and waste reduction include reduced pollution risks; conservation of natural resources, energy and landfill space; and reduced landfill costs.

Curbside recycling in Commonwealth municipalities of 10,000 or more residents began in 1990. Smaller communities implemented curbside recycling one year later. Municipalities must collect a minimum of 3 of the following materials: clear glass, colored glass, plastics, aluminum, steel and bimetallic cans, high grade office paper and corrugated paper in addition to other materials chosen by the municipality.

The City collects the following recyclables from households every other week: plastic (#1,2,3,4, and 5), glass, metal containers, newspapers, magazines, catalogs and paperboard, white office paper, junk mail and hardcover books, corrugated cardboard and phone books.

The City's recycling program is managed by a supervisor, assistant supervisor and clerk.

Recycling Benefits to City

Finding: Besides the obvious environmental advantages, recycling is an economic benefit to the City. Economic benefits include State grants, reduced landfill costs and income from recyclables.

State Performance Grants

The Commonwealth provides 904 Performance grants and 902 Program grants. 904 Performance grant monies are deposited into the City's general fund; 902 grants

primarily are used to purchase recycling vehicles for the Bureau. Grants are based on reported tonnage from commercial, institutional and residential recyclables.

Private haulers submit quarterly reports on the weight of recyclables they collect from commercial and institutional establishments and take to recycling contractors. These reports are totaled and included on the City's annual recycling performance grant applications along with the tonnage collected by the City. According to the Recycling Supervisor, there is a one year lag between grant application and award. At the time of the audit, 2008 grants were applied for but not received.

Finding: Recycling grant revenue is increasing. The City General Fund received \$220,857 performance grant funds in 2006 and \$347,850 in 2007. Similarly, Environmental Services received \$234,522 902 program grants in 2006 and \$499,695 in 2007. The 2007 grant was nearly the \$500,000 maximum 902 Program grant.

Residential Recycling

The Controller's 2003 audit found that residential recycling had been steadily declining from 1999 to 2003.

Finding: Since 2007, residential recycling is on the rise. Data supplied by the Recycling Division show a 29% increase in recyclables tonnage from 2007 to 2008 and a 4.4% increase in household participation. ES personnel attribute these increases to implementation of a single stream recycling system.

Top 12 Most Improved City Neighborhoods

A winter 2009 publication by the Mayor lists the twelve neighborhoods with the most improved 2008 recycling participation. East Liberty is number one with a change of +27.7 points or 48.1% from the previous year. Greenfield is second most improved and is recycling at more than 70%. The Central North Side came from below 35% to a participation rate between 50 and 65%. It was number three most improved.

The City rates neighborhoods using five colors. None has attained gold star status, which is 95 % of participation or better. The blue star goes to neighborhoods performing above the City's goal of 65 %. Shadyside at 67.7% and Swisshelm Park at 79.1% are in that category. Also on the improved list with a green star are Elliott 51.4%, Southside Flats 55.1% and Carrick 63.9%. North Point Breeze and Bloomfield are in the brown circle with a 44.7 and 41.9% participation rate respectively. Red circle neighborhoods include Central Oakland and Knoxville with a 26.6 and 29.2% participation rate each, which is below the 35 percent recycling participation (35 percent is equivalent to the State's waste diversion goal). However, residents in all City neighborhoods show improvement in recycling participation.

Finding: Bureau initiatives such as single stream recycling, expanded recycling venues and education efforts and enforcement are expected to further increase residential recycling.

Drop Off Sites/Expanded Venues

Residents can also drop off at four City run recyclable centers and at Construction Junction, a non-profit building material reuse retail center. The Bureau has plans to open up a large drop off center at the old City 911 center in the Strip District. On street recycling containers for bottles will be available in many neighborhood business districts.

Single Stream Residential Recycling

Single stream recycling is an easier way to recycle. All recyclables (except corrugated cardboard which must still be bundled) can be placed in the same blue bag. In January 2008, single stream recycling began as a pilot program in the City's Eastern and Central Divisions. The program was officially extended citywide in November 2008.

Pittsburgh Housing Authority Communities

Finding: The Controller's 2009 audit on Housing Authority Spending found that the City provides trash pick up services to Pittsburgh Housing Authority (HACP) communities but the communities are not recycling.

Referring to "the most recent multi-family garbage collection contract....negotiated between HACP and the City", the Housing Authority's response was "...the parties contemplated HACP's tenants participation in a recycling program in their multi-family garbage contract. HACP's staff will continue to work with City staff to facilitate such participation."

City-Housing Authority Cooperation Agreement

The most recent Municipal Solid Waste Collection Agreement between the City and Housing Authority was on September 29, 2008. This Agreement is "an addition to" an original Cooperation Agreement dated March 31, 1950. The original Cooperation Agreement "requires the City to furnish or cause to be furnished to the Housing Authority and its tenants *municipal solid waste collection and disposal services equal to those provided to other dwellings and inhabitants in the City* (emphasis added) at no cost or charge, with the exception of bulk items, which will be removed by Housing Authority employees".

The new agreement provides that the Housing Authority "lease" to the City one new front-loading and one new rear-loading style municipal solid waste truck and the City "provide garbage collection and disposal services" for five years. The City is to provide garbage pick up at 25 community housing complexes and senior high rises.

Finding: The City's current Solid Waste Collection Agreement with the Housing Authority is silent on recyclables collection. An argument could be made that the contract language requiring the City to furnish services "equal" to those provided to other City dwellings and inhabitants implies that the City must pickup recyclables at Housing Authority complexes.

RECOMMENDATION NO. 2:

There is no reason why tenants of Housing Authority multi-family housing complexes cannot put recyclables into large blue dumpsters next to existing trash dumpsters. The City Law Department should make a determination as to whether recycling pick up is required under the current collection agreement. If recycling pickup is not required under the current agreement, future collection agreements should be amended to include a recycling mandate.

Non Residential Recycling

Business Recycling

Finding: Despite a decline in drop-off/office paper tonnage, the amount of recyclables collected by outside haulers has increased 73.83% from 28,846.01 tons in 2007 to 50,142.64 tons in 2008. Whether this increase includes paper is unknown.

Finding: The Recycling Division is trying to increase business recycling compliance by direct mailings and recycling verifications.

In 2008, a City of Pittsburgh Business Guidelines notice was sent to all City businesses. The guidelines discuss the mandates for commercial and institutional recycling. The businesses are also asked to complete a verification form about what is recycled and how it is recycled (private hauler, self-haul).

Educational Facilities Recycling

Pittsburgh Public Schools

Since 1993, the Pittsburgh School District has been recycling paper. However, a June 4, 2009 article in the Pittsburgh City Paper gave Pittsburgh public schools recycling efforts a failing grade. The article reported that paper is recycled in only 32 of the district's roughly 70 buildings and only seven buildings recycle plastics, aluminum and other recyclable products.

Finding: The Pittsburgh School District does not appear to have a comprehensive recycling program. Recycling policy is set for individual schools by facility administrators and teachers.

Finding: Poor recycling compliance by the City public schools not only violates City and State law but sets a bad example for students.

Finding: City recycling personnel have been talking to Pittsburgh Public School administrators for 5 years about improving the district's recycling compliance with little success.

RECOMMENDATION NO. 3:

City Environmental Services should adopt the same approach to the Pittsburgh School District that is used for households and businesses that do not recycle, i.e., warnings and citations for violating the City code.

University of Pittsburgh and Carnegie Mellon University

Both the University of Pittsburgh (PITT) and Carnegie Mellon University (CMU) have been recycling since 1990. PITT initially only recycled of high grade office paper. Today, the University recycles almost every grade of paper including newsprint and colored paper. Other materials that are recycled are corrugated cardboard, all scrap metals, aluminum and tin cans, plastic containers, yard waste, batteries, fluorescent lamps, and computer monitors.

The lamp and computer monitor recycling program as well as all hazardous waste disposal needs are coordinated through the University of Pittsburgh Department of Environmental Health and Safety. The Facilities Management Department is responsible for recycling in most academic and athletic areas affiliated with the Oakland campus. The department employs a full time recycling coordinator to administer all components of the recycling program as well as facilitate the removal of regular waste and recyclable material.

According to the University's Green Practices newsletter, when Carnegie Mellon University adopted a formal recycling policy in 1990, campus Recycling Liaisons were appointed to implement the policy. The liaisons adopted the "Reduce, Reuse, Recycling" theme and promoted campus wide efforts to reduce waste.

In 1998, the Green Practices Committee was established to develop a more comprehensive waste reduction and energy conservation program. The committee, which is comprised of staff, faculty and students, establish priorities, goals, and mechanisms for implementing environmental practices.

CMU recycles paper, cardboard, plastic, glass, metal, alkaline and rechargeable batteries and scrap metals. CMU also has policies for recycling computer monitors and CPUs, printers and cell phones.

City Government Recycling

The last audit found recycling by City departments, bureaus and facilities inconsistent, in need of improvement, and recommended that the Recycling Division make recycling by City government a top priority.

Finding: Recycling in City facilities appears to be a priority for the Ravenstahl Administration.

A December 8, 2008 memo issued by the Mayor directed all department directors and bureau chiefs to improve recycling in City facilities. City administrators were asked to appoint a department/office representative to assist the Recycling Supervisor and newly hired Sustainability Coordinator in making improvements to the current recycling program.

City-County Building Recycling

The Sustainability Coordinator informed the auditors that there are not enough recycling bins in the City-County Building. The 2005 audit listed 62 recycling bins for approximately 24 offices. However, some departments have more than one floor of offices and other offices are spread out in areas where additional bins could be used.

One vendor had the contract for City-County Building cleaning in 2007 and 2008.

Finding: The auditors were told by ES Recycling personnel that this cleaning contractor mixed different recyclables with trash in the same recycling bins. Signage was placed in the City-County Building basement about the need to separate recyclables from trash.

The City-County Building cleaning contract, effective 1-1-07 to 12-31-08, states that “all office paper will be removed from office recycling containers and placed in specified bins”. Disposal of refuse and recyclables are clearly distinguished: “...all recycling products must also be properly placed in the basement area designated in order to be properly removed by the Department of Public Works, Environmental Services personnel. ***Recycling responsibilities*** (emphasis added) will include breakdown of all cardboard boxes”. Failure to comply would be a breach of contract.

Increasing the number of blue bins is irrelevant if the paper ends up at the dump. Including recyclable paper with the regular CCB trash will increase the City's dump fees and decrease its revenue from recyclable paper sales.

Finding: The current cleaning contractor appears to be complying with contract requirements for recyclables. Auditor inspection of the CCB basement trash holding areas and discussions with building security indicate that paper from recyclable containers is separated and picked up weekly by ES blue recycling trucks.

RECOMMENDATION NO. 4:

The Department of Finance personnel responsible for monitoring the City-County Building cleaning contractor must ensure that the current contractor is placing recycling container paper in separate bins and breaking down card board boxes to be recycled.

Finding: The Sustainability Coordinator and Recycling Coordinator plan to add more recyclable containers throughout the City-County Building. There appears to be some confusion that increasing the number of recyclable containers in the City-County Building will conflict with the current cleaning contract.

Finding: A review of the contract indicates there is no language regarding a set number of recyclables bins to empty.

RECOMMENDATION NO. 5:

The Director of Public Works should inform Department of Finance personnel who monitor the CCB cleaners that there is no contractual limit to the number of blue recycle bins the cleaners can empty.

City Recyclables Contracts

Environmental Services oversees four contracts for recyclables processing that pay the City for collected paper, single stream recyclables and scrap metals. Contracts have one, three or four year terms. The two contracts for Sale of Recyclable Paper will expire June 30, 2009. The contract for residential single stream recyclables expires on March 31, 2010. The contract for scrap metal expired March 31, 2009 but is anticipated to be renewed at a favorable rate.

Until June 30 2009, the City will be paid \$120.00 per ton for white ledger paper, \$65.00 per ton of mixed color ledger and \$40.00 per ton of loose corrugated cardboard delivered to Pittsburgh Recycling Services in Hazelwood and \$75.00 per ton of super

office mix delivered to Atlas Waste Paper on the South Side. Until March 31, 2010, the City will be paid \$46.46 per ton of blue bag or clear plastic bag co-mingled recyclables. Co-mingled items include glass, aluminum, certain grade plastic containers and newspapers. Bottles and cans are collected in clear plastic bags in on street recycling containers. According to ES administrators, this amount is considerably higher than what other municipalities receive and some municipalities are even paying to dispose of recyclable materials.

The City was paid \$90.00 per ton of scrap metal delivered/\$87.00 per ton picked up by the contractor. The City also has a three year contract for yard debris collection which expires March 31, 2011. The vendor collects the yard debris from three Public Works drop off sites and turns the yard debris into mulch. The City pays \$33.75 per each ton of yard debris collected.

Revenue from Recyclables Contracts

The following table shows the revenue received in 2007 and 2008 from recyclables taken to the above listed contractors:

TABLE 2
2007 AND 2008
REVENUE RECEIVED

Recyclable Item	2007	2008
Drop off/Office Paper	\$141,590.40	\$ 25,415.90
Blue Bag/Co-mingled	\$340,116.91	\$534,706.28
Scrap Metal	\$ 7,488.69	\$ 6,181.89
TOTAL:	\$489,196.00	\$566,304.07

Finding: The significant increase in revenue from blue bag/co-mingled recyclables indicates an increase in residential recycling.

Unlike State recycling performance grant monies, money from sale of recyclables is deposited into a Solid Waste Trust Fund.

Finding: Entering into multiple year contracts has ensured an income stream despite the global downturn in the recycled materials market. The Recycling Division is anticipating an excess of \$700,000.00 from sale of recyclables in 2009, mainly due to City-wide single stream residential recycling.

Recycling is a cyclical industry that has seen price fluctuations before. However, as the December 8, 2008 New York Times reported, the slowing global economy is drying up the market for recycled materials and driving down the prices. Demand from China, the biggest export market for recyclables from the United States (US) has virtually stopped and recycled materials are piling up in the US. Philadelphia currently is paying

\$30 to \$35 per ton to have its recyclables taken by a recyclable processor. According to the ES Recycling Supervisor, these charges are much less than landfill charges in the eastern part of the State.

Environmental Services is hoping that the market for its single stream recyclables will improve by the end of March 2010. Like Philadelphia, Pittsburgh is mandated to recycle by State statute regardless of market conditions.

RECOMMENDATION NO. 6:

The Recycling Division is hopeful that the market for recyclables will improve when the current contract for single stream recyclables expires next year. Because recycling is mandated, the Bureau should explore the most cost effective options for best and worst case market conditions.

Electronic Waste

Electronic waste (e-waste) is unwanted electronic equipment such as televisions, computers, monitors, printers and audio equipment. Electronic equipment contains hazardous metals such as cadmium, lead and mercury. If electronic equipment is discarded in landfills, these toxic substances can leach into the land or be released into the atmosphere, negatively impacting nearby communities and the environment.

Finding: The City of Pittsburgh has no recycling policy for residential electronic waste (e-waste). Computers, televisions and other electronic items are picked up with other solid waste, compacted and sent to the landfill.

State E-Waste Legislation

As of June 2009, nineteen states plus New York City have passed legislation mandating statewide e-waste recycling. All states except California use the Producer Responsibility approach where the manufacturers pay for recycling. In 2003, California enacted an e-waste disposal surcharge which is tacked onto all electronics sold in the state. This surcharge pays for e-waste disposal. E-waste recycling legislation is pending in thirteen states, including Pennsylvania. Senate Bill 816 and House Bill 708 will create statewide programs for recycling electronic waste in Pennsylvania. Both bills make manufacturers of computers and televisions sold in the Commonwealth responsible for the products recycling.

Current E-Waste Recycling Options

Finding: The Pennsylvania Department of Environmental Protection (DEP) promotes periodic electronic waste recycling events and electronics collection programs on its

website. According to the DEP website, unwanted computers can be taken to numerous Goodwill locations in Allegheny County for recycling.

Construction Junction provides an ongoing e-waste recycling option for City residents. For a fee, electronic equipment such as computers, monitors, televisions, printers, scanners and cell phones can be taken to the site in Point Breeze for recycling. E-waste fees are listed on Construction Junction's website and range from \$1.00 for mice and keyboards to \$50 for TVs 40 inches and larger. Collected electronics are taken to an EPA-certified recycler for processing.

RECOMMENDATION NO. 7:

The Refuse Division should include information about computer recycling at Goodwill and e-waste recycling at Construction Junction in its bi-annual newsletter to City residents. This could help reduce the amount of computers taken to the landfill and reduce refuse workers exposure to toxic metals.

RECOMMENDATION NO. 8:

Until e-waste recycling legislation is passed in Pennsylvania, the Refuse Division should partner with the State DEP, Allegheny County and local environmental organizations to organize more e-waste drop off events. A nominal charge for drop off could offset recycling charges.

City Government Generated E-Waste

Finding: The City has a policy for recycling old City owned computers but not for other types of electronic equipment.

According to the Sustainability Coordinator, after the hard drives are cleared of confidential data, unusable City computers are sent to an EPA-certified electronics recycler. Currently there is no City policy for other types of electronic equipment such as fax machines and phones but many copiers are returned to the vendor

RECOMMENDATION NO. 9:

The City should develop a comprehensive recycling policy for all electronic waste generated by City departments and bureaus.

Landfill Contracts

As previously mentioned, in 2006 the number of daily City trash pickup routes was reduced from 44 to 34. Two routes were added for the Borough of Wilksburg in 2007. The number of route stops per truck increased from 550 to 700. In addition, depending on the season, some trucks will make 2 or even 3 trips to and from the landfill before the route is completed. To help compensate for the increase in pickup stops and multiple landfill trips, the Bureau attempted to shorten drive times to the dump by contracting with two landfills. Each contract for Disposal of Solid Municipal Waste has a three year term effective March 1, 2007 to February 28, 2010.

Central and Eastern division trucks take their waste to Waste Management's facility in Monroeville PA. Southern and Northern division waste is taken to BFI-Allied facility in Imperial PA. The hauled waste is weighed at the facility transfer station or landfill before being unloaded.

Finding: All contracts for disposal of municipal solid waste must be competitively bid and awarded to the lowest responsible bidder. The City's landfill transport costs were added to the vendor's per tonnage waste disposal bids to calculate a total cost to the City. The vendor with the lowest total cost to the City (vendor waste disposal charge + Environmental Services transportation cost) was awarded the contract.

Finding: The Refuse Division was able to reduce drive times for Eastern and Central Division trucks while awarding the contract to the lowest bidder. Although the BFI per ton bid for Eastern and Central Division was lowest, the contract was awarded to Waste Management when drive time cost calculations were included.

The drive to BFI's Imperial facility was more than double the mileage to Waste Management's Monroeville facility (48.6 versus 20.4 round trip miles). Mileage to each solid waste facility was calculated from a central point under typical road access conditions. These increased transportation costs to the BFI landfill made awarding the contract to Waste Management more cost effective.

TABLE 3
Eastern/Central Refuse Divisions

Landfill Operator	3 Year Landfill Costs as Bid	One Way Driving Distance	City's 3 year Transportation Costs	Total 3 Year Cost to City
BFI/Allied	\$3,643,886.25	24.3 miles	\$1,936,177.34	\$5,580,063.59
Waste Management	\$4,487,764.50	10.2 miles	\$812,716.42	\$5,300,480.92*

*Total low bid, awarded contract.

Finding: The landfill contract for the Northern/Southern Divisions is the most cost effective but not drive time effective.

**TABLE 4
Northern/Southern Refuse Divisions**

Landfill Operator	3 Year Landfill Costs as Bid	One Way Driving Distance	City's 3 year Transportation Costs	Total 3 Year Cost to City
BFI/Allied	\$3,643,886.25	18.7 miles	\$1,489,980.10	\$5,133,866.35*
JP Mascaro	\$8,599,7907.05	36.3 miles	\$964,104.77	\$8,599,797.05
Waste Management (South Hills)	\$4,261,086.00	11 miles	\$876,458.88	\$5,137,544.88
Waste Management (Kelly Run, Elizabeth)	\$4,261,086.00	15.1 miles	\$401,046.34	\$5,464,225.01

*Total low bid, awarded contract.

Code Enforcement

The Refuse Division enforces the City ordinances for refuse violations. Residents and businesses can be cited by ES for violations of City Code sections dealing with refuse and trash. ES has an enforcement officer who works 3 to 11p.m. shift to enforce these City Ordinances. The Bureau also responds to calls to the Mayor's 311 Center.

Finding: The purpose of code enforcement is compliance, not taking people to court or making money. The division supervisor or foreman gives oral warnings or leaves notices to comply at the property. The supervisor or foreman issues citations after prior attempts to obtain compliance have failed. Citations include description of the violation, City Code cite and amount of fine.

A citation can be ignored, paid on its face or appealed. Appeals are heard every other week by a district justice in downtown Municipal Courts Housing Court. The district judge can uphold, reduce, withdraw or dismiss the citation. If the defendant disagrees with Housing Court's disposition, he/she can appeal to Common Pleas Court Summary Division.

The Refuse Division keeps a record of the issued citations in an access file format. A clerk from ES enters this information into a database file. The database includes the following information for each citation: Section_ Subsection, fine (this is an

estimate done by the Clerk at ES as to what may be the total fine, there is no actual documentation to support this amount), date issued, first name, last name, address, city, state, citation number, offense, outcome court, total fine, judgment amount, local address, case number and affiant.

The fine is the estimate per the section Subsection but increases for multiple violations. Total fine includes fine plus court costs and judgment amount is the total amount collected. All fines collected are deposited into the City General Fund.

Finding: There does seem to be some erroneous data entered into the file. For example in the Section Subsection field 113 records were empty and 2 were entered incorrectly from a total of 1,251 records.

RECOMMENDATION NO. 10:

The clerk should try to be more accurate in entering data into the database.

Citation Database Analysis

Finding: During the audit scope years 2007-2008, the Northern Division issued the most citations (60.9%), followed by the Central Division (27.3%). Over 87% of all citations were issued by these two divisions.

The following table shows the distribution of citations issued by Environmental Services division:

TABLE 5

Citation Frequency by Division		
Division	Frequency	% Frequency
Central	342	27.34%
Eastern	53	4.24%
Northern	763	60.99%
Southern	75	6.00%
X (Could not find)	9	0.72%
Blank	9	0.72%
Total	1,251	100.00%

The following table shows the frequency of citation offenses from 2007 and 2008.

TABLE 6
2007 and 2008
CITATION OFFENSES

City Code Section_Subsection	Citation Frequency	Percentage Frequency
Missing or incorrect	115	9.19%
416.02 Count	12	0.96%
601.11A Count	30	2.40%
601.11B Count	12	0.96%
609.01 Count	44	3.52%
619.01 Count	1	0.08%
619.02E Count	3	0.24%
619.03A Count	301	24.06%
619.03B Count	198	15.83%
619.04A Count	311	24.86%
619.04q Count	1	0.08%
619.05 Count	65	5.20%
619.05a Count	140	11.19%
619.12 Count	5	0.40%
643485 Count	1	0.08%
765.09 Count	12	0.96%
GRAND COUNT	1251	100.00%

Finding: From the citation database the Section_Subsection field was missing or incorrect for 115 of a total of 1251 records for 2007 and 2008. This accounts for 9.19% of the total.

The largest citation category was 619.04A which is the accumulation of municipal waste, recyclable materials, bulky rubbish, dirt or other refuse or debris on any sidewalk or street abutting such building, or in yards or vacant ground forming part of the premises. Accumulation of waste citations accounted for 24.86% of the total.

The second largest citation category was 619.03A which is the failure by single family dwellings and small apartment buildings to store waste in the manner prescribed by Waste Regulations issued by the Director of the Department of Environmental Services. Improper storage of waste violations accounted for 24.06 % of the total.

The third largest category was 619.03B which is the failure by residents of single family dwellings and small apartment buildings not placing municipal waste for collection at the time and in the manner prescribed by waste Regulations issued by the Departments. This also includes exceptions for those individuals with physical limitations. Early set out of trash accounted for 15.83 % of the total.

The fourth largest citation category was 619.05A which is the failure to separate all recyclable materials from municipal waste generated by single family dwellings and small apartment buildings. Failure to recycle accounted for 11.19 % of the total.

These four categories of violations (early set out of trash, accumulation of waste, improper storage of waste and failure to recycle) accounted for 75.94% of the total citations.

Fines Assessed and Fines Collected

Out of a total 1,251 citations issued in 2007 and 2008, the total fines assessed were \$198,160 and the total amount collected was \$2,761.50. Most fines were reduced or eliminated by housing court. Only 1.39% of the citation fines issued were collected.

Finding: The Southern Division had the highest percentage of fines collected (14.24%). No fines were collected from citations issued in the Eastern Division.

Table 7 shows the percent of fines collected by Division and by year:

TABLE 7

Division	No. Citations Issued 2007-2008	Total Fines Assessed	Citation Fines Collected	% Fines Collected
Central	342	\$51,717.50	\$714.50	1.38%
Eastern	53	\$18,717.50	\$0.00	0.00%
Northern	763	\$110,921.50	\$747.00	0.67%
Southern	75	\$9,120.00	\$1,300.00	14.25%
X (Could not find)	9	\$7,683.50	\$0.00	0.00%
Blank	9	\$0.00	\$0.00	0.00%
TOTALS	1,251	\$198,160.00	\$2,761.50	1.39%

Table 8 shows a breakdown of citation number, fines assessed and fines collected by year.

TABLE 8

Year	No. Citations Issued	Total Citation Fines	Citation Fines Collected	% Fines Collected
2007	919	\$164,892.50	\$1,120.50	0.68%
2008	332	\$33,267.50	\$1,641.00	4.9%
Total	1251	\$198,160.00	\$2,761.50	1.39%

Finding: The number of citations issued in 2008 was significantly less than the number issued in 2007 but a higher percentage of fines was collected in 2008.

Whether the decrease in citations indicates less warnings were needed or more deficiencies were corrected after receiving a warning is unknown. The ES database does not capture the number of warnings issued.

311 Complaint Analysis

The Mayor’s 311 Response Line serves as a one-call clearing house for all non-emergency calls requesting City services, making non-criminal complaints or seeking information. A good indicator of City service delivery effectiveness is the number of complaint calls to the City’s 311 center.

The auditors obtained the 2007 and 2008 complaint histories for Environmental Services. The 311 center places calls into 21 problem types. The auditors grouped the problem types into three categories: complaints about ES personnel, complaints about or caused by resident behavior and tote/info requests/thank you. Calls about refuse services and personnel are categorized by 311 as ‘property/vehicle damage’ and ‘personnel’ calls. An example of a call in the ‘personnel’ category was refuse workers swinging bags, causing trash spillage and leaving it in the street. Calls about problems with residents such as early trash set out, failure to recycle and improper trash storage are categorized as ‘violations’ by the 311 center. Other complaints about resident behavior include calls about overflowing dumpsters, yard debris and rodents.

Other categories appear to be complaints about ES services but are the result of non-compliance by the public. According to the 311 Supervisor, calls categorized as ‘missed blue bag’, ‘missed pick up’ and ‘partial pickup’ are due to resident set out error. Set out errors include placing inappropriate items in blue bags, setting out too many bulk items and placing items curbside that the City does not collect such as construction debris. Missed trash pickups not due to resident set out errors are classified as ‘personnel’ complaints.

The 311 Center received 2190 calls in 2007 and 2796 calls in 2008. Eleven of the 2007 calls and 18 of the 2008 calls were tote requests, thank you calls or information requests. Tote requests are from people needing assistance getting trash to the curb. The remaining calls were complaints about ES personnel or about resident code violations/ set out errors. The following tables show the number and percentage of complaints in each category for 2007 and 2008.

TABLE 9

2007 Refuse Division 311 Calls		
Call Type	Number of Calls	Percent of Total
ES Personnel Issues	103	4.7%
Resident Code Violations/Trash Set Out Errors	2,076	94.80
Tote/info Requests/Thank You	11	0.5%
TOTAL	2,190	100%

TABLE 10

2008 Refuse Division 311 Calls		
Call Type	Number of Calls	Percent of Total
ES Personnel Issues	118	4.2%
Resident Code Violations/Trash Set Out Errors	2,660	95.1%
Tote/info Requests/Thank You	18	0.6%
TOTAL	2,796	99.9%

Each day City refuse trucks make approximately 23,800 pickup stops (34 daily routes x 700 stops per route). Multiplied by 260 working days, this equals 6,188,000 stops per year. ES personnel had only 103 complaints in 2007 and 118 complaints in 2008 for over six million stops per year.

Finding: The majority of Environmental Services 311 complaint calls concern problems caused by residents. The relatively few complaint calls about ES personnel indicate effective and satisfactory trash pickup performance.