



Performance Audit

**Department of Public Works
Bureau of Environmental Services
Recycling Division**

Report by the
Office of City Controller

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AUDITEE RESPONSE



CITY OF PITTSBURGH
OFFICE OF THE CITY CONTROLLER

Controller Michael E. Lamb

August 1, 2023

To the Honorable Ed Gainey, Mayor of Pittsburgh
and Members of Pittsburgh City Council

Dear Mayor Gainey and Members of City Council:

The Office of the City Controller is pleased to present this performance audit of the **Department of Public Works (DPW) Bureau of Environmental Services Recycling Division**, conducted pursuant to the Controller's powers under Section 404(c) of the Pittsburgh Home Rule Charter. This audit examines the recycling division's policies, procedures, recycling contracts, and recycling programs offered to city residents.

EXECUTIVE SUMMARY

The Bureau of Environmental Services is one of the four Bureaus in the Department of Public Works and is divided into two divisions: Refuse and Recycling. The Recycling Division's responsibility is to maintain, monitor, and advance waste reduction and recycling activities that are fiscally responsible, environmentally friendly, and compliant with state law.

The Bureau has a recycling fleet of 40 vehicles that operate 13 daily recycling routes. The fleet collects recyclables from 115,200 residential properties with five dwelling units or less, the Housing Authority of the City of Pittsburgh, Pittsburgh Public Schools, 122 business district sidewalk bins, and City and County municipal buildings.

The City uses a curbside, **single-stream** recycling system where all recyclables are co-mingled into a single bin or bag and placed in a single truck. Co-mingled recyclables accepted for curbside collection are mixed paper, cardboard, plastic, metal, and glass. In addition to curbside collection, the City operates six drop-off centers where City residents can deposit curbside recyclables and other various types of recyclable materials including shredded paper, tires, yard waste, Christmas trees, and scrap metal.

In 2020, the City created a program to distribute 32-gallon blue recycling containers to City residents with the goal to make recycling easier and reduce recycling contamination. As of May 2023, there are 31 neighborhoods that still have not received a blue-bin container. When the program is complete, the Recycling Division should analyze the impact of the program (**Recommendation 17**).

All co-mingled recyclables are delivered and sold to Recycle Source. In 2020 and 2021, the total tonnage of recyclables sold to Recycle Source were 14,895.31 and 14,978.77 respectively. These figures include non-recyclables which are materials placed curbside that are not recyclable or recyclable materials that become contaminated through the act of collection, sorting, or processing. The City's contamination rate in both 2020 and 2021 was 15%. This means that 85% of all recyclables delivered to Recycle Source are processed.

A landfill diversion rate is a common benchmark metric of success for recycling programs. The diversion rate compares the amount of waste diverted from the landfill to be recycled with the total amount of waste collected (recycling and refuse tonnage). The more waste is recycled, the higher the landfill diversion rate will be. The City's landfill diversion rate was 16.23% in 2020 and 17.31% in 2021. The Recycling Division could increase their landfill diversion rate through public awareness which is a key to a successful recycling program. This can be accomplished by including additional information on their webpage and educational messaging such as commercials on PCTV, ads on City Channel Pittsburgh, and creating social media accounts (**Recommendation 5, 7**).

Glass and non-recyclable materials co-mingled with other recyclables on collection days have a negative impact on the total amount of revenue received from selling materials to Recycle Source. Recycle Source charges the city \$40 per ton for non-recyclable materials and \$17.50 per ton for all glass the City collects and delivers to their facility. Glass is hard to separate from other materials during the recycling process and both glass and non-recyclable materials are contaminants in single-stream recycling.

Three of the City's drop-off centers have glass only dumpsters used to help alleviate this problem. The auditors recommended that City administration should apply for a grant with the Department of Environmental Protection with the intent to purchase three more glass dumpsters and place each one of the three drop-off locations where no glass specific dumpsters are located (**Recommendation 9**).

According to the Bureau superintendent the Bureau needs 135 truck staff members to fully staff all refuse and recycling routes daily. It has been a challenge for the Bureau retaining employees and filling all budgeted truck staff positions due employees on workers compensation and high turnover rates. A four-month sample staffing analysis conducted by the auditors revealed that there was not one day in the four-month sample where the Bureau was fully staffed with 135 truck employees needed to operate the 37 refuse and 13 recycling routes. The Bureau of Environmental Services administration should ensure that pay rates remain competitive and work to explore ways of retaining qualified personnel and filling all budgeted positions (**Recommendation 2**).

Bureau of Environmental Services foremen have the authority to enforce all residential and business violations that fall under City Code of Ordinances Chapter 619: *Municipal Waste and Recycling*. In 2021, foremen issued 123 citations to property owners. However, there were no citations issued for failure to recycle and 111 of the citations were only issued in southern zone neighborhoods. The Bureau should make recycling code enforcement of property owners that fail to recycle a priority and strive to have equal City Code enforcement throughout all four of the recycling divisions (**Recommendation 18, 20**).

The Recycling Division fleet is getting older. The fleet has 14 recycling packers which last approximately 10-15 years with proper maintenance. Of the 14 large packers, seven (50%) are

between 11 and 15 years old, six (42.9%) are between 6 and 10 years old, and one (7.1%) is zero to five years old. The Bureau of Environmental Services administration should work with the Equipment and Leasing Authority to plan a fleet replacement schedule so that older vehicles can be replaced in a timely manner (**Recommendation 4**).

Woodwaste Recycling holds the City's yard waste contract who collect all yard waste for a fee. Woodwaste was the only bidder and was awarded the latest contract signed in April 2021. The collection fee increased from \$27.49 to \$50.56 per ton and the capability of composting a minimum of 10,000 tons per year. The Recycling Division administration should work with the Office of Management and Budget to rebid the next contract and lower the required tonnage capacity for vendors which may attract more bidders (**Recommendation 11**).

The auditors evaluated the number of Housing Authority City of Pittsburgh (HACP) communities and Pittsburgh Public Schools (PPS) buildings that participate in the city's recycling program. Only five out of 16 (31.3%) HACP managed communities recycle. The City's garbage collection service agreement with HACP only mentions refuse collection. The City should include language in the next agreement with HACP to include recycling collection and require HACP to conduct a campaign to educate residents about the importance of recycling to help increase participation (**Recommendation 14**).

The PPS Chief Operating Officer stated that there is no official board-approved recycling collection service contract with the City, nor does PPS have a comprehensive school recycling policy. There are about 25-30 schools that place blue-bin containers curbside on collection days. The Recycling Division needs to develop a consistent communication channel with PPS to get more schools to participate in the City's recycling program (**Recommendation 16**). The number of schools that recycle could not be determined with the data provided by the Recycling Division. The Recycling Division PPS database shows that Bureau foremen have not completed PPS recycling performance inspections since 2018. The foremen should conduct PPS recycling inspections immediately and update the results in their PPS database (**Recommendation 15**).

Our findings and recommendations are discussed in detail beginning on page 28. We believe our recommendations will provide more efficient operations within the Recycling Division. We would like to thank the Recycling Division staff for their cooperation and assistance during this audit.

Sincerely,



Michael E. Lamb
City Controller

INTRODUCTION

This performance audit of the **Department of Public Works (DPW) Bureau of Environmental Services Recycling Division** was conducted pursuant to the Controller’s powers under section 404(c) of Pittsburgh’s Home Rule Charter. This audit examines the policies, procedures, and programs within the DPW Recycling Division. Also analyzed were the recycling contracts that the City has with their materials recovery facility, composting vendor, electronic waste vendor, hazardous waste vendor, and glass recycling vendor.

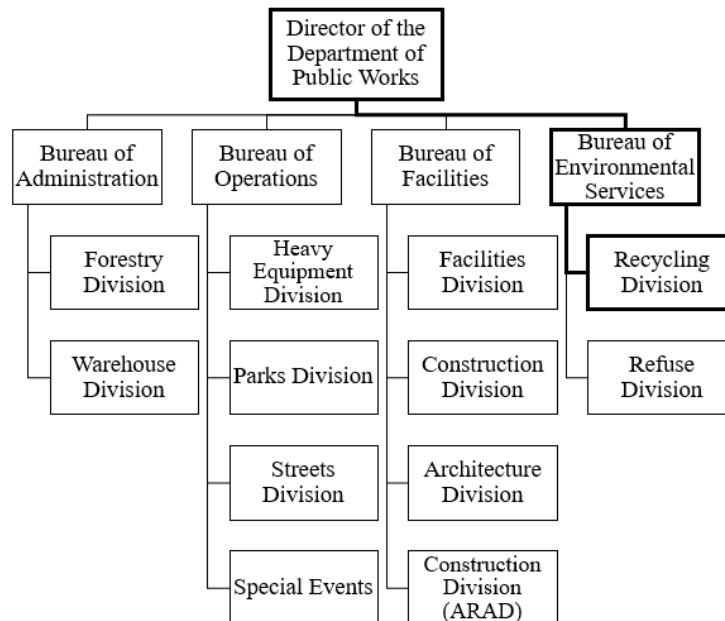
This is the third DPW Bureau of Environmental Services performance audit conducted by the City Controller’s Office since 2008. However, this audit focuses entirely on the Recycling Division. The two previous audits in 2009 and 2015 focused on both the Refuse and Recycling Divisions.

OVERVIEW

The mission of DPW is to maintain the City’s assets related to parks, facilities, and rehabilitating public structures; provide support to other departments; administer a solid waste and recycling system that promotes a litter-free environment; and ensure public safety responding to weather-related events.

The Bureau of Environmental Services is one of the four bureaus in DPW and is divided into two divisions: Refuse and Recycling. The Recycling Division within DPW is shown below in Figure 1.

FIGURE 1
Department of Public Works Organizational Chart 2021



Source: City of Pittsburgh’s 2021 Amended Operating Budget

As outlined on the Bureau's website, the mission of Environmental Services is to establish and maintain a refuse and recycling system that promotes a safe, litter-free and environmentally friendly city for all its residents and customers.

The role of the Recycling Division is to maintain, monitor, and advance waste reduction and recycling activities that are fiscally responsible, environmentally friendly, and compliant with State law. The City is required by the state Municipal Waste Planning Recycling and Waste Reduction Act 101 to have a curbside recycling program.

The Bureau of Environmental Services **headquarters is in the City's Strip District neighborhood at 3001 Railroad Street**. Administrative office hours are from 8:00 a.m. - 4:00 p.m. Monday through Friday. Administrative staff offices are located at the Bureau headquarters and truck staff are dispatched to their assigned routes from this location daily.

Recycling is collected every other week from approximately 115,200 residential properties with five dwelling units or less, the Housing Authority of the City of Pittsburgh, Pittsburgh Public Schools, a total of 122 sidewalk bins throughout business districts, and City of Pittsburgh municipal buildings.

The City uses a curbside, **single-stream** recycling system where all types of recyclables are co-mingled in a single bin or bag, collected by a single truck, then transported and sold to the material recovery facility. Since 2018, the City has sold recyclables to Recycle Source which is located at 50 Vespuccius Street in the Hazelwood neighborhood. Twice-per-year special yard debris curbside collections are provided for City residents, as required by state law. Yard waste is taken to drop-off sites where it is picked up by Wood Waste Recycling.

In addition to curbside collection, six drop-off centers are available for residents to deposit various types of recyclable materials including glass, shredded paper, tires, and scrap metal. Since 2006 and 2018 respectively, the City has had contracts with Liberty Tire to pick up tires, and the American Steel Processing & System Company to collect scrap metal. Christmas trees are collected for recycling at temporary drop-off sites and the resulting mulch is made available to residents for free each spring. Collection events for electronic waste (e-waste) and hazardous waste are held periodically at the Bureau of Environmental Services headquarters and in City neighborhoods.

Bureau of Environmental Services foremen are responsible for enforcing the City's recycling ordinances. Private haulers that pick-up recycling from buildings that do not qualify for City curbside pickup, such as commercial businesses and apartment buildings with more than five units, are also monitored for compliance.

Environmental Services Staff

The Bureau is managed by the Director of Public Works and is led by a superintendent who manages both the Refuse and Recycling Divisions. In 2020, there were a total of 193 Bureau of Environmental Services staff, including the superintendent. In 2021 there were 178 Bureau staff including the superintendent. As of 2021, the superintendent supervises the

Bureau's 14 administrative staff, 13 foremen, and 150 truck staff, including drivers, co-drivers, and loaders. Of the 14 administrative staff, three work exclusively on recycling and 11 work on both refuse and recycling. Truck staff and foremen work both refuse and recycling routes. The truck staff are members of the Teamsters Union Local 249 and foremen are members of the American Federation of State, County and Municipal Employees Union, Local 2037.

Bureau of Environmental Services Vehicles

The Environmental Services Bureau's fleet consists of 94 total vehicles, of which 43 are used by the Recycling Division. These include 14 large packer trucks, two trailers, three small packers, 18 pickup trucks, two stake body trucks, two front load trucks, and two roll-off trucks.

Bureau of Environmental Services Zones

The Bureau of Environmental Services is required to collect refuse and recycling from City residential property and apartment building with five or fewer units. The bureau is organized into four geographic refuse and recycling service zones: northern, southern, eastern, and central. The Bureau is also under contract to collect common refuse but not recycling materials from residential properties and apartment buildings with five or fewer units from the Borough of Wilkinsburg. Map 1 shows the geographic location of these four recycling zones throughout the City.

MAP 1
Bureau of Environmental Services Division Map



Source: Department of Public Works

Collection Schedule

Each resident serviced by the Bureau of Environmental Services is mailed an annual *Curbside Recycle/Refuse Newsletter and Calendar* that shows the collection schedule. The collection schedule is also available on the Bureau of Environmental Services' website and the web application PGH.st. The web application is provided by PGH.st Inc. a nonprofit 501c3 charitable organization. PGH.st was developed in 2014 through the Steel City Codefest, the annual civic software application development competition designed to grow the City's innovation and technology infrastructure. Through the app, City residents receive text messages and/or emails reminding them the day before their trash and/or recycling is due at the curb. The messages also note when holidays delay pickup. The service is intended for use by the residents of the City of Pittsburgh. A resident can type in their address and zip code and the site will provide trash, recycling, and yard debris pick-up dates. A copy of the collection schedule can be found in the Appendix under Exhibits A and B.

The Bureau separates the City into two zones from which recyclables are collected every other week: the northern/southern zone and the eastern/central zone. Recycling collection service is Monday through Friday unless a holiday is observed that week. There is no collection on an observed holiday and service is delayed one day. For example, if your recycling collection day falls on a Friday during a holiday week, you will receive service on a Saturday. The City has eight observed holidays during the recycling collection calendar year. The holidays are the following: Martin Luther King, Jr. Day, Memorial Day, Juneteenth Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and New Year's Day.

Heavy snowstorms can cause a delay in collection service. The Recycling Division evaluates each storm based on its starting time and severity. During active snow fall, the Recycling Division will wait for the DPW Streets Maintenance Division fleet to treat roadways before collection begins. If the storm is too severe, collection is delayed.

Property owners must place recyclables for curbside collection in blue bags, blue containers clearly marked for recycling not exceeding 35 gallons, or 32-gallon blue City-issued containers. Containers must be watertight with a closed fitting lid. In fall 2020, the City started a program to distribute the 32-gallon blue containers with lids to all single-family homes, duplexes, and apartments with five units or less. The bins were purchased from Rehrig Pacific Company, located in Erie, PA. **The program will be complete once all neighborhoods in the northern service zone receive a blue bin recycling container (expected spring 2023).** City residents may still place recyclables in blue bags until they receive a blue-bin container. Once containers are received, recyclables will no longer be collected if placed curbside in blue bags. The program is explained in detail later in this audit.

City residents are required to put out recyclables no earlier than 6:00 p.m. the day before collection and no later than 6:00 a.m. the day of collection. All recyclables must be placed in one single location while not obstructing the public right-of-way. Recycling containers must be moved from the collection site no later than 10:00 p.m. on collection days and stored on their property and/or out of the public right of way.

Routes

Foremen, drivers, co-drivers, and loaders meet every morning by 6:00 a.m. at the Bureau headquarters, located in the Strip District neighborhood. The foremen will then assign routes to crews. The staff can be assigned to either a refuse or recycling route. There are two employees assigned to a recycling vehicle: a driver and loader. The driver must have a commercial driver's license (CDL). The loader position does not require a CDL.

Routes generally start between 6:30 a.m. - 7:30 a.m. and vary depending on staffing levels. There are 13 recycling routes scheduled each day as follows:

- Each weekday, **ten** rear load recycling packer routes service residences and Pittsburgh Public Schools (PPS).
- Each weekday, **two** smaller packer (PUP trucks) routes collect from residential locations that are too hard to access for rear load packers (alleys and tight streets) and from 122 street containers stationed in the City business districts (Central Business District, Southside, Shadyside etc.).
- Each weekday, the #371 route is **one** rear load recycling packer that services a variety of locations most of which fit the description of being either a municipal building (City and County), Pittsburgh Public Schools, Housing Authority City of Pittsburgh, the City's six recycling drop-off centers, and institutions (for example: Pittsburgh Zoo, Phipps Conservatory, Schenley Park Visitors Center, Northside Community Center, charter schools etc.).

In addition, the #371 route runs every Saturday and Sunday to Construction Junction and the drop-off center at the Bureau of Environmental Services headquarters.

In one week's time, the Recycling Division canvasses the City with 67 routes. This total includes 13 routes per day for five days (Monday through Friday), one route on Saturday, and one route on Sunday (5 days x 13 routes = 65 weekday routes; 65 weekday routes + 2 weekend routes = 67 routes per week).

After the route is completed, the employee not driving the vehicle (the loader) is free to go home as part of their contract with the Teamsters Union Local 249. The driver must first dispose of recyclables at Recycle Source, refuel the vehicle, run a vehicle maintenance check, and drop off the vehicle at Environmental Services headquarters where the fleet is stored before concluding the day. Foremen will drive and inspect the routes to make sure all recyclables are collected and pick up any missed recyclables.

Pittsburgh's Sustainable Planning for Climate Change

Climate change is a major threat to communities around the world. Consequences of climate change include an increase in extreme weather events, higher rates of infectious diseases and heat-related illnesses, and the possible shortage of food and basic goods, as well as an increase in public expenditures to mitigate these effects.

The City of Pittsburgh has long recognized that wide-ranging action must be taken in order to mitigate the effects of climate change on both local and global communities. The City developed its first comprehensive climate resilience strategy in 2008, the *Pittsburgh Climate Action Plan*. A follow-up climate plan, the *Pittsburgh Climate Action Plan 2.0*, was published in 2012.

A climate change world summit took place in Paris in 2015. The United States, along with 195 other countries, agreed to address climate change by signing the Paris Agreement. The Paris Agreement is a 27-page document for nations to agree to take specific actions to stop climate change, including:

. . . holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change . . .

By signing the Paris Agreement, the United States agreed to reduce greenhouse gas emissions as soon as possible in order to achieve the long-term temperature goal to curb climate change.

In 2017, the United States withdrew from the Paris climate accords. In response, the mayor of Pittsburgh issued [Executive Order](#) number 2017-08, *Reinforcing Pittsburgh's Commitment to the Global Partnership on Climate Change*, on June 2, 2017. The executive order directed the City of Pittsburgh to endorse and remain fully committed to many sustainability goals and initiatives, including the goals outlined in the 2015 Paris Agreement, **a City-wide zero waste initiative to divert 100% of materials from the landfill by 2030**, and the *Climate Action Plan*, which, as noted in the executive order, was undergoing its third update at the time of issuance. It should be noted that “zero waste” is defined by the Zero Waste International Alliance to be at least 90% of materials diverted from the landfill.

As part of the City's climate resilience strategy, and in service of the City-wide zero waste initiative, the City of Pittsburgh released a [Roadmap to Zero Waste](#) report in 2017. The *Roadmap to Zero Waste* evaluates the City's operational infrastructure and makes suggestions for ways to improve recycling and waste recovery operations to achieve zero waste by 2030. The *Roadmap to Zero Waste* report can be found on the Bureau of Environmental Services webpage.

By 2018, the third iteration of the *Pittsburgh Climate Action Plan* was complete. Pittsburgh officially adopted the [Pittsburgh Climate Action Plan 3.0](#) on May 22, 2018, with the passage of [City of Pittsburgh resolution number 2018-0129](#). The *Pittsburgh Climate Action Plan 3.0* is an initiative of the Department of City Planning and the Mayor's Office in collaboration with numerous City departments, authorities, universities, non-governmental organizations, utilities, and civic sector organizations to account for and reduce greenhouse gas emissions and pollution in the City of Pittsburgh. The *Pittsburgh Climate Action Plan 3.0* tracks progress made through the first two plans and proposes new measures to counteract the adverse effects of climate change to achieve the objectives outlined in Executive Order 2017-08.

The purpose of the plan is to serve as a decision support tool for future planning, land use, transportation and development decisions. The document lays out pathways, strategies, and a framework for achieving Pittsburgh’s greenhouse gas reduction goals by the year 2030, including becoming a zero-waste city. Strategies listed in the *Pittsburgh Climate Action Plan 3.0* to achieve zero waste include:

- Implement the *Roadmap to Zero Waste*
- Modernize waste collection systems
- Improve education around waste diversion efforts and options
- Decrease organic materials in landfills
- Utilize anaerobic digestion technology
- Increase composting efforts
- Pursue a circular economy
- Support a statewide bottle bill
- Promote composting
- Increase collection of yard waste
- Increase ‘hard to recycle’ events and drop off locations
- Distribute recycle bins to all residents
- Enforce existing waste and recycling policies

Many of these strategies, such as modernizing waste collection systems, increasing yard waste collection, and implementing the *Roadmap to Zero Waste*, falls under the purview of the Bureau of Environmental Services.

OBJECTIVES

1. To report the Bureau’s status of previous audit recommendations from 2015.
2. To assess the Recycling Division’s policies, processes, and procedures.
3. To report the status of implementing relevant portions of the 2017 *Roadmap to Zero Waste* report.
4. To examine if the Bureau’s staffing levels are optimal.
5. To determine the Recycling Division’s age of fleet.
6. To analyze the City’s sale of recycled materials contract with Recycle Source.
7. To assess City resident, Housing Authority, and Pittsburgh Public School participation in offered recycling programs.
8. To report the number and type of citizen recycling complaints, service requests, and inquiries made via the City’s 311 Response Center.
9. To make recommendations for improvement.

SCOPE

The scope of this performance audit is the Bureau's operations for the years January 2020 through December 2021; the funding and the roll-out schedule of the blue bin recycling program created in fall 2020; Christmas tree collection from December 2019 through January 2022; the new electronic and hazardous waste collection program created in 2022; the design, printing, mailing service, and postage costs of the 2023 *Curbside Recycling/Refuse Newsletter and Calendar*; and for the staffing attendance analysis, the months of January and July 2020 and January and July 2021.

METHODOLOGY

The auditors had meetings via Microsoft Teams with the DPW director, the Bureau of Environmental Services superintendent, the DPW program supervisor, the environmental enforcement specialist, and the project coordinator to discuss audit objectives. Meeting topics included the Bureau's policies, processes, procedures, and performance data.

The auditors used the City Controller's Office OnBase database system and Openbook Pittsburgh database systems to research and analyze the City's contract with Recycle Source, their purchaser of all single-stream recyclables. Other City recycling contracts reviewed using the databases included the yard debris composting agreements with Wood Waste Recycling; blue-bin container manufacture and distribution contract with Rehrig Pacific Company; household hazardous and electronic waste agreements with Environmental Coordination Services and Recycling (ECS&R) and Pennsylvania Resources Council (PRC); glass recycling contract with Carry All Products (CAP) Glass; route optimization contract with RouteSmart Technologies; removal of scrap tire contract with Liberty tire; and sale of surplus scrap metal contract with American Steel Processing & System Company Inc.

Auditors researched and reviewed the Bureau website for information about the City's curbside recycling guidelines, drop-off resources, blue bin program, and special events recycling.

Data was requested, received, and analyzed from the Recycling Division personnel including 2020-2021 Recycle Source material tonnage spreadsheet and revenue database; 2020-2021 ECS&R's e-waste and hazardous waste collection database; 2020-2021 scrap metal tonnage and revenue; and the 2021 the City code violation database.

The auditors requested from Recycle Source the total 2020 and 2021 tonnage of materials delivered by the Recycling Division. The tonnage figures were used to verify if the Recycling Division tonnage totals supplied to the auditors were correct.

The auditors requested, received, and analyzed from Bureau staff a sample of four months of attendance records for truck staff from January and July 2020 and January and July 2021; this is a 16% sample. Missing data was obtained from the Human Resources payroll division.

The Bureau staff supplied the auditors with the recycling fleet inventory. Each vehicle listed had a DPW vehicle code, year, make, model, license, and serial number. This information was used by auditors for the fleet analysis.

The City Controller's Office OnBase database system was used to total all 2020 and 2021 Recycle Source invoice paid; ECS&R invoices paid; Wood Waste Recycling invoices paid and yard waste tonnage; Liberty Tire invoices and number of tires recycled; RouteSmart software maintenance and training fees; Rehrig Pacific Company blue-bin program invoices; and the 2023 *Curbside Recycling/Refuse Newsletter and Calendar* design and mailing service costs.

All city resident non-emergency service requests and complaints with the Bureau of Environmental Services were tallied and categorized using a spreadsheet provided by the City's 311 Response Center team. The auditors used the ArcGIS Pro data analysis software and longitude and latitude location data for the 311 calls to create maps showing the location of each 311 call and the neighborhood in which it is located.

The auditors received a list of all Pittsburgh Public School (PPS) buildings from the PPS Deputy School Controller. The list of 70 school and administrative buildings was used for our analysis. The auditors used the Recycling Division's PPS location contacts database to count the number of school buildings participating in the City's recycling program.

The auditors used the City 2021 operating budget to compare the Bureau of Environmental Services total budgeted workers' compensation expense of 8.4% to the total budgeted workers' compensation expense of five large City departments perceived to be the most dangerous. The five chosen were Public Safety's Bureau of Fire, Police, and EMS along with Public Works Bureaus of Operations and Facilities.

The auditors obtained demographic information for Environmental Services staff from the Department of Human Resources and Civil Service.

The auditors reviewed a database of private hauler reports provided by the Recycling Division to analyze private hauler recycled tonnage.

The auditors obtained information pertaining to compliance with the public education requirement of the PA Municipal Waste Planning Recycling and Waste Reduction Act (Act 101) from the PA Department of Environmental Protection.

Auditors requested and received the 2023 *Curbside Recycling/Refuse Newsletter and Calendar* postage costs invoices from C&C Mailing Services.

Other documents and sources reviewed by the auditors include the 2020 and 2021 Bureau of Environmental Services operating budget; City's Controller's Office Fiscal Focus Pittsburgh 2020 and 2021; City of Pittsburgh code of ordinances; City of Pittsburgh legislation database; PA Municipal Waste Planning Recycling and Waste Reduction Act (Act 101); U.S. Bureau of Labor Statistics; 2017 Road Map to Zero Waste report; Pennsylvania Department of Environmental Protection webpage; Pennsylvania Resources Council webpage; Housing Authority of the City of Pittsburgh webpage; Pittsburgh Public Schools webpage and <https://recyclethispgh.com/>.

STATUS OF 2015 PERFORMANCE AUDIT RECOMMENDATIONS

The City Controller's Office completed a performance audit titled *Department of Public Works, Bureau of Environmental Services, Refuse and Recycling Divisions* in May 2015. The following *italicized* sentences are the recommendations from this 2015 City Controller's performance audit of DPW's Bureau of Environmental Services (ES). The updates are the Bureau's response as to the 2022 status of each recommendation.

Recommendation No. 1: The preventive maintenance program is a key component of continuing efficient Environmental Services collection. ES Administration should make complying with the twice annual Preventive Maintenance schedule a priority making sure that all packer vehicles receive the service.

2022 Update:

“[First Vehicle Services*] FVS has been unable to provide consistent on time maintenance due to our inadequate fleet numbers. Like everyone else, they appear not to always have enough mechanics or access to needed parts.”

* First Vehicle Services is the City's long-time fleet maintenance vendor.

Recommendation No. 2: As noted on Pages six and seven, the Bureau began to modernize its fleet in 2014 and should continue to do so. As seen by the repair analysis, vehicles that have been in service for over seven years are the ones most likely to require extensive garage work and should be retired if possible or reserved for back-up duty.

2022 Update:

“The current fleet ranges from 2005 through 2020. Many older vehicles have been decommissioned but not enough vehicles have been purchased to replace them.”

Recommendation No. 3: All [Housing Authority City of Pittsburgh] HACP communities should separate their recyclable waste as mandated by PA State Act 101 titled Pennsylvania's Municipal Waste Planning, Recycling, and Waste Reduction Act and the City Code.

2022 Update:

“We collect recycling from 6 HACP communities out of 16 that are managed by the HACP and one maintenance facility. The remaining 14 properties are privately managed, and we are currently unsure of the status of recycling services at these properties.”

Recommendation No. 4: The next City contract with the HACP should lay out specific guidelines and procedures for the HACP administration to participate in recycling, with residential recycling included in the lease provision, the provision of blue bins etc. If administration and residents do not participate than a non-performance fine should be imposed.

2022 Update:

“This recommendation has yet to be implemented.”

Recommendation No. 5: The Law Department should investigate and determine the legality of the City expanding its solid waste collection beyond its borders. If the Law Department deems the expansion of City waste collection into other areas legal, the City should consider the cost/benefits of such an expansion as a potential source of revenue.

2022 Update:

“The Law Department has investigated and determined that it is legal for the City to contract with other municipalities to collect waste. We are currently collecting solid waste from the Borough of Wilksburg. Currently, we do not have the available equipment or staffing to provide collection to any additional municipalities”

*Recommendation No. 6: Environmental Services Administration should continue making efforts to educate the citizens of Pittsburgh to the benefits of recycling in order to reach the 25% recycling goal of Act 101**. An outreach effort should be made to work with Pittsburgh Public Schools to have recycling introduced as part of the City’s educational curriculum.*

**The 25% recycling goal of State Act 101 refers to the goal that 25% of municipal waste generated be recycled. Municipal waste generated equals the total tonnage of recycled material plus the total tonnage of refuse landfilled or refuse tonnage + recycled tonnage = municipal waste generated. Recycling percentage is (recycled tonnage / total municipal waste generated) x 100 = percent of municipal waste recycled.

2022 Update:

“Environmental Services produces an annual newsletter to educate our residents. In addition, we are always updating our section of the City web site, as well as issuing press and social media information. In 2022, we are at a 19% recycling goal. Outreach to the schools takes place on a by-request basis due to lack of dedicated education and outreach personnel.”

Recommendation No. 7: A collection site for yard waste should be considered to serve the southern neighborhoods. ES should also consider the establishment of a drop-off center to serve the northern sector of the City, perhaps at Riverview Park.

2022 Update:

“When the new DPW 4th Division is built it will accept yard waste. Riverview Park is a [Regional Asset District] [RAD]*** Park and we are unable to site a permanent recycling drop-off at it. The DPW 5th Division is [also] centrally located and is available to residents from these areas.”

***A Regional Asset District (RAD) is a special purpose area-wide unit of local government in Allegheny County; it was originally created to support the regional parks of the county. RAD was authorized by an act of the Pennsylvania Legislature (Act 77 of 1993). RAD provides grants to Allegheny County's libraries, parks and trails, arts and cultural organizations, regional attractions, sports and civic facilities, and public transit. RAD's revenue comes from half of the proceeds of the additional 1% sales and use tax in Allegheny County. A board is appointed to distribute this money. The auditors know of no restrictions about recycling in RAD parks.

Recommendation No. 8: The City should continue to work with environmental groups to educate the public on the benefits of composting for individuals and the community.

2022 Update:

“We refer people toward our nonprofit partner, Pennsylvania Resources Council, for compost tools and resources. The City's Sustainability Division recently embarked on a community compost initiative with funding from the [United States Department of Agriculture] (USDA).”

Recommendation No. 9: In face of the costs of disposing of yard waste, the City may wish to assess the cost/benefits of starting its own yard waste operation (mulching and/or composting). Such an operation would be eligible for a State Section 902 grant that may cover the majority of its construction costs.

2022 Update:

“A feasibility study for this was completed in January 2021, including site reviews. No progress has been made since.”

Recommendation No. 10: The City oversight of recycling should be strengthened through both educational and enforcement efforts. Enforcement measures may require a multi-departmental approach, perhaps involving the Department of Permits, Licenses and Inspections and the Public Safety Department, which has the greatest night-time presence of any City department.

2022 Update:

“The City has developed the GOLD Plan to address this very issue. The plan will combine resources from these departments to form three branches dedicated to recycling and litter/trash issues. The abatement branch will handle the sensorized litter cans, Clean and Liens, and general clean up duties. This would provide a larger pool for each task as needed, but never leave any task as low priority. The enforcement branch of officers would pull the duties currently spread between DPW, PLI, ES, and DOMI and finally make these tasks a high priority. And an administration branch handling prevention, outreach, data analysis and grant writing will be handled by specialists working closely with the entire division. Two dedicated inspectors will begin Q4 of 2022.” ^

^The auditors confirmed that 2 dedicated inspectors were hired at the end of 2022.

Recommendation No. 11: The City should examine the possibility of establishing a policy that would allow for the collection of recyclable materials from small businesses and apartments. The Director is enabled by City Code section 619.06.(b) to collect recyclable goods by agreement from commercial, rental or institutional clients and by section 619.06.(d) to “...establish pilot recycling programs in certain neighborhoods at his or her discretion.”

2022 Update:

“With unstable recycling markets, recycling is not as profitable as it was in 2015 and often costs the City to recycle. It is a service we provide our residents, but not something we should be offering commercial businesses. In addition, we have since clarified code to better define small and large apartments.”

Recommendation No. 12: The City should consider using a different color plastic bag (preferably but not necessarily blue) to sort its recyclables from solid waste in parks, fields and public buildings.

2022 Update:

“Different color trash and recycling bags have been implemented at the various City facilities in order to make separation of materials easier when collected.”

*Recommendation No. 13: As noted before, either through more robust enforcement or education, the City must continue to engage commercial, large residential and institutional entities such as the PBOE [Pittsburgh Board of Education] * to participate in recycling to a greater degree.*

2022 Update:

“A dedicated Recycling Foreman position was established in 2017 to help address many of these issues. Mostly upon request, we will engage with these entities to provide educational information. In addition, we have developed and provided various online tools geared towards these entities. Lastly, through the development of the GOLD Plan, we will be better able to address the enforcement portion of this recommendation.”

*The PBOE is the elected Board of Directors for Pittsburgh Public Schools (PPS).

Recommendation No. 14: The City should be more stringent in the waste collection efforts during and after special events, both during the planning stage and the event itself. The event sponsors should sort and collect waste generated by the event, according to the pre-event plans that are a required part of the permit process.

2022 Update:

“Special events are required to have a solid waste & recycling plan in order to receive an event permit. The Special Events Committee will often refer permit applicants to the Recycling Division for assistance. We can provide clearstream recycling containers for small and medium-sized events. Recycling roll-off containers are available for a fee for larger events.”

Recommendation No. 15: The City, while providing assistance in planning and waste collection for special events, should be more robust in its efforts to police these events, perhaps using a private-public model such as Waste Watchers to improve recyclable collection and education.

2022 Update:

“We rely largely on the Pennsylvania Resources Council to fill this role for larger events. Capacity restricts our ability to police gatherings on nights and weekends.”

Recommendation No. 16: A more active residential educational program should be established to bolster the recycling of film plastic material along with City collaboration with private recyclers. The City should use its variety of resources, such as The Clean City Commission, to partner with private sector plastic bag recycling efforts and businesses that emphasize reusable totes.

2022 Update:

“We refer residents to local grocery stores for recycling options. In April 2022 the City passed legislation for the implementation of a single use plastic bag ban.” *

*The enforcement of the single-use plastic bag ban has been postponed until October 14, 2023.

Recommendation No. 17: The City should consider allowing residents to drop off plastic bags at its already existing recycling centers and at municipal gathering spots such as the City-County Building, recreation centers and senior centers. In lieu of seeking a recycler, the City should work with the stores that already collect and recycle plastic bags to dispose of plastic film.

2022 Update:

“Market changes for plastic film are cost-prohibitive to recover using our staff, trucks, and equipment. We refer residents to local grocery stores for recycling options. We are looking forward to the implementation of the plastic bag ban passed in April 2022!”

Recommendation No. 18: The City and the Clean City Commission should examine a possible partnership with NOVA Chemical, Appliance Warehouse or any other interested firms for the drop-off collection and disposal of Expanded Polystyrene (EPS).

2022 Update:

“ES did partner with PRC, Construction Junction and the Appliance Warehouse in a pilot program to drop-off EPS for recycling at Construction Junction. The program was discontinued due to abuse and illegal dumping. The Appliance Warehouse does maintain an EPS recycling program at the Southside location that we refer residents to.”

Recommendation No. 19: The City should consider measures to limit the use of EPS, as the reduction of its use would be the most effective method to control its impact on the local waste.

2022 Update:

“This recommendation has yet to be implemented, though the City has recently enacted a ban on single use plastic bags.”

Recommendation No. 20: The City should continue to partner with other institutional and industry groups or with private disposal agencies to sponsor community pick-up days. This type of collection event is especially advantageous for the inclusion of City neighborhoods that because of distance, convenience or other reasons do not regularly participate in e-waste, hazardous waste and unwanted/expired pharmaceutical recycling and disposal.

2022 Update:

“We have worked with community partners to host neighborhood collection events with our e-waste and hazardous waste recycling vendor ECS&R: 3 in 2020, 6 in 2021. We have two events scheduled for 2022 with current e-waste recycling vendor Pennsylvania Resources Council.”

Recommendation No. 22^{^^}: With the volume of complaints made from the Southern Division concerning Resident Code Violations, ES should increase its educational and enforcement efforts in that district.

2022 Update:

Number of Households Collected by Division	2020 - 311 Refuse Violations	2021 – 311 Refuse Violations
Eastern – 25,463	264	224
Central – 20,850	697	547
Southern – 28,175	1308	1250
Northern – 23,175	284	258

“The Southern Division does have the highest number of households of all the divisions that we service. In addition, we have hired a new Foreman in our Southern division and are in the process of hiring 2 new Anti-Litter Inspectors that will focus on residential trash and recycling issues.”

“^^The numbering of recommendations in this document reflects the numbering in the original 2015 audit. No. 21 was missing in the 2015 audit.”

Recommendation No. 23: ES should investigate the large disparity between the Central and Northern Divisions number of citations and the Eastern and Southern Divisions citation numbers. ES should strive to have equal enforcement emphasis from all its divisions.

2022 Update:

Citations Issued by Division	2021
Eastern	0
Central	104
Southern	12
Northern	1

“It should also be noted that the number of citations issued in Oakland alone related to the move in and out of the college students contributes to the large disparity between the divisions. In addition, the citation tracking was restarted in May 2021 so not all citations issued may be represented above.”

Recommendation No. 24: ES management should determine if they want to continue keeping track of the outcomes (fined, dismissed or withdrawn) of each citation. If management decides to keep track of outcome of citations, it should commit to entering every citation result into the database. If the case is dismissed, it should be entered as such in the database. ES should contact the Municipal Courts to establish a timely reporting system for the outcome of each citation in its database.

2022 Update:

“We have been working to streamline our tracking system since 2021. We are in the process of implementing Computronix to track all citations. We have been working to introduce it in Q1 of 2023. Until that occurs, we will continue to track citations manually through an excel spreadsheet.”

Recommendation No. 25: A date as to when the code violation was corrected should be part of the database. Only then can the effectiveness of issuing citations be quantified.

2022 Update:

“This recommendation has yet to be fully implemented.”

Recommendation No. 26: ES should investigate the cause of the increase in injuries and accidents. It may be that employees need a refresher course in safe practices of refuse and recycling collection to reinforce their introductory safety classes.

2022 Update:

“Due to the nature of the job most injuries are soft tissue tears, sprains, and strains. Specifically, shoulders and lower back area. We consistently look for root cause analysis on each incident and recommend further training and if necessary next step disciplinary action. All accidents are evaluated and analyzed to determine root cause.”

Recommendation No. 27: While the five dump trucks fitted with an alternate fuel system is a small sample size, the results suggest that DPW should continue to examine alternate fuel sources/systems and extend the testing to ES vehicles. The department already has converted some of its smaller vehicles to natural gas fuel in an effort to curb fuel consumption.

2022 Update:

“In 2016, 19 ES packers were retrofitted with the split fuel tanks as an extension of the bio-fuel pilot program. Unfortunately, this system did not work well with the existing technologies found on modern packer trucks and all vehicles were eventually switched back to regular fuel. ES currently has 8 CNG vehicles in the fleet and will continue to purchase more while we work to install infrastructure needed to charge electric ES vehicles that we are in the process of purchasing.”

FINDINGS AND RECOMMENDATIONS

Budget and Expenditures

The budget for the Bureau of Environmental Services includes both the Refuse and the Recycling Divisions. In 2020, the total budget for the Bureau was \$18,368,918. In 2021, the total budget for the Bureau was \$17,713,118, a reduction of 3.6%. The budget expenditure categories for 2020 and 2021 are shown in Table 1.

TABLE 1
Bureau of Environmental Services
Operating Budget 2020-2021

Expenditure	2020 Budget	2021 Budget	Change
Salaries and wages	\$8,862,855	\$8,427,911	-4.9%
Employee benefits	\$4,290,702	\$4,004,457	-6.7%
Professional and technical services	\$5,000	\$88,000	1,660.0%
Property services	\$5,016,645	\$5,034,684	0.4%
Other services	\$35,500	\$19,000	-46.5%
Supplies	\$153,216	\$137,066	-10.5%
Miscellaneous	\$5,000	\$2,000	-60.0%
Totals	\$18,368,918.00	\$17,713,118	-3.6%

Source: City of Pittsburgh Operating Budget 2020 and 2021

According to the Environmental Services superintendent, the majority of the Bureau's budget was decreased along with other City departments in 2021 in response to the City's revenue crisis resulting from the COVID-19 pandemic. The only difference was in the professional and technical services budget, which increased by 1,660% in 2021, from \$5,000 in 2020 to \$88,000 including prevention expenditures. A detailed list of the expenditures budgeted, and actual amounts spent for professional and technical services in 2020 and 2021 is shown in Table 2.

TABLE 2
Bureau of Environmental Services
Professional and Technical Services Budget vs. Actual Expenditures 2020-2021

Expenditure	2020 Budget	2020 Actual	2021 Budget	2021 Actual
Workforce Training	\$5,000	\$0	\$3,000	\$10,500
Maintenance-Miscellaneous/Repairs	\$0	\$0	\$15,000	\$460
Prevention	\$0	\$67,519	\$70,000	\$40,836
Administrative Fees	\$0	\$1,008	\$0	\$526
Totals	\$5,000	\$68,527	\$88,000	\$52,322.00

Sources: City of Pittsburgh Operating Budget 2020, 2021, and 2023

City's Controller's Office Fiscal Focus Pittsburgh 2020 and 2021

The prevention expenditure category accounted for \$70,000, or 79.6%, of the professional and technical services budget in 2021. According to the Environmental Services superintendent, the prevention expenditure category refers to costs associated with health screenings for staff during the COVID-19 pandemic.

The Bureau utilized Mobile Health Services, a Trafford, PA-based company, to do daily temperature/wellness checks each morning at a cost of \$67,519 in 2020 and \$38,760 in 2021. As reported in Fiscal Focus (the City Controller's City of Pittsburgh finance tracking website), Mobile Health Services also provided 'medical and dental fees' services at a cost of \$2,076 for a total of \$40,836 in prevention costs (\$38,760 + \$2,076 = \$40,836).

Finding: The total dollar amount spent on prevention for 2020 and 2021 is \$108,355, which is more than the \$70,000 budgeted for both years.

Staffing

The Director of Public Works oversees the Bureau of Environmental Services. The Bureau is managed by the superintendent who heads both the Refuse and Recycling Divisions. In 2021, the superintendent supervised the Bureau's 14 administrative staff, 13 foremen, and 150 truck staff for a total of 178 employees. Truck staff includes drivers, co-drivers, and loaders who go out on collection routes. Truck staff and foremen work both refuse and recycling routes.

Truck staff and the lot coordinator position are members of the Teamsters Union Local 249. Foremen are members of the American Federation of State, County and Municipal Employees Union Local 2037. The environmental enforcement specialist, dispatchers, payroll technicians, and administrative assistant 1 are members of the American Federation of State, County, and Municipal Employees, Local 2719. The superintendent, program supervisor, environmental enforcement coordinator, recycling supervisor, refuse collection supervisor, anti-litter specialist, and administrator 2 are non-union positions.

In 2020, truck staff positions included truck driver A, first year, second year, third year, and fourth year and job title truck driver B, first year, second year, third year, and fourth year. In 2021, these eight positions were converted to three: driver, co-driver, and loader.

According to the Teamsters Union Local 249 contract running January 1, 2021, through December 31, 2025, the job classifications of driver A first year through fourth year were consolidated into one driver position. The job classifications of driver B first year through fourth year were consolidated into one co-driver position. The loader job classification was newly created.

The driver and co-driver positions require a CDL license; the loader position does not require either a CDL or a driver's license. The creation of a truck staff position in environmental services that does not require a license should help to increase recruitment by allowing for a wider pool of potential candidates. Requiring a driver's license can be a barrier to employment for individuals without the means to obtain one. Removing that requirement will make City employment more accessible.

Finding: The Bureau of Environmental Services lowered barriers to employment by eliminating the driver’s license requirement for the new loader position.

In 2020, there were 193 budgeted positions in Environmental Services. In 2021, 15 truck staff positions were eliminated bringing the total to 178. This represents a 7.7% reduction in staff. According to the Bureau superintendent, 15 unfilled truck staff positions were eliminated as part of negotiations with Teamsters Union Local 249. This occurred to allow the City to raise salaries for the employed union members to a more competitive wage.

Finding: In 2021, truck staff positions were reduced by 15 unfilled positions during contract negotiations with Teamsters Union Local 249.

The 2021 City of Pittsburgh Amended Operating Budget shows there were 179 positions, however, this is an error. According to the Bureau superintendent, one position, for which the title is left blank, was intended for the DPW Bureau of Operations but was mistakenly included in Environmental Services.

Figure 2 shows the budgeted positions for 2020 and 2021 including the mistakenly untitled position. It also shows the title changes for truck staff and the loss of 15 truck staff positions.

FIGURE 2
City of Pittsburgh Bureau of Environmental Services
Budgeted Positions 2020 and 2021

Position Summary								
Title	2020 FTE	Rate/ Grade	Hours/ Months	2020 Budget	2021 FTE	Rate/ Grade	Hours/ Months	2021 Budget
Superintendent	1	29E	12	\$ 81,780	1	29E	12	\$ 84,234
Refuse Collection Supervisor	2	25E	12	132,927	2	25E	12	136,915
Foreman, Environmental Services	13	54,000	12	701,999	11	55,620	12	611,820
					1	55,620	4	18,540
Foreman, Second in Command	—	56,080	12	—	2	57,700	12	115,400
Program Supervisor	1	24E	12	63,887	1	24E	12	65,804
Environmental Enforcement Coordinator	1	18G	12	54,053	1	18G	12	55,674
Anti-Litter Specialist	1	10E	12	36,880	1	10E	12	37,987
Lot Coordinator	1	10E	12	36,880	1	10E	12	37,987
Recycling Supervisor	1	18G	12	54,053	1	18G	12	55,674
Specialist, Environmental Enforcement	1	11D	12	37,227	1	U07-A	12	45,877
Administrator 2	1	19G	12	56,363	1	19G	12	58,054
Clerical Specialist 2	1	12D	12	38,330	—	12D	12	—
Dispatcher	2	10D	12	72,480	2	U10-D	12	74,655
Technician, Payroll	1	07D	12	33,638	2	U02-K	12	76,034
Assistant 1, Administrative	1	06D	12	32,916	1	U02-G	12	35,271
Driver	—	—	—	—	50	22.63	104,000	2,353,520
Co-Driver	—	—	—	—	76	20.92	158,080	3,307,034
Loader	—	—	—	—	24	16.00	49,920	798,720
Truck Driver B First Year	13	14.20	27,040	383,968	—	15.00	—	—
Truck Driver B Second Year	12	15.81	24,960	394,618	—	16.28	—	—
Truck Driver B Third Year	11	17.15	22,880	392,392	—	17.66	—	—
Truck Driver B Fourth Year	79	20.31	164,320	3,337,504	—	20.92	—	—
Truck Driver A First Year	—	15.81	—	—	—	16.28	—	—
Truck Driver A Second Year	—	16.61	—	—	—	17.11	—	—
Truck Driver A Third Year	2	18.22	4,160	75,795	—	18.77	—	—
Truck Driver A Fourth Year	48	21.97	99,840	2,193,485	—	22.63	—	—
Total Full-Time Permanent Positions	193			8,211,174	179			7,969,200

Source: 2021 City of Pittsburgh’s Amended Operating Budget

Staff Demographics

The auditors requested staff demographics from the City’s Department of Human Resources and Civil Service. Race and gender demographic data for Environmental Services staff was analyzed for 2020 and 2021. The dataset includes any employee who was employed for any amount of time during the scope years. In 2020, there were 182 employees and in 2021 there were 194 employees.

In 2020, of the 182 employees who worked in Environmental Services that year, 39 (21.4%) were white, 132 (72.5%) were Black, one (0.6%) was Hispanic or Latino, two (1.1%) were American Indian or Alaska Native, four (2.2%) were two or more races, and four (2.2%) declined to answer. A breakdown of employee race by job category—administrative, foremen, or truck staff—is shown in Table 3.

TABLE 3
Environmental Services Staff
Racial Demographics
2020

Race	Administrative	Foremen	Truck Staff
White	8 (66.7%)	8 (38%)	23 (15.4%)
Black	3 (25%)	13 (62%)	116 (77.9%)
Hispanic or Latino	-	-	1 (0.7%)
American Indian or Alaska Native	-	-	2 (1.3%)
Two or More Races	-	-	4 (2.7%)
Declined to Answer	1 (8.3%)	-	3 (2%)
Total	12	21	149

Source: City of Pittsburgh’s Department of Human Resources and Civil Service

In 2021, of the 194 employees who worked in Environmental Services, 40 (20.6%) were white, 141 (72.7%) were Black, one (0.5%) was Hispanic or Latino, two (1%) were American Indian or Alaska Native, five (2.6%) were two or more races, and five (2.6%) declined to answer. A breakdown of employee race by job category is shown in Table 4.

TABLE 4
Environmental Services Staff
Racial Demographics
2021

Race	Administrative	Foremen	Truck Staff
White	8 (66.7%)	7 (35%)	25 (15.4%)
Black	3 (25%)	13 (65%)	125 (77.2%)
Hispanic or Latino	-	-	1 (0.6%)
American Indian or Alaska Native	-	-	2 (1.2%)
Two or More Races	-	-	5 (3.1%)
Declined to Answer	1 (8.3%)	-	4 (2.5%)
Total	12	20	162

Source: City of Pittsburgh’s Department of Human Resources and Civil Service

In both years, administrative staff were majority white (66.7%), truck staff were majority Black (77.9% in 2020 and 77.2% in 2021), and foreman were majority Black (62% in 2020 and 65% in 2021).

In 2020, 168 (92.3%) of the 182 Environmental Services staff members were male and 14 (7.7%) were female. A breakdown of gender by job category is shown in Table 5.

TABLE 5
Environmental Services Staff Gender Demographics 2020

Gender	Administrative	Foremen	Truck Staff
Male	4 (33.3%)	20 (95.2%)	144 (96.6%)
Female	8 (66.7%)	1 (4.8%)	5 (3.4%)
Total	12	21	149

Source: City of Pittsburgh’s Department of Human Resources and Civil Service

In 2021, 174 (89.7%) of the 194 staff members were male and 20 (10.3%) were female. A breakdown of gender by job category is shown in Table 6.

TABLE 6
Environmental Services Staff Gender Demographics 2021

Gender	Administrative	Foremen	Truck Staff
Male	4 (33.3%)	19 (95%)	151 (93.2%)
Female	8 (66.7%)	1 (5%)	11 (6.8%)
Total	12	20	162

Source: City of Pittsburgh’s Department of Human Resources and Civil Service

The ratios of men and women remained largely the same across all three job categories in both years. Administrative staff were 33.3% male and 66.7% female in 2020 and 2021. Foremen were majority male in both 2020 (95.2%) and 2021 (95%). Truck staff were also majority male in both years—96.6% in 2020 and 93.2% in 2021.

Finding: The majority of Environmental Services staff were male in both 2020 (92.3%) and 2021 (89.7%).

Truck Staff Compensation

Employee benefits for truck staff are negotiated with the Teamsters Union Local 249. According to the union contract, drivers, co-drivers, and loaders are eligible for the Teamsters 261 Highmark BCBS health insurance plan, short and long-term disability insurance, life insurance for an amount equal to the employee’s hourly wage times the standard hours in a work year, dental insurance, and vision insurance. These positions have access to paid vacation time, sick leave, personal leave, bereavement time, parental leave, and safe leave (for people affected by domestic violence).

TABLE 7
Pay Rates for Drivers and Co-Drivers 2020-2021

2020 Position	2020 Hourly Pay Rate	2021 Position	2021 Hourly Pay Rate	Percent Change
Truck Driver A First Year	\$15.81	Driver	\$22.63	43.1%
Truck Driver A Second Year	\$16.61	Driver	\$22.63	36.2%
Truck Driver A Third Year	\$18.22	Driver	\$22.63	24.2%
Truck Driver A Fourth Year	\$21.97	Driver	\$22.63	3.0%
Truck Driver B First Year	\$14.20	Co-Driver	\$20.92	47.3%
Truck Driver B Second Year	\$15.81	Co-Driver	\$20.92	32.3%
Truck Driver B Third Year	\$17.15	Co-Driver	\$20.92	22.0%
Truck Driver B Fourth Year	\$20.31	Co-Driver	\$20.92	3.0%

Source: City of Pittsburgh’s Operating Budget 2020; Teamsters Union Local 249 contract January 1, 2021, through December 31, 2025

The average Teamsters Union Local 249-member wage was \$41,077.35 in 2020 and went up to \$43,061.83 in 2021.

Finding: The auditors verified that 15 jobs were eliminated and that truck staff wages were increased. Raises for drivers and co-drivers ranged from 3% to 47.3% in 2021.

In 2020, the wages for some truck staff employees were barely above the federal poverty threshold. The pay rate for the lowest-paid truck staff position in 2020, truck driver B first year, was \$14.20 per hour, or \$29,536 per year (\$14.20 per hour x 40 hours = \$568 per week; \$568 per week x 52 weeks = \$29,536 per year). According to the U.S. Department of Health and Human Services, the federal poverty threshold for a family of four in 2020 was \$26,200.

The truck driver B first year position was converted to the co-driver position in 2021, paying \$20.92 per hour, or \$43,513.60 per year (\$20.92 per hour x 40 hours = \$836.80 per week; \$836.80 per week x 52 weeks = \$43,513.60 per year). This means that wages for the former truck driver B first year position increased by 47.3%, making the physically demanding job more competitive.

Workers' Compensation

According to the U.S. Bureau of Labor Statistics (BLS), refuse and recyclable material collection has always been a dangerous occupation. Refuse and recyclable material collectors are at risk of injury on collection routes by, for example, falling from the refuse/recycling truck, being struck by another vehicle, lifting heavy objects, slipping and falling on ice, or encountering dangerous materials such as chemicals or broken glass in trash.

In 2020, according to the BLS, refuse and recyclable material collection workers had the sixth-highest rate of workplace fatalities, behind fishing/hunting workers, loggers, roofers, construction trade helpers, and aircraft pilots/flight engineers. The 2021 data shows that waste and recycling collection fell to the seventh most dangerous occupation in terms of fatal workplace accidents.

Finding: The BLS data shows that refuse and recyclable material collection workers remain at high risk for work related fatalities and injuries.

Workers' compensation expenses are included in the employee benefits expenditure category of the budget. Workers' compensation expenditures are medical expenses, indemnity pay that covers loss of income while the employee is unable to work, and administrative management fees (the City uses UPMC WorkPartners as of this audit). The Bureau budgeted \$4,290,702 in 2020 and \$4,004,456 in 2021 for employee benefits. Employee benefits are the third-highest expenditure for the Bureau, representing 23.4% of the total budget in 2020 and 22.6% of the total budget in 2021. An itemization of the employee benefits expenditures budgeted and actual, for 2020 and 2021 is shown in Table 8.

TABLE 8
Bureau of Environmental Services
Employee Benefits Budgeted and Actual Expenditures
2020-2021

Expenditure	2020 Budgeted	2020 Actual	2021 Budgeted	2021 Actual
Health Insurance	\$1,738,591	\$1,731,091	\$1,584,185	\$1,247,540
Other Insurance/Benefits	\$200,739	\$200,949	\$195,154	\$147,288
Social Security	\$697,110	\$633,633	\$650,855	\$663,065
Workers' Compensation - Medical	\$410,650	\$410,640	\$410,650	\$410,650
Workers' Compensation - Indemnity	\$1,048,858	\$961,444	\$1,048,858	\$1,048,858
Workers' Compensation - Fees	\$34,754	\$34,752	\$34,754	\$34,754
Personal Leave Buyback	\$160,000	\$117,247	\$80,000	\$96,575
Retirement Severance	\$0	\$3,691	\$0	\$0
Retiree Health Insurance	\$0	\$87,404	\$0	\$0
Totals	\$4,290,702	\$4,180,850	\$4,004,456	\$3,648,730

Sources: City of Pittsburgh Operating Budgets, 2020 and 2021
City's Controller's Office Fiscal Focus Pittsburgh

In both 2020 and 2021, the Bureau budgeted a total of \$1,494,262 for workers' compensation expenditures, including medical expenses (\$410,650), indemnity pay (\$1,048,858), and fees (\$34,754), which was 34.8% of the employee benefits budget in 2020 and 37.3% in 2021. Workers' compensation expenditures represent 8.1% of the Bureau's total budget for 2020 and 8.4% of the total budget for 2021.

Finding: Workers' compensation expenses accounted for 8.1% of the total Bureau of Environmental Services budget in 2020 and 8.4% of the total budget in 2021.

The Bureau's Workers' Compensation Expenditures Compared to Other Departments

The auditors used the City 2021 operating budget to compare the Bureau of Environmental Services total budgeted workers' compensation expense of 8.4% to the total budgeted workers' compensation expense of five large City departments perceived to be the most dangerous. The five chosen were Public Safety's Bureau of Fire, Police, and EMS along with the Public Works Bureaus of Operations and Facilities.

The 2021 Bureau of Environmental Services total budgeted workers' compensation expense of 8.4% was larger than all five departments analyzed. The total 2021 budgeted workers' compensation expense for the five department were the following from highest to lowest:

- Department of Public Safety's Bureau of Fire (7.4%)
- DPW Bureau of Operations (4.7%)
- Department of Public Safety's Bureau of Police (3.7%)
- Department of Public Safety's Bureau of Emergency Medical Services (EMS) (1.8%)
- DPW Bureau of Facilities (0.6%).

Finding: Environmental Services workers' compensation expense is the highest among the perceived most dangerous City jobs.

Truck Staff Safety

Drivers, co-drivers, and loaders are provided personal safety equipment by the City, including gloves, boots, eyewear, and uniforms. The Bureau also requires safety training for all truck staff members (driver, co-driver, and loader positions) and has developed four safety training classes, Trash 101, Trash 201, Trash 301, and Trash 401. Table 9 shows a breakdown of each course, which is explained in more detail below.

TABLE 9
Bureau of Environmental Services Truck Staff Trainings

Training	Purpose	Training Time	When required
Trash 101 part 1	New hire/onboarding	42 hours	Upon hire
Trash 101 part 2	Required to operate front load packer truck	19.5 hours	Upon hire and/or before operating front load packer truck
Trash 201	Refresher course	One lesson	When employees return from an extended leave
Trash 301	Air brake training	One lesson	Quarterly
Trash 301	Vehicle safety operations	One lesson	Weekly
Trash 301	On-route safety	One lesson	Biweekly
Trash 401	Corrective training	Two lessons	After accidents, injuries, or poor performance

Source: Bureau of Environmental Services

The Trash 101 class consists of 10 lessons totaling approximately 42 hours of mandatory classroom and on-the-job training and 19.5 hours of optional training. The first lesson (two hours) pertains to safe lifting and back safety and is part of the orientation for all new truck staff employees. The next five lessons (40 hours) are training and evaluation sessions for new staff members to learn to safely load, unload, and operate the packer vehicles on routes. Each driver employee must attend all five of the training and evaluation sessions over a period of at least three to four months before they are eligible to drive the packer vehicles. The final four lessons

(19.5 hours) are an optional course for drivers who have elected to learn to operate the Bureau's front load packer truck.

The Trash 201 class is a one-lesson refresher course for employees returning from extended leave (longer than 10 months).

The Trash 301 curriculum includes all ongoing safety trainings for current employees, including quarterly specialized trainings such as air brake training, weekly one-on-one trainings on vehicle safety operations, and at least biweekly small group trainings by foremen. The foremen conduct daily checks on truck staff crews and administer training during weekly truck checks. This type of instruction provides more individualized training. The Bureau superintendent stated that the Bureau does not hold all-hands training sessions because the Bureau lacks the building capacity to hold all truck staff members at once.

Finding: The Bureau of Environmental Services conducts small group training sessions in lieu of all-hands training sessions due to a lack of building capacity.

When accidents and injuries occur, they are analyzed to determine root cause. If necessary, further training and/or disciplinary action is recommended. Trash 401 is the two-lesson disciplinary and corrective training course to address issues that arise after accidents or poor performance of route duties.

Finding: All accidents are reviewed to determine cause; depending on the cause, an appropriate action is taken, which may include additional training.

Safety training is also required when a staff member takes on new responsibilities or when the Bureau purchases new equipment or technology.

Staffing All Routes

In the 2020 budget, there were 165 truck staff positions (Truck Driver A and B, First-Fourth Year); in the 2021 budget the number of positions was reduced by 15 to 150 truck staff positions, which were renamed driver, co-driver, and loader. The Bureau superintendent reported that the reduction in the number of truck staff positions between 2020 and 2021 affected the Division's ability to fully staff all routes. According to the Bureau superintendent, 150 truck staff positions is insufficient for waste collection operations because employee illnesses, vacations etc. happen every day, making the chance to be shorthanded greater.

Truck staff work both refuse and recycling routes, with three staff members per refuse truck and two truck staff employees per recycling truck. Three truck staff members are assigned to refuse trucks so that routes can be completed more efficiently. Staff assigned to refuse trucks are responsible for picking up heavy bulk items set out on the curb (residents are allowed to dispose of two bulk items per week) and may require more than one person to lift the item so no one gets injured. Without three people working the refuse truck, the driver is required to get out of the truck to load bulk items as necessary. This makes the trip longer, but the two refuse

workers earn an additional four hours of regular pay each, per the Teamsters Local 249 union contract.

According to the superintendent, with the number of routes and the number of people needed on the collection trucks, the Bureau needs 135 truck staff members available to fully staff the 37 refuse and 13 recycling routes per day. As mentioned before, three staff members are assigned to refuse routes and two are assigned to recycling routes. However, one refuse route uses a front loader packer which needs only one person to operate. The front loader packer has a forklift that picks up large dumpsters and doesn't require additional manpower. A breakdown of the 135 truck staff members needed to fully staff each daily route is the following:

- 34 City refuse routes x 3 people = 102 truck staff for refuse routes
- 2 Wilkinsburg refuse routes x 3 people = 6 truck staff for Wilkinsburg routes
- 1 front loader route x 1 person = 1 truck staff for the front loader
- 13 recycling routes x 2 people = 26 truck staff for recycling routes
- 102 refuse route staff + 6 Wilkinsburg route staff + 1 front loader staff + 26 recycling route staff = 135 truck staff members needed to fully staff all daily routes.

If there are not enough truck staff members at work to fully staff all daily routes, some refuse trucks will go out with two staff members instead of three, which poses a safety risk. **When there are fewer than 98 truck staff employees available to work, the Division begins to postpone recycling routes prior to postponing refuse routes.** When recycling routes are postponed, the Division must rely on staff members electing to work overtime to make up the route. If only one or two routes are postponed over a week-long period, the Division can make them up the same week; sometimes this can be accomplished the same day or the next day. This practice is not commonly known to the public.

Recycling Collection Day Notifications

It is not advertised to residents on the City website or on the Environmental Services yearly *Curbside Recycling/Refuse Newsletter and Calendar* that recycling will be picked up the same week if pickup is postponed. The yearly *Curbside Recycling/Refuse Newsletter and Calendar* directs residents to the website PGH.st to look up their collection day. But there is no mention of the other services available on PGH.st, such as text and email reminders for regular collection, holidays, and last-minute cancellations and alternate pickup days.

Finding: Residents may not be aware that they should leave their recycling on the curb if it is not picked up on their scheduled day because the Division will attempt to come back to collect it the next day if staffing allows.

City residents often call the City's 311 Response Center and file a complaint when the Bureau does not pick up trash and or recycling on their collection day. In 2020 and 2021, the 311 Response Center received 1,474 and 2,678 complaints (respectively), for missed recycling pick-ups. (See Chart 3 on page 83 of audit). Bureau missed refuse or recycling pick-ups are caused by human error or route postponements. The 311 response line manager reported to the auditors that

Bureau administration always contacts the 311 staff by email the same morning when a route is postponed and the reason why it was postponed.

RECOMMENDATION 1:

The Bureau of Environmental Services Recycling Division administration should communicate to residents that, in the event their recycling is not picked up, they should leave the can on the curb for up to 24/48 hours so that it is still there when the route is made up. For example, the yearly Curbside Recycling/Refuse Newsletter and Calendar, which is mailed to every household yearly, should include this information and all services that are available on PGH.st (including text messaging reminders). The Bureau administration should continue to inform the City's 311 operators who take refuse/recycling complaints to tell residents this same information.

Staffing Analysis

The Division superintendent reported that during the audit scope period, which coincided with the COVID-19 pandemic, large numbers of staff were out due to sickness and injury. There was a shortage of staff members willing to volunteer for overtime and often routes could not be made up the same week. As a result, the Division was behind on recycling routes.

The auditors wanted to test for how often the Recycling Division was short staffed. As stated previously, refuse routes are staffed with three employees per truck and recycling routes are staffed with two employees per truck.

The Bureau provided scanned copies of handwritten attendance records that tracked a variety of information, including whether an employee was absent, the type of leave taken, whether an employee was performing certain functions outside their regular duties (such as a driver working as a loader), and overtime. These records are made daily by the foremen as route assignments are made each morning. Some overtime is tracked separately on handwritten sheets that are kept in each truck. Overtime is recorded at the end of employees' shifts. The overtime sheets from the trucks are given to the foremen or the superintendent for approval at the end of each day. The handwritten attendance records and the truck overtime sheets are given to the Bureau's two payroll clerks who are responsible for entering the information into Dayforce, the Bureau's electronic timekeeping system, and ensuring that the information has been entered correctly. Ceridian, the City's electronic payroll system calculates employee pay based on the information entered into Dayforce.

For the staffing analysis, the auditors limited the sample size to one winter month, January, and one summer month, July, in each scope year for a total of four months. Handwritten time sheets for all four Public Works divisions were reviewed. This represents a 16.7% sample size.

Daily attendance and staffing levels for regular Monday-Friday collection were analyzed, excluding weekends and holidays. There were 21 weekdays in January 2020, 19 weekdays in January 2021, 23 weekdays in July 2020, and 21 weekdays in July 2021.

Records for the central and northern divisions for the last two weeks of July 2020 were missing from the information provided by the Recycling Division but were obtained from the Department of Human Resources and Civil Service payroll division.

Finding: The Recycling Division was unable to produce attendance records for two weeks in July 2020 for two divisions, a total of four weeks missing. This represents 6.25% of the 16-week sample for the four Public Works divisions.

The number of truck staff members employed each day was tallied to calculate a monthly average number of truck staff members. Employed individuals include available staff to work each day, along with employees who are not available to work due to being out on workers' compensation, long-term and short-term disability, vacation and personal time, sick days, bereavement, suspensions, and birthdays.

Table 10 shows the total number of truck staff positions budgeted, the average number of truck staff positions filled/employed, and the average percent of positions that were filled/employed for each sample month.

TABLE 10
Truck Staff Positions Employed
as Compared to the Budget
January and July 2020 and 2021

Month	Total Number of Budgeted Positions	Average Number of Positions Filled/Employed	Average Percent of Positions Filled/Employed
January 2020	165	142.2	86.2%
July 2020	165	140.3	85.0%
January 2021	150	134.7	89.8%
July 2021	150	142.4	94.9%

Source: Bureau of Environmental Services

On average, in January 2020, 86.2% of positions were filled; in July 2020, 85% of positions were filled; in January 2021, 89.8% of positions were filled; and in July 2021, 94.9% of positions were filled.

There were 19 days in January 2021, of these, there were five days with truck staff of 133, nine days with a staff of 135, and five days with a staff of 136. In January 2021, an average of 134.7 truck staff members were employed. This means that staffing levels were less than the minimum of 135 employees needed to operate all recycling and refuse routes.

Finding: In January 2021, there was an average of 134.7 total staff members, which is less than the 135 minimum staff members required to fully staff all refuse and recycling routes.

Finding: Table 10 shows that the Bureau has the budgeted capacity to meet the 135-employee minimum to operate effectively. The Bureau has not hired to full capacity.

The number of truck staff at work and the number of truck staff absent per day were tallied to determine a monthly average. Table 11 shows the average total number of staff members (actual staff employed), the average number of staff at work per day, the average percent of staff of staff at work per day, the average number of staff absent per day, and the average percentage of staff absent per day for each of the four months.

TABLE 11
Average Truck Staff Attendance
January and July 2020 and 2021

Month	Average Number of Employed Staff Members	Average Daily Staff at Work	Percent Average Daily Staff at Work	Average Daily Staff Absences	Percent Average Daily Staff Absent
January 2020	142.2	118.5	83.4%	23.7	16.6%
July 2020	140.3	98.5	70.2%	41.8	29.8%
January 2021	134.7	110.6	82.1%	24.1	17.9%
July 2021	142.4	107.6	75.6%	34.8	24.4%

Source: Bureau of Environmental Services

Table 11 shows that in January 2020, there were, on average, 118.5 truck staff members at work each day; in July 2020, there were an average of 98.5 truck staff members at work each day. In January 2021 there were an average of 110.6 truck staff members at work each day; in July 2021, there were an average of 107.6 truck staff members at work each day. This means that, on average, the Recycling Division did not have enough truck staff members to fully staff all routes for all four months of the sample.

Finding: The Bureau’s average daily truck staffing levels were less than the minimum of 135 employees needed to operate all routes for the four months in the sample the auditors analyzed.

Table 12 shows the number of days of each month, in the sample, where attendance fell below the minimum required levels for normal operations.

TABLE 12
Truck Staff Daily Attendance Levels
Under the 135 and 98 Minimums
January and July 2020 and 2021

Month	Total Collection Days	Number of Days ES was Under 135 Truck Staff	Number of Days ES was Under 98 Truck Staff
January 2020	21	All	0
July 2020	23	All	10 (43.5%)
January 2021	19	All	0
July 2021	21	All	0

Source: Bureau of Environmental Services

Finding: For the sample months, there was not one day where the Bureau was fully staffed with 135 truck staff employees needed to operate all routes. In other words, **there were fewer than 135 truck staff members working on each day** of all four months of the analysis.

In January 2020, January 2021, and July 2021, attendance levels did not fall below the 98-person threshold; however, in July 2020, there were fewer than 98 truck staff at work on 10 of the 23 weekdays, or 43.5% of the month. This was at the height of the pandemic.

Finding: In July 2020, **at least one recycling route was postponed on 43.5%** of collection days.

The City instituted a hiring freeze on May 4, 2020, due to the Covid-19 pandemic; however, the Bureau reported they were so short-staffed at the time that they were permitted to continue hiring throughout this period.

The Bureau superintendent noted that staffing has always been in a state of flux during his time as the manager. This is due to several different issues such as employees on workers' compensation from the dangers of the job and high turnover rates. Hiring new employees for driver, co-driver, and loader positions has always been difficult because it is a rigorous job with a relatively low pay rate.

The lack of adequate staffing for the removal of rubbish and recycling is of great concern for Environmental Service administration for City residents. This impacts the safety, health and welfare of the public.

RECOMMENDATION 2:

The Bureau of Environmental Services administration should ensure that pay rates remain competitive and work to explore ways of retaining qualified personnel and filling all budgeted positions. Waste removal is one of the most important concerns of public health and adequate staffing should be a top priority to ensure quick removal of garbage and recyclables.

As Tables 11 and 12 show, in the four months of the sample, the Bureau was shorthanded. According to Fiscal Focus Pittsburgh, the **actual** premium pay, or overtime pay, for 2021 was \$795,704. An in-depth analysis of overtime pay was outside the scope of this audit.

RECOMMENDATION 3:

Once all budgeted positions are filled, the Recycling Division administration should collaborate with the Office of Management and Budget to conduct a staffing analysis of the Bureau. The analysis should determine if the budgeted number of 150 truck staff positions provides enough staff to eliminate shortages and service disruptions caused by routine employee absences, such as paid time off and short-term or long-term leave. If the analysis finds that 150 staff members is not sufficient, the number of budgeted truck staff positions should be increased in the City's next operating budget.

Recycling Fleet

The City's entire fleet is purchased, owned, and sold by the Equipment Leasing Authority. The authority is comprised of five City employees from City Council and/or the Office of Management and Budget. Three employees are appointed by the Mayor of Pittsburgh and two are appointed by the City Council president. All City fleet updates (decaling etc.), maintenance (including inspections), and repairs are contracted to First Vehicle Services, located in the Strip District.

As reported in the 2015 City Controller's Office performance audit titled *Department of Public Works, Bureau of Environmental Services, Refuse and Recycling Divisions*, in 2014 the total Bureau fleet comprised of 101 vehicles. In 2021, the Bureau's fleet consisted of 94 vehicles, a reduction of 6.9%. In 2021, the Bureau fleet included 62 large (25 cubic yard capacity) packer trucks, three small (six cubic yard capacity) packer trucks, 18 pickup trucks, two roll-off trucks, two stake body trucks (trucks with removable sides), two front-load trucks (trucks with a front forklift for lifting dumpsters), two trailers, one van, one SUV, and one sedan. Of the 94 total vehicles, 43 (45.7%) were used by the Recycling Division: two trailers, three small packers, 18 pickup trucks, two roll-off trucks, two front-load trucks, two stake body trucks, and 14 (22.6%) of the large packers.

The large packers, small packers, roll-off trucks, front-load trucks, and trailers are used for recycling collection. Pickup trucks and stake body trucks are multi-use vehicles for both the Refuse and Recycling Divisions. Foremen use the pickup trucks to drive completed recycling routes to ensure no bins were missed. The stake body trucks are used for refuse and recycling-related deliveries. A detailed inventory of recycling vehicles is provided in the Appendix under Exhibit C.

As shown in Table 13, of the total recycling fleet, 15 vehicles, or 34.9%, are 5 years old or less; 12 vehicles, or 27.9%, are six to 10 years old; 12 vehicles, or 27.9%, are between 11 to

15 years old; and four vehicles, or 9.3%, are 16 to 22 years old. The four vehicles that are between 16 and 22 years old are two trailers, one stake body truck, and one pickup truck.

TABLE 13
2021 Recycling Fleet Age

Age of Vehicles	Number of Vehicles	Percentage of Total
0-5 years	15	34.9%
6-10 years	12	27.9%
11-15 years	12	27.9%
16-22 years	4	9.3%
Totals	43	100%

Source: Bureau of Environmental Services

Finding: Of the 43 vehicles used by the Recycling Division, 37.2% (16 vehicles) are more than 10 years old.

Recycling Packers and Pickups

The Recycling Division has 14 packers that account for 32.6% of the recycling fleet and 18 pickup trucks that account for 41.9% of the recycling fleet. According to the Bureau's superintendent, large recycling packers last approximately 10-15 years with proper maintenance. As shown in Table 14, the Recycling Division's large packers' range in age from five to 15 years old.

TABLE 14
2021 Large Recycling
Packer Truck Fleet Age

Age of Vehicle	Number of Vehicles	Percentage of Total
0-5 years	1	7.1%
6-10 years	6	42.9%
11-15 years	7	50%
Totals	14	100%

Source: Bureau of Environmental Services

Finding: Of the 14 large packers, seven (50%) are between 11 and 15 years old, six (42.9%) are between 6 and 10 years old, and one (7.1%) is zero to five years old.

The age range of the Bureau’s pickup trucks, as of 2021, is shown in Table 15.

TABLE 15
The Bureau of Environmental Services
2021 Pickup Truck Fleet Age

Age of Vehicle	Number of Vehicles	Percentage of Total
0-5 years	9	50%
6-10 years	4	22.2%
11-15 years	4	22.2%
16+ years	1	5.6%
Totals	18	100%

Source: Bureau of Environmental Services

Finding: Of the 18 pickup trucks, nine (50%) are five years old or newer, four (22.2%) are between 6 and 10 years old, and five (27.8%) are more than 10 years old.

RECOMMENDATION 4:

The Bureau of Environmental Services administration should work with the Equipment and Leasing Authority to plan a fleet replacement schedule so that older vehicles can be replaced in a timely manner.

Route Software

The Bureau of Environmental Services uses RouteSmart software developed by RouteSmart Technologies Inc for trash and recycling route optimization. The agreement between the City and RouteSmart Technologies Inc says that the Bureau of Environmental Services has **been using this software for over 20 years.**

RouteSmart is a desktop software that can determine the most efficient route by entering different variables into the program. Some variable examples include the terrain of the area, vehicle mileage, how many homes on each route, and the average weight of trash and recycling collected from each route. RouteSmart creates paper maps with turn-by-turn directions.

The Recycling Division last updated their routes in 2007 and 2008. The Bureau’s superintendent reported that routes are currently being updated using RouteSmart and will be available to use in 2023. All maps and directions are stored in paper binders that are given to the drivers at the start of their collection route.

The City pays RouteSmart an annual software update subscription including a maintenance fee covering troubleshooting and technical assistance. The City’s Controller’s Office OnBase database system shows that the City paid RouteSmart an annual software subscription maintenance fee of \$6,301 for 2020, \$6,490 for 2021, and \$6,685 for 2022.

In August 2021, the City extended their software agreement with RouteSmart Technologies for one year with three renewal option years. The agreement also stated that RouteSmart is to provide end user online training to the Bureau of Environmental Services staff at a cost of \$10,500. In September 2021, the Bureau of Environmental Services employees attended the seven-day RouteSmart software end user training remotely.

There is no Global Positioning System (GPS) installed in any of the refuse or recycling vehicles. The Bureau's superintendent noted that in 2023, they will be moving away from the paper routes and installing RouteSmart Navigator on tablets in the trucks. This will supply electronic assistance in the cab as opposed to paper.

RouteSmart Navigator will provide GPS directions according to the routes the Bureau creates in RouteSmart. The system will display all home locations on the route and report medical exemption information for residents who need extra assistance in taking out their trash and recyclables.

RouteSmart Navigator is a different GPS route optimization system than was installed in all DPW snow and ice removal vehicles. Quetica developed the route optimization in the snow removal GPS system while the Environment Service Bureau will be creating their own routes in RouteSmart Navigator. Creating routes in-house will provide efficient trash collection due to the Bureau staff's familiarity with the City's terrain. This was not the case with development of the snow removal GPS system.

According to the 2020 City Controller's Office performance audit titled *Department of Public Works, Snow and Ice Control and Street Pothole Maintenance Programs*, the City had numerous issues with the route optimization system that was developed for the snow removal vehicles. DPW truck drivers interviewed by auditors stated that the new system created longer routes, unsafe travel, and lacked flexibility. Issues were not corrected until test runs were performed, and feedback forms were completed by drivers that identified the issue. Some issues were not resolved in a timely fashion and delayed the project's completion date.

Residential Recycling

Pennsylvania Act 101

Statewide municipal recycling has been required by the State of Pennsylvania since 1988 with the passage of the **Municipal Waste Planning Recycling and Waste Reduction Act 101 (Act 101)**. Act 101 sets criteria for communities where recycling is mandatory, sets the standards by which local recycling programs must operate, lays out requirements for county-level planning of recycling programs, and establishes a funding stream to support compliance. The Pennsylvania Department of Environmental Protection is responsible for overseeing the implementation of Act 101.

Municipalities of more than 10,000 people are mandated by Act 101 to maintain curbside recycling programs. Municipalities meeting this standard, including the City of Pittsburgh, must adopt ordinances to require the following:

- At least three types of recyclable material must be separated from landfill waste for curbside recycling by residents,
- Leaf waste must be separated from other waste for collection, and
- Recyclable materials from commercial, municipal, or institutional establishments must be separated for collection, including those generated from community activities. These organizations can make alternative recycling arrangements if they provide written documentation of the total number of tons recycled to the municipality annually.

Act 101 requires that recyclable materials be collected curbside at least once per month. Yard waste must either be collected curbside at least once per month or curbside twice per year provided that the municipality has facilitated a drop-off location for yard waste available at least once per month. Municipalities must also create sufficient incentives and penalties to ensure recycling compliance.

Curbside Co-Mingled Recyclables Accepted and Not Accepted

According to the Bureau of Environmental Services webpage, the City accepts the following five different curbside recyclable materials:

- **Mixed Paper:** White office paper, newspaper, magazines, hardcover/softcover books, catalogs, junk mail, phone books, paperboard (six-pack holders, frozen food boxes), paper egg cartons.
 - **Not Accepted:** Shredded paper, greasy pizza boxes, coffee cups, paper plates.
- **Cardboard:** Must be flattened, bundled and placed into a separate box or bin for collection. (3-ply old-corrugated cardboard, shipping boxes).
- **Metal Containers:** Empty aluminum, aerosol, and steel cans. Leave labels on, discard lids or leave attached to can.
 - **Not Accepted:** Loose metal lids and bottle caps, metal cookware, aluminum pans and foil.
- **Plastic Containers:** Bottles, jugs and jars (3 gallons or less). Items with a neck.
 - **Not Accepted:** Buckets, tubs, tubes, clamshell containers, swimming pools, toys, garden hoses, and Keurig cups.
- **Glass:** Amber, blue, red, green, and clear bottles and jugs (3 gallons or less).
 - **Not Accepted:** Windows, Pyrex, glass plates, drinking glasses or dinnerware and mirrors.

Mixed paper, metal, plastic, and glass can be co-mingled into a single bin or blue bag for curbside collection. All cardboard must be flattened, bundled, and placed into a separate box or bin for collection. As of this audit, cardboard is a highly valuable commodity on the current market and should always be recycled whenever possible.

As of January 2020, the City's residential recycling program only accepts plastic jars, jugs, and bottles larger than two inches and smaller than three gallons. The easiest way to determine what plastics are recycled is to look for a neck. These are usually bottles, jugs, and jars that are made from heavier and rigid plastic #1 polyethylene terephthalate (PET) and plastic #2 high-density polyethylene (HDPE) material which are highly valuable and re-sellable in today's recycling market. Plastics labeled 3-7 are not accepted for curbside collection or at the City's drop-off centers because they are less valuable and difficult to recycle.

Residents should take note that some plastics with no neck are labeled PET #1 and HDPE #2 material on the bottom of the container but are not recyclable. A perfect example are clamshells. They are made of plastic #1 but are thin and flimsy material, which is not valuable and can damage the recycling machinery. The City requests clamshells be thrown away with regular garbage.

All plastic or glass bottles, jugs or jars, and metal containers should be rinsed and cleaned before being added to a recycle bin or blue bag to prevent the contamination of other co-mingled materials. Caps and lids also need to be removed from all plastic and glass bottles, jugs, and jars because they can damage the recycling processor.

Recycling Data

The Roadmap to Zero Waste recommends that recycling data be made available to the public to encourage participation in recycling goals by all citizens. **According to the report, studies show that actively measuring, tracking, and publicly releasing recycling information increases participation rates.**

A recycling contamination rate is the amount of non-recyclable materials, or residue, picked up with curbside recycling and delivered to the materials recovery facility. This figure is reported to the Recycling Division by Recycle Source, the City's materials recovery facility. This includes materials collected but not processable or materials that become contaminated through the act of collection, sorting, or processing. The City's contamination rate in both 2020 and 2021 was 15%.

Finding: In 2020 and 2021, of all single-stream curbside recyclable materials collected, 85% of the material is processed.

A landfill diversion rate is a common benchmark metric of success for recycling programs. The diversion rate compares the amount of waste diverted from the landfill to be recycled with the total amount of waste collected (recycling and refuse tonnage). The more waste is recycled, the higher the landfill diversion rate will be. The landfill diversion rate can be calculated with the following formula:

$$\text{Weight of Recycling} / (\text{Weight of Recycling} + \text{Weight of Refuse}) \times 100$$

In 2020, the Bureau of Environmental Services collected a total of 115,361.5 tons of waste, of which 18,721.5 tons was recycled. The landfill diversion rate in 2020 was 16.23%.

In 2021, 114,069.6 tons of waste was collected, of which 19,747.6 was recycled. The landfill diversion rate was 17.31%.

Finding: The landfill diversion rate increased from 16.23% in 2020 to 17.31% in 2021.

The Division currently tracks landfill tonnage, tonnage taken to the materials recovery facility, and tonnage of materials such as yard waste and tires processed by the City's various recycling vendors. This data is currently not posted on the division's website and is only available upon request.

RECOMMENDATION 5:

The Recycling Division administration should work with the Department of Innovation and Performance to include recycling data on its website. Tonnage recycled by material, the landfill diversion rate, residential recycling participation rate, contamination rate, and a recycling per capita rate should be added to the website and updated quarterly. Reports from private haulers can also be incorporated. Where possible, data should be broken down by public works divisions. Currently, the results of recycling are not reported to the public. Public awareness of the successes may increase program participation.

Public Education

Act 101 outlines the public education requirements for Pennsylvania municipalities, namely, that all residents must be notified of recycling requirements at least once every six months. The Pennsylvania Department of Environmental Protection told the auditors that the notification requirements outlined in Act 101 are met if there is one annual mailed notification along with a public website. This information is available on the Department of Environmental Protection's [website](#).

The Recycling Division mails a *Curbside Recycling/Refuse Newsletter and Calendar* to all residents on a yearly basis and maintains a robust website. The website contains a large amount of information for residents on how to recycle various types of material. Some information is available in video form, increasing accessibility. Residents can visit the website to learn about what types of recyclable materials are accepted curbside, at drop-off sites, and at various local businesses. An [interactive materials recovery map](#) of locations where various materials can be taken for recycling is provided. The Division has also produced educational videos with City Channel Pittsburgh.

Finding: The Recycling Division is compliant with the public education requirement of Act 101 with their yearly mailing, *Curbside Recycling/Refuse Newsletter and Calendar*, and webpage information.

RECOMMENDATION 6:

Recycling Division administration should be commended for their well-designed, easy to navigate webpage, and informational newsletter; both should be continued.

Cost of Curbside Recycling/Refuse Newsletter and Calendar

In 2022, the City's contract for the 2023 *Curbside Recycling/Refuse Newsletter and Calendar* printing was awarded to the lowest bidder, DD&G Marketing Communications and Advertising, for a one-year period ending in December 2023. Contract services include the design and printing of the newsletter for a total of \$13,809.73. The printing contract does not include mailing costs. C&C Mailing Service is responsible for address verification, sorting, folding (tabbing), and delivering 97,988 newsletters to the post office for which the City paid \$3,284.93. The City paid the United States Postal Service \$26,168.77 for mailing postage.

Finding: The total cost to design, print, and mail the 2023 *Curbside Recycling/Refuse Newsletter and Calendar* to City residents, as required by Act 101, was \$43,263.43.

Educational Outreach

Given the importance of increased participation rates to the efficacy of the recycling program, continued educational messaging to the public is essential.

RECOMMENDATION 7:

The Recycling Division administration should explore options for increasing additional educational messaging in a variety of mediums and on a variety of platforms to reach the greatest number and diversity of residents. Grant funding may be available for this purpose. The investment to educate the public about proper recycling practices will pay for itself by reducing the costs associated with disposing of non-recyclable materials. Additionally, increasing participation rates through public education will increase the tonnage of recyclable materials collected, which will increase the amount of grant money for which the Division is eligible. See Recommendation 8.

Examples of additional messaging are developing commercials for PCTV and public radio, running ads on City Channel Pittsburgh, purchasing ad time on local cable stations, running a social media ad campaign, creating new recycling-specific social media accounts, and/or issuing public service announcements. Posters could be printed and posted near recycling cans in municipal buildings, public schools and college campuses.

Financial Assistance Recycling Grants

The PA Department of Environmental Protection (DEP) offers financial assistance grants to support local recycling and environmental protection programs. Grants are funded through a \$2 per ton fee on all waste disposed at landfills and waste-to-energy facilities.

The City of Pittsburgh is eligible for three of the five grants offered by the DEP: the Recycling Program Development and Implementation Grant, the Household Hazardous Waste Collection Grant, and the Recycling Performance Grant. In 2020-2021, the City received financial assistance from the Recycling Program Development and Implementation Grant and the Recycling Performance Grant, as explained below.

Recycling Program Development and Implementation Grant

The Recycling Program Development and Implementation Grant (Act 101, Section 902) is available to counties and municipalities for reimbursement of 90% of eligible recycling program development and implementation expenses. This grant is awarded on a biennial basis and municipalities may apply every other year.

Any project that diverts recyclable materials from landfill tonnage is eligible to be funded under this grant, including educational programs, equipment, building or land improvements, and costs associated with further developing the municipal recycling program. Examples of eligible activities could be developing and publishing educational videos, the planting of trees in a park, or construction of a recycling drop off boxes.

In 2021, Environmental Services applied for a Section 902 grant for reimbursement of the purchase of a packer truck and dumpsters. The purchases and a reimbursement in the amount of approximately \$350,000 have been approved by the DEP.

One of the advantages of these types of grants are that the grantee has the flexibility to use this grant in a variety of ways. One suggested use would be to collect more yard debris. See the Yard Debris Collection section on page 60.

Household Hazardous Waste Collection Grant

The Household Hazardous Waste Collection Grant (Act 190, Chapter 2) provides 50% reimbursement of costs of collection programs for household hazardous wastes. Household hazardous wastes are those wastes produced in households that are hazardous in nature but are not regulated as hazardous waste under federal and state laws, such as pesticides, old paint, drain cleaners, and pool chemicals. Environmental Services did not receive this grant in 2020 or 2021.

According to the Bureau superintendent, although the Bureau is eligible for this grant, it had not applied for it in the past so as not to reduce the amount of money awarded to Allegheny County for similar programming available to City residents. The superintendent reported that the Recycling Division is now engaging with the Grants Office to apply for this grant going forward due to the City now providing collection services for its residents.

Recycling Performance Grant

The Recycling Performance Grant (Act 101, Section 904) is available to all Pennsylvania local governments with recycling programs and provides an incentive to increase the collection of recyclables. The amount of grant money awarded is based on the tonnage of recyclable materials collected: the more recyclables collected the more grant money is awarded. Contaminated materials are excluded from recycled tonnage for the purposes of calculating the grant amount. This includes materials collected but not processable, or materials that become contaminated through the act of collection, sorting, or processing.

The DEP uses a contamination rate of 20% unless the municipality provides documentation that their contamination rate is less than 20%. Recycle Source's material tonnage spreadsheet, provided to the auditors, shows that the City's contamination rate (reported as residue) is 15%. This means that 85% of the material collected by the Recycling Division and transported to Recycle Source is processed. Non-recyclable materials are explained in further detail in the Recycle Source section of this audit.

In 2020, Environmental Services did not receive a Recycling Performance Grant. In 2021, Environmental Services received a \$442,008 Recycling Performance Grant.

Finding: The Recycling Division can obtain more grant funding for the recycling program by increasing the tonnage of materials recycled and decreasing the contamination rate.

Solid Waste Trust Fund

As explained in the City's 2021 budget, the Solid Waste Trust Fund was established by Resolution No. 522 of 1990 to account for deposit of monies from donations, contributions, **or grants** related to solid waste management. Establishment of the trust fund authorizes deposits to be used by Department of Public Works and the Mayor's Office for expenses related to solid waste and recycling collection such as training and educational programs, purchase of equipment and services, composting services, and construction of or improvements to solid waste facilities.

The auditors requested documentation from the City Controller's Office accounting section to verify where grant money is deposited. The auditors found that all grant funds are deposited in the City's general fund when they are received from the DEP, including performance grants.

Because the City supports and pays for all refuse and recycling-related expenses, it makes sense that reimbursement money be put into the general fund. However, the performance grant is an incentive grant, and the Recycling Division is not being directly rewarded for its efforts.

RECOMMENDATION 8:

Money from performance grants earned by the Recycling Division should be deposited in the Solid Waste Trust Fund for use by the Recycling Division rather than the general fund. This will provide an incentive for the Recycling Division to improve its performance, specifically to increase the tonnage of recyclable materials collected, which will provide more grant money to help fund Division expenses, such as public education. (See recommendation 7).

Recycling Drop-Off Locations

The City's six recycling drop-off centers offer City residents and businesses the availability to drop-off co-mingled recyclables on days beside their own recycling collection day. The hours of each location are provided in Table 16.

Three of the drop-off facilities are located within the DPW Streets Maintenance Divisions and staffed by their employees: East End (DPW 2nd Division), Hazelwood (DPW 3rd Division), and West End (DPW 5th Division). The Division locations also accept yard waste, Christmas trees, scrap metal, and tires.

The other three locations are the Bureau of Environmental Services headquarters in the Strip District, Construction Junction in North Point Breeze, and the parking lot of McKinley Park in Knoxville/Beltzhoover. These locations are unstaffed and have dumpsters for co-mingled recyclables onsite.

All recyclables dropped off at the centers must be placed loosely in the dumpsters without plastic bags. Five of the drop-off locations (excluding Knoxville/Beltzhoover) accept shredded paper. Shredded paper must be placed in a clear bag in the designated shredded-paper-only dumpster. Shredded paper is prohibited with curbside collection because the small pieces of paper are too hard to separate from the other co-mingled recyclables at the material recovery facility. The small pieces of shredded paper can also jam and damage the recycling sorting machinery.

Table 16 shows the six different drop-off centers, their address, hours of operation, and what kind of recyclables and other waste material they accept.

TABLE 16
City of Pittsburgh
Recycling and Waste Drop-Off Center Locations
and Hours of Operation
2023

Drop-off Center	Address	Hours of Operation	Materials Accepted (In addition to curbside recyclables)
East End (DPW 2nd Division)	6814 Hamilton Ave Pittsburgh, PA 15208	Mon-Sat 7am-3pm closed on holidays	Shredded paper, yard waste, xmas trees, tires, and scrap metal
Hazelwood (DPW 3rd Division)	40 Melanchton St Pittsburgh, PA 15207	Mon-Sat 7am-3pm closed on holidays	Shredded paper, yard waste, xmas trees, tires, and scrap metal
West End (DPW 5th Division)	1330 Hassler St Pittsburgh, PA 15220	Mon-Sat 7am-3pm closed on holidays	Shredded paper, yard waste, xmas trees, tires, and scrap metal
Beltzhoover/Knoxville	623 Bausman St Pittsburgh, PA 15210	Mon-Fri 6am-2pm	None
Strip District (Bureau of Environmental Services)	3001 Railroad St Pittsburgh, PA 15201	24-hour	Shredded paper
Construction Junction	214 North Lexington Pittsburgh, PA 15208	Mon-Sat 9am-5pm Sun 10 am-5pm	Shredded paper

Source: Bureau of Environmental Services webpage

Creating Additional Drop-Off Locations

People are generally more inclined to participate in activities that are convenient for them. Traveling outside of the neighborhood to a recycling drop-off site to dispose of recyclables is a barrier to residents. Reducing the travel time to these sites will enable more residents to use them. There are only recycling drop-off locations for compostable materials, scrap metal, and tires in the East End and West End parts of the City of Pittsburgh. There is no drop-off location to service the City residents in the Northside neighborhoods.

Recycling management stated that the Strip District and the DPW 5th Divisions are the closest locations for Northside residents to drop off any type of recyclable material, but they are 5.8 miles and 5 miles respectively from upper Perrysville Avenue on the Northside. From the lower Northside, maybe a mile is eliminated. Both routes cross a bridge and can incur heavy traffic depending on the time of day. Conversations with the DPW director indicated that the Department is open to creating a drop-off site in the Northside.

The DPW 1st division would be the most suitable location because they have staff available to assist City residents and already collect tires and yard waste. This site was used in the past but was eliminated after complaints from residents about the traffic at all hours.

Partnering With Local Organizations

To meet zero waste goals, the Recycling Division can further decrease landfill tonnage by partnering with local organizations to provide donation bins for items that can be reused. Reuse/repair organizations such as the Pittsburgh Center for Creative Reuse, Salvation Army, Construction Junction, or the Free Stores, for example, accept donations of items such as craft and office supplies, clothing, furniture, and household goods. Donation bins could be placed in municipal buildings and/or at drop-off sites. Through agreements with the owners, bins could be placed on private property in high-trafficked areas, such as gas stations, grocery stores, or college campuses.

Green Dedicated Glass Dumpsters

City residents and businesses are encouraged to drop off glass into the glass bottle and jar-specific roll-off dumpsters stationed at three locations: Construction Junction, Strip District, and Knoxville/Beltzhoover. The dumpsters were purchased by the City through a DEP grant as part of a four-month pilot program operated with Carry All Products (CAP) Glass, who makes glass bottles, located in Connellsville, PA. The pilot program started in July 2019 and its goal was to reduce glass contamination in single-stream recycling. Glass is highly vulnerable to breaking when mixed with other co-mingled materials. Broken glass can attach to paper, plastic, and cardboard, which can damage these commodities and lower their end value.

The City extended this program and entered into an agreement with CAP Glass effective August 26, 2020, extending through to August 26, 2023. Under the agreement, the Recycling Division collects the three roll-off dumpsters and unloads them at CAP Glass's subsidiary company, Superior Mulch LLC, located in McKees Rocks, PA. There is no monetary exchange in the agreement unless the load exceeds its acceptable level of contamination (above 2%). Both parties benefit from the agreement, as the Recycling Division receives a reduction in the contamination in their co-mingled recyclables and CAP Glass receives extra stock to produce more glass bottles back into the market.

Finding: The Construction Junction, Strip District, and Knoxville/Beltzhoover recycling drop-off locations have glass-specific recycling dumpsters that are sent to a separate facility for recycling. Separation of glass from the single-stream recycling system reduces contamination to other recyclables and increases their end value.

RECOMMENDATION 9:

City administration should apply for a grant with the Department of Environmental Protection for the intent to purchase three more glass-specific dumpsters collected by CAP Glass. This would help reduce contamination of single-stream recyclables and increase their end value. A dumpster can be stationed at their East End, Hazelwood, and West End drop-off centers where no glass-specific dumpsters are located. Additionally, a Northside location would be beneficial since there are no glass dumpsters in that location.

City Contract with Recycle Source

Co-mingled recyclables collected from the Recycling Division's 13 routes are transported and sold to Recycle Source. Recycle Source separates, processes, and sells the recyclables to potential buyers. The City entered in a contract with Recycle Source effective September 1, 2019, through August 31, 2021, with three one-year options to renew. Currently, the contract has been renewed for two additional years and expires on August 31, 2023.

Single-stream recyclables are dropped off at Recycle Source's receiving site located off Second Avenue in Hazelwood, Monday through Saturday, 6:00 a.m. to 5:00 p.m., closed on holidays. Recycling packers are weighed at the receiving site. The net tip weight of recyclables (weight of packer with load minus empty packer weight) is the weight recorded for the City.

The City's responsibilities for handling recyclables conclude upon delivery to the vendor. Single-stream recyclables are received in an "as is" condition. Recycle Source employees are responsible for removing all contaminants or residuals from the load. All processing, bundling, and baling of recyclables is done by Recycle Source staff.

Recycle Source sends daily reports to the Recycling Division with the date, time of weighing, route number of each recycling packer, and the total daily single-stream tonnage delivered for that day. After separation of recyclables, the products are weighed, and monthly tonnage reports are sent to the City by material type.

Contract Pricing

All contract material prices are based off their current market value and are determined by an industry index that is adjusted monthly, except for glass and non-recyclable materials (residue). Recycle Source charges the City a fee for all glass and non-recyclable materials delivered to their facility. The fee is \$17.50 per ton for glass materials and \$40 per ton for all non-recyclable materials. In other words, the City loses money on all glass and non-recyclable materials delivered to Recycle Source.

Finding: The City is charged \$17.50 per ton for glass materials and \$40 per ton for all non-recyclable materials (residue) the City collects and deliver to Recycle Source.

Glass is 100% recyclable and has market value. However, Recycle Source charges the City for all glass delivered to their facility because the glass recycling process is expensive. Glass often becomes broken when co-mingled with other recyclables on collection days. Tiny broken glass pieces are hard to separate from the other materials during the sorting process. In single-stream recycling, broken glass can stick to paper and carboard in the truck load which contaminates these other materials and lowers their end value. Broken glass is also dangerous for workers to handle and can damage the processing machinery.

As mentioned before, this is why the City encourages residents to drop off glass at one of their glass-specific dumpsters stationed at the Construction Junction, Strip District, and Knoxville/Beltzhoover drop-off facilities. The City takes these dumpsters to Superior Mulch in

McKees Rocks, a subsidiary of CAP Glass. Per the City agreement, there is no monetary exchange between both parties.

Charts 1 and 2 show that glass accounted for 20% of tonnage collected.

Finding: Glass is a contaminant in curbside single-stream recycling systems because it breaks and adheres to other recyclable materials. This lowers the value of both the glass and the contaminated materials.

Contract Compensation

The auditors used the City Controller's Office OnBase database system to verify all revenues and expenses from the sale of recyclables. In 2020, the City did not generate any revenue from co-mingled recyclables and had to pay Recycle Source \$571,025.15. This was caused by a large drop in the market value of recycled materials.

In 2021, the City paid Recycle Source \$85,997.65 from January 2021 to May 2021, but from June 2021 to December 2021 the City generated revenue. The superintendent reported the revenue was \$250,617.29.

Revenue from the sale of recyclables is deposited in the City's solid waste trust fund. According to the City Controller's Fiscal Audit of the *DPW's Solid Waste Trust Fund* released in 2014, this fund is used by the City to support solid waste projects such as purchase of equipment and services, education and training programs, consulting fees, and facility improvements.

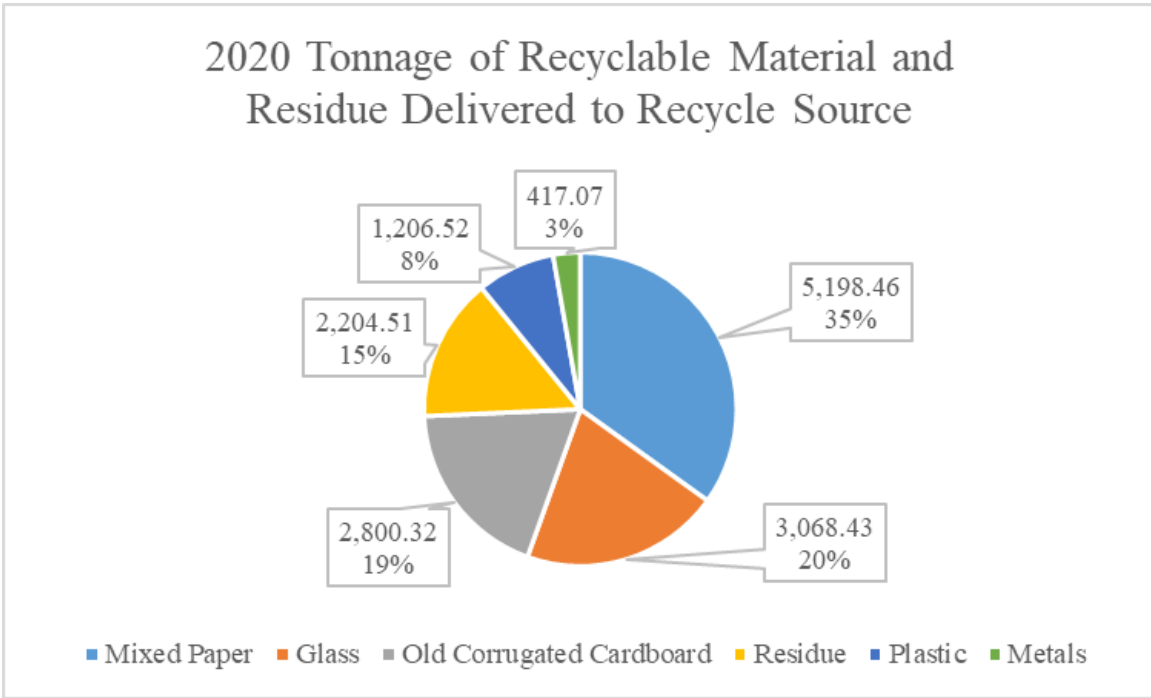
Recyclable Material Collected

The Recycling Division staff provided the auditors with their material tonnage spreadsheet that shows the total tonnage of each type of material delivered to Recycle Source in 2020 and 2021. **The total tonnage of all materials delivered in 2020 was 14,895.31 and 14,978.77 in 2021.** The totals include the following materials: mixed paper, old-corrugated cardboard, metal, glass, plastic, and residue. Residue, or contamination, is non-recyclable materials found during the recycling process.

Charts 1 and 2 show a breakdown by mixed paper, corrugated cardboard, metal, plastic, glass and residue for 2020 and 2021 from information provided by Environmental Services.

CHART 1

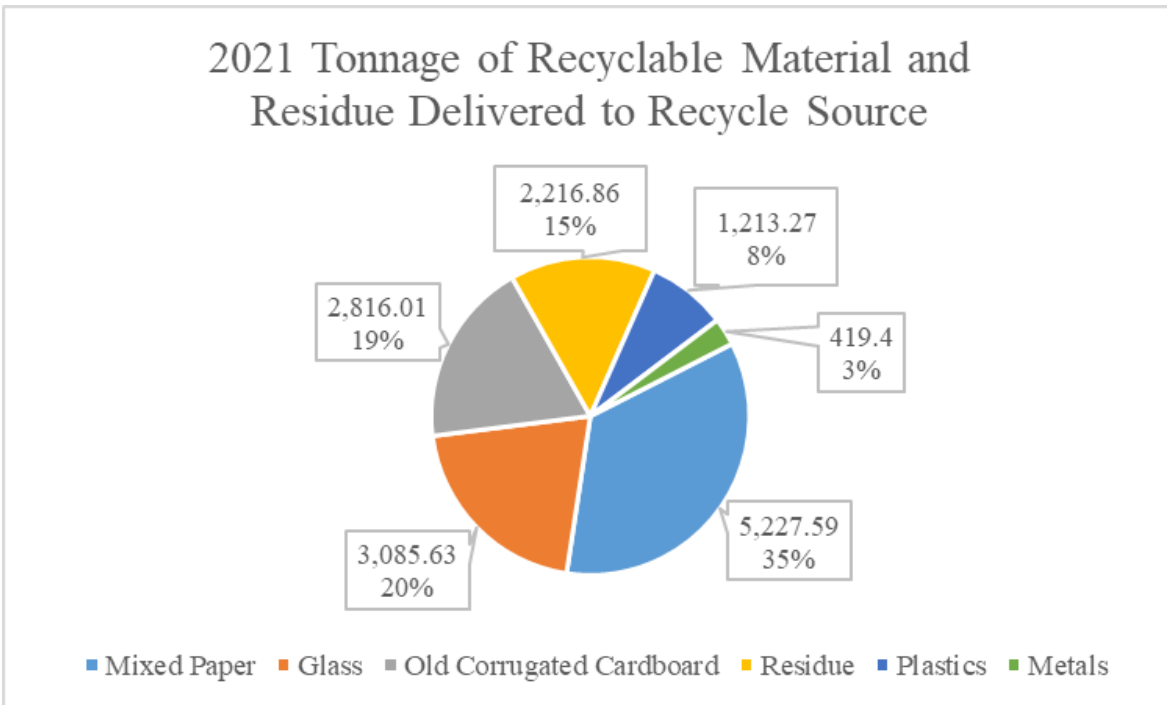
2020 Tonnage of Recyclable Material and Residue Delivered to Recycle Source



Source: Data from Bureau of Environmental Services Recycling Division

CHART 2

2021 Tonnage of Recyclable Material and Residue Delivered to Recycle Source



Source: Data from Bureau of Environmental Services Recycling Division

In 2020, the top three materials collected by the Recycling Division were 5,198.46 tons (35%) of mixed paper, 3,068.43 tons (20%) of glass, and 2,800.32 tons (19%) of cardboard. In 2021, the same top three recyclable materials in the same order were collected: 5,227.59 tons (35%) of mixed paper, 3,085.63 tons (20%) of glass, and 2,816.01 tons (19%) of cardboard. Non-Recyclable materials (residue) accounted for 15% of total materials collected and delivered in both 2020 and 2021.

Tonnage Totals Verification

The auditors requested from Recycle Source the 2020 and 2021 total tonnage of materials delivered by the Recycling Division to verify if the tonnage figures they supplied to the auditors were correct. Tonnage figures were counted for each delivery to Recycle Source by the auditors.

In 2020, the Recycling Division reported that they delivered 14,895.31 tons to Recycle Source. Recycle Source reported 14,850.64 tons for the same year. The City reported 44.67 (.15%) tons more material than Recycle Source.

In 2021, the Recycling Division reported that they delivered 14,978.77 tons to Recycle Source. Recycle Source reported 15,061.15 tons for the same year. The City reported 82.38 (.27%) FEWER tons of material than Recycle Source. These discrepancies between the Recycling Division's tonnage and Recycle Source tonnage are statistically insignificant.

Non-Recyclable Materials

City residents are mixing too many non-recyclable materials in with their co-mingled recyclables. In 2020 and 2021, non-recyclable materials accounted for 15% of total tonnage of recyclables delivered to Recycle Source. The City is charged \$40.00 per ton for non-recyclable materials. The large amount of nonrecyclable materials collected is interfering with the City's ability to make a profit from its recycled materials.

Finding: Non-recyclable materials accounted for 15% of the total tonnage of materials collected and delivered to Recycle Source in 2020 and 2021.

Additional Recyclable Material Tonnage Breakdown

For contract compensation purposes, Recycle Source reports monthly metal tonnage by aluminum and bi-metal materials; plastic material tonnage by polyethylene terephthalate (PET), high density polyethylene (HDPE) natural, HDPE colored, and mixed plastic #3-7.

In 2020, the Recycling Division collected and delivered a total of 417.07 tons of metal to Recycle Source. This consisted of aluminum (89.37 tons) and bimetal (327.70 tons). Bimetal is a general term that refers to an object that is composed of two separate metals joined together. Instead of being a mixture of two or more metals, like alloys, bimetallic objects consist of layers of different metals. In 2021, the totals were similar. Recycle Source received a total of 419.40 tons of metal. This consisted of aluminum (89.87 tons) and bimetal (329.53 tons).

The Recycling Division collected and delivered a total of 1,206.52 tons of plastic to Recycle Source in 2020. The type of plastic material collected and delivered consisted of the following: PET (461.75 tons), HDPE natural (74.48 tons), HDPE colored (193.64 tons) and mixed plastic #3-7 (476.65 tons). There was a total of 1,213.27 tons of plastic collected and delivered in 2021. The material breakdown was the following: PET (464.34 tons), HDPE natural (74.89 tons), HDPE colored (194.72 tons) and mixed plastic #3-7 (479.32 tons).

Recycling Tonnage Comparison to Previous Audit

Although the same co-mingled materials are accepted, with the same collection system, City residents are not recycling as many co-mingled materials as they did when the 2015 City Controller's Office performance audit titled *Department of Public Works, Bureau of Environmental Services, Refuse and Recycling Divisions*, was conducted. The 2015 audit shows that from the start of 2012 through the end 2013, City residents recycled 30,089.16 tons of co-mingled material that were processed and avoided landfill space. The totals do not include the tonnage of non-recyclable materials.

From the beginning of 2020 through the end of 2021, City residents recycled 25,452.71 tons (29,874.08 total tonnage - 4,421.37 residue) of co-mingled material that were processed at Recycle Source and avoided landfill space. This was a 15.4% decrease in total tonnage from 2012-2013.

Finding: In 2020-2021, City residents recycled 4,636.45 or 15.4% fewer tons of co-mingled recyclables that were processed and avoided landfill space than they did seven and eight years ago.

Yard Debris Collection

Yard debris are grass clippings, leaves, branches, plant material, brush etc. The Recycling Division encourages City residents to not mix yard debris in with their refuse collection. Yard debris takes up valuable space needed at the landfill; according to the *Roadmap to Zero Waste*, approximately 8–10% of residential waste in the United States is yard waste. This material slows the decomposition process which increases the production and release of harmful chemicals that negatively affect the environment. In addition, yard debris is compostable and reusable. Composting enriches soil and reduces the need for chemical fertilizers.

Bi-Annual Yard Debris Curbside Collection Days and Drop-off Centers

The Recycling Division offers special curbside collection days of seasonal yard debris twice per year to help divert yard waste materials from the landfill. The yard debris collections are one Saturday in the spring and one Saturday in the fall for all four zones. The Recycling Division will accept leaves, brush, grass, and branches (four inches or less) for curbside collection. All yard debris must be placed in paper bags weighing less than 35 pounds and branches must be bundled with twine or rope. Plastic bags are not accepted.

City residents can also dispose of yard debris year-round at three of the City's drop-off centers that are staffed by the DPW Streets Maintenance Division employees: East End (DPW 2nd division), Hazelwood (DPW 3rd division), and West End (DPW 5th division). Proof of City residency is required to drop off materials. There is no drop-off fee for residents hauling yard waste in cars, SUVs, pick-ups and vans **without a trailer**. There is a \$21.00 drop-off fee for cars, SUVs, pick-ups and vans **with a trailer**. There is a \$52.50 fee for dump trucks or large box vans, and those must have prior approval from the DPW Director. All payments must be made by check or money order only to the Treasurer, City of Pittsburgh. The auditors noticed the DPW yard debris drop-off program fee sign located in the 3rd division parking lot has outdated pricing.

RECOMMENDATION 10:

DPW administration should update signage at recycling sites with the latest pricing charges to the public.

The *Roadmap to Zero Waste* recommends expanding residential yard waste collection services. Currently residents have only two options for recycling yard waste: the two special yard waste collection dates per year and the three drop-off sites which collect yard waste. Hours for drop-off sites are limited and may not be accessible to residents lacking appropriate transportation. Residents putting bags of yard waste out for collection on days other than the special yard waste collection days may be unaware that it is being landfilled.

According to data provided by the recycling superintendent, it costs approximately \$41,673.36 (2023 dollars) in additional staffing costs to bring in personnel for additional Saturday collections due to overtime pay. The calculation for the cost of a Saturday collection is as follows:

- 13 foremen x \$42.54 per hour overtime rate x 8 hours = \$4,424.16 for foremen
- 49 drivers x \$36.02 per hour overtime rate x 8 hours = \$14,119.84 for drivers
- 86 co-drivers x \$33.29 per hour overtime rate x 8 hours = \$22,903.52 for co-drivers
- 1 dispatcher x \$28.23 per hour overtime rate x 8 hours = \$225.84 for a dispatcher
- \$4,424.16 for foremen + \$14,119.84 for drivers + \$22,903.52 for co-drivers + \$225.84 for a dispatcher = \$41,673.36

Due to the cost of additional Saturday collections and increased market rates for yard debris recycling, increasing the number of yard waste pickup days may be cost prohibitive at this time. However, as noted in the Financial Assistance Grants section on page 51, grant funding may be available to support extra yard debris collection. As stated previously in Recommendation 7, the Recycling Division should conduct an educational campaign to remind residents of the yard debris drop-off sites and the designated curbside pickup days.

Finding: With two-yard waste pick-up days per year, and three drop off sites, the City's Recycling Division has exceeded compliance with Act 101.

Yard Debris Composting Contract with Wood Waste Recycling

Yard debris accumulated from the Recycling Division's two annual special collection days, three drop-off centers, and DPW internal operations are picked up by Wood Waste Recycling, LLC. Wood Waste Recycling is a company that receives and processes yard waste into playground surfacing, mulch, compost, and soil.

Under the City's agreement, Wood Waste Recycling supplies the City with roll-off boxes. The City piles the compostable materials into the roll-off boxes and loads the material onto vendor trucks for removal. During the audit scope, Wood Waste Recycling collected compostable materials from the DPW divisions (1st, 2nd, 3rd, and 5th), DPW Forestry Division, and 1st Tee-Pittsburgh, a non-profit organization that operates the Bob O'Connor Golf Course located in Schenley Park. It should be noted that the City's 4th division has been closed since 2017 due to poor building conditions and was demolished.

Contract Pricing

The Recycling Division manages the contract with Wood Waste Recycling. The current contract began on April 1, 2021, through March 31, 2024, with two, one-year options to renew at year three pricing. The contract is not to exceed \$1,516,800.

The contract's estimated amount is based on the vendor having the capability to receive and process 10,000 tons of yard debris each year and charging the City \$50.56 per ton of material they collect. The price is the same for all three years of the contract. The City is also charged a \$3.00 per ton fee at each division onsite tub grinding, shredding and chipping service on an as-needed basis. The City does however receive back 5% of the finished compost and 5% of mulch, by weight, at no additional charge for each 12-month period of the contract. The material is used in City parks, municipal landscaping, and for public pick-up events.

Wood Waste Recycling also held the prior yard debris composting service agreement with the City from April 1, 2017, through March 31, 2021. The contract was not to exceed \$1,099,600. The contract amount is based on the vendor having the capability to receive and process 10,000 tons of yard debris each year and charging the City \$27.49 per ton of material they collect. The onsite tub grinding, shredding and chipping service was an additional \$1.00 per ton of material. The City also received 10% of the finished compost by weight for each 12-month period of the contract. The previous contract states that "the 10% shall be calculated as a percentage of the raw compostable (not a percentage of the finished compost) as weighed."

Finding: The rates the City is paying in their current yard debris composting agreement with Wood Waste Recycling is substantially higher compared to their previous contract with the same vendor. The rate increase is due to market condition changes in processing yard waste into compost and mulch.

The City is charged \$50.56 per ton of material they accumulate in their current agreement which runs from April 1, 2021, through March 31, 2024, compared to \$27.49 per ton of material in the contract that expired on March 31, 2021. This is a 45.6% increase in costs.

RFP Bid Process

Due to the contract price increase, the auditors reviewed the Bid Award Report to evaluate the competition of the contract and if it was given to the lowest bidder. The City's Bid Award Report for the April 1, 2021, through March 31, 2024, yard debris composting contract indicated that two vendors were listed on the bid sheet. However, Wood Waste Recycling was the only contractor who submitted a completed bid and was awarded the current contract. According to the Report, Diamond Mulch, who held the contract in the past, decided not to submit a bid and just asked to be notified of future bids.

The auditors contacted Diamond Mulch to ask them why they did not bid on the yard waste composting contract. Diamond Mulch reported the contract would not benefit them financially and would only increase their internal costs. Most of the yard waste the City collects are leaves. Diamond Mulch does not have the infrastructure to compost this material and would have to pay a vendor to provide this service for them. When Diamond Mulch held the contract previously, they mentioned the City's yard waste bins had too many contaminants (construction materials and automotive parts) and they wasted valuable manpower hours separating the contaminants from the yard waste.

Contract Requirements

The City processed 3,060.57 tons of yard waste material in 2020 and 3,845.67 tons in 2021. The current RFP requirement for collecting yard waste asked for vendors who could handle a capacity of 10,000 tons of yard waste per year. The RFP states:

The processor will receive approximately 3,000 to 5,000 tons of compostable materials per year from the City of Pittsburgh throughout the term of this contract. However, it is possible that volume may reach as high as 10,000 tons. Bidders must have the capability to compost a minimum of 10,000 tons of material per year throughout the term of this contract

This averages about 2.5 times higher than what the City collects making the current yard waste vendor contract capacity underutilized. Ten thousand tons is not attainable for smaller vendors. This requirement may account for the lack of competitive bids. According to the Bureau superintendent, there are numerous yard waste composting vendors in the Pittsburgh area.

Finding: The City processed tons of yard waste material 3,060.57 in 2020 and 3,845.67 tons in 2021, which is far below the RFP minimum of 10,000 tons per year.

RECOMMENDATION 11:

The Recycling Division administration should work with the Office of Management and Budget to rebid the next yard waste composting contract and lower the required tonnage capacity for vendors. This could attract more bidders thereby creating competition which should lower the tonnage price.

Tonnage of Yard Debris Collected and Fees

The tonnage of yard waste collected each month and the corresponding fee for 2020 and 2021 are shown below in Table 17. The City paid a rate of \$27.49 per ton of material in 2020 and for the first three months, January, February, and March 2021. When the new contract took effect in April 2021, the City paid a rate of \$50.56 per ton of material.

TABLE 17
Leaf Waste/Yard Debris Monthly Tonnage, and Fees
2020-2021

Month	Tonnage		Tonnage Percent Change	Fee		Fee Percent Change
	2020	2021		2020	2021	
January	402.53	233.91*	-41.9%	\$11,065.58	\$6,430.19*	-41.9%
February	230.54	71.48*	-70.0%	\$6,337.55	\$1,964.97*	-69.0%
March	106.42	299.53*	181.5%	\$2,925.47	\$8,234.06*	181.5%
April	110.11	274.84	149.6%	\$3,026.93	\$14,032.84	363.6%
May	201.22	236.55	17.6%	\$5,531.55	\$11,959.95	116.2%
June	237.26	255.13	7.5%	\$6,522.26	\$12,899.37	97.8%
July	246.29	372.14	51.1%	\$6,770.53	\$18,815.42	177.9%
August	298.12	425.6	42.7%	\$8,195.33	\$21,518.31	162.6%
September	177.14	518.47	192.7%	\$5,069.58	\$26,213.86	417.1%
October	296.28	403.15	36.1%	\$8,344.74	\$20,383.25	144.3%
November	592.78	357.06	-39.8%	\$16,295.52	\$18,052.95	10.8%
December	161.88	397.81	145.7%	\$4,450.08	\$20,113.26	352.0%
Totals	3,060.57	3,845.67	25.7%	\$84,535.12	\$180,618.43	113.7%

Source: Wood Waste Recycling Invoices 2020-2021 from the City Controller's Office Onbase System

*Charged at old contract rate of \$27.49 per ton. The 2021 rate for the shaded part in Table 17 is \$50.56.

The City paid \$84,535.12 to compost 3,060.57 tons of material in 2020, a rate of \$27.43 per ton. The increase in fees from \$27.49 to \$50.56 per ton of material occurred in April of 2021. In 2021, the City paid \$180,618.43 to compost 3,845.67 tons of material, an average rate of \$46.96 per ton and **an increase of 70.8%**. Tonnage increased by 25.7% between 2020 and 2021, while costs increased by 113.7%. For both 2020 and 2021, the City paid a total of \$265,153.55.

Finding: The City processed 785.10 more material in 2021 than in 2020 and paid \$96,083.31 more. The increase in fees between 2020 and 2021 caused the City's per-ton cost to recycle yard waste to increase by 70.8%.

Christmas Tree Collection

The City of Pittsburgh recycles used Christmas trees each year into pine mulch, which is offered for free to City residents. Pine mulch is used as a weed suppressant and is ideal for vegetable gardens. City residents must take their used Christmas trees to a drop-off location. Once collected, the DPW Streets Maintenance Division transports the trees from the drop-off sites to the zoo overflow parking lot, where DPW laborers use a woodchipper rented by the Forestry Division to chip the trees into mulch. All of the pine mulch is then made available for City residents to pick up in the Pittsburgh Zoo parking lot. Residents must bring their own buckets, gloves, and shovels.

Christmas tree collection runs from the end of December through the end of January. The number of drop-off sites available is dependent on the Recycling Division's ability to staff them. During the December 2019-January 2020 tree collection, 12 drop-off sites collected 109 tons of trees. In addition to the drop-off sites available at DPW divisions, temporary drop-off sites were made available in parking lots and in parks on City property.

During the December 2020-January 2021 tree collection, the number of drop-off sites was reduced by 58.3% to five. The drop-off sites collected 38 tons of trees (a 65.1% reduction). During the December 2021- January 2022 season, the same five drop-off sites collected 38.15 tons of trees. The five drop-off sites were located at DPW divisions.

According to the superintendent, the number of drop-off sites was reduced due to low staffing in 2020 during COVID. Although out of the scope of this audit, in the 2022-2023 season, the number of Christmas tree drop-off sites was increased to 12.

Curbside Tree Recycling

Curbside tree recycling is a convenient option for residents that do not have the ability or means to transport a tree to a drop-off site. In the past, the Recycling Division collected Christmas trees curbside for recycling. According to the superintendent, Christmas trees were last collected curbside in 2010 when 88.63 tons of trees were collected. The prior year, in 2009, 44.89 tons of trees were collected curbside. From 2009 to 2010 the tonnage doubled (44.89 tons in 2009 to 88.63 tons in 2010). During the same time period, 2009 and 2010, drop-off sites were available at DPW locations; this tonnage is not known and is not included in the curbside collection totals.

The auditors requested additional information about Christmas tree collection prior to 2009 from the recycling superintendent, including the reason why the program was canceled. The superintendent reported that the curbside Christmas tree collection program was canceled due to very low participation and the high cost of bringing in staff members for a special Saturday curbside collection day (approximately \$41,673.36). It was determined that doing a

spring and fall yard waste collection and providing drop-off locations for the Christmas trees was a better use of resources.

Finding: In the last two years of tree curbside pick-up, from 2009 and 2010, tonnage doubled, which contradicts the superintendent's answer.

Finding: The last year of tree curbside pick-up, 2010, yielded 88.63 tons of Christmas trees. The 12 collection sites in the 2019-2020 season yielded 109 tons.

RECOMMENDATION 12:

The Recycling Division administration should not offer fewer than 12 Christmas tree collection drop-off sites to residents. If site tree collection drops substantially, the Division should explore the possibility of collecting Christmas trees curbside on one designated pick-up date in January.

As previously stated, an education campaign to increase participation and make residents aware of the tree drop-off sites would be helpful. Residents might not realize that any tree left on the curb will be taken to the landfill.

Food Composting

As previously mentioned in the Recycling Data section on page 48, the landfill diversion rate is the amount of waste collected for recycling expressed as a percentage of the total waste collected. The Recycling Division could raise the landfill diversion rate by reducing the amount of food waste taken to the landfill. According to the Environmental Protection Agency (EPA), about one-third of food intended for human consumption in the U.S. goes to waste. Food waste releases methane when it decomposes in landfills, which is a potent greenhouse gas. The EPA estimates that the methane emissions from food waste rotting in landfills is significant. EPA data shows that food waste is the single most common material landfilled in the U.S., comprising 24% of landfilled municipal solid waste.

Finding: According to the EPA, 24% of landfilled waste in the U.S. is food waste resulting in methane gas being released in the air and contributing to global warming.

Municipal composting programs can successfully divert food waste from the landfill. According to a New York Times article dated January 1, 2023, titled *How Central Ohio Got People to Eat Their Leftovers*, **the Solid Waste Authority of Central Ohio (SWACO) achieved a 51% landfill diversion rate in 2020 after implementing an aggressive public awareness campaign and providing composting tools, such as bins and liners, to residents.**

According to a New York Times article dated January 25, 2023, titled *New York to Expand Composting Citywide, Targeting Trash and Rats*, New York City announced that its

curbside composting pilot program in Queens outperformed expectations and will be expanded City-wide by October 2024.

The Department of City Planning has made composting available to City residents via a drop-off site at City-run farmer's markets. Residents can drop off food waste at the farmer's market in East Liberty on Mondays or the farmer's market on the Northside on Fridays. The farmer's markets are open from May to November each year. The food waste is collected by a vendor and the resulting compost is used on local urban farming and gardening projects.

Finding: Municipal composting is available to City residents via drop-off locations at the East Liberty and Northside farmer's markets available two days per week from May to November.

Although outside of the scope of this audit, the auditors wanted to note that in 2023, the City is conducting a composting pilot program, called SoilMill PGH, led by the Department of City Planning, Department of Public Works, and Citiparks with a \$90,000 grant from the United States Department of Agriculture.

Scrap Metal and Tires

Scrap metal is defined as discarded metal items from appliances, automotive parts, furniture, fixtures made of copper, brass, aluminum, steel, tin, or cast iron. Scrap metal and scrap tires can be converted into raw materials that can be reused in a variety of products. Both items are part of the City's recycling program to divert waste from the landfills and to increase the City's recycling participation rate.

There are no curbside collections for scrap metal or tires. City residents can dispose of scrap metal and tires at three of the recycling drop-off centers staffed by DPW Streets Maintenance Division employees: East End (DPW 2nd division), Hazelwood (DPW 3rd division), and West End (DPW 5th division). There are no drop-off fees for City residents. However, only two tires can be dropped off per day and rims need to be removed. In addition to City residents, DPW Facilities and Construction Divisions often recycle scrap metal through the program. In 2020-2021, the City's scrap metal recycling contract was with American Steel Processing & System Company Incorporated and the tire recycling contract was with Liberty Tire. Details about each contract are in the following sections.

Scrap Metal Contract

During the audit scope, the City had an agreement with American Steel Processing & System Company Incorporated (ASP&SC) for the sale of surplus scrap metal from March 15, 2018, through May 31, 2022. The company, located in Coraopolis, PA, processes various scrap irons and metals.

The scrap metal accumulated at the City's three drop-off facilities that accept scrap metal (East End, Hazelwood, and West End) are picked up by ASP&C, who pays the City \$123.50 a ton. In 2020, the City sold 88.98 tons of scrap metal to ASP&SC that produced a revenue of \$10,989.03. In 2021, the City sold 109.42 tons of scrap metal to ASP&SC that produced a

revenue of \$13,513.37. All monies from the sale of scrap metals are deposited in the City's Solid Waste Trust Fund.

Tire Contract

Liberty Tire Services of Ohio LLC is the company that collects the City's scrap tires. Liberty Tire recycles scrap tires into raw materials that are reused for molded rubber goods, rubber flooring, rubberized asphalt, athletic surfaces, playgrounds, and mulch. The City entered into an agreement with Liberty Tire effective July 1, 2017, through June 30, 2021.

Liberty Tire picks up tires from the five DPW divisions and transports them back to their facility to be recycled. In 2020 and 2021, the 4th division was under construction and was not used to stage tire pick-ups. The Bureau superintendent stated most of the tires recycled are tires the DPW Bureau of Operations staff find on the streets or in wooded areas from illegal dumping.

Liberty Tire charges the City a collection fee for each tire picked up. According to the contract, prices are charged to the City by the following categories: car or light duty truck without rim (\$2.85), car or light duty truck with rim (\$10.35), heavy duty truck without rim (\$9.75), heavy duty truck with rim (\$15.00), agricultural tires without rim (\$57.00), agricultural tires with rim (\$60.42).

The auditors used the City Controller's Office OnBase database system to count the number of tires recycled by the City and the amount paid to Liberty Tire to provide this service. In 2020, the City recycled 24,488 tires and paid Liberty Tire \$107,259.81. In 2021, the City recycled 13,002 tires and paid Liberty Tire \$46,734.78.

Electronic and Household Hazardous Waste Recycling Program

It is recommended to recycle old electronic devices (e-waste) at the end of their useful life cycle because they save landfill space and are harmful to the environment. Electronic devices are comprised of toxic chemicals and heavy metals such as chromium, cadmium, mercury, and lead. When tossed into the landfill, these materials leach into the soil, contaminating the air and waterways. E-waste also contains valuable components with economic benefits when recycled.

The Pennsylvania General Assembly passed the *Covered Device Recycling Act* in 2010 to reduce this problem. The law was imposed by the Pennsylvania Department of Environmental Protection. Section 506 of the act requires all individuals to recycle covered devices and their components and no longer dispose of them with their curbside landfill municipal waste. Electronic covered devices under the act include, but are not limited to, desktop computers, laptop computers, computer monitors, computer peripherals, televisions, tablets, phones and gaming devices. Section 506 of the Act went into effect statewide on January 24, 2013.

Household hazardous waste—materials such as paint, pool and drain cleaners, motor oil, propane tanks, pesticides, etc.—is harmful to the environment if not properly recycled. Disposal of household hazardous waste is not regulated by federal or state law. The City of Pittsburgh encourages proper disposal; City code (619.07) bans household hazardous waste from curbside

pick-up and empowers the DPW Director to develop and implement programs for the collection and disposal of household hazardous wastes.

Electronic and Hazardous Waste Collection

In May 2019, the City entered into a professional service agreement with Environmental Coordination Services & Recycling (ECS&R) for the purpose of providing electronic and hazardous waste collection recycling services to all City residents. The contract was from October 3, 2019, to May 29, 2020, and was not to exceed \$250,000.

During this agreement, City residents could drop off their electronic and household hazardous waste materials (nothing greater than five gallons) during ECS&R-held collection events at the Bureau of Environmental Services headquarters. Collection events were every Sunday between 9:00 a.m. and 5:00 p.m. and every Wednesday between 3:00 p.m. and 8:00 p.m. and there was a disposal fee. Times were subject to change based on customer demand. ECS&R employees recorded, reported, handled, and transported all collected materials at the events.

City residents had to preregister for the events online through the ECS&R website link, or a telephone number that was provided on the Bureau of Environmental Services' own website and yearly mailed flyer. Residents had to fill out a form and provide proof of City residency when attending the events.

Residents were charged a disposal fee per pound of material they dropped off except computers, hard drives, laptops, and mainframe computer equipment, which was free of charge. According to the Pittsburgh ECS&R's price guide the rates were the following:

- Cathode ray tube (CRT) electronics, computer monitors, and freon containing devices (.40 cents/Lb).
- Shredded hard drive (\$3.00 each).
- Flat screen televisions, and all other e-waste (.25 cents/Lb)
- Latex paint (.52 cents per pound), oil-based paint (.84 cents/Lb)
- Antifreeze, oils, aerosols, corrosives, flammable liquids, asbestos, pesticides, poisons, oxidizers, and chlorine products (.84/Lb).
- Batteries (.63 cents/Lb)
- Light bulbs (.60/Lb)
- Grill sized propane tanks (\$15.00 each)
- Organic peroxides (\$6.90/Lb)
- Mercury containing devices and thermostats (\$6.75/Lb)

The contract stated that ECS&R agreed to provide up to nine City selected collection events a year at various locations within the City limits. ECS&R also operated a curbside collection program for City residents where they could request ECS&R to come out to their home and collect their curbside electronic and hazardous waste for a \$50 fee, plus cost per pound of material.

Once all collection events were completed, ECS&R would transport and store all household hazardous waste to their Evans City, PA facility and e-waste to their Cochranon, PA facility.

ECS&R permanently closed operations in November 2021 due to labor shortages and financial problems. The closure left the City with no electronic and hazardous waste collection program for approximately six months.

City Payments to ECS&R

The City had to pay ECS&R a monthly charge for holding the collection events. The charge included tonnage fees for each material dropped off, as well as a \$45 onsite technician fee for each event, \$495 transportation rate to haul a load of electronics to the ECS&R facility, and a \$90 box truck and operator fee at certain events.

The auditors used the City Controller's Office OnBase database system to total all ECS&R invoices from collection events that were held in months of 2020-2021; the City paid ECS&R a total of \$58,599.87 and \$69,694.37 respectively. There were no invoices for collection events held in April and May in 2020 due to the COVID-19 pandemic mandatory shutdown. The invoices ended in October 2021, due to ECS&R's closure. This was seven months short of their contract's expiration.

Weight of Materials Collected

The Recycling Division e-waste and hazardous waste collection database was used to tally the tonnage of each material collected at the ECS&R collection events. In 2020-2021, the City collected 113.85 and 105.22 tons of e-waste respectively.

In 2020-2021 the City collected 46.45 and 49.50 tons of household hazardous and universal waste respectively. Batteries and lightbulbs were labeled as universal waste in ECS&R's price guide and in the Recycling Division's e-waste and hazardous waste collection database.

Finding: The City collected 160.30 tons of materials at e-waste and household hazardous waste collection events in 2020 and 154.72 tons of material in 2021.

Tables 18 and 19 show the total tonnage of e-waste, hazardous waste, and universal waste gathered at the collection events for 2020 and 2021. Propane gas cylinders are not shown in Table 19 because they were priced and counted individually, not by weight, at each collection event. City residents recycled 260 propane tanks in 2020 and 211 in 2021.

TABLE 18
Total Tonnage of E-Waste Collected from ECS&R
Collection Events
2020 and 2021

Type of E-Waste	2020 Tonnage	2021 Tonnage
Cathode Ray Tube (CRT) TVs	41.34 (36.3%)	31.94 (30.3%)
Flatscreen TVs	21.57 (19.0%)	21.62 (20.5%)
Other Electronics	16.22 (14.2%)	17.22 (16.4%)
Towers and Peripherals	13.92 (12.2%)	13.88 (13.2%)
Freon Containing Devices (window AC units, dehumidifiers, mini fridges)	8.72 (7.7%)	10.05 (9.6%)
Cathode Ray Tube (CRT) Monitors	4.31 (3.8%)	3.16 (3.0%)
Flatscreen Monitors	3.62 (3.2%)	3.06 (2.9%)
Projection and console/wooden	3.23 (2.8%)	4.27 (4.1%)
Broken Glass Cathode Ray Tube	0.91 (0.8%)	0.02 (0.0%)
Totals	113.84 (100%)	105.22 (100%)

Source: Recycling Division's E-waste and Hazardous Waste Collection data

TABLE 19
Total Tonnage of Hazardous and Universal Waste Collected
from ECS&R Collection Events
2020 and 2021

Type of Hazardous and Universal Waste	2020 Tonnage	2021 Tonnage
Latex Paint	24.51 (52.8%)	28.33 (57.2%)
Oil Based Paints/Adhesives	5.31 (11.4%)	4.46 (9.0%)
Other HHW	4.15 (8.9%)	4.94 (10.0%)
Flammable Liquids	3.43 (7.4%)	2.86 (5.8%)
Batteries	2.76 (5.9%)	2.59 (5.2%)
Used Oil	1.90 (4.1%)	1.49 (3.0%)
Pesticides	1.56 (3.4%)	1.05 (2.1%)
Aerosols	1.21 (2.6%)	1.21 (2.4%)
Light Bulbs	0.55 (1.2%)	0.86 (1.7%)
Antifreeze	0.41 (0.9%)	0.69 (1.4%)
Corrosives-acid	0.33 (0.7%)	0.34 (0.7%)
Corrosives-alkaline	0.26 (0.6%)	0.37 (0.7%)
Oxidizers	0.05 (0.1%)	0.02 (0.0%)
Mercury Containing Devices	0.02 (0.0%)	0.29 (0.6%)
Totals	46.45 (100%)	49.50 (100%)

Source: Recycling Division's E-waste and Hazardous Waste Collection data

2022 E-Waste and Hazardous Waste Vendor

Since ECS&R's closure, the City attempted to secure a new vendor to manage the electronic and hazardous waste collection programs. The City was able to restart the program by entering into a professional service agreement with Pennsylvania Resources Council (PRC). The agreement requires PRC to provide e-waste and hazardous waste collection services for City residents for one whole year starting on May 25, 2022, with options to renew in 2023 and 2024. The contract is not to exceed \$315,000 over the course of three years. The first collection events under the agreement were held in August 2022.

PRC collection events are held at the Bureau of Environmental Services headquarters. PRC also provided two neighborhood collection events in 2022, in the West End and Lawrenceville. Recycling Division staff reported to the auditors that they are collaborating with PRC to organize more than two neighborhood collections in 2023. PRC does not provide a curbside program like the City's previous e-waste vendor.

To participate in hazardous waste collection events, City residents must pre-register by calling the PRC office at 412-489-9299 or on the PRC's webpage. A link to the registration can be found on the Recycling Division webpage under the "E-Waste Recycling Section" (<https://pittsburghpa.gov/dpw/electronic-waste-disposal>). Online registration requires your name, address, phone number, what City neighborhood you currently reside in, and how you heard about the program. Residents must fill out a form and provide proof of City residency when attending the events.

Registration is free, but City residents pay a \$.35 per pound for all e-waste materials except for laptops and CPU towers which are free of charge. According to the Recycling Division webpage, the following e-waste materials are accepted at this \$.35 per pound rate:

- All computer monitors
- All televisions
- Printers
- Home and cell phones
- Mice and keyboards
- Servers, Routers, and Modems
- DVD players, VCRs, and Stereos
- Copiers and scanners
- Video game consoles
- Electronic cables
- Freon appliances
- VHS, DVD, and cassette tapes
- Batteries
- CPU towers and laptops (free of charge)

Household hazardous waste fees vary by the type of material dropped off:

- Paints, antifreeze, unused oil, other fuels (.25/Lb)
- Pesticides, poisons, household cleaners, asbestos, acids, aerosols, oxidizers (\$1.25/Lb)
- Flammable and reactive solids (\$2.95/Lb)
- Small propane tanks (under 20 pounds/\$4.00 each, over 20 pounds/\$14.00 each)
- Mercury containing devices (\$35.00/Lb)

In 2023, the PRC's e-waste collection events are held twice weekly. The hours of operation are the following:

- March through November (Tuesday from 2:00 p.m. to 6:00 p.m. and Thursdays from 3:00 p.m. to 7:00 p.m.)
- December through January (Tuesday from 2:00 p.m. to 5:00 p.m. and Thursdays from 3:00 p.m. to 6:00 p.m.)

In 2023, household hazardous waste collection events are held on one Saturday every other month from 9:00 a.m. to 1:00 p.m. Household hazard waste collection event dates are the following: May 13, July 15, September 16, and November 11.

Budget Narrative

Each Bureau or Division of the DPW is responsible for sending the budget narrative information to the director of DPW each year. The budget narrative describes the department's mission, structure, accomplishments of the current year, and goals for the coming year. This narrative for DPW includes "an inventory of outputs" for the Bureau of Environmental Services Recycling Division, including the number of properties serviced and the tonnage of various materials recycled. The recycling superintendent is responsible for tabulating and sending the information for the Recycling Division.

The Bureau of Environmental Services budget narrative purports to show the previous year's recycling tonnage totals. However, the recycled tonnage amounts for 2020, 2021, and 2022 were identical, e.g., yard waste tonnage was reported as 4,144 tons in all three years. In fact, all recycled totals were the same for all three years. This includes co-mingled recyclables, tires, electronic and hazardous waste and scrap metal. It is highly improbable that the exact same amounts would be collected for all three years.

Table 20 shows the tonnage of recycled materials reported in the 2020, and 2021 operating budget narrative, versus what the auditors calculated from the applicable invoices, spreadsheets and databases.

TABLE 20
Operating Budget Narrative Recycling Totals
Compared to Auditor Totals
2020 and 2021

Type of Material	2020 and 2021, Budget Narrative Tonnage Totals	2020 Auditor Tonnage Totals	2021 Auditor Tonnage Totals
Co-Mingled Recyclables	15,222 tons	14,895.31 tons	14,978.77 tons
Yard Waste	4,144 tons	3,060.57 tons	3,845.67 tons
Electronic and Hazardous Waste	17 tons	160.29 tons	154.72 tons
Scrap Metal	100 tons	88.98 tons	109.42 tons
Tires	50,000 each	24,487 each	13,005 each

Source: City of Pittsburgh Operating Budgets 2020 and 2021; Recycling Division co-mingled material tonnage spreadsheet; Wood Waste Recycling invoices; Recycling Division’s e-waste and hazardous waste collection data; Recycling Division’s scrap metal data; Liberty Tire invoices.

Finding: The tonnage amounts reported in the Recycling Division’s budget narratives are different from their actual tonnage totals.

The Recycling Division superintendent reported that the recyclable materials totals in the budget narrative are projected totals and are not meant to represent the actual tonnage recycled. This is because the superintendent must send the recycled tonnage numbers for the budget narrative before the year is over and the actual totals are known.

RECOMMENDATION 13:

The Bureau of Environment Services administration should make it clear in the budget narrative that the recycled tonnage totals represent projected totals rather than the actuals for the reporting year.

Housing Authority City of Pittsburgh (HACP)

The Housing Authority City of Pittsburgh (HACP) is a municipal corporation that provides publicly subsidized housing to low-income families throughout the City. The HACP manages 16 different public and/or senior communities. Both the 2009 and 2015 City Controller’s Office Bureau of Environmental Services performance audits reported that the HACP is not requiring their communities to separate recyclables from refuse waste. According to the Bureau’s superintendent, there are still only certain HACP communities that participate in recycling and there is no recycling collection service agreement with the City. Over the years,

the Recycling Division has provided large recycling dumpsters and/or bins to HACP communities, but it is the responsibility of the HACP residents to participate

The last garbage collection service agreement between the City and HACP was a resolution that was passed by City Council and signed by the mayor in 2018. The resolution states that the City would provide garbage collection and disposal services to HACP communities. In return, the HACP will purchase two refuse packers every five years and transfer titles to the City at no charge. The City is only responsible for the maintenance of the vehicles. **There is no mention in the agreement requiring the HACP to recycle and for the Bureau to provide recycling collection services.** This agreement has been renewed three times since it was first enacted in 2001. According to the Bureau superintendent, the HACP purchased two new 2019 refuse packers for the City as required by the 2018 agreement.

HACP Communities that Recycle

Despite recycling not being part of the garbage collection service agreement between the City and HACP, some of the HACP communities do recycle. The Recycling Division's #371 route consists of one rear load recycling packer that runs Monday through Sunday and collects recyclables from the HACP communities, municipal buildings, PPS, drop-off centers, and institutions. The auditors received a list of all collection locations of the #371 route and found only five out of 16 were HACP-managed communities.

Finding: Only five out of 16 (31.3%) HACP communities are separating recyclables from municipal waste in accordance with Pennsylvania Act 101 and City code.

RECOMMENDATION 14:

The Recycling Division administration should work with City Council and the Law Department to include language in the next agreement with HACP to expand recycling collection and have blue-bin containers located in each HACP community. The agreement should also require HACP to conduct a campaign to educate residents about the importance of recycling to help increase participation. If needed, additional drop-off and/or donation bins, for different types of materials, should be added to HACP properties. This would comply with PA's Municipal Waste Planning Recycling and Waste Reduction Act 101 and City code ordinance 619.02.

Pittsburgh Public Schools

According to the Pennsylvania Department of Environmental Protection (DEP) *Recycling in Pennsylvania Schools, Colleges, and Universities* fact sheet, "recycling at educational institutions throughout Pennsylvania can make a positive impact on our environment and our local communities.... Many wastes generated at educational institutions can be recycled. It is important that administrators, faculty, employees, students and the local municipality all work

together to implement and maintain a recycling program at their educational institutions.” The fact sheet, a copy of which can be found in the Appendix under Exhibit F, also states:

Recycling is local in Pennsylvania - The Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101) requires commercial, institutional, and municipal establishments located in Pennsylvania’s mandated municipalities to recycle high-grade office paper, corrugated paper, aluminum, and leaf waste. In addition, establishments must recycle any other materials included in the municipality’s recycling ordinance or regulations, which may include glass, newsprint, plastics, and/or steel and bimetallic cans.

The auditors received a list of all 70 Pittsburgh Public School (PPS) facilities from the PPS Deputy School Controller. The list includes 59 school buildings and four administrative and support facilities that use the Bureau for curbside recycling collection. All other locations use a private hauler. These include two early childhood centers (Children’s Museum and Carnegie Science Center) and five City Connections special education program locations (three houses, Community College of Allegheny, and Mercy Behavioral Health).

All public schools use a private hauler for refuse collection. According to the PPS Chief Operating Officer, there is no official recycling collection service contract with the City that has been approved by the Pittsburgh Board of Education (the elected oversight governing body of PPS), nor does PPS have a comprehensive school recycling policy. However, PPS is in the process of creating a written sustainability policy.

The PPS Chief Operating Officer reported that the products the schools recycle consistently are white paper, cardboard, lightbulbs, leaves, and e-waste such as computers/laptops and batteries. Eleven schools have a contract with Royal Oak Recycling and participate in their paper retriever program. This program is a low-cost option that provides rebates to schools and non-profit organizations that recycle paper. All recycled cardboard is transported to a recycling plant on Neville Island.

The Bureau of Environmental Services works with schools on an individual basis. The PPS Chief Operating Officer stated that 25-30 schools place blue-bin containers curbside on collection days.

PPS Recycling Performance Monitoring

The Bureau administration provided a PPS location database shows 59 PPS school buildings, and three district office and support facilities serviced by the Recycling Division for a total of 62 buildings. One administrative building was missing from the database.

For the 62 PPS buildings listed in the database, the recycling performance category was incomplete or outdated. The database includes the name of a recycling contact person at each school, but the contact's name might be outdated. The database indicated that the recycling

performance of each PPS building was unknown because the Recycling Division foremen last conducted onsite school recycling inspections in 2017 or 2018.

Finding: The Recycling Division is not monitoring PPS recycling performance and documenting the results in their PPS recycling database.

The Bureau superintendent reported that onsite checks done at each location are not done on a frequent basis due to time constraints and staffing shortages. The Recycling Division foremen are currently doing an internal audit on each school building recycling participation that was spurred by information requested for this audit.

RECOMMENDATION 15:

The Recycling Division should monitor the PPS recycling performance and update the results in their database. Schools that are underperforming or not participating in the recycling program should be contacted and encouraged to recycle.

RECOMMENDATION 16:

An official, consistent communication channel should be established with PPS administration and/or each PPS school. The Recycling Division should verify that the recycling contact at each school is still employed and willing to act as the school's recycling contact. The Recycling Division should also consider appointing a staff member to be the City's recycling liaison for PPS. An initial investment in employee time to establish a working relationship can be beneficial in the future when both parties are recycling to their full potential. The importance of recycling for a sustainable future for the students is a timely topic.

Educating Students

PPS represents a significant opportunity for the Recycling Division to raise recycling awareness and to increase the tonnage of materials recycled in the City. As noted by the *Roadmap to Zero Waste*, "educating today's children on how our waste and resources are managed is a great investment in the future and provides a way to educate families through their children at school."

The Recycling Division makes some staff available to conduct recycling education presentations for local schools upon request. In 2021, according to a Facebook post by the Clean Pittsburgh Commission, the Recycling Division's anti-litter specialist gave a virtual presentation to students at Environmental Charter High School. The Anti-Litter Specialist position was changed to Project Coordinator in 2022.

According to the superintendent, recycling participation is dependent on each school's principal and/or staff at each school.

Finding: PPS school recycling participation depends on each school's principal and staff.

Special Events

Special events are festivals, concerts, trade shows, marathons, markets, and weddings etc. Organizers of special events that expect more than 200 attendees are required to recycle materials per City code 619.02- *Separation of Recyclables from Municipal Waste*. The same co-mingled materials recycled during curbside collection are required to be recycled at special events, except for glass. The Recycling Division webpage states that glass recycling is encouraged but not mandatory at special events. To host a special event in the City of Pittsburgh, an application must be submitted to the City's Office of Film and Event Management.

Event organizers who need help with a plan can call the Recycling Division and receive assistance with planning. Hosts are also able to rent equipment from the Recycling Division. Equipment fees are charged when the Recycling Division is requested to deliver and collect equipment from the event location. Fees are waived for event organizers willing to self-service equipment from the Recycling Division office. Recycling equipment fees are as follows: clear stream recycling stands with frame and lids (\$5.00 each, with a minimum order of 10), 9 cubic yard recycling collection trailer (\$150), and a 38 cubic yard roll-off container (\$225). If you order 15 recycling stands, you can request a cube cart, which is used to transport the recycling stands, at no extra charge. Recycling bags are free upon request.

Event organizers are responsible for the collection, maintenance, and supervision of recycling during each event. At the conclusion of a special event, organizers can hire a private company or self-haul recyclables to one of the City's five recycling drop-off centers. A third option is to ask the Recycling Division to provide this service which is based on their availability. The Recycling Division will only pick-up recyclables collected in the 38 cubic yard roll-off container or 9 cubic yard collection trailer. The collection service is included within the rental fee.

Pennsylvania Resources Council (PRC)

For large events, the Recycling Division refers special event organizers to PRC. For a fee, PRC offers zero-waste event services for special events throughout the City. Zero-waste event services aim to recover 90% of materials discarded at events either by recycling, composting, or reuse.

The staff will provide, set up, and manage zero-waste stations, as well as answer recycling, composting, and waste-related questions that event attendees have. After the event, the team will sort through event waste to maximize landfill diversion. PRC has worked at popular events in the City including the Three Rivers Arts Festival, Three Rivers Marathon, and the Richard S. Caliguiri City of Pittsburgh Great Race.

Special event organizers interested in the service must first submit a zero-waste management form to PRC no later than one month prior to the event. A Pennsylvania Resources

Council employee will then design a zero-waste service event proposal that fits your needs. The zero-waste management form and details of the program can be found through the [Sustainable Event Guidelines](#) link provided on the Recycling Division webpage under the special events recycling section.

Blue Bin Program

In fall 2020, the City created a program that will distribute over 100,000 32-gallon blue recycling containers to City residents. The goal of the program is to make single-stream curbside recycling easier for residents and reduce recycling contamination. All single-family homes, apartments, and duplexes with five units or less within the City are eligible for the program and **will receive** a container with a tight-fitting lid and an information packet. All eligible residents will not receive a blue-bin container at the same time. Distribution of the containers are broken into a series of phases.

The Recycling Division blue-bin fact sheet states that the Division “will not be able to replace lost, stolen, or damaged lids or bins. Residents will then be required to purchase a new bin themselves.” “Residents can qualify for a replacement 18-gallon tote bin if they are medically exempt and cannot physically manage the City issued standard bin.”

On February 24, 2021, the City entered into a professional service agreement with the Rehrig Pacific Company to manufacture, deliver, and distribute all the blue-bin containers. The contract was not to exceed \$1,351,000.00. On October 4, 2022, the contract was amended to not exceed \$2,654,800.00. This amended agreement states that funding for the program came from the City’s capital budget (\$538,000), City’s capital fund (\$730,000), grants awarded from the Department of Environmental Protection (\$313,000) and The Recycling Partnership, a national non-profit organization (\$1,073,800).

The auditors examined the paid invoices found on the City Controller’s Office OnBase system. Paid invoices include both blue-bin assembly and distribution costs. For 2020 and 2021, the City paid Rehrig Pacific Company \$106,723.88 and \$878,540.59 respectively for the manufacture and distribution of the blue-bin containers and lids. In 2022, the City paid the company \$623,451.59. Until the end of 2022, the City has spent \$1,608,716.06 for the manufacture and distribution of the blue-bin containers and lids.

Tracking Delivery

The Recycling Division provided Rehrig Pacific Company a list of all their service locations. Each blue-bin container has a barcode with a unique serial number that matches the service location. A spreadsheet was provided to the Recycling Division that shows each service address and their assigned serial number. Upon delivery, the blue bin container is scanned by Rehrig Pacific Company staff and the list is transferred over to the Recycling Division at the end of the day. The Recycling Division can then verify what property owners received a blue-bin container.

Program Completion Date

Initially the program was supposed to be completed in fall 2022. However, the Bureau’s superintendent noted that the program will not be complete now until 2023. This was due to manufacturing issues and the contract having to be amended so the City would not exceed the listed dollar amount. The additional money was needed to complete the distribution of blue-bin containers in the Bureau’s northern and southern zones.

The auditors used the Recycling Division webpage’s blue bin distribution schedule to count the number of neighborhoods that received a blue-bin container. There are 90 neighborhoods in the City of Pittsburgh, but the auditors did not include the Central Business District in the analysis, bringing the total to 89, because only five residents in the Central Business District will receive blue-bin containers scheduled for delivery in Spring 2023. All other properties in the Central Business District do not meet the eligibility requirement to receive a blue-bin container because they are not single-family homes, apartments, and duplexes with five units or less. However, the Recycling Division does collect additional Central Business District recyclables from street containers and City municipal buildings.

As of December 13, 2022, 58 (65.17%) out of 89 City neighborhoods have received a blue bin recycling container. There are 31 (34.8%) northern service zone neighborhoods that are not scheduled to receive a blue bin recycling container until spring 2023.

Table 21 shows a breakdown of the number of City neighborhoods that received a blue-bin container by season and by Bureau service zone.

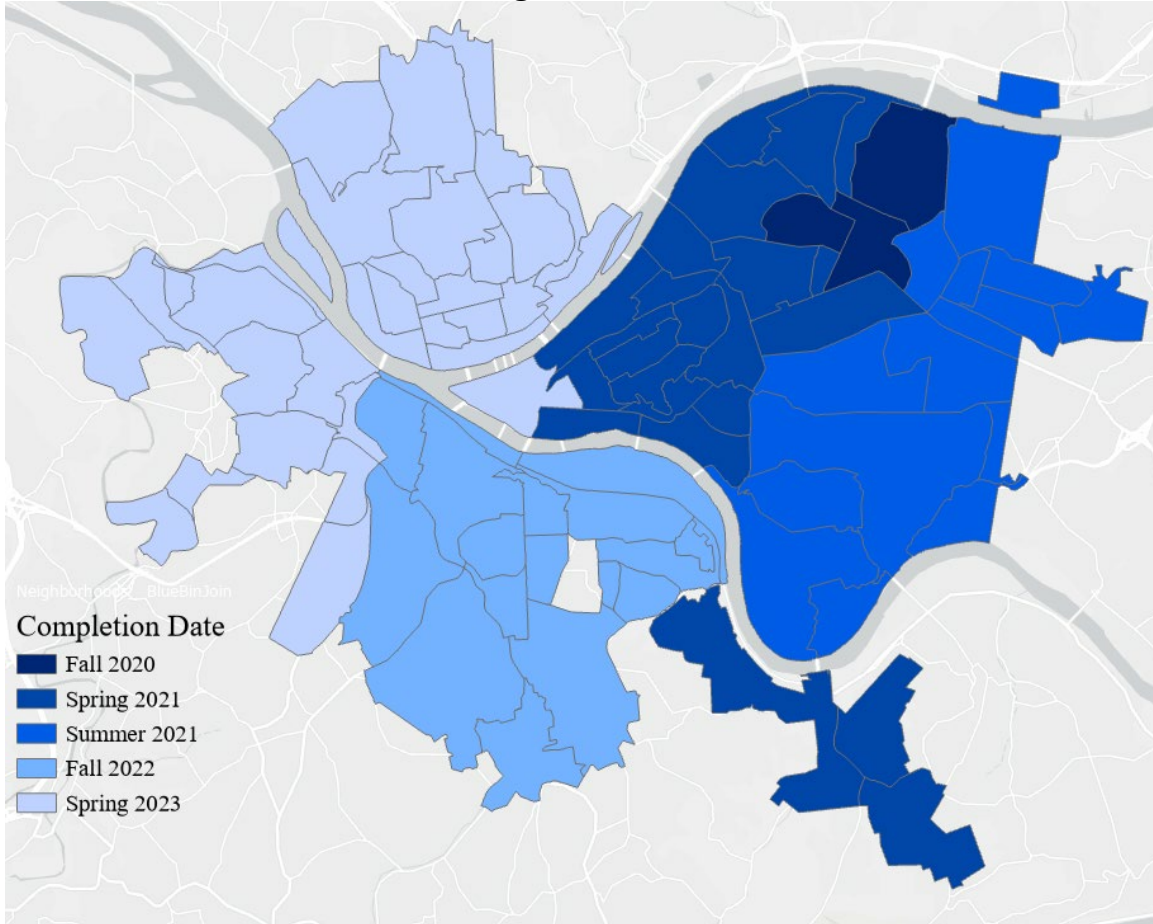
TABLE 21
Number of City Neighborhoods
that Received a Blue-Bin Container
by Season Received
and Environmental Services Service Zone

Season Blue Bin Received	Number of City Neighborhoods	Number of City Neighborhoods by Environmental Services Service Zone
Fall 2020	3 (3.4%)	All Central
Spring 2021	23 (25.8%)	19-Central 4-Eastern
Summer 2021	15 (16.9%)	All Eastern
Fall 2022	17 (19.1%)	All Southern
<i>Projected Spring 2023</i>	31 (34.8%)	All Northern
Total	89 (100%)	

Source: Bureau of Environmental Services webpage

Map 2 shows the blue-bin rollout schedule by the season of the completion date and the area within the City.

MAP 2
City of Pittsburgh
Blue Bin Program Rollout Schedule



Source: City of Pittsburgh Bureau of Environmental Services Blue Bin webpage

Finding: Through the fall of 2022, 58 (65.2%) City neighborhoods have received a blue-bin recycling container. There are 31 out 89 (34.8%) City neighborhoods that will not have received a blue-bin recycling container by the end of 2022.

The auditors were unable to analyze the city-wide impact of the program because it was not complete at the time of this audit.

RECOMMENDATION 17:

Once blue bins have been distributed to all residents and the program is complete, the Recycling Division administration should analyze the impact of the blue bin program. For example, analysis should include the effect of the program on the recycling rate, recycled tonnage, and City operations including time to complete daily routes and truck staff injury rates. This information should be posted on the Bureau website for public awareness.

Recycling 311 Response Center Calls

The City's 311 Response Center handles all City department non-emergency service requests, inquiries, and complaints submitted by the public. The Response Center can be reached by dialing 311 or their ten-digit number: 412-255-2621. Requests or complaints can also be sent using the 311 online request form, 311 Twitter page, and the MyBurgh app. The Bureau's staff has access to the 311 Response Center system and can review and evaluate their service requests. The Bureau also receives requests from the 311 Response Center by email or phone call.

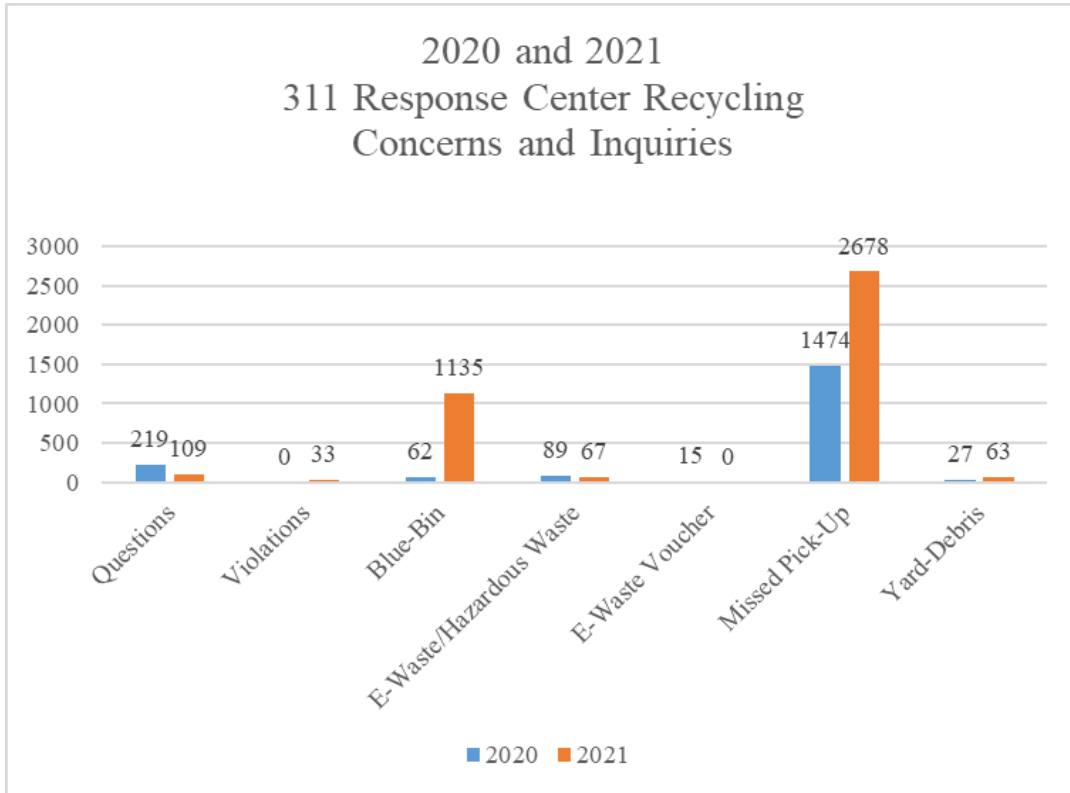
The auditors requested Bureau of Environmental Services 311 data from the 311 response line manager to see how many recycling collection service requests, complaints, and inquiries from the public occurred in 2020 and 2021. The database contained the following fields: identifier number, date requested, the status of request (open or closed), the submitter contact information (name, address phone number, email etc.), the location of the request by longitude and latitude coordinates, and type of call. The longitude and latitude coordinates were used to determine the neighborhood location of the calls.

The database contained seven "type of call" categories related to recycling: recycling questions, recycling violations, missed recycling pick-up, blue bin containers, electronic/hazardous waste disposal, e-waste voucher, and yard debris. The auditors tallied the total number of entries by each type of recycling category, which is displayed in Chart 3

It should be noted that the 311 Response Center switched to a new database system in 2015. The new system does not have the capability to generate a spreadsheet with the comment field. The comment field is the resident's detailed account of their situation that is viewed by the 311 staff and the City department servicing the request.

Without the comment field, the auditors were unable to distinguish whether the calls were public complaints, service requests, or inquires for the categories listed: blue bin containers, e-waste, and yard debris. All resident early and late trash set out complaints were excluded from the number of recycling calls because they were not identified in the database as being for refuse or recycling collection. Chart 3 shows the 311 seven call categories for 2020 and 2021.

CHART 3



Source: 311 Response Center data

There were 9,872 and 15,627 Bureau of Environmental Service 311 calls in 2020 and 2021 respectively. In 2020, recycling requests accounted for 1,886 (19.1%) out of the 9,872 total requests. In 2021, recycling calls accounted for 4,085 (26.1%) out of the 15,627 total requests.

Recycling 311 calls increased 116.6% from 2020 to 2021. This was due to the 81.7% increase in missed recycling collection complaints and the 1,730.7% increase in questions and concerns about the blue bin program. Missed recycling collection complaints accounted for more than half of the 311 recycling requests in both years. There were 1,474 (78.2%) missed recycling collection complaints in 2020 and in 2,678 (65.6%) in 2021.

Finding: Recycling 311 service center calls increased 116.6% from 2020 to 2021. This was due to the 81.7% increase in missed recycling collection complaints and 1,730.7% increase in questions and concerns about the blue bin program.

Finding: Missed recycling collection complaints accounted for 78.2% and 65.6% of the Bureau of Environmental Services' total 311 recycling calls in 2020 and 2021 respectively.

Missed Recycling Collection 311 Calls

Missed recycling collection 311 calls increased by 81.7% between 2020 and 2021, from 1,474 in 2020 to 2,678 in 2021. Most recycling-related 311 calls were for missed recycling collection in both years: 78.2% were missed recycling collection complaints in 2020 and 65.6% in 2021. The auditors analyzed the calls by the month and location that they occurred.

The number of calls increased from the prior year each month in 2021, except in April, July, and December. There was one fewer call in April 2021 than in 2020, 16 fewer calls in December, and 200 fewer calls in July. Table 22 shows the number of calls that occurred each month during 2020 and 2021.

TABLE 22
Number of 311 Calls
About Missed Recycling Collection
by Month 2020-2021

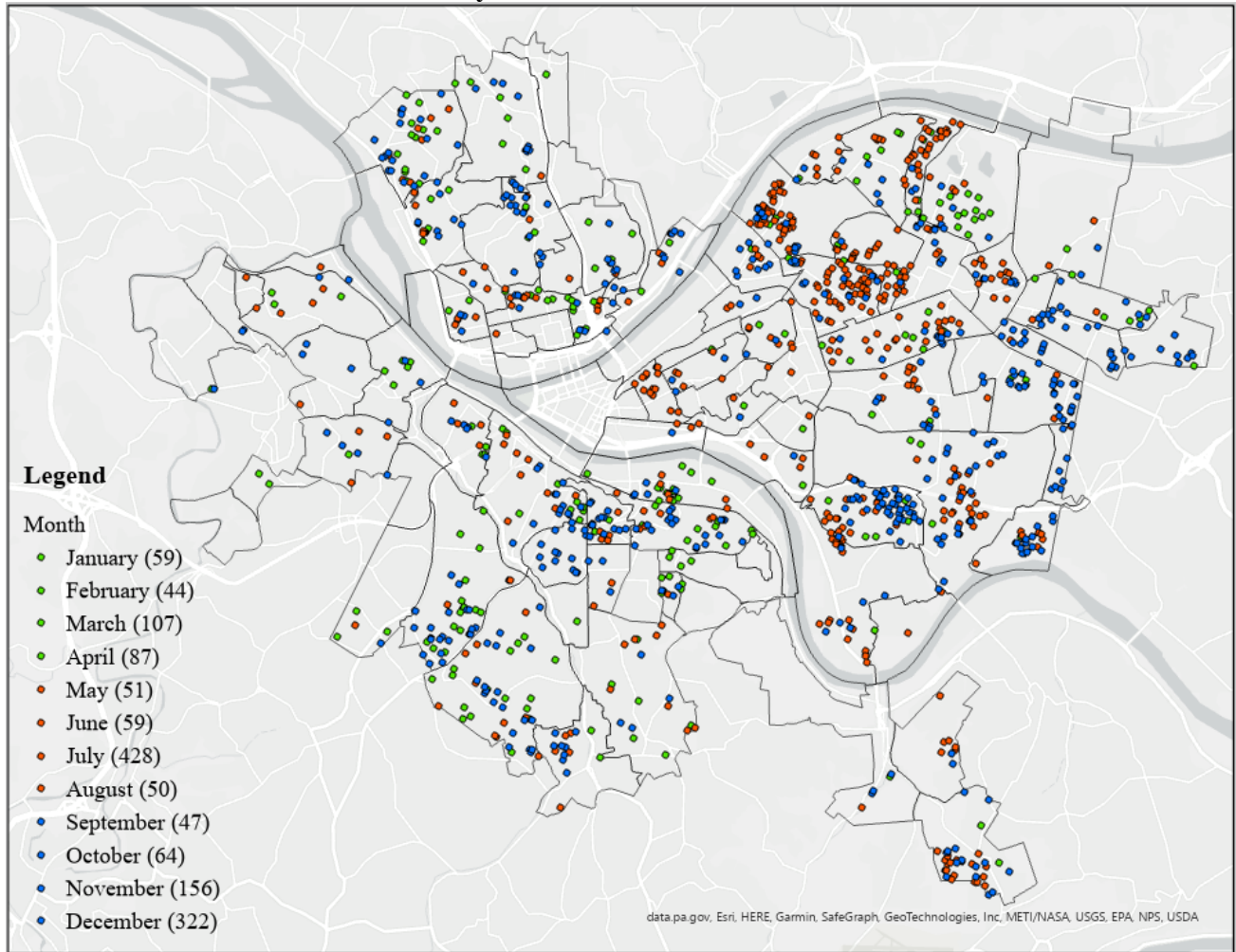
Month	2020	Percent of Total	2021	Percent of Total	Increase /Decrease
January	59	4.0%	104	3.9%	45
February	44	3.0%	143	5.3%	99
March	107	7.3%	110	4.1%	3
April	87	5.9%	86	3.2%	-1
May	51	3.5%	112	4.2%	61
June	59	4.0%	189	7.1%	130
July	428	29.0%	228	8.5%	-200
August	50	3.4%	351	13.1%	301
September	47	3.2%	418	15.6%	371
October	64	4.3%	272	10.2%	208
November	156	10.6%	359	13.4%	203
December	322	21.8%	306	11.4%	-16
Totals	1,474	100.0%	2,678	100.0%	+1,204

Source: 311 Response Center data

In 2020, two months—July and December—accounted for 50.8% of calls, with 428 calls (29.0%) in July, and 322 calls (21.8%) in December. In 2021, 63.7% of the calls occurred in the last five months of the year, from August to December.

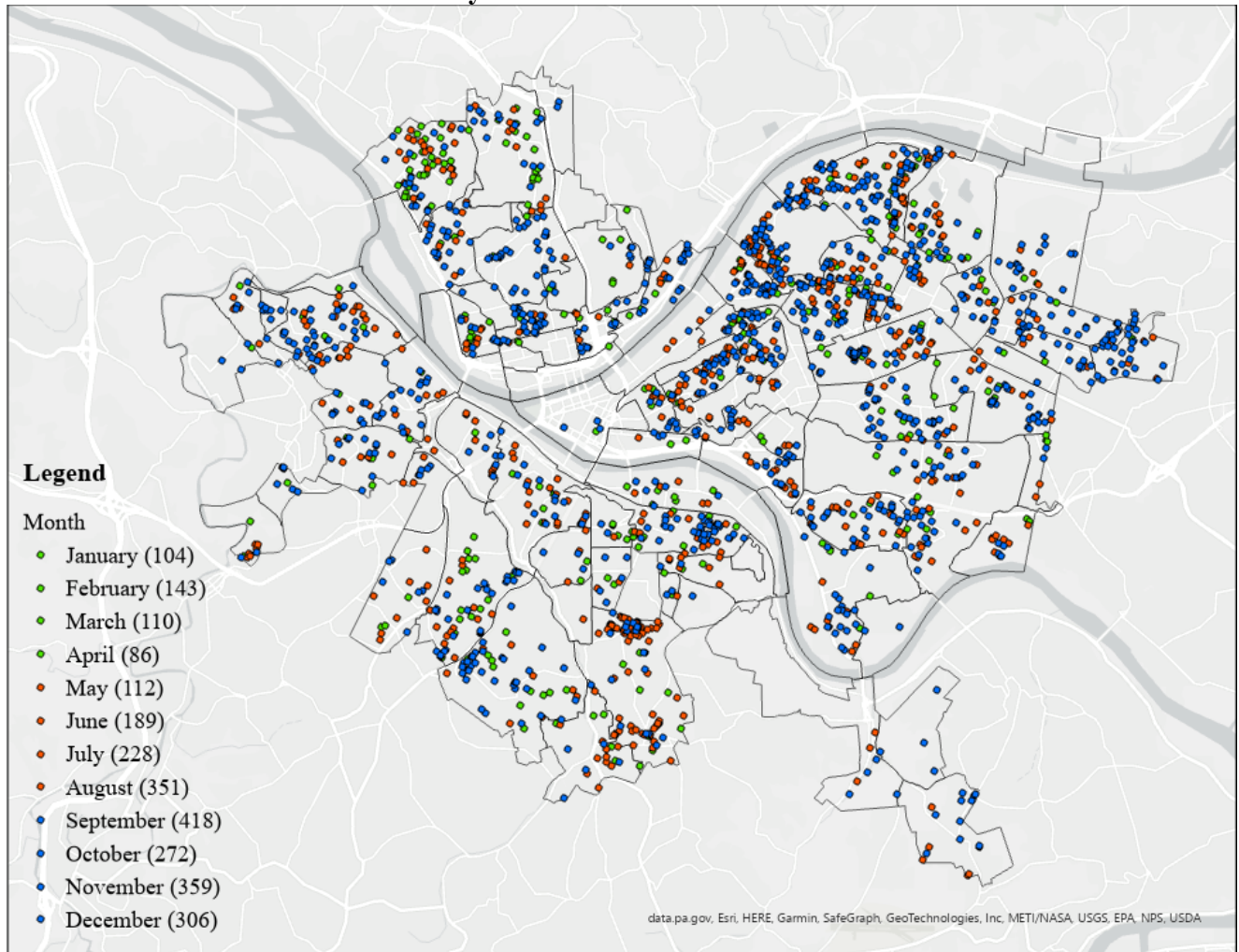
Maps 3 and 4 show the location of each 311 call for missed recycling collection by month (color-coded by season) in which the call occurred for 2020 and 2021. In 2020, missed recycling collection 311 calls occurred in 81 of 90 neighborhoods. In 2021, missed recycling collection 311 calls occurred in 85 of 90 neighborhoods.

MAP 3
Location of 311 Calls
for Missed Recycling Collection in 2020
By Month and Season



Source: 311 Response Center data

MAP 4
Location of 311 Calls for
Missed Recycling Collection in 2021
by Month and Season



Source: 311 Response Center data

The 311 Response Center database information shows from 2020 to 2021, 70 of the 90 neighborhoods saw an increase in missed recycling collection calls. Eleven neighborhoods saw a decrease and four neighborhoods had the same number of calls. Five neighborhoods—Allegheny Center, Arlington Heights, Chateau, Northview Heights, and South Shore—had no calls in either year.

Table 23 shows the 10 neighborhoods with the highest number of missed recycling collection 311 calls in 2020 and 2021. In 2020, the top 10 neighborhoods made up 38.9% of all calls. In 2021, the top 10 neighborhoods made up 31.8% of all calls.

TABLE 23
Ten Neighborhoods with the Highest Number of
Missed Recycling Collection 311 Calls
2020 and 2021

Neighborhood	2020 # of Calls	Percent of Total	Neighborhood	2021 # of Calls	Percent of Total
Greenfield	79	5.4%	Carrick	122	4.6%
Bloomfield	77	5.2%	Brighton Heights	92	3.4%
Squirrel Hill South	73	5.0%	Bloomfield	92	3.4%
Central Lawrenceville	63	4.3%	Central Lawrenceville	91	3.4%
Brookline	55	3.7%	Shadyside	86	3.2%
Beechview	53	3.6%	Squirrel Hill South	82	3.1%
Lincoln Place	46	3.1%	Morningside	75	2.8%
Brighton Heights	43	2.9%	Brookline	73	2.7%
Morningside	42	2.9%	South Side Slopes	71	2.7%
Shadyside	42	2.9%	Beechview	67	2.5%
Totals	573	38.9%	Totals	851	31.8%

Source: 311 Response Center data

Finding: Eight neighborhoods—Bloomfield, Squirrel Hill South, Central Lawrenceville, Brookline, Beechview, Brighton Heights, Morningside, and Shadyside—are in the top 10 for missed recycling collection 311 calls in both 2020 and 2021.

Table 24 shows the 10 neighborhoods with the greatest increases in the number of missed recycling collection 311 calls from 2020 to 2021. Carrick saw the greatest increase of 101 calls, from 21 calls in 2020 to 122 calls in 2021, an increase of 481%.

TABLE 24
Neighborhoods With the Greatest Increase in Number of
Missed Recycling Pickup 311 Calls
2020-2021

Neighborhood	2020	2021	Number Increase	Percent Increase
Carrick	21	122	101	481%
Sheraden	11	62	51	464%
Middle Hill	10	60	50	500%
Brighton Heights	43	92	49	114%
Shadyside	42	86	44	105%
Stanton Heights	20	63	43	215%
Polish Hill	5	44	39	780%
Upper Hill	9	46	37	411%
Homewood North	12	46	34	283%
Morningside	42	75	33	79%

Source: 311 Response Center data

Blue Bin 311 Related Calls

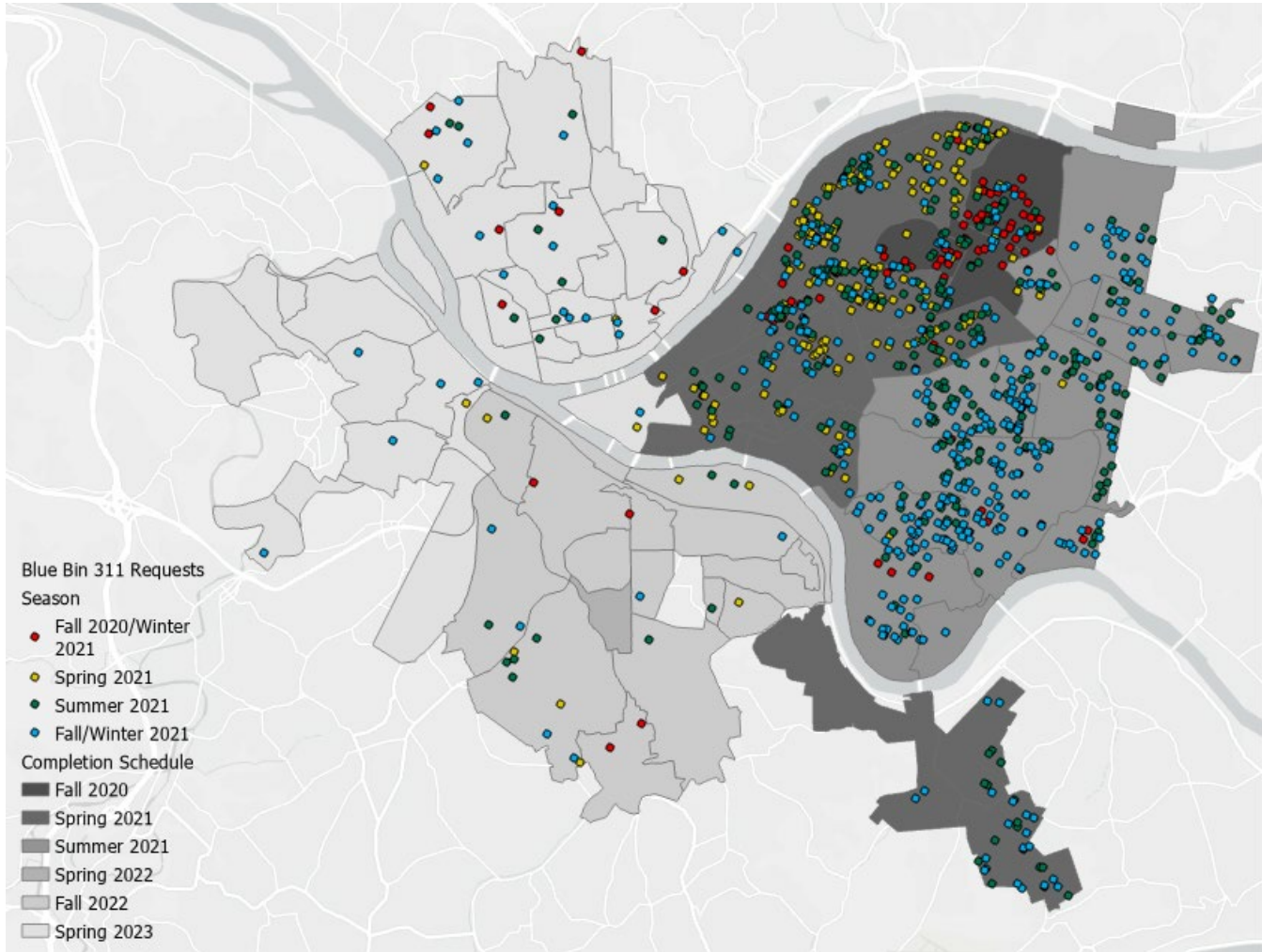
The blue bin program began in fall 2020. The 311 Response Center received 1,197 calls related to the blue bin program from October 2020 to December 2021. During this time period, blue bin 311 calls comprised 29.3% of all recycling-related 311 calls. The auditors analyzed the calls according to the month and location that they occurred.

Auditors were unable to identify the reason for the call because the 311 database does not produce a spreadsheet that is easily readable showing the details of the complaint for external analysis. The 311 response line manager reported that there are numerous types of blue-bin calls. Some residents wanted information on when they were going to receive a bin. Others complained that the blue bin was oversized, that they already had a bin and did not need another one, or that they were unable to remove the tight-fitting lid from the container.

Finding: The 311 database does not produce a spreadsheet that is easily readable showing the details of the complaint for external analysis.

Map 5 shows the locations in City neighborhoods and the season in which the blue bin 311 calls occurred in 2020 and 2021. Boundary lines in the map are neighborhoods. A map with neighborhood names can be found in the Appendix under Exhibit D. Of Pittsburgh's 90 neighborhoods, 70 had at least one call during this time period and 20 had no calls.

MAP 5
Blue Bin 311 Calls
October 2020 – December 2021



Source: 311 Response Center data

Further analysis of blue bin calls by neighborhood, month and breakdown of the 3 months that had the most calls can be found in the Appendix under the Exhibit E Tables 26 through 30.

City Code Enforcement

The Bureau division foremen have the authority to enforce all residential and business violations that fall under City code of ordinances Chapter 619: *Municipal Waste and Recycling*. These are violations such as failure to recycle, overflowing dumpsters, placing trash curbside before 6:00 p.m. the day before collection, improper storage of waste, placing materials for pick-up not collected by the City, etc.

During their shifts, foremen drive around the streets, inspect the neighborhoods, and report any code violations. Residents can also report code violations by calling the Bureau's main office or filing a complaint with the 311 Response Center.

Unless there are major safety issues, warnings are always issued first to try and resolve the problem. If the problem persists, a citation with a fine is issued to the property owner. The Bureau sends a citation form to the District Magistrate that covers the neighborhood where the violation occurred. The District Magistrate will issue a summons to the defendant. The defendant can plead guilty and pay the fine or go before the District Magistrate for a hearing. The District Magistrate may even dismiss the case or modify the fine amount. The defendant can appeal the District Magistrate's ruling and go before the common pleas court. The foreman that issued the citation must attend all court hearings and is told the final ruling by the judge. All paid refuse and recycling fines are deposited into the City's general fund.

Citation Database

In May 2021, the Bureau started tracking all citations issued and documenting the information in a Microsoft Excel spreadsheet. Prior to this time, they report being too short-staffed and unable to maintain a spreadsheet of citations. The spreadsheet fields include the defendants name, defendants address, DPW division, address and lot and block number of violation, violation code, violation date, citation issued date, magistrate office, date entered in database, and foreman who issued citation. These fields were 100% completed in the database. The following fields were left blank most of the time: fine/plea, owners phone number, and hearing data field. The database does not identify whether the city code violations were for refuse or recycling waste.

Numerous properties in the database were issued more than one citation. In 2021, there were 123 citations issued to 72 different properties. Citations issued by service division were the following: (111) central, (11) southern, and (1) northern. There were no citations issued in the eastern division. (See map 1 in the Overview of this audit).

Finding: In 2021, property owners in the central division were issued 111 (90.2%) out of 123 total citations.

RECOMMENDATION 18:

The Bureau of Environmental Services management should strive to have equal City code enforcement throughout all four of the divisions.

Missing Entries in Citation Database

Out of the 123 citations issued, there were 120 (97.6%) that had no documentation in the “fine/plea” field. One hundred and thirty (91.9%) citations had no hearing date documented. The lack of documentation in these two fields made it impossible for the auditors to determine the outcome of each citation issued.

The foremen know the outcome of each citation. If there is no hearing date, the resident plead guilty and paid the amount on the citation. If there is a hearing date, the foreman attends the hearing, and the judge tells them the final ruling.

RECOMMENDATION 19:

Bureau of Environmental Services administration should make sure all foremen, who enter the citation ticket information into the citation database, complete all fields in the database. Most of the missing data involves the hearing date (if needed), the hearing result (guilty, not guilty, dismissed) and if any fine is charged and paid.

Types of Citations

In 2021, 48% of the citations issued by foreman were for violation of City code 619.03(b). City code 619.03(b) states that “Municipal waste and recyclables shall be placed for collection no earlier than 6:00 p.m. the day before collection and no later than 6:00 a.m. the day of collection. Containers shall be removed from collection site and stored no later than 10:00 p.m. on collection days.” The auditors were unable to identify what the property owner infractions were under City code 619.04(a). The City code 619.04(a) states “The City shall collect municipal waste and recyclables from single family dwellings and small apartment buildings, defined as having five (5) or fewer units.” The Bureau of Environmental Services superintendent stated that the infractions could be anything from not recycling, improper set out location, improper set out timing, using the wrong size cans, etc. Table 25 shows the number of citations issued by foreman by City code violation.

TABLE 25
Municipal Waste and Recycling Citations
Issued by Bureau of Environmental Services
2021

City Code of Ordinance	Number of Citations
601.11(a)-Littering or Illegal Dumping	4 (3.3%)
619.03(a)-Improper Storage of Waste by Single Family Dwellings and Small Apartment Buildings	18 (14.6%)
619.03(b)-Improper Storage of Waste by Leased Single Family Dwellings and Small Apartment Buildings	3 (2.4%)
619.04(a)- The City shall collect municipal waste and recyclables from single family dwellings and small apartment buildings defined as having five or fewer units (general)	5 (4.1%)
619.04(b)-Early or Late Set Out Violations	59 (48.0%)
619.06(a)-Accumulation of Municipal Waste and Recyclables	33 (26.8%)
619.07(a)-Hard to Recycle Items Placed Curbside (E-waste, Hazardous, Tires etc.)	1 (.08%)
Total	123

Source: Recycling Division citation data

Finding: In 2021, almost half (48%) of the municipal waste and recycling citations issued to City residents and businesses were for early or late trash set out.

Recycling Code Violations

City code 619.02- *Separation of Recyclables from Municipal Waste* states that:

- (a) In accordance with Pennsylvania Act 101 recycling is mandatory in the City of Pittsburgh.
- (b) Materials collected as recyclables are designated by waste regulations.
- (c) Recyclables must be separated from municipal waste and free of solid liquid and residue.
- (d) Municipal waste may not be stored or placed for collection in blue bags, blue containers, or any container marked for recycling.

The auditors, while conducting the audit, witnessed large apartment units and other businesses are not recycling materials and/or do not have recycling dumpsters or bins.

Finding: In 2021, foreman issued zero citations to residents and businesses for violation of City code 619.02. Recycling is mandatory in the City and foreman have the authority to issue recycling code violations to any City residents or businesses for failure to recycle.

RECOMMENDATION 20:

The Bureau of Environmental Services administration should make recycling code enforcement of property owners and businesses that fail to recycle a priority. To have not one citation in 2021 for failure to recycle is evidence of lack of enforcement. All property owners and businesses who do not recycle should be cited for violation of the City code by a foreman.

Private Hauler Compliance

City code 619.04 states that all residents and businesses “not serviced by the City shall maintain a record, subject to City review upon request, of the name and address of the private collector and annual tonnage of municipal waste, recyclables, and any other waste collected.” These private waste haulers must send recycling data reports to the Recycling Division on a quarterly or yearly basis. The Recycling Division includes these reports in the yearly report to the PA Department of Environmental Protection (DEP).

The Recycling Division provided copies of the private hauler database for 2020 and 2021. The database includes the name and contact information for each hauler, fields to mark whether a report has been received for each quarter and at the end of the year, and a notes field that tracks staff follow-up efforts to obtain reports.

The private hauler data is included with the City’s recycling tonnage for the purposes of applying for performance-based recycling grants from the DEP. Because the grant formula is based on tonnage, there is a financial incentive to ensure that accurate reports are received from all eligible haulers. The Recycling Division superintendent reported that private haulers frequently need to be reminded, sometimes repeatedly, to send the reports, which utilizes staff time and resources.

RECOMMENDATION 21:

The Recycling Division administration should lobby City Council to increase the fines for private hauler noncompliance with City code 619.04. This should increase compliance with the law and reduce the Recycling Division’s staff time spent tracking down reports.

Achieving Zero Waste by 2030

The recycling market has changed drastically since Pittsburgh committed to achieving zero waste by 2030. From the late 1990s until 2017, China accepted more than 50% of the world's exported recyclables. Beginning in July 2017, the Chinese government imposed a new regulation known as "National Sword" which restricted the import of low-grade plastics and contaminated recyclables. The policy bans the import of 24 types of recyclable materials and includes a strict 0.5% limit on the amount of contamination allowed for other imported recyclables. Most recycling collected from single-stream recycling programs does not meet this new standard. The restrictions have caused worldwide impacts in recycling markets and have created challenges for local municipal recycling programs.

Achieving zero waste by 2030 will be difficult without further interventions and will require the full cooperation of all City departments, residents, private businesses and nonprofits, and county, state, and federal governments. Changes to local ordinances and state laws may be required for the City to meet its zero-waste goal.

City Legislation and Operations

The Pittsburgh Climate Action Plan 3.0 is the City's climate resilience and sustainability plan. It is an initiative of the Department of City Planning and the Mayor's Office in collaboration with numerous City departments, authorities, universities, non-governmental organizations, utilities, and civic sector organizations to account for and reduce greenhouse gas emissions and pollution in the City of Pittsburgh. The purpose of the plan is to serve as a decision support tool for future planning, land use, transportation, and development decisions.

The Pittsburgh Climate Action Plan 3.0 was officially adopted with the passage of City of Pittsburgh Resolution number 2018-0129 on May 22, 2018. The fiscal impact statement accompanying the legislation indicates that no funding was allocated. Implementation of the Pittsburgh Climate Action Plan will require significant investment.

The *Roadmap to Zero Waste* provides suggestions for changes to internal City policies that would enable the City to make progress toward zero waste, such as expanding requirements regarding the use of recycled materials in particular circumstances (recycled content guidelines for certain commodities purchased by the City or banning the purchase of bottled water with public funds). The City could require that private entities generating large amounts of landfilled refuse find alternative recycling solutions.

State Legislation

Extended Producer Responsibility EPR laws shift responsibility for the disposal of certain products from the public sector to the manufacturers of such products. EPR laws generally govern specific items, such as single-use packaging, electronics, mattresses, carpets, or batteries. Under these laws, producers must assume financial and managerial responsibility for the entire life cycle of a product, including its disposal. This reduces costs to municipalities and

provides an incentive for producers to incorporate environmental considerations into the design of their products.

EPR laws are on the books in 33 states as of 2023. California has the most EPR legislation with 11 state laws, followed by Maine with nine state laws. Pennsylvania has two EPR laws: the 2010 Covered Device Recycling Act, which governs the disposal of devices such as laptop computers, and the 2008 Mercury-Free Thermostat Act, which governs the disposal of mercury thermostats. EPR laws help to reduce landfilled waste and the enactment of EPR laws will be necessary to achieve zero waste.

Glass bottle deposit laws require that a refundable deposit be included when beverage containers are purchased. The deposit is then refundable to the consumer when the empty bottles are returned for recycling. According to the Roadmap to Zero Waste, glass bottle deposit laws are in place in 11 states. Pennsylvania no longer has a bottle deposit law. Pennsylvania's bottle deposit law was repealed sometime in the 1970s.

As previously mentioned, glass is highly vulnerable to breaking when mixed with other materials in a single-stream recycling system. Broken glass becomes a contaminant that attaches to paper, plastic, and cardboard, which damages these commodities and lowers their end value. Broken glass is also a less valuable recyclable material than intact glass bottles. The recycled material resulting from bottle deposits is generally higher-quality and therefore more valuable and is not at risk of breaking and contaminating other recyclable materials.

APPENDIX

EXHIBIT A

Refuse and Recycling Collection Schedule 2023: Central and Eastern Divisions

CENTRAL-EASTERN 2023 Refuse/Bulk and Recycling Pickup Calendar

ENVIRONMENTAL SERVICES 2023 HOLIDAYS

Monday, January 2 - Observed New Year's Day
 Monday, January 16 - Martin Luther King, Jr. Day
 Monday, May 29 - Memorial Day
 Monday, June 19 - Juneteenth National Independence Day

Tuesday, July 4 - Independence Day
 Monday, September 4 - Labor Day
 Thursday, November 23 - Thanksgiving Day
 Monday, December 25 - Christmas Day

When a holiday falls on or before your collection day, your pickup will be one day later.

JANUARY							FEBRUARY							MARCH						
SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7				1	2	3	4				1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25
29	30	31					26	27	28					26	27	28	29	30	31	

APRIL							MAY							JUNE						
SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
						1	1	2	3	4	5	6					1	2	3	
2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10
9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17
16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24
23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	
30																				

JULY							AUGUST							SEPTEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
						1			1	2	3	4	5						1	2
2	3	4	5	6	7	8	6	7	8	9	10	11	12	3	4	5	6	7	8	9
9	10	11	12	13	14	15	13	14	15	16	17	18	19	10	11	12	13	14	15	16
16	17	18	19	20	21	22	20	21	22	23	24	25	26	17	18	19	20	21	22	23
23	24	25	26	27	28	29	27	28	29	30	31			24	25	26	27	28	29	30
30	31																			

OCTOBER							NOVEMBER							DECEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7			1	2	3	4					1	2		
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
														31						

KEY	 Red - Holidays (No Pickup)	 Gray - No Regular Trash Pickup	 Green - Yard Debris Pickup	↕ Household Hazardous Waste Drop Off
	 Blue - Recycling Pickup			

- Notes on Curbside Collection Timing, Size, and Access:**
- All items for pickup must be set out no earlier than 6:00 p.m. on the night before collection and no later than 6:00 a.m. the day of collection.
 - All trash cans set out for collection must not exceed 35 gallons in size and must be removed from the curb after collection on your pickup day (City code 619).
 - Each dwelling may only set out two bulk items per week. Carpeting and fencing must be tied and bundled not to exceed 35 lbs or 5 ft in length.
 - Tires, Electronic, and Household hazardous waste are prohibited from curbside disposal but are accepted at various drop off locations in the city.
 - Automotive parts and large amounts of construction and demolition waste are prohibited from curbside collection.



Scan the QR code for more curbside and drop off information, or visit pittsburghpa.gov/dpw/curbside-pick-up

EXHIBIT B

Refuse and Recycling Collection Schedule 2023: Northern and Southern Divisions

NORTHERN-SOUTHERN 2023 Refuse/Bulk and Recycling Pickup Calendar

ENVIRONMENTAL SERVICES 2023 HOLIDAYS

Monday, January 2 - Observed New Year's Day
 Monday, January 16 - Martin Luther King, Jr. Day
 Monday, May 29 - Memorial Day
 Monday, June 19 - Juneteenth National Independence Day

Tuesday, July 4 - Independence Day
 Monday, September 4 - Labor Day
 Thursday, November 23 - Thanksgiving Day
 Monday, December 25 - Christmas Day

When a holiday falls on or before your collection day, your pickup will be one day later.

JANUARY						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

MARCH						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL						
SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

MAY						
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE						
SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY						
SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST						
SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER						
SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

KEY	 Red - Holidays (No Pickup)	 Gray - No Regular Trash Pickup	 Green - Yard Debris Pickup	↕ Household Hazardous Waste Drop Off
	 Blue - Recycling Pickup			

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 - Automotive parts and large amounts of construction and demolition waste are prohibited from curbside collection.



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EXHIBIT C
Recycling Fleet
2020-2021

Use Type	Make/Type	Year	Vehicle Age In Years
Refuse/Recycling	Ford F250 XL pickup	2020	2
Recycling	Mack Roll Off	2019	3
Recycling	Mack front loader	2019	3
Refuse/Recycling	Ford F250 pickup	2019	3
Refuse/Recycling	Chevy Silverado pickup	2018	4
Refuse/Recycling	Chevy Silverado pickup	2018	4
Refuse/Recycling	Ford F250 pickup	2018	4
Refuse/Recycling	Ford F250 pickup	2018	4
Refuse/Recycling	Ford F250 pickup	2018	4
Recycling	Hino (small packer)	2017	5
Recycling	Hino (small packer)	2017	5
Recycling	Hino (small packer)	2017	5
Recycling	Cranecarrier (large packer)	2017	5
Refuse/Recycling	Ford F250 pickup	2017	5
Refuse/Recycling	Ford F250 pickup	2017	5
Recycling	Cranecarrier (large packer)	2015	7
Recycling	Cranecarrier (large packer)	2015	7
Recycling	Cranecarrier (large packer)	2015	7
Refuse/Recycling	Mack Granite (stake body)	2015	7
Recycling	Cranecarrier (large packer)	2014	8
Recycling	Mack front loader	2014	8
Refuse/Recycling	Ford F350 pickup	2014	8
Recycling	Cranecarrier (large packer)	2012	10
Recycling	Cranecarrier (large packer)	2012	10
Refuse/Recycling	Ford F350 pickup	2012	10
Refuse/Recycling	Ford F350 pickup	2012	10
Refuse/Recycling	Ford F350 pickup	2012	10
Recycling	Cranecarrier (large packer)	2011	11
Recycling	Cranecarrier (large packer)	2011	11
Recycling	Mack roll-off	2010	12
Recycling	Cranecarrier (large packer)	2010	12
Recycling	Cranecarrier (large packer)	2010	12
Recycling	Cranecarrier (large packer)	2009	13

EXHIBIT C
Recycling Fleet
2020-2021(Continued)

Use Type	Make/Type	Year	Vehicle Age In Years
Recycling	Cranecarrier (large packer)	2009	13
Recycling	Cranecarrier (large packer)	2009	13
Refuse/Recycling	Chevrolet pickup	2009	13
Refuse/Recycling	Chevy 3500 pickup	2008	14
Refuse/Recycling	Chevy 3500 pickup	2008	14
Refuse/Recycling	Chevy Colorado pickup	2008	14
Refuse/Recycling	Chevy C4500 (stake body)	2006	16
Refuse/Recycling	Ford F250 pickup	2005	17
Recycling	Trailer	2000	22
Recycling	Trailer	2000	22

Source: Bureau of Environmental Services

EXHIBIT D
City of Pittsburgh Neighborhood Map

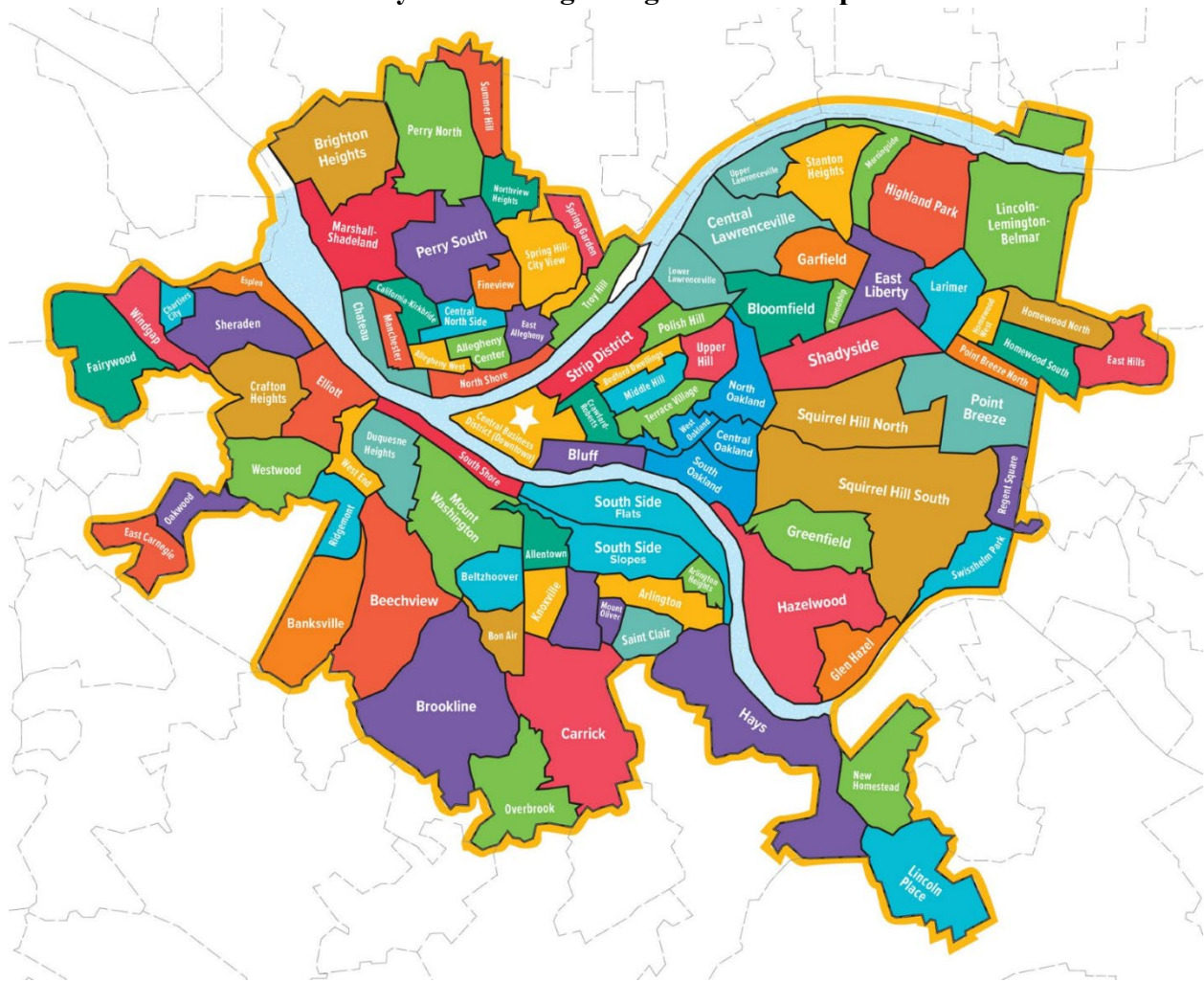


EXHIBIT E
Blue Bin Analysis

The following Tables 26-30 show information about blue bin-related 311 calls in 2020 and 2021.

Table 26 shows the 10 neighborhoods with the highest number of blue bin-related 311 calls from October 2020 to December 2021. These 10 neighborhoods were responsible for 52.7% of all blue bin 311 calls.

TABLE 26
Neighborhoods with the Highest Number of
Blue Bin-Related 311 Calls
October 2020 – December 2021

Neighborhood	Number of Calls	Percentage of All Calls
Squirrel Hill South	90	7.5%
Bloomfield	83	6.9%
Squirrel Hill North	75	6.3%
Greenfield	73	6.1%
Shadyside	60	5.0%
Highland Park	59	4.9%
Central Lawrenceville	55	4.6%
Upper Lawrenceville	47	3.9%
Point Breeze	46	3.8%
Stanton Heights	43	3.6%
Total	631	52.7%

Source: 311-Response Center data

Table 27 shows the number of blue bin 311 calls that occurred each month from October 2020 to December 2021. Of all the blue bin-related calls, 59.5% occurred during May (226 calls, or 18.9%), August (216 calls, or 18.0%), and September (270 calls, or 22.6%) of 2021. September 2021 had the highest number of calls at 270 (22.6%) and October 2020 had the lowest number of calls at three (0.3%).

TABLE 27
Blue Bin 311 Calls Per Month
October 2020-December 2021

Month	Number of Calls	Percentage of Total
October 2020	3	0.3%
November 2020	44	3.7%
December 2020	15	1.3%
January 2021	25	2.1%
February 2021	11	0.9%
March 2021	14	1.2%
April 2021	15	1.3%
May 2021	226	18.9%
June 2021	90	7.5%
July 2021	80	6.7%
August 2021	216	18.0%
September 2021	270	22.6%
October 2021	86	7.2%
November 2021	58	4.8%
December 2021	44	3.7%
Total	1,197	100.0%

Source: 311-Response Center data

The auditors analyzed the months with the most the blue bin 311 calls, May, August, and September 2021 by location. Table 28 shows the seven neighborhoods with the highest number of calls in May 2021. In May 2021, these seven neighborhoods accounted for 74.3% of the 226 total calls.

TABLE 28
Neighborhoods With the Highest Number of
Blue Bin 311 Calls
May 2021

Neighborhood	Number of Calls	Percent of Monthly Total (226)
Bloomfield	39	17.3%
Central Lawrenceville	30	13.3%
Stanton Heights	29	12.8%
Upper Lawrenceville	20	8.8%
Morningside	20	8.8%
Upper Hill	15	6.6%
Shadyside	15	6.6%
Total	168	74.3%

Source: 311-Response Center data

Table 29 shows the seven neighborhoods with the highest number of calls in August 2021. These seven neighborhoods accounted for 54.6% of the 216 total blue bin calls in August.

TABLE 29
Neighborhoods With the Highest Number of
Blue Bin 311 Calls
August 2021

Neighborhood	Number of Calls	Percent of Monthly Total (216)
Squirrel Hill North	25	11.6%
Point Breeze	23	10.6%
Squirrel Hill South	19	8.8%
Greenfield	17	7.9%
East Hills	13	6.0%
Lincoln Place	13	6.0%
Regent Square	8	3.7%
Total	118	54.6%

Source: 311-Response Center data

Table 30 shows the seven neighborhoods with the highest number of calls in September of 2021. These seven neighborhoods accounted for 65.6% of the 270 total calls in September.

TABLE 30
Neighborhoods With the Highest Number of
Blue Bin 311 Calls
September 2021

Neighborhood	Number of Calls	Percent of Monthly Total (270)
Squirrel Hill South	44	16.3%
Greenfield	36	13.3%
Squirrel Hill North	34	12.6%
Hazelwood	20	7.4%
Lincoln-Lemington-Belmar	18	6.7%
Point Breeze	13	4.8%
Lincoln Place	12	4.4%
Total	177	65.6%

Source: 311-Response Center data

EXHIBIT F
Department of Environmental Protection
Recycling in Pennsylvania Schools, Colleges, and Universities Fact Sheet



Recycling in Pennsylvania Schools, Colleges, and Universities

Recycling at educational institutions throughout Pennsylvania can make a positive impact on our environment and our local communities. Administrators, students, faculty, and employees of these institutions, working together with their local municipality, can establish and maintain a successful recycling program.

Recycling is local in Pennsylvania - The Municipal Waste Planning, Recycling, and Waste Reduction Act of 1988 (Act 101) requires commercial, institutional, and municipal establishments located in Pennsylvania's mandated municipalities to recycle high-grade office paper, corrugated paper, aluminum, and leaf waste. In addition, establishments must recycle any other materials included in the municipality's recycling ordinance or regulations, which may include glass, newsprint, plastics, and/or steel and bimetallic cans. Businesses and institutions with facilities located within mandated municipalities must implement recycling programs according to local requirements, those not, are encouraged to recycle.

General municipal recycling requirements are as follows:

- All commercial, institutional, and municipal establishments must source separate the following materials:
 - High grade office paper;
 - Corrugated cardboard;
 - Aluminum cans;
 - Leaf waste; and
 - Any other recyclables that may be designated by the municipality.
- These establishments must arrange for the collection and recycling of all designated materials.
- All commercial, institutional, and municipal entities must provide written documentation as to the type and weight of materials recycled annually. Reports are due to the municipality by January 31 of each year on a form provided by the municipality.

Steps for Successful Recycling in Schools, Colleges, and Universities

The challenge to good management of a recycling program in educational institutions is that unlike offices, restaurants, or other establishments that serve primarily a single purpose, these institutions must plan for a wide range of areas that encompass management of everything from office waste and cardboard to food waste and related materials. Compounding the challenge is a constantly changing population. Most colleges and universities also have housing, so residential materials are part of the mix, and many have extensive grounds and must manage large volumes of organic materials generated in grounds keeping operations. Here are some hints to help in planning:

1. Perform a waste assessment. Walk through the facility noting what type of waste is discarded in each area. A walk-through will help you determine which types of containers are needed. Typical programs are likely to involve some of the following:
 - **Administrative and office areas** - office paper, corrugated cardboard, other paper, cans, bottles, toner cartridges
 - **Classrooms** – mixed paper, newspaper, glass, metal, and plastic containers
 - **Library** – newspaper, magazines, mixed paper, books
 - **Retail areas (book stores, etc.)** – corrugated cardboard, mixed paper, newspaper
 - **Food service areas** - glass, metal, cans, plastic containers, corrugated cardboard (make sure that food waste is separated from recyclables), grease
 - **Mail room/area** – mixed paper, corrugated cardboard
 - **Student housing** – newspaper, magazines, glass, metal and plastic containers, corrugated cardboard
 - **Public areas** - newspaper, magazines, bottles, cans
2. Based on the results of the waste assessment, set up appropriate recycling programs in each area. When setting up a program, concentrate most on areas that produce significant amounts of waste.
3. Make sure that collection containers in all areas are well-marked, particularly those in public areas. For public areas, it is best to choose containers with specialized openings, such as a hole for cans or a slot for newspapers

FACT SHEET

EXHIBIT F
Department of Environmental Protection
Recycling in Pennsylvania Schools, Colleges, and Universities Fact Sheet
(Continued)

– this helps limit contamination from other wastes. It is also important to place containers where the materials are generated to make recycling convenient.

4. Inform employees and students about proper recycling procedures. Issue a memo, throw a kick-off party, and explain any separation procedures when you distribute containers. Make sure to follow up to ensure that procedures are being followed and further educate employees and students as necessary.
5. Set up a log book or a receipt system to record the volume of recyclables leaving the premises. This will enable you to receive proper compensation for your materials and to take appropriate action if volumes change.
6. Include recycling information in your orientation for new employees and new students. Publicize by posting recycling information in the school newspaper, on a web page, through e-mail, in a school handbook, and during student orientation activities.
7. After policies have been established, explain the recycling program to your physical plant/custodial/housekeeping staff. Train them by showing them what to do with new containers, how to collect waste separately, and where to take separated materials. For a 24-hour operation, plan pick-ups on appropriate shifts so that you do not have a problem with overflowing containers.
8. Ask for assistance from your physical plant/custodial/housekeeping staff in monitoring the program. Have them inform you of areas with major contamination problems or where employees or students are not participating, and follow up with improved recycling education in these areas.
9. If appropriate, make sure that your grounds crew knows to keep yard waste separate from other waste.
10. Ask your waste hauler for advice about keeping recyclables and wet waste separate. Depending on the company's trucks and equipment, your hauler may want to give you separate containers for trash and recyclables.
11. Remind employees and students to keep food waste out of recycling containers and trash. Food waste should be handled separately from trash and recyclables. Where appropriate, your facility should consider composting this waste, and/or recycling grease with renderers.
12. Educational institutions that have establishments in multiple locations need to coordinate their recycling efforts with each local municipality where they operate. Each municipality may have different recycling processes – remember all recycling is local in Pennsylvania.

Many wastes generated at educational institutions can be recycled. It is important that administrators, faculty, employees, students and the local municipality all work together to implement and maintain a recycling program at their educational institutions.

Schools, Colleges and Universities, retail operations, hotels, offices, restaurants, manufacturers, hospitals, and other establishments each generate various types and amounts of wastes and have their own unique recycling opportunities. To learn more on how different types of establishments can implement a recycling program, please refer to our other Recycling Fact Sheets available at: <http://www.depgreenport.state.pa.us/elibrary/> (select Publications and then Waste Management). Though each workplace may have differences in the waste they produce and what they can recycle, all have the capability of significantly reducing what and how much waste is disposed in our landfills. By recycling they can also save energy and reduce carbon emissions, save natural resources, and limit operational costs. It is important that we all work together with our employers and local municipalities to implement and maintain a recycling program at our places of work and educational institutions.

For more detailed information about recycling in Pennsylvania, visit the Pennsylvania Department of Environmental Protection, Bureau of Waste Management, Recycling in Pennsylvania website at: <https://www.dep.pa.gov/Business/Land/Waste/Recycling>.

Auditee Response

ED GAINNEY
MAYOR



CHRIS HORNSTEIN
DIRECTOR

CITY OF PITTSBURGH
DEPARTMENT OF PUBLIC WORKS
CITY-COUNTY BUILDING

July 14, 2023

Via Email: michael.lamb@pittsburghpa.gov
Michael Lamb, City Controller
Office of City Controller
414 Grant Street
Pittsburgh, PA 15219

Re: Responses to the Bureau of Environmental Services Recycling Division Performance Audit Report.

Dear Mr. Lamb,

This letter is in response to the enclosed July 2023 Performance Audit Report on the Department of Public Works' (DPW) Bureau of Environmental Services, Recycling Division. Upon reviewing the aforementioned Report, DPW would like to address the Report's Recommendations #1 through #21 as follows, by cross-referencing the Report, and as discussed at the exit conference of this audit held on June 6, 2023:

- **Recommendation #1:** The Bureau of Environmental Services Recycling Division administration should communicate to residents that, in the event their recycling is not picked up, they should leave the can on the curb for up to 24/48 hours so that it is still there when the route is made up. For example, the yearly Curbside Recycling/Refuse Newsletter and Calendar, which is mailed to every household yearly, should include this information and all services that are available on PGH.st (including text messaging reminders). The Bureau administration should continue to inform the City's 311 operators who take refuse/recycling complaints to tell residents this same information.
 - **Response: Providing up-to-date information to City residents is DPW's priority, and we will continue to explore options for this recommendation.**
- **Recommendation #2:** The Bureau of Environmental Services administration should ensure that pay rates remain competitive and work to explore ways of retaining qualified personnel and filling all budgeted positions. Waste removal is one of the most important concerns of public health and adequate staffing should be a top priority to ensure quick removal of garbage and recyclables.

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- **Response: DPW agrees with this recommendation.**
- **Recommendation #3:** Once all budgeted positions are filled, the Recycling Division administration should collaborate with the Office of Management and Budget to conduct a staffing analysis of the Bureau. The analysis should determine if the budgeted number of 150 truck staff positions provides enough staff to eliminate shortages and service disruptions caused by routine employee absences, such as paid time off and short-term or long-term leave. If the analysis finds that 150 staff members is not sufficient, the number of budgeted truck staff positions should be increased in the City's next operating budget.
 - **Response: DPW agrees with this recommendation.**
- **Recommendation #4:** The Bureau of Environmental Services administration should work with the Equipment and Leasing Authority to plan a fleet replacement schedule so that older vehicles can be replaced in a timely manner.
 - **Response: A Fleet Replacement Plan has been developed, and what is budgeted each year for this purpose is beyond the Bureau's control.**
- **Recommendation #5:** The Recycling Division administration should work with the Department of Innovation and Performance to include recycling data on its website. Tonnage recycled by material, the landfill diversion rate, residential recycling participation rate, contamination rate, and a recycling per capita rate should be added to the website and updated quarterly. Reports from private haulers can also be incorporated. Where possible, data should be broken down by public works divisions. Currently, the results of recycling are not reported to the public. Public awareness of the successes may increase program participation.
 - **Response: Public awareness of the success of recycling efforts would, beyond doubt, increase program participation.**
- **Recommendation #6:** Recycling Division administration should be commended for their well-designed, easy to navigate webpage, and informational newsletter; both should be continued.
 - **Response: DPW sincerely appreciates the compliment of this recommendation, and fully intends to continue providing user-friendly recycling information to the public.**
- **Recommendation #7:** The Recycling Division administration should explore options for increasing additional educational messaging in a variety of mediums and on a variety of platforms to reach the greatest number and diversity of residents. Grant funding may be available for this purpose. The investment to educate the public about proper recycling practices will pay for itself by reducing the costs associated with disposing of non-recyclable materials. Additionally, increasing participation rates through public education will increase the tonnage of recyclable materials collected, which will increase the amount of grant money for which the Division is eligible. See Recommendation 8.
 - **Response: DPW will strive to be creative in pursuit of educational funding dollars through the Department of Environmental Protection (DEP) and the Environmental Protection Agency (EPA).**
- **Recommendation #8:** Money from performance grants earned by the Recycling Division should be deposited in the Solid Waste Trust Fund for use by the Recycling Division rather than the general fund. This will provide an incentive for the Recycling Division to improve its performance, specifically to increase the tonnage of recyclable materials collected, which will provide more grant money to help fund Division expenses, such as public education. (See recommendation 7).


- **Response: DPW welcomes the opportunity to turn this recommendation into concrete action with guidance of the Office of Management and Budget. The Department and the public would benefit greatly with the infusion of these dollars into our recycling programming within the Bureau.**
- **Recommendation #9:** City administration should apply for a grant with the Department of Environmental Protection for the intent to purchase three more glass-specific dumpsters collected by CAP Glass. This would help reduce contamination of single-stream recyclables and increase their end value. A dumpster can be stationed at their East End, Hazelwood, and West End drop-off centers where no glass-specific dumpsters are located. Additionally, a Northside location would be beneficial since there are no glass dumpsters in that location.
 - **Response: DPW is in plans of exploring this recommendation.**
- **Recommendation #10:** DPW administration should update signage at recycling sites with the latest pricing charges to the public.
 - **Response: DPW will work with the City's sign shop within the Department of Mobility and Infrastructure's Traffic Division to upgrade any outdated signs.**
- **Recommendation #11:** The Recycling Division administration should work with the Office of Management and Budget to rebid the next yard waste composting contract and lower the required tonnage capacity for vendors. This could attract more bidders thereby creating competition which should lower the tonnage price.
 - **Response: DPW takes this recommendation into consideration and will evaluate the possibilities, despite having concerns of smaller vendors who may not have enough capacity and/or hauling equipment to provide the needed resources.**
- **Recommendation #12:** The Recycling Division administration should not offer fewer than 12 Christmas tree collection drop-off sites to residents. If site tree collection drops substantially, the Division should explore the possibility of collecting Christmas trees curbside on one designated pick-up date in January.
 - **Response: The Bureau relies on the support of other DPW sister Bureaus/Divisions, namely Forestry and Streets, to help with staging, collection, and chipping of the trees. Their continued contributions will guarantee the success of a tree recycling program of this capacity.**
- **Recommendation #13:** The Bureau of Environment Services administration should make it clear in the budget narrative that the recycled tonnage totals represent projected totals rather than the actuals for the reporting year.
 - **Response: DPW will add a clarifying note onto the budget narrative for better context.**
- **Recommendation #14:** The Recycling Division administration should work with City Council and the Law Department to include language in the next agreement with HACP to expand recycling collection and have blue-bin containers located in each HACP community. The agreement should also require HACP to conduct a campaign to educate residents about the importance of recycling to help increase participation. If needed, additional drop-off and/or donation bins, for different types of materials, should be added to HACP properties. This would comply with PA's Municipal Waste Planning Recycling and Waste Reduction Act 101 and City code ordinance 619.02.

- **Response: DPW will work with City Council and the Law Department to evaluate this recommendation before another agreement with Housing Authority City of Pittsburgh (HACP) is put in place.**
- **Recommendation #15: The Recycling Division should monitor the PPS recycling performance and update the results in their database. Schools that are underperforming or not participating in the recycling program should be contacted and encouraged to recycle.**
 - **Response: DPW recently reaffirmed its relationship with the Pittsburgh Public Schools' (PPS) Chief Operations Officer and Environmental Sustainability Manager, resulting in putting forth this precise recommendation.**
- **Recommendation #16: An official, consistent communication channel should be established with PPS administration and/or each PPS school. The Recycling Division should verify that the recycling contact at each school is still employed and willing to act as the school's recycling contact. The Recycling Division should also consider appointing a staff member to be the City's recycling liaison for PPS. An initial investment in employee time to establish a working relationship can be beneficial in the future when both parties are recycling to their full potential. The importance of recycling for a sustainable future for the students is a timely topic.**
 - **Response: Your office is right to highlight this opportunity, and DPW will work with PPS on this recommendation. A recent grant application submitted to the EPA requested funding for a dedicated education staffer for the Recycling Division, as this is a priority for DPW.**
- **Recommendation #17: Once blue bins have been distributed to all residents and the program is complete, the Recycling Division administration should analyze the impact of the blue bin program. For example, analysis should include the effect of the program on the recycling rate, recycled tonnage, and City operations including time to complete daily routes and truck staff injury rates. This information should be posted on the Bureau website for public awareness.**
 - **Response: The impetus to analyze the success of blue bin distributions is fueled in part by reporting requirements to our matching funder, the Recycling Partnership.**
- **Recommendation #18: The Bureau of Environmental Services management should strive to have equal City code enforcement throughout all four of the divisions.**
 - **Response: The implementation of the Goals on Littering & Dumping (GOLD) Plan and hiring of new Anti-Litter Inspectors will assume the previous responsibilities of the Foreman and lead to code enforcement, holistically.**
- **Recommendation #19: Bureau of Environmental Services administration should make sure all foremen, who enter the citation ticket information into the citation database, complete all fields in the database. Most of the missing data involves the hearing date (if needed), the hearing result (guilty, not guilty, dismissed) and if any fine is charged and paid.**
 - **Response: In assuming these enforcement roles from the Bureau's Foremen; Anti-Litter Inspectors have been mentored and trained by the Department of Permits, Licenses, & Inspections inspectors to use Computronix, and in turn, automate notification and tracking processes and follow-ups.**
- **Recommendation #20: The Bureau of Environmental Services administration should make recycling code enforcement of property owners and businesses that fail to recycle a priority. To have not one citation in 2021 for failure to recycle is evidence of lack of enforcement. All property owners and businesses who do not recycle should be cited for violation of the City code by a foreman.**

- **Response: DPW will better-utilize its Recycling Foreman, along with its onboarding Anti-Litter Inspectors to expand this work.**
- **Recommendation #21:** The Recycling Division administration should lobby City Council to increase the fines for private hauler noncompliance with City code 619.04. This should increase compliance with the law and reduce the Recycling Division's staff time spent tracking down reports.
 - **Response: DPW agrees with this recommendation.**

Thank you for the scrutiny of our daily operations and special initiatives by providing the aforementioned recommendations of improvement for the City and its esteemed residents. Please let me know if you need any other information.

Sincerely,


Chris Hornstein (Jul 14, 2023 14:25 EDT)

Chris Hornstein
Department Director

CH/gm
Enclosure

cc: Marcelle Newman, DPW Assistant Director of Administration (via email)
Shawn Wigle, DPW Superintendent of Environmental Services (via email)
Brian Chizeck., DPW Program Supervisor (via email)
Alicia Carberry, DPW Recycling Supervisor (via email)
Rachael Heisler, Deputy Controller (via email)
Gloria Novak, Performance Auditor Manager (via email)
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