2014-2017 Recycling In Multi-Family Buildings Initiative

Prepared by the

Pennsylvania Resources Council

Supported by

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1.0 Project Background

Since the enactment of Pennsylvania Act 101 in 1988 by Governor Bob Casey, recycling has become mandatory for the vast majority of Pennsylvanians. Businesses, residents, institutions, and government offices must recycle a number of materials, as outlined by local municipal ordinances. Municipalities with populations over 100,000 and municipalities with five to ten thousand residents and a population density of more than 300 people per square mile are required to provide such ordinances as well as curbside recycling services. These requirements necessitate the City of Pittsburgh and the majority of surrounding communities to provide recycling programs. In a May 2015 Performance Audit of the City's Environmental Services Division, the Office of the City Controller reported that they City achieved 17.5% recycling rate of City-managed waste on the most recent data available (fiscal year 2013). In comparison, the EPA reported a national average of 34% for the same period. The Greater Pittsburgh Area therefore has much opportunity for improvement in regards to recycling.

Multi-family residential units provide a key area for growth in material diversion in the region. Pennsylvania's Act 101 defines multi-family dwellings as "housing properties with four or more units" though the City of Pittsburgh (§ 619.15) defines multi-family dwellings as properties with six or more units. Multi-family dwellings can range from a collection of small buildings, to a single high-rise, to condominiums and cooperatives. According to the 2010 census, 23.3 percent of the housing in the City of Pittsburgh is made up of multi-family residential units (over 37,000 units). (Unfortunately, multi-family properties often fall through "cracks" in regards to enforcement as they feature a combination of aspects from both commercial and residential institutions.)

However, Act 101 clearly outlines that within "mandated" municipalities, multi-residential family units are required to provide their residents with easily accessible recycling containers as well as ensure the recycling is hauled and properly recycled. Properties are not responsible for how well and if their residents recycle, though the recycling infrastructure must be provided. In addition to regulations outlined in Act 101, many municipalities have enacted local ordinances regarding recycling, including designating responsibilities for multi-family recycling hauling. Within the City of Pittsburgh, the ordinance states that owners and landlords must establish clearly marked collection systems for recyclables at each of their properties in addition to providing written instructions and educational materials regarding the recycling program (§ 619.05). It should be noted that the City of Pittsburgh currently provides free recycling hauling for a number of multi-family properties within City limits.

Though Act 101 and municipal ordinances are clear, consistent enforcement is critical to the success of the law itself. With tight budgets and limited resources, government offices are oftentimes unable to provide the resources to track, fine, and otherwise enforce municipal ordinances in multi-family properties that are out of compliance.

2.0 Project Overview

The *Recycling in Multi-Family Buildings Initiative* worked with fifteen multi-family properties in the Greater Pittsburgh Area to test a variety of strategies for successful recycling programs and determine best management practices in a variety of types of multi-family properties. During this project, staff collected data to determine the effectiveness of the program, including quantity and quality of recycling output, as well as staff and resident surveys.

This project was supported by a grant from Alcoa Foundation and was implemented by the Pennsylvania Resources Council (PRC).

3.0 Project Objective

The outcomes of the *Recycling in Multi-Family Buildings Initiative* will help determine best management practices for improving and implementing recycling programs in multi-family properties in the Greater Pittsburgh Area. PRC will then work with the City of Pittsburgh's Recycling Division to provide these best management practices and related materials to local property managers, landlords, and owners to develop or improve their own recycling programs. These materials will also be used to assist in the enforcement of § 619.03, § 619.04, § 619.05, § 619.11, and § 619.11.

The primary objectives of the pilot project were developed to:

- Increase the amount of multi-family dwellings with successful recycling programs
- Increase the amount of recycling generated by multi-family properties
- Increase resident and management awareness of recycling
- Increase resident recycling participation rates
- Decrease contamination in multi-family recycling
- Develop best management practices and educational materials for use by other multi-family properties

4.0 Project Timeline

This pilot program followed the timeline outlined below to meet the aforementioned objectives and are described in detail in Section 5.0: Project Implementation.

Dates	Phase
Phase I - (Fall 2014 – Spring 2016)	• **Identify and enroll participating multi-family properties** • **Conduct Site Visits**
Phase II (Winter 2015 – Spring 2016)	• **Develop Property Specific Recycling Plans** • **Develop Formal Signage** • **Collect Baseline Recycling Data**
Phase III (Winter 2015 – Spring 2016)	• **Review Plans with Property Management & Staff** • **Conduct Resident Recycling Surveys**
Phase IV (Winter 2015 – Spring 2016)	• **Implement Recycling Program**
Phase V (Spring 2015 – Fall 2016)	• **Conduct Follow Up Recycling Surveys** • **Collect Follow Up Recycling Data** • **Identify and Troubleshoot Problem Areas**

5.0 Project Implementation

Multi-family properties for this initiative were identified by a variety of factors. PRC included properties varying in size, type, location, existing recycling program, and socioeconomic makeup.

Properties were initially contacted via email and phone; PRC then met directly with interested property managers and staff to conduct a site visit and a baseline property survey regarding the property's size and layout, resident population, and waste system. From this survey and site visit PRC identified properties to be included in the project.

Once identified and engaged, PRC created specific recommendations for each property from data collected during the site visit and the property survey. These recommendations contained combinations of the following strategies: centralized and public space recycling containers, personal recycling containers for interested residents, public space recycling containers, streamlined signage regarding the waste system, informational handouts, and educational presentations by a member of PRC's staff. These recommendations each included three levels of recycling programs, ranging from simple changes to more comprehensive shifts. PRC then worked with property managers, staff, and property coordinators to identify the best solutions for each property.

Prior to implementing the program, PRC staff measured baseline performance of the institution's recycling system and surveyed residents about their current recycling habits and opinions. PRC then deployed the new recycling features (I.e. bins, signage, presentation, etc.) with the support of property managers (see Appendices). PRC continued to contact property managers and/or staff in the months following project implementation.

Several months after implementation, PRC returned to the site to collect data regarding the weight and quality of materials recycled through the program and conduct a follow up survey of residents regarding changes to their recycling practices, knowledge, and opinions on the new system (Figure 2, 3, 4, 5). PRC amalgamated the recycling, resident, and staff data collected from all participating properties for analysis and creation of best management practices (Section 8.0). Throughout this process PRC continuously interacted with property management and staff to adjust the program as necessary including installing additional signage, adjusting bin locations, follow up presentations, and more.

For a majority of the participating fifteen multi-family properties, PRC implemented or improved the existing recycling program through a variety of combinations of the recycling features outlined below.

5.1 Recycling Infrastructure

Centralized Waste Area Recycling Bins

PRC provided convenient and easily accessible recycling bins to a number of the multi-family properties. These bins were placed alongside the main existing trash receptacles (either in trash rooms, near trash chutes, or in hallways) within the building to increase convenience and streamline the recycling process. Coupling trash and recycling bins eliminated the residents' need to take multiple trips to dispose of their trash and recycling.

All new recycling bins were bright blue in color to immediately distinguish from the black or grey garbage cans or silver garbage chutes (Figure D, E, F, G).

Figure 1. Resident of Mackey Lofts using new recycling bin, located in the hallway of each residential floor.

Public Space Recycling Bins

PRC installed recycling bins in public and community spaces in the majority of participating properties, coupling every public space trash can with a recycling bin. These spaces typically included community rooms, laundry rooms, lobbies, and gyms (Appendix D, F). While these bins are not typically utilized as frequently as central recycling receptacles, public space recycling containers increase the convenience of recycling throughout the building, especially for items like junk mail in mail areas and plastic bottles in gyms and community rooms. Furthermore, by coupling every available trash can with a recycling bin, PRC normalizes recycling, constantly reminding residents to consider recycling when they throw out materials. This normalization will likely lead to long-term increased recycling levels.

Resident Recycling Bins

PRC provided residents in a number of properties with small recycling bins to use in their own apartments (Appendix F, G). These bins were small enough to fit under sinks, and were implemented to increase participation and decrease contamination levels. These bins serve as a constant reminder to residents to recycle, as well as remove the need for plastic bags to hold recyclables, therefore reducing contamination.

5.2 Educational Materials

To continuously educate current and new residents, management, and staff about the new or updated recycling program, PRC created the following streamlined educational materials for each property. These materials were made available in additional languages when needed.

Signage

PRC created large posters and decals to be posted with each recycling bin throughout the building, including public space containers and central waste areas (Appendix A). These signs featured a

combination of clear graphics and text outlining which materials should be recycled, as well as information about placement of recycling and trash receptacles throughout the building.

By clearly identifying recyclable materials, this signage will decrease resident confusion about accepted recyclable materials. With increased understanding of the program, PRC anticipates reduced contamination rates as well as increased participation rates.

Brochures

PRC created property-specific informational brochures for residents and staff, mirroring the graphics and style of the signage throughout the property (Appendix B). These brochures featured specific information regarding the property's recycling program and highlighted new recycling features within the building. The brochures also give residents tips regarding common recycling questions and errors, to reduce resident confusion and contamination rates. PRC also provided information regarding specialty recycling resources, which covered materials such as electronics, tires, and textiles.

Magnets

Each apartment was provided with an informational image-based magnet, reflecting aforementioned signage and brochures (Appendix C). Magnets are likely to remain on refrigerators despite resident turnover, unlike brochures and flyers which may be lost over time. Therefore, the magnet is ideal for educating residents in properties with high resident turnover, such as student housing.

5.3 Educational Presentations

PRC offered interested properties educational presentations to accompany the installation of new signage and bins. These presentations served to explain general recycling information as well as building-specific recycling updates and information regarding local specialty recycling options. To increase attendance, PRC offered these presentations in property common rooms, offered attendees a free meal, as well as a chance to a win a gift card to a local grocery store. In addition to presenting new information, these presentations allowed residents to ask individual recycling questions and receive immediate answers. By connecting with residents and clarifying recycling procedures, PRC anticipates increased participation rates and decreased contamination levels.

Figure 2. PRC Staff Giving Recycling Presentation to residents of Highland Plaza.

6.0 Summary of Results

The *Recycling in Multi-Family Buildings Initiative* created a number of different impacts to participating properties. These impacts included changes in the amount of recycling produced by residents, the quality of the recycling generated by residents, resident understanding of the recycling system, and the impacts of the program on both the staff and finances of the property

6.1 Changes in Tonnage

The *Recycling in Multi-Family Buildings Initiative* measured nine of the participating properties recycling tonnages before and after the program was implemented due to limitations of staff resources and property management. For this project PRC found that determining impacts in recycling tonnage to be the most straightforward way to determine recycling participation rates: increased rates of participation should lead to increased recycling tonnage.

Measurements were taken from all property recycling receptacles multiple times to find an average weight for both time periods, to avoid potential anomalies (I.e. student move-in week). PRC used a standardized waste calculator to determine material weights within dumpsters. PRC took follow-up weights an average of 6 months after the initial weigh-ins to determine post-program impacts.

In five of the nine buildings, increased recycling tonnages were documented. Significant increases (an increase of over 50 percent) were found in two properties, and more modest increases were found in three properties (an increase of between 10 and 28 percent). PRC also found decreased recycling tonnages in four of the measured nine properties, each of which had modest decreases (a decrease of between 10 and 28 percent).

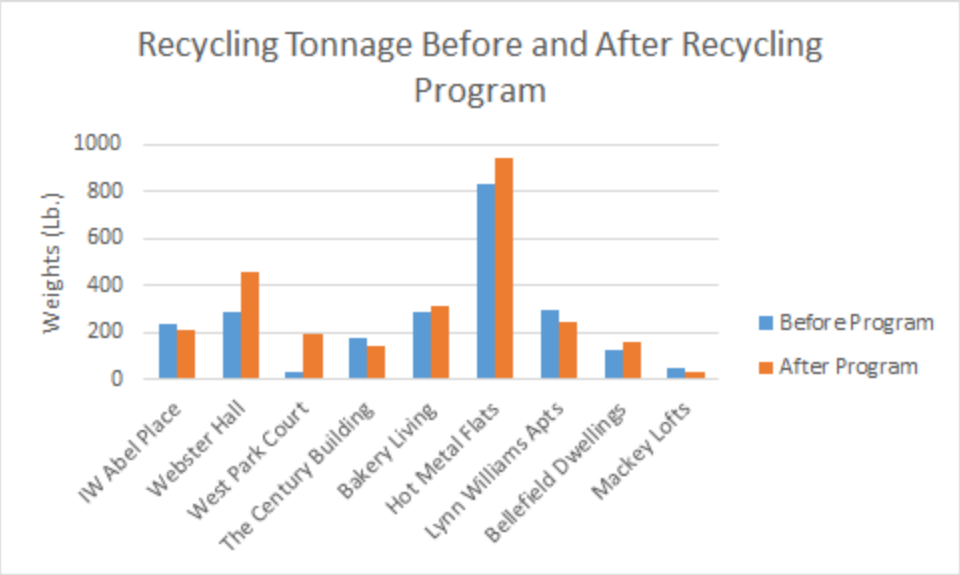


Figure 3. Recycling tonnages before and after implementing the recycling program.

6.2 Recycling Quality

The *Recycling in Multi-Family Buildings Initiative* measured the quality of recycled materials several months after the recycling programs were implemented at fourteen of the properties. A qualitative scale was created to measure the contamination rates. Overall the measured buildings had a lower contamination rates several months after the program was implemented.

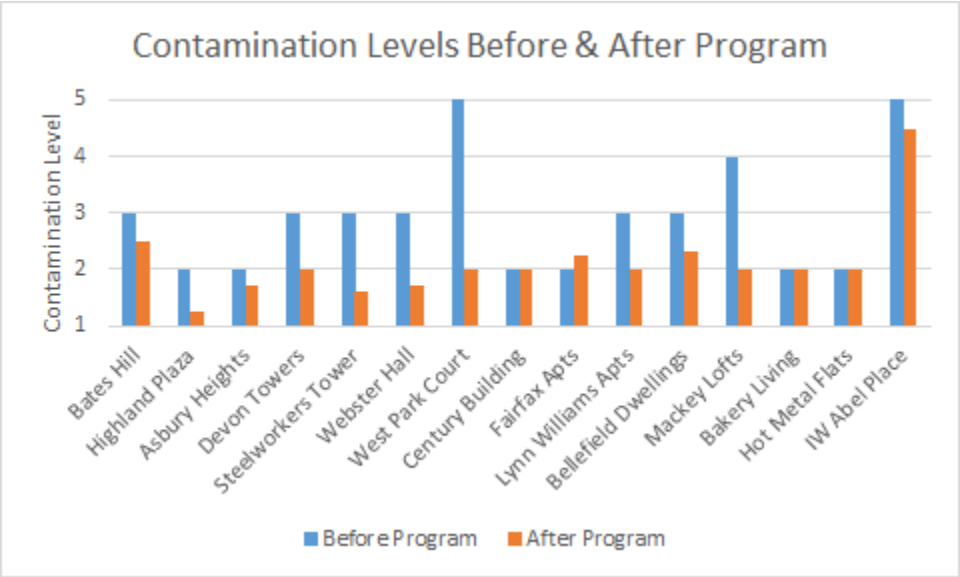
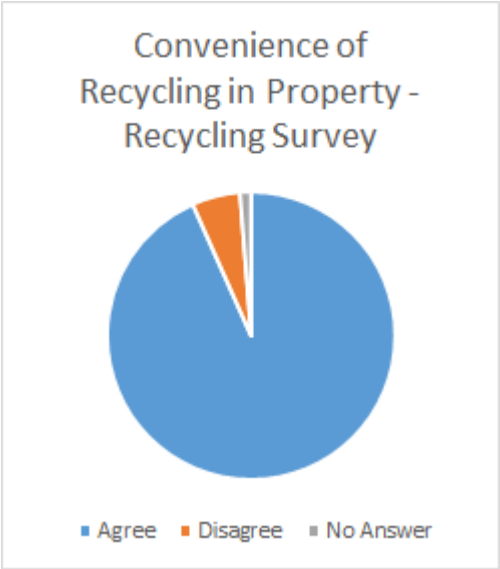


Figure 4. Contamination at participating properties before and after program.
(1 – No Contamination 5 – Very High Contamination)

6.3 Resident Feedback

The *Recycling in Multi-Family Buildings Initiative* measured resident knowledge and opinions of the recycling programs in their properties. After the new recycling program was implemented the vast

majority of residents reported that they understood how to recycle after the program (94 percent) , and that they found that recycling was easier after the new program had been implemented (93 percent).



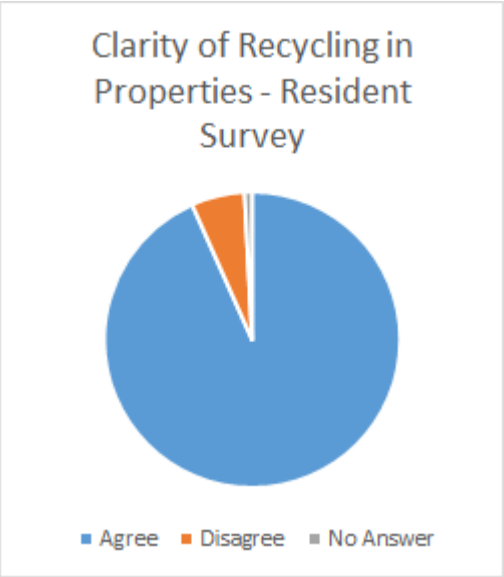


Figure 5. Responses to the statements: "It is Easy to Recycle in my Building" and "I Know How to Recycle in My Building."

6.4 Impacts on Operations and Finances

The *Recycling in Multi-Family Buildings Initiative* worked closely with property management and staff to determine the impacts of the recycling program on cost, staff, and management. Property managers have commented on improvements in recycling quality, tonnage, and resident understanding. Maintenance staff have not reported any positive or negative impacts on their duties with new recycling program. No real financial impacts have been reported, though PRC believes that in the long-term properties will experience waste hauling savings as more material is diverted to be recycled instead of hauled as trash.

7.0 Challenges

Throughout this program, PRC faced many challenges in implementing meaningful recycling programs and improving existing recycling programs in multi-family properties including building infrastructure, resident apathy, financial limitations, physical limitations, and property staff. The following sections cover each topic as well as the strategies PRC used during the duration of this project to overcome each challenge.

7.1 Building Culture and Infrastructure

As with many recycling programs, user apathy poses large barriers to effective materials collection. While it is unlikely that residents of multi-family dwellings are any more apathetic towards recycling than single-family housing, these residents are faced with additional barriers towards recycling that are unique to this housing type. Some issues include: lack of effective communication, lack of a sense of place, and a lack of convenient infrastructure.

Unlike single-family residences, multi-family residents do not always receive the biannual recycling literature distributed by the City of Pittsburgh's Recycling Division, which clarifies how and why to recycle. Additionally, property managers do not always provide clear information about how and where to recycle in each property, leading to resident confusion and eventual apathy. Additionally, high resident turnover can lead to disconnect between residents and their homes, which could reduce their incentive to participate in programs such as recycling. Recycling infrastructure in properties may not always be easily accessible to residents. When recycling bins are not as convenient as trash containers, participation rates often suffer.

Solutions

PRC worked to overcome these multi-family property-specific issues by making recycling as convenient, clear, and easy as possible for both residents and staff. Increasing recycling convenience included coupling all existing waste receptacles with recycling bins, such as central trash areas and community spaces. PRC displayed clear signage coupled with each recycling bins o increase resident clarity regarding how and where to recycle materials. This signage outlined recycling infrastructure using clear text and graphics, and was posted in the languages spoken by residents. To further increase clarity, all provided recycling bins were streamlined in color (blue).

PRC also directly and indirectly engaged residents through provision of informational brochures and magnets outlining general and building-specific recycling information, collected surveys regarding resident recycling practices, knowledge and opinions, held educational presentations within the property, and worked with interested property managers to distribute recycling articles through building newsletters, meetings, and more (Appendix H).

PRC worked hard to increase convenience and clarity as well as to accommodate and engage residents to reduce confusion and increase recycling convenience to increase participation rates and decrease contamination rates in property recycling bins. For more information regarding community space bins, signage and presentations please refer to Section 5.0.

7.2 Economics

The primary challenges facing this project were economic. While the grant supported recycling bins, educational signage and materials, informational presentations, in addition to setting up and monitoring the new recycling program at no cost to properties, these funds did not cover hauling costs, leaving properties to pay for the removal of recyclables out of their own budgets. Hauling/service costs were the greatest barrier for properties that did not already have an existing recycling program programmed into their budget (Appendix I).

PRC contacted over one hundred multi-family residential units throughout the Greater Pittsburgh Area. From that number only twenty properties agreed to participate, with the majority of properties opting out due to hauling costs. Even with properties that initially elected to participate, hauling fees continued to be a problem causing a number to drop out or choose less robust recycling programs to avoid the extra costs that increased hauling rates would incur.

Solutions

To ensure participation, PRC was forced to work primarily with properties that already hosted some sort of recycling, either by already including recycling hauling fees into their budget or by working with the

City of Pittsburgh's Recycling Division to pick up materials free of charge. PRC also provided each property's management team with recycling plans featuring a number of levels of recycling and pricing options for their property, enabling managers to pick the plan that best suits their property and budget. PRC also engaged members of the property owners to find extra funds in the budget.

Solutions beyond the scope of this project include working with cities and municipalities to include multi-family buildings in existing curbside recycling routes. According to AMERPEN, less than fifty percent of municipal curbside programs include apartments and other multifamily properties. This solution works in a state like Pennsylvania, which require local municipalities to create and enforce recycling legislation. This enforcement can result in fines, which can generate revenue to continue local recycling programming as well as incentive for property managers to overcome this budgetary hurdle.

Unfortunately, within the scope of this project, PRC was not able to find solutions for a number of properties leading to their exclusion from the project.

7.3 Space

Space, both inside and outside multifamily dwellings presented challenges to a number of properties participating in this program. Many properties are located in dense urban areas, and therefore had limited outdoor space for additional dumpsters and recycling toters. (This includes the spaces necessary to ensure dumpster accessibility by trash and recycling haulers.) For example, Highland Plaza was forced to utilize several recycling toters instead of a single dumpster, a much better fit for the property's recycling capacity due solely to space limitations (Figure 6).

Additionally, many properties did not have space within their buildings that could easily accommodate recycling bins. In a number of properties, trash rooms and collection areas had spaces solely for trash cans and chutes. Therefore, finding convenient and logical spaces for recycling bins was sometimes a challenge, especially in older buildings.

Figure 6. Highland Plaza can only use recycling toters, as there is no addition room for a recycling dumpster.

Solutions

PRC worked with property managers and staff to find the best solutions for recycling bins throughout each building including bin shape and locations. With this guidance, PRC was able to find specifically-

sized bins, signage placement, and convenient locations throughout each property. Unfortunately, little can be done to change outdoor space limitations, leaving PRC to encourage property managers and companies to include additional space for recycling infrastructure.

To ensure future multi-family properties host successful recycling programs, municipalities must create ordinances or buildings codes mandating equal space for both trash and recycling receptacles. This space will enable room for recycling and trash receptacles in the building, and also space for trash and recycling dumpsters outside properties.

7.4 Staff

Implementing a new recycling program or expanding existing recycling infrastructure has the potential to create additional work for management and maintenance staff at participating properties. With most staff members already working at full capacity many were initially opposed to working with PRC to increase property recycling. This opposition can lead to a resentment of the recycling program and poor building performance.

Solutions

PRC was able to bypass this issue by including management and maintenance staff members in all planning conversations and decisions. One property's maintenance staff was highly hesitant to change the existing waste system and include a recycling option on each residential floor. However, after discussing the program and receiving his input PRC was able to provide him with the tools he needed to find a solution – namely a wheeled cart for material collection and a service schedule considerate of his many other obligations.

8.0 Best Management Practices

Though each property is different, PRC noticed a number of strategies that provided the best results in terms of recycling. These strategies are outlined below and all aim to increase convenience of recycling in the property, increase resident and staff understanding of how to recycle, and to increase normalization of recycling as part of everyday life.

8.1 Public Space Containers

As has been noted in past research, providing access to recycling will increase diversion rates. As with conventional recycling, providing free and convenient bins is the number one way to drive recycling. Recycling containers need to be placed in clear and obvious locations and should be placed near every trash receptacle. These locations include but are not limited to: communal trash rooms, trash dumpsters, lobbies, kitchens, laundry rooms, et.

By coupling each trash can with a recycling bin recycling becomes normalized to residents and staff. In the long term this normalization is key to increasing participation rates and reducing contamination rates, (obviously placed and to be obviously for recycling).

Additionally, these bins should be clearly marked and color-coded to increase user recognition (in this program all bins were bright blue).

8.2 Residential Containers

Multi-family properties should also provide or encourage residents to acquire individual recycling containers. These recycling containers should be convenient for apartment living, small enough to fit under kitchen sinks and provide easy transport to the property's recycling receptacles. These bins should match the color of the public space recycling containers, tying together the recycling program both inside and outside the individual's apartment.

The individualized bin serves as a reminder for residents to recycle, and can reduce the number of plastic bags, a contaminant, in the recycling stream.

8.3 Signage

To increase resident and staff understanding of how and where to recycle, property's must install streamlined signage throughout the building. This signage must include clear and concise text and graphics regarding common materials to recycle and recycling instructions, and should be available in pertinent languages, based on the resident make-up of the property.

Signage should be coupled with recycling stations throughout the building as well as in any community spaces.

8.4 Communication with Residents

To both increase resident understanding of the recycling program and normalize recycling, properties must communicate regularly with residents. Varied communication tactics produce best results and can include, educational recycling presentations, articles in property flyers or newsletters, and individual informational materials.

Individual informational materials should include brochures and, if possible, magnets which mirror recycling signage. These brochures explain the recycling program in more detail, as well as serve as one more reminder for residents to recycle. Previous studies have linked increased direct mail recycling information with increased recycling rates. As residents within multi-family properties are often excluded in these types of mail campaigns, recycling flyers from properties themselves can fulfill this role.

8.5 Communication with Staff

A successful recycling program depends on a property's management and maintenance staff. Hold open dialogues regarding the implementation or improvements of existing waste and recycling infrastructure and discuss any insight that they might have regarding the on-the-ground operations of the property. Ensure that all staff members are aware of how and where to recycle in the property through continual staff meetings and educational materials.

Engaged property managers and staff are often the key to a successful recycling program, as they will ensure the materials are correctly disposed of, interact regularly with residents, and identify any problem areas as they arise.

8.6 Communication with Property Owners

As mentioned earlier in this report, Act 101 requires property owners to provide recycling infrastructure and proper recycling hauling. Municipalities and local governments must take steps to communicate these requirements to property owners to make them aware of the law. Officials should also work to educate property owners regarding the how and why to recycle in the form of educational flyers and mailings, community meetings, and site visits.

After educational steps have been taken and significant notice given, governments must take action enforcing recycling ordinances and laws to ensure compliance.

9.0 Conclusions

Analysis of the data collected throughout the course of this project has produced valuable insights that will inform property managers and the City of Pittsburgh's Recycling Division on existing conditions and best management practices for multi-family properties throughout the Greater Pittsburgh Area.

Based on the data derived from this pilot, as well as information gleaned from on the ground work in these buildings and direct conversations with building management, staff, and residents has shown that implementing best management practices outlined in Section 8.0 to increase convenience, increase resident and staff understanding of the recycling system, and to increase normalization of recycling will increase resident affinity with recycling programs and lead to low contamination rates.

Property managers and management companies are invited to use the best management practices outlined in this report as well as educational signage and brochures to increase recycling rates and decrease contamination.

10.0 Appendices

A. **Clear Educational Signage**

B. **Educational Brochure**

WELCOME TO

YOUR NEW HOME

According to the EPA, the average American produces
4.4 pounds of waste a day.
That's about **1.5 tons** of solid waste a year!
Approximately **75%** of that waste is recyclable.

This building is proud to offer a variety of sustainability services including a comprehensive recycling system for residents. By recycling, a family of four could save approximately **4 THOUSAND pounds** of waste from entering landfills every year.

Help make our building and Pittsburgh healthy places to live!

Recycling Tips

Leave the lid on your containers when recycling them.

Do not recycle plastic bags through the building's recycling — instead recycle them at your local grocery store.

Always rinse your recyclables! Food, grease, and other contaminants can ruin an entire batch of recycled materials.

Do not recycle ceramics, broken glass, or light bulbs.

Pennsylvania Resources Council, Inc.
"Making a power for environmental action since 1968"

PRC

For more recycling information, go to
prc.org

Recycling Resources

A Recycling Guide for Residents

Prepared by Pennsylvania Resources Council

Recycling Instructions for Residents

This property provides single stream recycling to all residents – all recyclables can be placed in the same bin.
Clean and dry all recyclable materials and place in the building's designated recycling receptacles.

Recyclable Items

METAL
aluminum and steel cans

PLASTIC
numbers 1, 2, 3, 4, 5, 7

GLASS
bottles, jugs, and jars

PAPER
newspapers, junk mail, magazines, paperboard

CARDBOARD
please flatten

CARDBOARD CARTONS
beverage and soup cartons

Disposing of a large item like a mattress? Contact your **Property Manager** for instructions

what to do with the rest... Pennsylvania Resources Council (PRC) collects items that don't belong in the trash or recycling bins at collection events throughout the year. Bring cleaners, pesticides, paints, automotive fluids, and other products containing hazardous components to a **Household Chemical Collection Event**. Bring ewaste, compact fluorescent bulbs, alkaline batteries, and more to one of PRC's **Hard to Recycle Collection Events**. Find a complete schedule and more information at www.prc.org.

Or take your stuff to one of these specific **drop off locations:**

Freon Appliances

Appliance Warehouse - No charge to drop off. 412-381-8800

Construction Junction accepts Freon-containing appliances for a fee of $10 each. 214 North Lexington St., Point Breeze
www.constructionjunction.org
412-243-5025

Tires

City of Pittsburgh Public Works accepts two tires (no rims) free at select locations. 412-255-2631

Building Materials

Construction Junction accepts used or new appliances, usable building materials, and more.
www.constructionjunction.org
412-243-5025

Pharmaceuticals

Pittsburgh Bureau of Police
Western Ave, Pittsburgh, PA 15233

Household Textiles (clothes, towels, and pillows.)

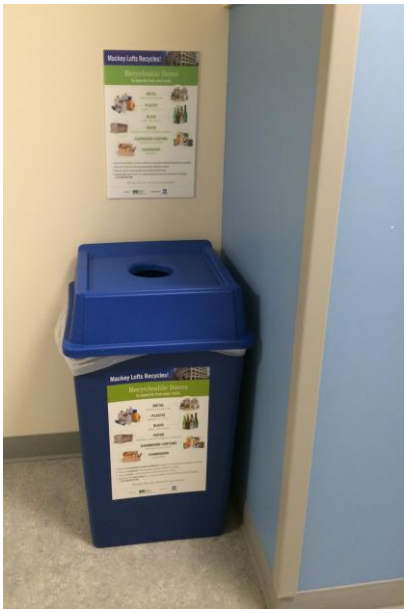
Drop off old textiles for reuse or recycling at the following locations:

- **Goodwill Stores** - Clothing, towels, sheets, pillows, etc.
- **Salvation Army Stores** - Clothing, towels, sheets, pillows, etc.
- **Local Animal Rescues** - Towels, blankets, pillows, etc.

C. **Educational Magnet**

D. **Public Space Recycling Bins**

E. **Public Space Recycling Bins in Laundry Room and on Residential Floors (Mackey Lofts)**



F. **Residential Recycling Bin**

G. **Residents with Residential Recycling Bins (Bellefield Dwellings)**

H. **Case Study of West Park Court**

PRC worked with one multi-family property with significant recycling infrastructure, especially contamination. West Park Court is an affordable housing high-rise apartment located in Pittsburgh North Side. West Park Court's waste system featured a trash chute and a recycling toter in each floor's trash room. West Park Court Management had reported such high levels of contamination that the majority of the materials in the recycling bin were thrown out each week and that the installation of signage had not resulted in any improvements. PRC and West Park Court management determined that the issue stemmed from the ease of placing big bags of trash in large recycling toters rather than through skinner trash chutes.

To combat this issue PRC staff worked with West Park Court's property manager and maintenance team to implement a source-separated recycling system in each trash room to dissuade any placement of trash or mixed bags in recycling bins. PRC clearly explained this new system to West Park Court residents

at multiple educational presentations, as well as in informational materials. These new bins were also paired with signage on each floor and in community spaces throughout the property. Recycling rates immediately increased and contamination rates fell substantially, leading to the most successful numbers of the Multi-Family Recycling Initiative!

Figure 7. Source-Separated Recycling System implemented in each trash room at West Park Court.

I. Case Study of Lloyd McBride Court

At the beginning of this program PRC contacted over one hundred multi-family properties in the Greater Pittsburgh Area to find participants. Of these, one property manager, who oversaw Lloyd McBride Court and Lynn Williams Apartments, was very excited to join the program. Lynn Williams Apartments is located within City, had their recyclables hauled by the City of Pittsburgh biweekly at no fee. Lloyd McBride Court was located in Millvale, and therefore did not quality for free pickup. Both of these properties are affordable housing, and therefore have limited budgets. Lloyd McBride Court did not have a recycling program, though a local Boy Scout Troop regularly picked up the property's aluminum cans.

PRC worked with Sequoia Waste Solutions to find an affordable recycling program. **Sequoia proposed a program with a 2-yard dumper for trash which would cost approximately $86 per month and two 96-gallon recycling toters which would cost $103 per month**. Unfortunately, this price difference was enough to dissuade the property manager from committing to the program at Lloyd McBride Court, though she continued to engage with PRC to implement the program at Lynn Williams Apartments.

	Hauling Cost Per Month
Trash (one 2-yard dumpster)	$86.48
Recycling (two 96-gallon toters)	$103.15

Figure 8. Costs for trash and recycling at Lloyd McBride Court.