

# The **INSTITUTE** for

Public Policy & Economic Development

at Wilkes University

*A partnership among Keystone College, King's College, Lackawanna College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College, University of Scranton & Wilkes University*

## RECYCLING



5/12/2016

Planning, Land use, Transportation, and Infrastructure Task Force

Recycling is the process of remanufacturing waste to be usable again. Recycling can be either up-cycling, which means adding value to the product for a reuse, or a down-cycling, which means breaking down the waste to elements to reuse in manufacturing a completely new product. <sup>1</sup>

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**Study prepared by: The Institute for Public Policy & Economic Development**

Executive Director – Teri Ooms

Research Analyst – Andrew Chew

Research Assistant – Nimita Patel

Student Intern – Abdullah Alrabiah (Marywood University)

**The Institute’s Planning, Land Use, Transportation, and Infrastructure Task Force Members**

- Dr. Marleen Troy, Professor, Wilkes University, Chair
- Tom Curra, President, WVIA Public Media
- Pam Fendrock
- Norman Gavlick, Executive Director, Luzerne County Transportation Authority
- Tom Lawson, Vice President, Borton Lawson
- Robert Luciani, Vice President, Prudential Retirement Services
- Lawrence Malski, Director, Pennsylvania Northeast Regional Railroad Authority
- Jill Murray, Ph.D., Executive Vice President/Chief Academic Officer, Lackawanna College
- Amanda Modrovsky, Director Sponsored Programs, Wilkes University
- Kevin O’Donnell, President, CAN DO
- Steve Pitoniak, Lackawanna County Planning Commission
- Lee Puskar, Interim Director, Luzerne County Planning Commission
- Nicholas Semon, Chief Sustainability Consultant, Semon Consulting, LLC
- Rick Williams, Luzerne County Council

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## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>4</b>
<b>LOCAL LEVEL RECYCLING STRATEGIES.....</b>	<b>4</b>
<b>IMPLEMENTATION PROCESS.....</b>	<b>5</b>
<b>REDUCING THE COST OF IMPLEMENTATION.....</b>	<b>7</b>
Short-term Adjustment .....	7
Medium-term Changes .....	7
Long-term Redesign .....	7
<b>CASE STUDIES.....</b>	<b>8</b>
<b>LEGISLATION AND POLICY .....</b>	<b>9</b>
<b>RESOURCES AVAILABLE.....</b>	<b>9</b>
Financial .....	9
Technical.....	10
<b>ENDNOTES.....</b>	<b>10</b>

## PLANNING, LAND USE, TRANSPORTATION, AND INFRASTRUCTURE TASK FORCE

### INTRODUCTION

Recycling is the process of remanufacturing waste to be usable again. Recycling can be either up-cycling, which means adding value to the product for a reuse, or a down-cycling, which means breaking down the waste to elements to reuse in manufacturing a completely new product. <sup>2</sup>

Recycling is a perfect solution to reduce waste while also reducing the resources required to manufacture new goods. When recyclable materials are collected and taken to recycle stations, they will go through a sorting process before they are packed and sent to remanufacturing sites. <sup>3</sup> Recycling and reducing waste is not a new or novel concept, but it is an important component of overall community sustainability.

According to National Recycling Coalition, there are many reasons why people should recycle: <sup>4</sup>

- It is good for the environment since it uses less sources
- Saves energy: recycling can significantly save energy over manufacturing with raw materials
- Reduces waste
- Preserves landfill space
- Minimizes the carbon that is created by burning waste
- Reduces water pollution
- Protects wildlife
- Good for the economy
- Creates new jobs: 1.1 million people work in the recycling industry nationwide
- Creates new demand: recycled products create demand for more recycled products

In Northeastern Pennsylvania, many municipalities have recycling programs. Those with populations greater than 5,000 are mandated to have recycling programs. However, for the reasons stated above, recycling is a great way for smaller communities to enhance their sustainability in a relatively easy way, even if a program is not mandated.

### LOCAL LEVEL RECYCLING STRATEGIES

There are several types of recycling programs that communities can implement. Deciding which is best is determined by the size and characteristics of the community, amount of resources that can be dedicated to the recycling program, and community preferences.

A curbside program involves regular curbside collection of recyclables, much like curbside garbage collection for homes and businesses. Some programs require that participants sort recyclable materials (glass, metal, paper, etc.) though single-stream or comingled recycling, in which different types of materials can be recycled together, are growing in availability. Providing this service on a regular basis is costly relative to other recycling programs, but the convenience of curbside pickup may be appealing to those who would not otherwise recycle.

Drop off centers work like curbside programs, except participants must bring their recyclables to a central location. Again, the recycling may be single-stream or recyclables may need to be sorted. This approach can be less resource-intensive, but it requires active participation from the community in order to be successful.

Finally, event recycling is used for specialty recycling, which involves recycling specific items like electronics or tires. Participants bring their items to a central location on a certain day or days. These programs can be a good starting point for local agencies or municipalities that are exploring creating a recycling program, or a way for municipalities that already recycle to expand their recycling and thus enhance their sustainability.

## IMPLEMENTATION PROCESS

The key elements of establishing a recycling program start with creating a team, identifying supporters, determining and assessing quantity and type of waste, establishing reduction goals, and developing the role of the program coordinator. These five elements could make an effective residential recycling program in any community. Further, businesses – both large and small/local – can be presented with information on the benefits of recycling for their sustainability and the sustainability of their location.

Community participation is essential for the success of the program. There are those who are inclined to recycle and those who are not. The goal is to get both groups into recycling by approaching them differently. It can take time and creativity to convince non-recyclers to willingly transition into recycling. On the other hand, the approach to current recyclers is about instruction rather than promotion. An effective method to encourage more recycling is to educate the community on the positive aspects and outcomes of recycling while emphasizing its relative ease and convenience.<sup>5</sup>

Identifying supporters is the second key element for success. Identifying and reaching out to organizations, public agencies, and institutions that are known for their interest in green and sustainable programs would strengthen the recycling project. It is a great strategy to partner with them for the benefit of the program and the community as well. These organizations would provide and assist the program with their experience and potentially financial support. According to the annual report of recycling in Pennsylvania, there have been 31 grant awards in different counties. Another partnership that has assisted the recycling programs is America Recycles Day (ARD). The Professional Recyclers of Pennsylvania (PROP) and Pennsylvania Department of Environmental Protection (PADEP) have a partnership to provide recycling coordinators with the tools they need to plan an ARD event. A new ARD web page was established by PROP to provide those who are planning events with downloadable sponsor logos, pledge cards, and links to other events planned in the state. Further information is available on the national ARD website. Finally, Keep America Beautiful (KAB) has also provided services in order to aid recycling efforts. Wilkes-Barre, for example, received a Public Space Bin Grant in through KAB to obtain recycling bins for the area in 2014.<sup>6</sup>

The next step is to develop a detailed and thoughtful implementation plan. As stated by the U.S. Environmental Protection Agency (EPA), to determine the scope, answer these questions:

- Does the community already have recycling drop-off centers in place? Where are they located? Could they be placed in more strategic areas with greater visibility?

## Recycling

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- Has the community tried annual recycling campaigns, such as phonebook and electronic recycling drives? The community can consider partnering with neighboring towns to help defray costs.
- If drop off centers are already in place, is the community ready to take the next step and implement curbside recycling?

As described above, there are several different types of recycling programs that local officials can choose from. The best course of action depends on many specifics, including amount and type of resources available, type and size of the community, and community preferences.

At this stage, it is important to consider key details depending on the type of program being planned. If drop off locations will be used, it is important that the location be carefully considered. They should be accessible to as many people as possible. It can be a good practice to locate them near public facilities like schools, post offices, and other community buildings so that they are visible and recycling can easily fit into peoples' regular routines.

After determining the scope, the jurisdiction decides what to recycle. Different communities have different waste. Look for what could be the most beneficial for the community.<sup>7</sup>

Outlining the role of the coordinator is an essential step to ensure sustainability for the program. The recycling coordinator may have many roles, including supervising collection, facilitating events and awareness and educational campaigns, providing administrative support, acting as a liaison with the public, community groups, businesses, and government agencies, seeking funding, and managing program funds.<sup>8</sup>

After setting the stage for the program, the next task would be developing and writing a strong contract. Some communities prefer to bring contractors in to handle and manage the transportation service for the recycling program. To decide if the program needs a contractor to handle hauling service, the community needs to determine what equipment they have/need and the availability and cost of labor.

The community needs to understand the "community of buyers" of recycling content. Because recycled goods are a commodity, they have value. This means communities can defray the cost of the program, or even make a small profit, on their recycling program. Because each community's waste, participation levels, and program structures are different, each community needs to evaluate the fiscal impact of a recycling program. Components of this include the sales price of the content and how the content needs to be prepared and delivered. Knowing the answers to these questions will also help determine the feasibility and scope of the initiative. *Recycling Today* and *Waste News Magazine* both keep updating prices of recycling material. Keeping in touch with partners and state officials will help to find the current trends in recycled materials.<sup>9</sup>

The most challenging task after creating and starting every necessary step in the program is communicating with the non-recyclers. According to EPA, targeting the non-recyclers alone is often more effective than targeting the whole community. Drawing their attention to the positive outcomes is better than focusing on the negative or public policy issues which may cause some residents to opt out based on political beliefs.<sup>10</sup>

As for local businesses, the incentive to recycle comes mainly from the increased sustainability of their establishments. In particular, recycling things like paper, batteries, and light bulbs leads to cost effective savings; businesses can circulate these resources within their communities and their own establishments to

be reused, and thus less money will be spent on new materials.<sup>11</sup> When business' costs decrease, their sustainability increases; this allows for even more money to be circulated through the business and its community. Providing businesses with this information and outlining the role that they play in improving themselves and their community is pivotal in gaining their support of and participation in recycling.

## **REDUCING THE COST OF IMPLEMENTATION**

There are some cases where recycling programs have failed or been scaled back because of the high implementation costs. Therefore, recycling programs can be evaluated to see where efficiency can be gained. Wisconsin Recycles developed a three step model for cost reduction in municipal recycling programs that can also be applicable to communities in Northeastern Pennsylvania.

Reducing cost can be done in three sequential steps:

- Short-term adjustment.
- Medium-term changes.
- Long-term redesigns.

### **Short-term Adjustment**

This step starts with working with the hauler. A hauler has the most expertise when it comes to recycling and garbage collection programs. Improving the collection program can reduce time and money spent on the contractor. The hauler can help by answering some questions like:

- Is it possible to reduce the number of pickups? If the bins/dumpsters fill frequently, can their size, number, or location be modified to reduce the frequency of pickup?
- Do residents do a good job preparing and separating materials? Did the hauler provide local officials and residents with a list of materials of that are acceptable?
- Would the hauler consider reducing charges in exchange for a contract extension?

Contacting neighboring municipalities can introduce you to better services with low cost. Explore ways to work together on things like contracts, education, and operation of drop off facilities and annual recycling events. This cooperation brings more power to the joint recycling programs.

### **Medium-term Changes**

First, increase participation and get more people involved in the recycling programs. If participation or awareness is low, investing in education and outreach can help the program achieve long-term success. To maximize the success of outreach, explain to community members who should recycle, what can be recycled, where they can recycle, when pick up occurs, and why recycling is beneficial.

The community can also consider purchasing its own bins or dumpsters rather paying a recycling services provider to provide them.

### **Long-term Redesign**

The following are examples of more significant structural changes to recycling programs that may be necessary to keep struggling programs viable or to bring an existing program to the next level of success.

## Recycling

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Pay as you throw:

The recycling program could adapt new methods like pay as you throw for garbage collection. Similar to other services, like water and electricity, residents are charged based on the volume used. This system can encourage residents to minimize waste and increase recycling.

Look for alternative funds:

Besides what Act 101 provides programs financially, look for alternatives like reaching out to the community or hosting fundraisers.

Switch to single stream collection:

Make it convenient for participants and attract new participants by making the sorting of the recycling materials at the recycling site, not at the household.<sup>12</sup>

## CASE STUDIES

### Indian River County, Florida

Identifying how and where to reach residents with key messages is a difficult task. In Indian River County, Florida, officials determined that because residents have to either pay for garbage collection or transport their own trash to area collection centers, reaching them at these locations would yield better results. Most residents were hauling their own trash and recycling to the collection centers. The “*Bin There. Done That!*” education campaign included monthly fliers to be distributed to residents who visit a center. The fliers included important facts about recycling and tied into holidays and observances such as Earth Day. This campaign, coupled with overall messaging at the city level netted a 22 percent increase in co-mingled collections over a three-month period.<sup>13</sup>

### South Brunswick Township, New Jersey

The Township of South Brunswick, which is located in central New Jersey, has had a successful municipal recycling program in place for many years. The township’s recycling program switched from a curbside dual stream recycling system to a curbside single stream recycling system in 2012. A large variety of paper grades, bottles, and cans are collected through the curbside program. In addition to providing curbside collection of recyclable material, the township also operates a recycling depot where residents can drop off the materials collected through the curbside program, as well as recyclable scrap metal, appliances, rechargeable and button cell batteries, automobile batteries, tires, used motor oil, antifreeze, empty propane tanks, and clean textiles. The recycling depot is open Monday through Saturday from 9:00 a.m. to 5:00 p.m.

The South Brunswick Township recycling coordinator developed a compelling cost comparison between the township’s residential solid waste collection/disposal and residential curbside collection recycling programs (both of which are collected on a weekly basis by the same company) in which she determined that recycling is 60 percent more cost effective than solid waste disposal.<sup>14</sup>

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## Oakland Park, Florida

In 2007, the City of Oakland Park, Florida, completed a preliminary recycling assessment. Due to low recycling rates, the city opted to hire a contractor to evaluate existing waste reduction practices and make recommendations on how to make the program more successful.

A few of the recommendations included:

- Enhance the bulk trash collection program to incorporate recycling. The evaluation found sufficient resources to begin collecting electronics curbside.
- Increase public education and program promotion. The city was encouraged to conduct a recycling participation study to gain additional knowledge concerning why residents and businesses do or do not recycle, and how to best structure the recycling message to the targeted group.
- Ensure that all commercial recycling carts are properly labeled. The study encouraged that labels should be multilingual and should include pictures of the materials to be placed in the recycling cart.
- Consider dumpster service for commercial recyclables. The city was encouraged to evaluate whether there was enough interest among businesses to warrant establishing a business recycling route.<sup>15</sup>

## LEGISLATION AND POLICY

Act 101 of 1988, known as "The Municipal Waste Planning, Recycling, and Waste Reduction Act," requires municipalities with populations over 5,000 and a population density greater than 300 people per square mile to establish a recycling program. As reported by the Pennsylvania Department of Environmental Protection (PADEP) website, 440 of Pennsylvania's 2,700 municipalities are mandated to recycle and 617 are voluntarily providing curbside collection programs. In addition, Act 101 requires that all residents, commercial establishments, municipal establishments, and institutions in mandatory recycling communities to recycle.

The act specifies certain materials to recycle. In communities with a population of over 5,000, residents should recycle, at minimum, leaf waste as well as three of the following: Clear glass containers, colored glass containers, high-grade office paper, newsprint, corrugated paper, aluminum cans, steel and bi-metallic cans, and plastics.<sup>16</sup>

## RESOURCES AVAILABLE

### Financial

In Pennsylvania, Act 101 is the primary law that governs recycling programs. In addition to the mandates mentioned above, it provides several sources of funding for local recycling programs, including the following:

## Recycling

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Act 101 under Section 902, Recycling Program Development and Implementation Grants – the grants compensate counties and municipalities with 90 percent of the development and implementation expenses of qualified recycling programs.

Act 101, Section 904, Recycling Performance Grants - Recycling Program Performance Grants are available to all Pennsylvania local governments with recycling programs. The grants' awards are based on the total tons recycled and the applicant's recycling rate.

Act 190, Chapter 2, Household Hazardous Waste Collection Grant - Provides reimbursement up to 50 percent to registered sponsors of collection programs for household hazardous waste, electronics, and tires of eligible cost like collection, transportation, and management of the wastes plus education programs.<sup>17</sup>

## Technical

PADEP provides recycling programs with technical support to develop the recycling programs in Pennsylvania's municipalities. On their website, PADEP provides recycling with helpful material to assist programs and maximize material recovery and ensure sustainability.<sup>18</sup>

Another source of useful information on municipal recycling programs is the EPA's municipal government toolkit, located on their website.<sup>19</sup>

## ENDNOTES

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<sup>1</sup> *Recycling*. (2012, Dec.). Retrieved Septambar 11, 2015, from whatis.com: <http://whatis.techtarget.com/definition/recycling>

<sup>2</sup> *Recycling*. (2012, Dec.). Retrieved Septambar 11, 2015, from whatis.com: <http://whatis.techtarget.com/definition/recycling>

<sup>3</sup> *How recycling works*. (n.d.). Retrieved September 11, 2015, from Recycle For Landon: <http://www.recycleforlondon.com/content/how-recycling-works>

<sup>4</sup> Top 10 Reasons to Recycle, retrieved 09 25, 2015, from [http://www.socrra.org/recycling\\_top10.shtml](http://www.socrra.org/recycling_top10.shtml)

<sup>5</sup> EPA. (n.d.). Retrieved 09 18, 2015, from EPA: <http://www.epa.gov/region4/rcra/mgtoolkit/starting.html>

<sup>6</sup> Spring 2014 Public Space Recycling Bin Grant Winners. (n.d.). Retrieved 01 28, 2016, from *BinGrant*: <http://bingrant.org/2014-public-space-recycling-bin-grant-winners/>

<sup>7</sup> *Improving Your Recycling Program*. (n.d.). Retrieved 09 18, 2015, from EPA: <http://www3.epa.gov/region4/rcra/mgtoolkit/improving.html>

<sup>8</sup> "The Municipal Waste Planning, R. a. (2001&2002). *elibrary.dep.state.pa*. Retrieved 09 18, 2015, from <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-45916/2520-BK-DEP2586.pdf>

<sup>9</sup> *Increased Recycling Initiative*. (2013, 08 12). Retrieved 09 21, 2015, from [file:///C:/Documents%20and%20Settings/juscintern/My%20Documents/Downloads/Increased\\_Recycling\\_Initiative\\_8-12-13\\_\(REVISED\).pdf](file:///C:/Documents%20and%20Settings/juscintern/My%20Documents/Downloads/Increased_Recycling_Initiative_8-12-13_(REVISED).pdf)

<sup>10</sup> *To Implementing North Cornwall Township's*. (n.d.). Retrieved 09 21, 2015, from greenwork: <http://www.greenworks.tv/events/pdf/elia.pdf>

<sup>11</sup> *Thinking Green at Work: Five Tips for a Sustainable Small Business* (2012, 4 27). Retrieved 01 28, 2016 from *Waste Management, Inc.*: <http://thinkinggreen.wm.com/web/wmblog/home/-/blogs/thinking-green-at-work-five-tips-for-a-sustainable-small-business>

<sup>12</sup> *Reducing Recycling Costs and Strengthening Your Program*, Retrieved 09 25,2015 from: <http://dnr.wi.gov/files/PDF/pubs/wa/WA1603.pdf>

<sup>13</sup> *Municipal Government Toolkit*. (n.d.). Retrieved 9/17/2015, from EPA: <http://www.epa.gov/region4/rcra/mgtoolkit/starting.html>

<sup>14</sup> *New Jersey WasteWise Business Network*. (2013). Retrieved 09 18, 2015, from *The Economic Benefits of Recycling*: [https://www.co.somerset.nj.us/CMS/Service/NJSOMER/NJSOMER\\_68/NJSOMER\\_68\\_65169.pdf](https://www.co.somerset.nj.us/CMS/Service/NJSOMER/NJSOMER_68/NJSOMER_68_65169.pdf)

<sup>15</sup> inc., k. c. (2007, 12 11). *Preliminary Analysis of Recycling Program*. Retrieved 09 18, 2015, from EPA: <http://www.epa.gov/region4/rcra/mgtoolkit/documents/oakland.pdf>

<sup>16</sup> "The Municipal Waste Planning, R. a. (2001&2002). *elibrary.dep.state.pa*. Retrieved 09 18, 2015, from <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-45916/2520-BK-DEP2586.pdf>

<sup>17</sup> *financial\_assistance*. (n.d.). Retrieved 09 21, 2015, from DEP:

[http://www.portal.state.pa.us/portal/server.pt/community/financial\\_assistance/14065](http://www.portal.state.pa.us/portal/server.pt/community/financial_assistance/14065)

<sup>18</sup> *Technical\_Assistance*. (n.d.). Retrieved 09 21, 2015, from DEP:

[http://www.portal.state.pa.us/portal/server.pt/community/technical\\_assistance/14066](http://www.portal.state.pa.us/portal/server.pt/community/technical_assistance/14066)

<sup>19</sup> *Municipal Government Toolkit* (n.d.) Retrieved 9/21/2015 from [www.epa.gov](http://www.epa.gov)