

IV. Reference Year Population, Waste Generation and Waste Reduction [ORC Section 3734.53(A)(5)-(6)]

The Tables referenced throughout Section IV of this *Plan Update* are included as attachments at the end of the section.

A. Reference Year Population and Residential/Commercial Waste Generation

Table IV-1, "Reference Year Population and Residential/Commercial Sector Generation," includes an estimate of the 2008 population for SWACO. The population estimate of 1,129,067 for SWACO is a projection using the 2000 *Census* and population projections from the Ohio Department of Development Office of Strategic Research, 2008 Population for Counties, Cities, Villages and Townships. This population estimate of 1,129,067 is not adjusted for political subdivisions located in more than one solid waste district.

Population Adjustments

The following adjustments were made for political subdivisions located partially within SWACO and partially within surrounding solid waste districts. In accordance with Ohio law, the entire population of political subdivisions located in more than one solid waste district was credited to the district containing the largest portion of the jurisdiction's population.

- The City of Columbus had more than 50 percent of the population living inside Franklin County and a portion living inside Delaware and Fairfield Counties. The population of the City of Columbus in Delaware County (3,347) and in Fairfield County (8,174) was added to SWACO's population total.
- The City of Dublin had more than 50 percent of the population living inside Franklin County and a portion living inside Delaware and Union Counties. The population of the City of Dublin in Delaware County (5,174) and in Union County (363) was added to SWACO's population total.
- The City of Reynoldsburg had more than 50 percent of the population living inside Franklin County and a portion living inside Licking and Fairfield Counties. The population of the City of Reynoldsburg in Licking County (6,418) and in Fairfield County (316) was added to SWACO's population total.
- The Village of Canal Winchester had more than 50 percent of the population living inside Franklin County and a portion living inside Fairfield County. The population for the Village of Canal

Winchester in Fairfield County (695) was added to SWACO's population total.

- The Village of New Albany had more than 50 percent of the population living inside Franklin County and a portion living inside Licking County. The population for the Village of New Albany in Licking County (209) was added to SWACO's population total.
- The Village of Harrisburg had more than 50 percent of the population living inside Franklin County and a portion living inside Pickaway County. The population for the Village of Harrisburg in Pickaway County (6) was added to SWACO's population total.
- The City of Westerville had more than 50 percent of the population living inside Franklin County and a portion living inside Delaware County. The population for the City of Westerville in Delaware County (6,877) was added to SWACO's population total.
- The City of Pickerington had less than 50 percent of the population living inside Franklin County and more than 50 percent living inside Fairfield County. The population for the City of Pickerington in Franklin County (284) was subtracted from SWACO's population total.
- The Village of Lithopolis had less than 50 percent of the population living inside Franklin County and more than 50 percent living inside Fairfield County. The population for the Village of Lithopolis in Franklin County (61) was subtracted from SWACO's population total.

The total adjusted population for SWACO in 2008 was 1,160,301.

SWACO projected Residential/Commercial Sector waste using Ohio EPA's September 4, 2002 recommendations for estimating per capita Residential/Commercial Sector waste generation. For 2008, the per capita Residential/Commercial Sector waste generation estimate was 4.82 pounds per person per day. Table IV-1 shows the formula for projecting the Residential/Commercial Sector waste generation using the "national projections" that were adjusted by Ohio EPA. This methodology estimated SWACO's Residential/Commercial Sector waste generation was 1,020,659 tons in 2008. This estimate is 508,760 tons less than the Residential/Commercial Sector waste generation of 1,529,419 recorded by landfills and transfer stations for 2008 (1,147,340 tons) plus reported recycling and source reduction

activities for 2008 (382,079 tons). For further discussion on reconciling the waste generation values, see Section IV.H of this *Plan Update*.

B. Industrial Waste Generation

SWACO conducted an Industrial Survey in 2008 to support this *Plan Update*. A summary of industrial survey results is included in Appendix F. Table IV-2 presents the results of SWACO's 2008 Industrial Survey. SWACO used information from industries and brokers responding to the survey as well as Appendix JJ of the Ohio EPA Plan Format (Version 3.0) to estimate Total Industrial Waste Generated.

SWACO had 1,285 industries in SIC codes 20 and 22-39, and approximately four percent (51) of the industries responded to the survey. Approximately 14,850 (21 percent) of the employees were represented by the survey results.

SWACO calculated the generation rate and tons of waste generated per employee for each SIC code from the survey respondents. Then SWACO calculated the amount of Industrial Sector waste generated based on the number of industries and employees that did not submit a survey. For those industries that did not respond, SWACO used the generation rate from Appendix JJ of the Ohio EPA Plan Format (version 3.0) to estimate total waste generated. Using this projection methodology, a total of 770,301 tons of Industrial Sector waste was generated by SWACO. Approximately 21 percent (163,584 tons) was reported in the surveys.

C. Exempt Waste

Exempt waste is material that is not defined as solid waste, such as construction and demolition debris. Exempt wastes can be managed in landfills that have different and often less stringent environmental control requirements. Table IV-3 shows the total exempt waste generated by the District was 40,666 tons. This includes the exempt waste reported by the landfills and transfer stations receiving waste generated within the District in Table III-1. SWACO intends to implement an aggressive inspection and enforcement strategy to ensure proper classification and disposal of exempt waste generated within the District.

Landfills and transfer stations receiving waste reported managing 40,666 tons of exempt waste. Of those 40,666 tons, 3,908 tons were direct hauled to landfills and 36,758 tons were hauled to transfer facilities. The Reynolds Avenue Transfer Facility (Table III-3) reported accepting 33,742 tons of exempt waste.

D. Total Waste Generation

Table IV-4, "Reference Year Total Waste Generation for the District," presents the total waste generated using national and statewide projections. Using the national averages adjusted by Ohio EPA, SWACO projected 1,831,627 tons of waste was generated in 2008. The generation rate in pounds per person per day is estimated at 8.65. This included 1,020,659 tons (Table IV-1) of projected Residential/Commercial Sector waste, 770,301 tons (Table IV-2) of projected Industrial Sector waste and 40,666 tons (Table IV-3) of projected exempt waste. The total waste generation listed in Table IV-4 was 64,074 tons more than the total in Table IV-8 as calculated using landfill/transfer facility data and reported recycling and waste reduction, including exempt waste. For further discussion on reconciling the waste generation values see Section IV.H. In order to ensure compliance with SWACO rules, SWACO intends to implement a comprehensive inspection and enforcement strategy related to proper classification of District waste and recyclable materials.

E. Reference Year Waste Reduction

SWACO conducted a survey of communities, businesses, recycling facilities and brokers to obtain data and information on Residential/Commercial Sector waste, including data from institutional generators and Industrial Sector recycling. The Residential/Commercial Sector waste reduction reported in Table IV-5 and Industrial Sector waste reduction reported in Table IV-6 was obtained from these surveys.

Residential Data

In 2005, SWACO began using a web-based data management system, Re-TRAC, to replace paper surveys for collecting data from communities, businesses, recycling facilities, brokers, processors and haulers. SWACO continued to use Re-TRAC to collect data from political subdivisions and businesses for the 2008 reference year. Political subdivisions located within the District use the Re-TRAC system at no cost to enter data throughout the year on recycling, solid waste disposal and composting activities. Throughout the year SWACO works with the communities to assure that they are entering data correctly and consistently.

Commercial/Industrial Data

SWACO made several attempts in 2009 to collect data for the 2008 reference year from commercial and industrial businesses. SWACO first used a service to send two separate email requests to businesses and industries inviting them to use SWACO's web-based survey

system. SWACO followed up the first two email notifications by mailing a hard copy survey to select businesses. Finally, SWACO made a third mass mailing attempt by sending a letter via the U.S. Postal Service to each business and industry in SIC codes 20 and 22-39. The letter asked businesses to navigate to the commercial and industrial survey web address to fill out the one-time survey.

SWACO also provided brokers with a separate web-based survey to collect data. This survey is available year-round for brokers to enter data on either a monthly or annual basis. If any businesses/brokers elected to fill out a paper survey, they were instructed to contact SWACO to request the paper survey. Copies of the surveys for Commercial, Institutional and Industrial businesses and brokers are included in Appendix F.

SWACO E-TRAC

Businesses were also given a new option this year to join SWACO E-TRAC to track their recycling and solid waste data. Businesses that sign up for SWACO E-TRAC can enter data on a daily, monthly, quarterly, semi-annual or annual basis. This service is provided by SWACO at no cost to businesses located in the District.

Despite SWACO's repeated attempts to attract commercial, institutional and industrial businesses to the survey website, responses were lower than expected. After the initial two emails and targeted mailing to select businesses, SWACO attempted to garner more survey responses by sending District businesses a letter in July of 2009 directing them to the one-time survey website. This effort generated additional survey respondents, and commercial, institutional and industrial survey data was used along with broker data collected through SWACO's web-based broker survey.

Avoided Double Counting

As part of the *Plan Update* development, SWACO made follow-up in-person interview contacts with several brokers to obtain additional recycling information. Each broker was interviewed to determine that the materials they reported to SWACO met OEPA criteria and could be credited as a recycled material. Materials that were confirmed to be comprised of metals from auto bodies, train boxcars or construction and demolition debris were not included in the District's recycling totals.

The Residential/Commercial Sector recycling data was based on the data entered into the community Re-TRAC survey system and from data provided by brokers for the Residential/Commercial Sector.

SWACO used community Re-TRAC survey system data only if that data was not already reported by a broker, processor or hauler.

As described above, the survey of commercial, institutional and industrial businesses was completed in 2009 for the reference year 2008. As a method of quality control, SWACO reviewed each survey to ensure the accuracy of the numbers presented in the *Plan Update*. SWACO avoided double counting of Residential/Commercial Sector and Industrial Sector waste reduction primarily by using the Residential/Commercial and Industrial Sector recycling reported by brokers or haulers. If a business identified using a hauler, processor or broker that submitted data to SWACO the survey data **was not** included. If a business submitted data through a hauler, broker or processor that did not submit data to SWACO, the information was included in the survey data.

Residential/Commercial Sector Waste Reduction

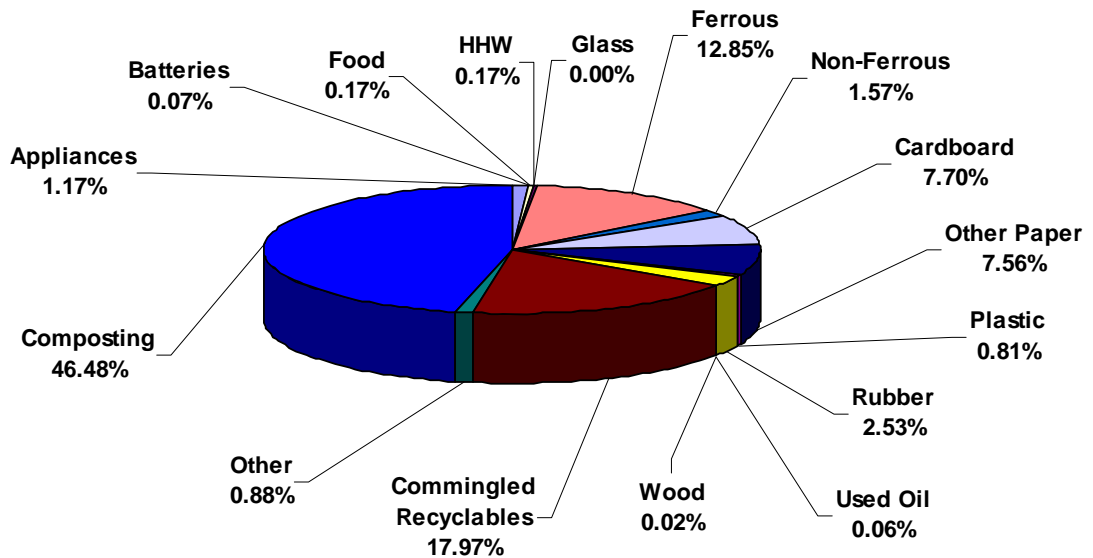
Table IV-5, "Reference Year Residential/Commercial Sector Waste Reduction in the District," shows that SWACO had 382,079 tons of Residential/Commercial Sector waste recycled in 2008. The largest commodity recycled within SWACO in 2008 was 177,596 tons of composted yard waste and wood. The yard waste and wood material accounted for 46 percent of SWACO's recycled material in 2008. This was a significant increase over the previous two years. Some of the increase is due to a significant wind storm caused by the remnants of Hurricane Ike that occurred in September 2008. When Hurricane Ike hit Ohio, it had wind gusts up to 75 miles per hour, the strength of a Category I Hurricane. Other large components of Residential/Commercial Sector recyclables include commingled recyclables (68,655 tons), ferrous metals (49,099 tons), cardboard (29,416 tons), paper (28,871 tons), and rubber (9,679 tons). The metals markets were also at their highest levels in 2008. The market pricing is one reason for the increase in Residential/Commercial Sector ferrous metals tonnages. SWACO will continue to monitor the ferrous metals reports from brokers and processors to determine reporting accuracy. Figure IV-1 breaks down Residential/Commercial Sector recycling by commodity.

Figure IV-1 – Residential and Commercial Recycling by Commodity

Commodity	2008 Tons
Appliances	4,452
Batteries	263
Cardboard	29,416
Commingled Recyclables	68,655
Ferrous Metals	49,099
Food	654
Glass	7
HHW	641
Non-Ferrous Metals	5,999
Other Paper	28,871
Other	3,362
Plastic	3,093
Tires	9,679
Used Oil	232
Wood	60
Yard Waste	177,596
Total	382,079

Figure IV-2 depicts the waste reduction percentages for the residential/commercial sector.

Figure IV-2 – 2008 Residential/Commercial Waste Reduction



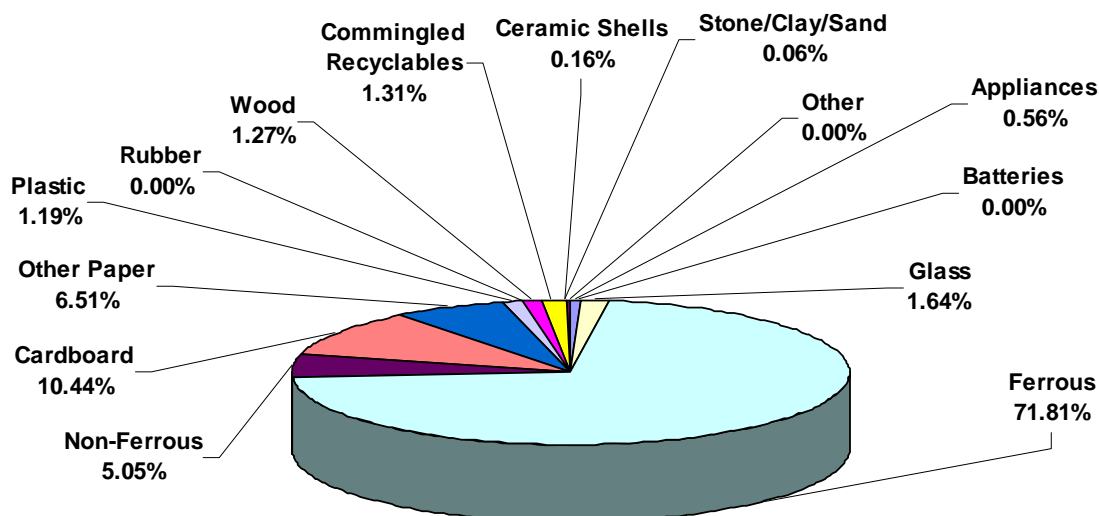
Industrial Waste Reduction

Table IV-6, "Reference Year Industrial Sector Waste Reduction in the District" shows that SWACO had 149,760 tons of Industrial Sector waste recycled in 2008. Ferrous metals (107,549 tons) accounted for over approximately 72 percent of the 149,760 tons of Industrial Sector recyclables. Cardboard (15,636 tons) is the second largest component comprising approximately 10 percent of Industrial Sector recyclables. Figure IV-3 breaks down Industrial Sector recycling by commodity.

Figure IV-3 – Industrial Recycling by Commodity

Commodity	2008 Tons
Appliances	835
Batteries	1
Cardboard	15,636
Commingled Recyclables	1,966
Glass	2,461
Other Paper	9,744
Plastic	1,776
Ferrous Metals	107,459
Non-Ferrous Metals	7,565
Wood	1,895
Tires	0
Stone/Clay/Sand	88
Ceramic Shells	244
Other	0.33
Total	149,760

Figure IV-4 depicts the waste reduction percentages for the industrial sector.

Figure IV-4 – 2008 Industrial Waste Reduction

Note: Types of materials with 0% made up less than 1% of the District's recycled waste from the Industrial Sector.

1. *Residential/Commercial Waste Reduction/Recycling and Education Strategies*

A. RESIDENTIAL/COMMERCIAL RECYCLING AND WASTE REDUCTION PROGRAMS

Consistent with the Ohio Constitution and state law, communities within SWACO are responsible for developing and implementing recycling programs. However, SWACO provides financial resources, technical assistance, solid waste management expertise and other consulting services to local governments, businesses, residents, haulers and policymakers. SWACO researches, designs and implements recycling pilot programs, proven "best practice" demonstrated programs and helps manage other community-wide and targeted recycling efforts. The goal of SWACO is the creation and management of an integrated solid waste management system for solid waste and recyclable material. SWACO will continue many existing programs for the planning period. SWACO will continue to test new programs, projects and waste management proposals during the planning period and will terminate other programs that are no longer effective in achieving District goals in the State Solid Waste Management Plan. The following recycling efforts were continued, strengthened, tested and/or introduced in SWACO in 2008:

1. Non-Subscription Recycling Programs

In 2008, there were twenty-seven communities that operated non-subscription curbside recycling programs (Table III-4). Non-subscription means that all residents have access to curbside recycling. These curbside recycling programs are only available to single family units and are not available to multi-family housing units.



Payment for the program and service is made either by the resident or for the resident through the political subdivision. Each of the non-subscription communities collects aluminum and bi-metal cans, glass, plastic #1 -7 and newspaper. In 2008, the non-subscription communities reported collecting 29,629 tons of recyclables. The Non-Subscription Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – Non-Subscription Curbside Recycling Programs	
Description	Details
Solid Waste Plan Program Number	SWACO-RP-1
SWACO Budget Number	n/a
OEPA Program Number	5246 – 5271 (not 5247)
Entity Responsible for Maintaining Program	Political Subdivision
Service Area for Program	Political Subdivision

Program Summary – Non-Subscription Curbside Recycling Programs	
Description	Details
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper
2008 Recycled Tonnage	29,629
2008 Program Costs	n/a
2008 Advertising Cost	n/a
Program Operator/Contractor	Rumpke, Waste Management, Local Waste

The strengths of this program include:

- The non-subscription communities collect aluminum and metal containers, glass, plastic, newspaper, mixed paper, cardboard, magazines and office paper.
- Almost all of the suburban communities provide non-subscription curbside recycling.
- Approximately 340,000 residents have non-subscription curbside recycling.

The challenges of this program are:

- The City of Columbus, the largest political subdivision within the District, does not have non-subscription curbside recycling.
- Several smaller communities continue to have difficulty providing total tonnage and participation rates.

2. Subscription Curbside Recycling

In 2008, the City of Columbus and Clinton Township were the only political subdivisions that offered subscription recycling services within the District. Subscription programs typically offer the same type of program as non-subscription programs. The major difference is residents choose to subscribe and pay the hauler directly for the service. The subscription program collected aluminum and bi-metal containers, glass, plastic, newspaper, mixed paper, cardboard, magazines and office paper. Approximately 19,560 tons of materials were collected in 2008. Customers that subscribe to a curbside recycling program are more likely to be motivated to participate in the

program versus an entire municipality's population where less than 100 percent of households participate. The Subscription Curbside Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – Subscription Curbside Recycling	
Description	Details
Program Number	SWACO-RP-2
SWACO Budget Number	n/a
OEPA Program Number	5272, 5247
Entity Responsible for Maintaining Program	Political Jurisdiction
Service Area for Program	Political Jurisdiction
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper
2008 Recycled Tonnage	19,562
2008 Program Costs	n/a
Program Operator/Contractor	Rumpke, Waste Management

The strengths of this program include:

- During 2008, nearly 759,000 residents had the opportunity to participate in the subscription program.
- The subscription program accepts the same materials as the non-subscription programs.
- The program collected almost 20,000 tons in 2008, which is more than a 100 percent increase over the 7,000 tons collected in 2002.

The challenges of this program are:

- Participation in the subscription program is less than 5 percent of households in the City of Columbus, and may require some level of subsidy by the City.
- The cost for a household in the City of Columbus to participate in the subscription program is \$8.25 per month.
- Program promotion could be enhanced to encourage more participation.

3. Drop-off Recycling

In 2001, the City of Columbus operated a drop-off recycling program. In 2002, SWACO began operating the drop-off program in the City of Columbus and combined the program with village and township drop-offs. In 2008, there were 80 full-time drop-offs located at various sites within the District and 123 full-time drop-offs located at Columbus City Schools. These 203 publically available sites are all operated by SWACO. There are 13 additional drop-off locations that are not available to the public and are used privately by Columbus City Schools. There are an additional five drop-off locations not available to the public at the Columbus Zoo.

The number of SWACO drop-offs listed in this *Plan Update* differs slightly from the number of drop-offs provided by SWACO in their Annual District Report (ADR) for 2008. Additional information regarding the status of existing drop-offs was provided during the preparation of this *Plan Update* and after the submission of the ADR. The number of drop-offs is adjusted to accurately reflect the correct locations and correct number of drop-offs operated by SWACO in 2008.

SWACO arranges for the containers to be emptied on a regular basis and the materials collected are delivered to the Rumpke Fields Avenue Facility.



SWACO plans to maintain the drop-off program throughout the planning period. If the City of Columbus decides to develop a non-subscription curbside program, SWACO will continue the drop-off program by evaluating drop-off locations on a case-by-case basis in order to continue to provide multi-family residences access and an opportunity to recycle.

The drop-off program funding costs for the containers were included in the Annual District Report. The costs were part of the general obligation bond revenue identified in Table VIII-4 which is separate from generation fee revenues. SWACO's Strategic Plan includes Goal #09-04 - Effective Recycling System for Columbus and Neighboring Communities. This goal includes a target to increase the recycling rate by 30 percent over the 2008 baseline. The Drop-Off Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – Drop-Off Recycling	
Description	Details
Program Number	SWACO-RP-3
SWACO Budget Number	3-O-620
OEPA Program Number	5273 - 5326
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper
2008 Recycled Tonnage	12,999
2008 Program Costs	\$376,041
Program Operator/Contractor	SWACO, Rumpke

The strengths of this program include:

- Containers are located in heavily trafficked and highly visible areas.
- Program can be easily expanded to meet customer demand.
- The drop-offs provide a supplement to the subscription recycling service in Columbus.

- During 2008, all of the drop-offs collected aluminum and metal containers, plastic, glass, newspaper, magazines, mixed paper, office paper and cardboard.
- The drop-offs provide recycling services to apartments and condominiums without access to a curbside program.

The challenges of this program are:

- Drop-offs are not as convenient as a curbside recycling program.
- The operational cost for the drop-off program is significant.
- Drop-offs are occasionally overfilled leading to litter.
- Some drop-off locations can be subject to high levels of contamination from illegal dumping.

4. Yard Waste Management

During the reference year, there were eight registered Class IV compost facilities operating in SWACO. These facilities managed nearly 120,000 tons of yard waste. In 2008, Columbus Academy operated a pilot study for a Class II compost facility. This facility is no longer in operation. In 2009, the Kurtz Brothers' Groveport facility became a Class II compost facility. A Class II compost facility may accept organic materials such as yard waste, plant materials, animal waste and specific types of food waste. A Class IV compost facility may only accept yard waste.

SWACO has contracts with Kurtz Brothers and Ohio Mulch to operate compost facilities without charge when residential yard waste generated within the District is delivered to one of their facilities. These contracts may be found in Appendix H. Kurtz Brothers reported to SWACO an additional 58,044 tons of material that was categorized as wood waste and was converted to mulch. In 2008, a major wind storm contributed significantly to the amount of wood waste that was managed. This material was not required to be reported to the Ohio EPA and not included in the Annual Compost Report. The total yard waste

managed within SWACO was 177,596 tons. This included tons managed by registered compost facilities (119,553) and the wood quantities (58,044). The reported quantities consist of materials which are processed pursuant to contract with SWACO and do not include totals from other businesses that may engage in processing yard waste materials. SWACO quantified yard waste tonnages from 2004-2009. The average tonnage was 165,500 tons. This amount is used to project yard waste for each year of the planning period.

Consistent with the Ohio Constitution and state law, communities within the District are responsible for all costs, the management and the administration of yard waste collection within their jurisdiction. The political subdivisions or contracted haulers deliver yard waste for composting to registered compost facilities where they have agreements to deliver yard waste. The Yard Waste Management Program Summary outlines the operation of the program in the reference year:

Program Summary – Yard Waste Management	
Description	Details
Program Number	SWACO-RP-4
SWACO Budget Number	3-O-600
OEPA Program Number	5328, 5327
Entity Responsible for Maintaining Program	Compost Facilities
Service Area for Program	SWACO
Materials Reduced/Recycled	Grass, leaves, brush
2008 Recycled Tonnage	177,596
2008 Program Costs	\$2,218,506
Program Operator/Contractor	Registered Compost Facilities

The strengths of this program include:

- There are a sufficient number of facilities located in SWACO to manage all of the yard waste generated and separated for composting.
- Yard waste is collected curbside in most suburban communities offering convenience and service to residential customers.

- In the 2008 reference year, yard waste was offered curbside to Columbus residents at no cost.

The challenges of the program/strategy are:

- In 2009, the economic impact of the recession on the City of Columbus budget required the City to suspend its yard waste collection program. Most residential customers were left without service after January 31, 2009 unless they elected to pay for the service. This may significantly impact the amount of yard waste diverted for 2009.
- Yard waste is a major component of SWACO's budget with significant payments to the two largest operators.
- SWACO does not administer nor benefit from the end use of the compost material.

5. Just In Time Recycling (JITRS)

SWACO established a Just in Time Recycling Program (JITRS) for small businesses within the District in 2000. SWACO provides participating businesses with desk side paper recycling bins and a 96-gallon paper tote. The participating business fills the tote with office paper and calls for a pick-up when the container is filled. SWACO picks up the paper and delivers it to Rumpke for recycling. In the 2008 reference year, the JITRS program collected and recycled 774 tons of paper that was diverted from landfill disposal. The JITRS Program Summary outlines the operation of the program in the reference year:

Program Summary – Just In Time Recycling (JITRS)	
Description	Details
Program Number	To Be Discontinued. See Section V
SWACO Budget Number	3-O-630
OEPA Program Number	5330
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Mixed office paper
2008 Recycled Tonnage	774
2008 Program Costs	\$13,874

Program Summary – Just In Time Recycling (JITRS)	
Description	Details
Program Operator/Contractor	SWACO/Rumpke

The strengths of this program include:

- Increased levels of recycling in small businesses. The program doubled tonnage in the last 5 years.
- Convenient access to recycling services.
- Simple program for small businesses to implement.
- The program is offered at no cost to a small business.

The challenges of the program/strategy are:

- The cost for the desk side containers and roll carts.
- Operating costs exceed the revenues from the recycled paper.
- Due to the economics of the program, the demand for this program exceeds SWACO's ability to provide service.

6. HHW Collection and Processing

Permanent Facility

SWACO currently contracts with Environmental Enterprises, Inc. (EEI) to operate a permanent Household Hazardous Waste (HHW) facility. This facility is located at 1249 Essex Avenue. In the winter (November – March) the facility is open Wednesdays 2:00 pm – 6:00 pm and Thursdays from 9:00 am – 4:00 pm. In the summer (April – October) the facility is open Wednesdays from 2:00 pm – 7:00 pm and Thursdays from 9:00 am – 5:00 pm. In 2008, 445,502 lbs. (223 tons) of HHW materials was collected at the permanent facility and the facility managed 5,291 cars. This facility provides SWACO residents with an alternative to the landfill for the disposal of HHW items. SWACO's program meets the requirement of State goal #5 to provide strategies for managing Household Hazardous Waste.

Mobile Collection Events

SWACO also utilizes EEI to provide collection and disposal of household waste at mobile collection sites around SWACO. In 2008, SWACO conducted 13 mobile collection events at different communities in Franklin County. There were 8,807 cars managed during these events in 2008. These events brought in 836,696 lbs. (418 tons) of household hazardous items in 2008. The hazardous household materials included: batteries, fuels, aerosols, pesticides, flammables, propane, freon, oil, antifreeze, paint, fire extinguishers and other miscellaneous items.

HHW Processing

OGM, LTD operated a facility that treated water containing oil and other non-hazardous contaminants, including latex paint. The OGM, LTD program was discontinued after approximately one year due to the high costs associated with testing the latex paint prior to beginning the reclamation process. The HHW Collection & Processing Program Summary outlines the operation of the program in the reference year:

Program Summary – HHW Collection & Processing	
Description	Details
Program Number	SWACO-RP-5
SWACO Budget Number	3-O-610
OEPA Program Number	5331, 5332, 5352
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Batteries, fuels, aerosols, pesticides, flammables, propane, freon, oil, antifreeze, paint, fire extinguishers and other miscellaneous items
2008 Recycled Tonnage <i>Permanent Facility</i>	445,502 lbs. (223 tons)
2008 Recycled Tonnage <i>Mobile Collection Events</i>	836,696 lbs. (418 tons)
2008 Program Costs	\$551,902

Program Summary – HHW Collection & Processing	
Description	Details
Program Operator/Contractor	EEI

The strengths of this program include:

- SWACO's HHW program promotes recycling and safe disposal for SWACO residents while keeping dangerous materials out of homes and the landfill.
- Many items that are collected can be reused or recycled.
- SWACO residents have opportunities to dispose of HHW materials year-round.

The challenges of this program include:

- There is a high cost for this program.
- There is a less than one percent diversion rate for the HHW materials.
- The permanent collection facility's capacity is limited.

7. Facility Solid Waste Management Planning

SWACO continued to establish partnerships with large facilities that serve the public to develop specific facility-wide solid waste management plans. In 2008, SWACO worked with Nationwide Children's Hospital, Eddie Bauer, and the Ohio Exposition Center.

SWACO continued to assist and respond to requests to evaluate waste management practices and help with establishing recycling programs.

SWACO provides and arranges the technical assistance for solid waste management planning through solid waste and recycling assessments and waste reduction analysis. SWACO provided assistance for consulting services and containers for the facilities. The Facility Solid Waste Management Planning Program Summary outlines the operation of the program in the reference year:

Program Summary – Facility Solid Waste Management Planning	
Description	Details
Program Number	SWACO-RP-6
SWACO Budget Number	4-D-313
OEPA Program Number	5334
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Results of a waste assessment can highlight a number of alternatives and suggestions that could enhance waste reduction efforts within the organization.
- The collaboration can serve as a model for other solid waste districts.
- Exposure of SWACO and recycling before a large and captive audience.
- Strong penetration of public awareness message.
- Minimal budgetary impact on SWACO.
- SWACO has a web-based data management system (SWACO E-TRAC) offered to commercial facilities in SWACO's District at no-cost. The system provides reports showing waste diversion and carbon savings.

The challenges of this program are:

- The facilities waste stream may not generate enough recyclable materials to be eligible for a recycler to collect.
- A lack of reporting requirements on behalf of the facilities contracted haulers means that data received regarding diversion is often neither timely nor verifiable.

8. Electronics Recycling

SWACO has discontinued hosting collections for electronic materials due to the overwhelming growth of private companies that are collecting

consumers' e-waste at little or no charge. In order to assist residents, SWACO provides a list of organizations on their website where residents can take their electronics for processing. Each of the listed organizations has indicated to SWACO in writing that recyclable materials brought to them will be processed and used in a safe, environmentally friendly manner in accordance with applicable law and that no part of the recyclable materials will be disposed of in any landfill. They have also indicated any known countries to which the recycled materials may be exported for processing. All such information is available to the public according to SWACO's Public Records Request Policy.

The listing of any of these organizations by SWACO on their website is not an endorsement of any particular business or organization over another. SWACO is not responsible or liable for the collections, operations, processing, policies, disposal or transportation of recyclable materials by any of the listed organizations. If residents have questions about the services provided by those listed, SWACO urges them to ask those questions before turning over their equipment for recycling. The Electronics Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – Electronics Recycling	
Description	Details
Program Number	SWACO-RP-7
SWACO Budget Number	n/a
OEPA Program Number	5333
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Electronics, cell phones, computers, televisions
2008 Recycled Tonnage	27
2008 Program Costs	\$0
Program Operator/Contractor	various

The strengths of this program are:

- Information on electronics processing is available 24 hours a day, 7 days a week through SWACO's website.
- Electronics are delivered directly to the processor.
- Residents are provided with consistent information about electronics recycling.
- Five locations are open year round throughout SWACO's jurisdiction.
- This program is operated at no cost to SWACO.

The challenges of this program are:

- SWACO does not receive recycling numbers from all of the processors.
- To work with e-waste recyclers and media broadcasters to further promote the local availability of recycling sites.

9. Tire Recycling

SWACO has several programs dedicated to meeting the State's goal #5 to develop strategies managing scrap tires. In 2008, the Ohio EPA reported that 9,679 tons of scrap tires were collected from the Residential/Commercial Sectors in the District. SWACO's scrap tire programs include the following:

1. SWACO and the Franklin County Board of Health partner to prohibit the illegal disposal of solid waste including scrap tire dump sites. In 2008, the Board of Health indicated that there was one site that contained scrap tires.
2. SWACO collects and properly manages tires at each of the transfer stations and the landfill. There is a fee of \$5.00 per tire for auto tires and a fee of \$50.00 for large tires as posted on the SWACO website. These fees may change from time to time as determined by the SWACO Board of Trustees.
3. SWACO and the City of Columbus have developed a joint program to ensure that the

City is able to effectively manage scrap tires that it delivers to SWACO.

4. As opportunities arise, SWACO will evaluate new tire recycling technologies to divert scrap tires from the waste stream.

The Tire Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – Tire Recycling	
Description	Details
Program Number	SWACO-RP-8
SWACO Budget Number	n/a
OEPA Program Number	5360, 5361, 5359
Entity Responsible for Maintaining Program	SWACO, Franklin County Board of Health, Brokers
Service Area for Program	SWACO
Materials Reduced/Recycled	Scrap tires
2008 Recycled Tonnage	9,679
2008 Program Costs	\$0
Program Operator/Contractor	SWACO, Franklin County Board of Health, Brokers

The strengths of this program are:

- SWACO manages scrap tires at the landfill and transfer stations year-round.
- SWACO has an in-District tire processor.
- There is no cost to operate this program.
- The SWACO website answers questions about the proper disposal of scrap tires.
- In 2008, there was only one open dump site containing waste tires.
- The tire dealer network effectively manages the majority of scrap tires generated within the District.

The challenges of this program are:

- The SWACO website does not describe the dangers of tire storage sites and open dumps with regard to human health and the environment.
- Removal of tires from the transfer stations or the Franklin County Sanitary Landfill can be difficult.

10. City of Columbus Recycling Programs

SWACO continues to explore means to help member communities develop and implement effective and financially sustainable recycling systems for Columbus and neighboring communities. One of the first strategies is to determine whether there is a cost effective way to enhance the City of Columbus' existing residential recycling program. An objective of this strategy is to identify the geographic and financial barriers for enhancing a curbside system. A second objective is to work with the City of Columbus to implement a financially viable recycling system. Another strategy is to maximize the City of Columbus and SWACO's existing drop-box recycling system, in the absence of a financially sustainable curbside system.

Base Year Situation

The City of Columbus offered curbside recycling through a contract with Rumpke of Ohio, Inc. to any city resident. The cost was \$8.25 per month to the residents, and may have included some financial support by the City of Columbus. Residents contacted Rumpke directly to subscribe to this weekly service.

City of Columbus residents (and all District residents) may also deliver their recyclables to any of the 203 SWACO drop-offs located throughout the District for free. Drop-offs are located at retail locations, recreation centers, fire stations and Columbus City Schools.

Future options for the City of Columbus will be presented in Section V. The City of Columbus Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – City of Columbus Recycling Programs	
Description	Details
Program Number	SWACO-RP-9
SWACO Budget Number	3-O-620
OEPA Program Number	None

Program Summary – City of Columbus Recycling Programs	
Description	Details
Entity Responsible for Maintaining Program	City of Columbus, SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper
2008 Recycled Tonnage	12,999 from drop-offs and 19,562 subscription programs (includes some tonnage from other political subdivisions)
2008 Program Costs	Included in Program # SWACO-RP-3
Program Operator/Contractor	City of Columbus, SWACO, Rumpke Recycling

The strengths of this program are:

- Columbus residents are provided with more than one option for recycling. They can subscribe to the curbside service or utilize SWACO drop-offs.
- Any resident who lives in a single-family home has access to curbside recycling if they choose to subscribe.
- The cost to residents for the subscription curbside program is \$2.06 per week. This cost is reasonable as compared to other markets in Ohio.
- The drop-offs offer Columbus residents a comprehensive recycling program.

The challenges of this program are:

- The City of Columbus subscription curbside recycling program is not well advertised.
- Participation in the curbside recycling program is low.
- The program may require financial support from the City to remain in existence.
- Drop Off locations can have contamination problems due to illegal dumping.

B. Education and Community Awareness Programs

SWACO supports and maintains environmental education and community outreach programming that seeks to reach every resident in the District. SWACO's environmental education programs are designed for school age audiences and the general public. The intent of the programs is to introduce the concepts of waste reduction, reuse and recycling in order to affect behavioral change. Other SWACO environmental education programs provide educators with technical assistance, workshops and access to reference materials so educators can incorporate solid waste awareness into their curricula. A list of educational events conducted in 2008 may be found in Appendix I.

The SWACO Strategic Plan includes Goal #09-10 Public Awareness and Education. The goal is to enhance SWACO's public image and bring about behavioral change on waste reduction as well as recycling through community outreach, effective communication and educational methods. The Strategic Plan includes the following objectives:

- Continue to update the SWACO website
- Produce 2008 (for 2009 use) Annual Report in print and on-line
- Further growth of the Emerald Awards
- Promote recycling & waste reduction School District Outreach
- Nail-a-Dumper
- Promotion of Green Energy Centre
- Promote development of waste/recycling consortiums
- Promote CNG fuel use and sales consortiums
- Media Training for Senior SWACO Staff

Community outreach efforts and programs are designed for broad audiences and to position SWACO as the community resource for solid waste management as well as solid waste reduction, recycling and re-use. Education and community outreach efforts in place during 2008 include:

1. Smart Communities

The Smart Communities Program is designed to meet two objectives. The first objective is to increase participation rates in recycling programs in villages, townships and cities. SWACO provides technical assistance and resources to communities to raise participation levels by household. The second objective is to educate the public about litter prevention and reducing litter in communities. Meetings, primarily with service department staff, are held to identify strategies, tactics and projects to increase curbside recycling and reduce litter.

SWACO partners with selected municipalities that have committed to enhancing participation and increasing diversion rates in household and/or commercial recycling. The program began with the municipalities of Hilliard, Bexley and Gahanna and has continued to expand each year to now include twelve Smart Communities. The additional communities are: Dublin, Grandview, Marble Cliff, Minerva Park, Reynoldsburg, Upper Arlington, Westerville, Whitehall and Worthington. In 2008, these communities had an average waste reduction rate of 37.85%. The Smart Communities Program Summary outlines the operation of the program in the reference year:

Program Summary – Smart Communities	
Description	Details
Program Number	SWACO-EA-1
SWACO Budget Number	3-D-312
OEPA Program Number	5231
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper, litter
2008 Recycled Tonnage	n/a
2008 Program Costs	\$27,386
Program Operator/Contractor	SWACO

The strengths of this program include:

- Promotes SWACO's services and programs and enhances SWACO's visibility in the community.
- SWACO, its member communities and their leadership, form partnerships that can lead to an innovative approach to achieving SWACO's goals.
- Collective planning with community leaders results in a sense of ownership of the projects, tactics and outcomes.
- Higher levels of participation and diversion help meet the goals of the solid waste management plan.

The challenges of this program are:

- Initial outreach and start-up is time consuming.
- Requires legal and staff resources to maintain current information on community laws and public contracting.
- It is sometimes difficult to effectively educate the public about litter reduction.

- The time requirement to meet and follow through on tasks is a deterrent to some communities.

2. Center of Science and Industry (COSI)

Educators, children and their families are an important audience for SWACO’s efforts in promoting waste reduction and recycling in Central Ohio. In 2008, SWACO provided monies for the maintenance of the “Trashformation” exhibit, an interactive permanent exhibit at COSI Columbus. “Trashformation,” opened in 2003 and was made possible through grant funding from SWACO as well as The Ohio Department of Natural Resources-Division of Recycling and Litter Prevention (ODNR-DRLP).

“Trashformation” is a high tech display which includes an interactive computer program promoting the concepts of reduce, reuse, recycle, and composting in Franklin County. The computer program incorporates interactive “flash” method and video clips of landfill operations, Material Recovery Facilities (MRF) and recycling re-manufacturers.

The COSI Program Summary outlines the operation of the program in the reference year:

Program Summary - COSI	
Description	Details
Program Number	To Be Discontinued. See Section V
SWACO Budget Number	3-D-305
OEPA Program Number	5233
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$20,000
Program Operator/Contractor	SWACO

The strengths of this program are:

- COSI and SWACO share similar educational missions and audiences.
- COSI hosts more than 1 million visitors annually, thus providing SWACO with a broad audience.
- The exhibit is in a high visibility area.
- The exhibit provides a consistent message to young people about waste reduction and recycling.

The challenges of this program are:

- The exhibit is now six years old and may need to be updated.
- Funding to update this exhibit is limited.
- There is no way to track the exhibit’s effectiveness.

3. Columbus Zoo & Aquarium (CZA) My House/Education Grant

SWACO and the CZA established a partnership in the spring of 2000. That partnership has resulted in the Authority sponsorship of the “My House” exhibit/education center, located at the entranceway to the North American Region at the CZA. “My House” opened in 2002, providing an education venue for visitors to experience exhibits and programs based on North American habitats. Human influence and its impact on habitats and the surrounding environment are a strong theme at “My House”.

SWACO assisted the CZA in choosing recycled content construction material to incorporate into the “My House” building. Enviro Wall® was chosen for wall system construction. This material is manufactured from post-consumer packaging and food service polystyrene. Post-consumer polystyrene material is ground and mixed with cement to manufacture prefabricated wall system panels. The lightweight panels are easily stacked and interlocked by using expanding foam glue. Channels can be cut into the soft wall panels to allow the installation of electrical wiring as well as window and door openings.

“My House” provides visitors with a positive experience and educates them about how to reduce negative impacts on the environment. The collaboration has been designed to enhance education and public outreach efforts. Several supplemental outreach and education programs have been developed to further explore some of the environmental issues introduced at the “My House” exhibit. These programs are offered free of charge to children and families on-site. The Columbus Zoo/My House Program Summary outlines the operation of the program in the reference year:

Program Summary – Columbus Zoo/My House	
Description	Details
Program Number	To Be Discontinued. See Section V
SWACO Budget Number	3-D-609

Program Summary – Columbus Zoo/My House	
Description	Details
OEPA Program Number	5234
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$79,262
Program Operator/Contractor	SWACO

The strengths of this program are:

- The CZA receives over 1.8 million visitors, thus providing SWACO with a broad audience reach.
- The Zoo provides excellent maintenance of technical exhibits, providing an economical method for SWACO to reach this audience.
- Many CZA visitors also visit COSI providing an opportunity to “hear” the same message in a slightly different way, yet providing a reminder that in Central Ohio waste reduction and recycling are taken seriously.
- Increases the efficiency of SWACO’s education and outreach resources by providing an interesting and informal educational venue to a broad audience.
- Reinforces SWACO’s message of waste reduction, re-use and recycling through hands-on activities at a destination venue.
- The CZA and SWACO share similar missions and audiences.

The challenges of this program are:

- Exhibit expansion is limited.
- The exhibit is seven years old and some aspects of “My House” may need funding for additional maintenance and improvements.
- There is no way to track the exhibit’s effectiveness.
- The CZA is within the Delaware, Knox, Marion and Morrow Joint Solid Waste Management District.

4. School District Recycling

SWACO has shifted the Middle School Education program focus to work with school districts in developing recycling programs. In 2008, SWACO assisted six districts in maintaining and/or implementing recycling programs. Below is a list of

descriptions for school districts that received assistance from SWACO:

- Columbus City Schools – cost included in SWACO recycling drop-off program budget.
- Worthington Schools – assistance provided in re-writing the hauling contract to include co-mingled recycling district-wide resulted in removing the schools from the SWACO JITR’s program resulting in a cost savings to SWACO.
- Dublin City Schools – technical assistance provided in implementing a district-wide, co-mingled recycling program and removing the schools from the SWACO JITR’s program resulted in a cost savings to SWACO.
- Bexley City School District – cost included in SWACO General Grants Program for implantation of a co-mingled, district-wide recycling program.
- New Albany-Plain Local School District – donated recycling containers for use in the District’s co-mingled recycling program.
- South-Western City Schools – agreement entered into in 2006 provides funding for co-mingled recycling program implementation as well as other services provided by the school district.

The School District Recycling Program Summary outlines the operation of the program in the reference year:

Program Summary – School District Recycling	
Description	Details
Program Number	SWACO-EA-2
SWACO Budget Number	3-D-303 3-D-602
OEPA Program Number	5236
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$125,000
Program Operator/Contractor	SWACO

The strengths of this program are:

- Increased recycling.
- Increased student education.
- Program helps strengthen environmental awareness and knowledge about waste issues.

The challenges of this program are:

- Gaining staff support.
- Costs associated with purchasing containers.
- On-going staff training.

5. Teacher Technical Assistance

SWACO’s Teacher Technical Assistance program provides teachers and educators in Franklin County school districts with educational materials, upon request, to further help in educating students about environmental awareness. Materials available include:

- SWACO’s landfill poster.
- School District Recycling Guide.
- The Past Foundation/SWACO Garbology Curriculum.
- Brochures, handouts and a list of helpful websites.

The Teacher Technical Assistance Program Summary outlines the operation of the program in the reference year:

Program Summary – Teacher Technical Assistance	
Description	Details
Program Number	SWACO-EA-3
SWACO Budget Number	3-D-603
OEPA Program Number	5237
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$12,883
Program Operator/Contractor	SWACO

The strengths of this program are:

- Program helps strengthen environmental awareness and knowledge about waste issues.

- Teacher assistance is provided on the SWACO website allowing teachers to access information on their own schedule, while saving SWACO money.
- Educational materials are available at little or no cost.
- Provides hands-on classroom activities and positive learning experiences.

The challenges of this program are:

- SWACO does not have a method of tracking the use of these education resources.
- Overall effectiveness of the program is difficult to evaluate.
- Awareness of this program is difficult to assess.

6. Teacher Workshops

SWACO workshops for teachers offer training in a variety of approved curricula. Workshops are designed to meet the Ohio Department of Education (ODE) Academic Content Standards. Continuing Education Units (CEU's) and/or Graduate Credit are offered at all workshops. SWACO partners with several Central Ohio organizations in offering workshops as a member of the Education Advisory Council (EAC) in conjunction with Metro Parks. The Teacher Workshop Program Summary outlines the operation of the program in the reference year:

Program Summary – Teacher Workshops	
Description	Details
Program Number	SWACO-EA-4
SWACO Budget Number	3-D-605
OEPA Program Number	5238
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$1,899
Program Operator/Contractor	SWACO

The strengths of this program are:

- Workshops provide interactive, fun curricula/teacher kits and training to educators.
- All workshops provide Graduate credit or Continued Education Units (CEUs).
- All curricula provided meet the State of Ohio proficiency benchmarks and standards.

The challenges of this program are:

- Attendance averages only 30 teachers per workshop.

7. Resource Library

The SWACO Resource Library is a lending library containing educational resources with topics relating to Environmental Education (EE). The lending library is open to residents, students and educators within the District. The library contains a wide range of resources including pamphlets, magazines, reference books, periodicals, curriculum guides, newsletters, education kits, and videos.

Resources cover topics related to solid waste and other environmental issues including waste management, recycling, composting, biodiversity, litter, energy, natural resources, toxic waste, the water cycle, water pollution, and much more. Library resources provide lesson plans, activities related to scout badge work, science fair ideas and more.

In August of 2009, SWACO donated all SWACO Resource Library videos, books, teacher kits and posters to the Grange Insurance Audubon Center library.

The Resource Library Program Summary outlines the operation of the program in the reference year:

Program Summary – Resource Library	
Description	Details
Program Number	To Be Discontinued. See Section V
SWACO Budget Number	3-D-606
OEPA Program Number	5239
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$2,200
Program Operator/Contractor	SWACO

The strengths of this program are:

- Materials are mailed free of charge and return postage is paid on all videos.

- SWACO’s library offers teachers, students, businesses and the general public comprehensive environmental materials that specialize in solid waste information.
- New resources are added every year.

The challenges of this program are:

- The library is under-utilized.
- The location is inconvenient for many residents of the District.

8. Classroom Presentations

SWACO Environmental Education (EE) programs are available to Franklin County schools and the general public. Programs are interactive, fun and designed to Ohio Department of Education standards. Opportunities are available to Franklin County schools K-12, home schools, after school programs, summer programs and special interest groups.

The Classroom Presentations Program Summary outlines the operation of the program in the reference year:

Program Summary – Classroom Presentations	
Description	Details
Program Number	SWACO-EA-5
SWACO Budget Number	n/a
OEPA Program Number	5240
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Presentations include relevant topics.
- Most programs are tailored to reach a wide audience.

The challenges of this program are:

- Staff availability.
- Preparation time and cost.

9. News From SWACO (formerly Educator Newsletter)

“News From SWACO” reaches thousands in print, online and through e-mails. It is a three-times-a-year publication that updates community leaders, the business community, educators and others on SWACO’s program offerings and other local waste reduction and recycling opportunities. The cost is approximately \$750 each time, and the Newsletter is available on the SWACO website under Media Center. The News From SWACO Program Summary outlines the operation of the program in the reference year:

Program Summary – News From SWACO	
Description	Details
Program Number	SWACO-EA-6
SWACO Budget Number	3-D-303 3-D-310
OEPA Program Number	5241
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$2,000
Program Operator/Contractor	SWACO

The strengths of this program are:

- Promotes and educates communities and others within the District as to SWACO activities and programs.

The challenges of this program are:

- Keeping current and accurate mailing lists is a time-consuming challenge.
- No method of evaluation for effectiveness has been identified.

10. Landfill Tours

Tours of the Franklin County Sanitary Landfill are offered to schools and the general public to better explain the many solid waste disposal issues landfills and consumers are faced with today. Visitors report that they find the visual experience to be invaluable and leave with an enhanced understanding of waste disposal in landfills. Many schools return annually for tours. The Landfill Tours Program Summary outlines the operation of the program in the reference year:

Program Summary – Landfill Tours	
Description	Details
Program Number	SWACO-EA-7
SWACO Budget Number	3-D-604
OEPA Program Number	5242
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$14,807
Program Operator/Contractor	SWACO

The strengths of this program are:

- Sanitary landfill tours are a great way to educate the public on waste disposal, encouraging recycling while offering assistance to schools with bus reimbursement.
- Tours are very popular. In 2008 SWACO conducted 138 tours.
- Tours are free of charge.

The challenges of this program are:

- Landfill tours can only accommodate up to 55 people at a time, so schools often need to schedule several field trips to include as many classes as possible.

11. Special Events (formerly Community Outreach)

SWACO conducts public relations activities and works in the community at special events held within the District such as:

- The Ohio State Fair August 2008 – Funded through an ODNR-DRLP grant, SWACO developed a project to improve recycling opportunities at the Ohio Expositions (OEC) 2008 Ohio State Fair. Co-mingled recycling containers were placed in high traffic areas throughout the OEC grounds. Additionally, SWACO developed a “Waste Less” food composting pilot specifically for the Taste of Ohio building. During the event, compostable foodservice items were used and composted along with food waste generated at vendor’s booths in the building. All signage, vendor educational materials and public awareness documents were developed by SWACO. The event was well covered by the media, providing mass exposure to the importance of reducing food waste.

- Columbus Arts Festival June 2008 – SWACO sponsored Information Booths which distributed information on recycling and waste reduction to approximately 300,000 people.
- Eddie Bauer Employee Green Fair March 2008 – SWACO provided an exhibit board on “Reduce, Reuse, Recycle” and had give-a-ways for approximately 700 employees.
- Anheuser Busch Employee Fair July 2008 – SWACO staffed an exhibit on waste reduction and recycling and distributed information to over 350 employees.
- Molina Healthcare Employee Fair June 2008 – Provided Exhibit Board on “Reduce, Reuse & Recycle” and distributed items for over 400 staff members.
- Quantum Health Employee Fair June 2008 – Provided Exhibit Board on “Reduce, Reuse & Recycle” and distributed items for over 250 staff members.
- Olde Town East Festival September 2008 – Provided recycling boxes for this event attended by 10,000 people for approximately \$200 of in-kind services for the use of the boxes.

SWACO also participated in several speaking engagements such as those listed below:

- Mayor’s Green Conference February 2008 – Discussed conducting waste audits and procedures, recycling and how to efficiently manage waste streams for approximately 400 people.
- Gahanna Business Chamber May 2008 – Discussed forming a collective waste hauling district to approximately 40 business owners in the Creekside Development area in Gahanna.
- Business Owners & Managers Association Annual Meeting November 2008 – Approximately 125 building owners and managers attended a presentation on waste reduction and recycling techniques and procedures.
- Different programs and messages such as buy recycled, yard waste and/or food waste management and litter

prevention programs are among a few of the messages that are marketed at these events.

- SWACO continues to make use of community opportunities in which it can deliver the message of recycling and reuse. To that end, SWACO utilized three sports venues in 2008. These included messaging at Nationwide Arena, home to the NHL's Columbus Blue Jackets, Crew Stadium, home to MLS' Columbus Crew, and Cooper Stadium, home to the International League's Columbus Clippers. Spending on these three venues in 2008 was approximately \$45,000 and reached approximately 1.6 million people in terms of attendance at these venues. The message featured video scoreboard messaging as well as point of sales promotions for bottle products at the Arena and the Stadium.

The Community Outreach program summary outlines the operation of the program in the reference year:

Program Summary – Special Events	
Description	Details
Program Number	SWACO-EA-8
SWACO Budget Number	3-D-303 3-D-310
OEPA Program Number	5243
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$177,325
Program Operator/Contractor	SWACO

The strengths of this program include:

- These programs allow SWACO to be visible in the community.
- Allows SWACO to reach out to diverse audiences.
- Provides multiple opportunities to present waste reduction and recycling messages.

The challenges of this program include:

- Participating in a show can take a large amount of staff time to prepare and attend.
- Funding is limited.

12. The Central Ohio Emeralds

The Central Ohio Emeralds was initiated in 2006 as a means to honor businesses, institutions, communities and individuals for their waste reduction and recycling efforts. In its first year, approximately 225 attended the event honoring six winners in six award categories. In 2007, approximately 535 attended and the awards were increased to seven categories. In 2008, slightly over 650 attended, and the event became the “Premiere Green Award Program” in Central Ohio. The Emeralds offers an opportunity to reward and acknowledge the significant contributions made by those entities that meet program criteria designed to advance SWACO’s mission and comply with the guiding principles.

Award categories include: Environmental Leadership, Partnership, Innovation, Litter Clean-up, Environmental Education, Entrepreneurship and the Trustees Award.

The Central Ohio Emeralds Program Summary outlines the operation of the program in the reference year:

Program Summary – Central Ohio Emeralds	
Description	Details
Program Number	SWACO-EA-9
SWACO Budget Number	3-D-330
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$52,911
Program Operator/Contractor	SWACO

The strengths of this program are:

- Unprecedented program growth and support.
- Positioned SWACO as the premiere “Green Authority.”
- Increased SWACO’s visibility and its mission.

The challenges of this program are:

- A very labor and time intensive program.
- Program expense is high.
- Larger space needed to grow program.

13. SWACO Website (formerly Internet Application Development)

A primary educational tool for SWACO is the website. The website provides information for public consumption while providing interactive tools for problem solving. The broad reach of the Internet enables SWACO to provide information about reduction, recycling and re-use in a cost effective manner to a large audience. The SWACO Strategic Plan Public Awareness and Education Goal #09-10 includes an objective to continually update the SWACO website.

The website also helps SWACO attain the new State Plan Goal for outreach and education. The goal requires new elements for outreach including a website.

Some of the strategies outlined in the SWACO Strategic Plan include:

- Continually update web-content to ensure information is current.
- Continue to improve the user friendliness of the website.
- Add video content to current website.
- Continue to link web site mentions in all forms of advertising to drive people to the website.

The SWACO Website program summary outlines the operation of the program in the reference year:

Program Summary – SWACO Website	
Description	Details
Program Number	SWACO-EA-10
SWACO Budget Number	3-D-300
OEPA Program Number	5244
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program include:

- Effective communications, educational information and solid waste solutions to a broad public audience and other entities (businesses, educators, public officials).
- Potentially large audience penetration.

- Cost effectiveness per capita.
- Provides SWACO with a broader outreach to residents and businesses through cross promotion of all programs.
- The website provides an opportunity to link up with websites belonging to other organizations and facilitating flow between the sites.

The challenges of this program include:

- Users must approach and access the Web site on their own.
- Site, content and tools need regular updating and enhancement.
- Expand efforts to tie all forms of SWACO advertising together to take advantage of cross promotions that will increase traffic.

14. Environmental Steward Office – City of Columbus Partnership

The City of Columbus and SWACO coordinate the implementation of the City of Columbus “Get Green Columbus” initiative. The partnership includes maintaining the Office of the Environmental Steward (ESO) and SWACO provides grant funding for personnel, supplies and travel. The ESO acts as a liaison between the two organizations and educates and promotes issues related to waste reduction and investment in a green economy. As part of the “Get Green Columbus” initiative, the ESO also provides support for other organization’s environmental and economical sustainability efforts.

In 2008, the ESO implemented the GreenSpot program to provide businesses, communities, families and local organizations with information on how to live and work greener. Beginning at the GreenSpot website, a commitment is made to change behavior and a window decal is issued. All GreenSpot members can stay connected to the program year-round by participating in the related Facebook fan page to read daily tips, ask questions, share success stories, interact with city representatives and build a community network. Annual reports are requested from business locations which then give them the opportunity to win an annual GreenSpotlight Award at the Get Green Business Conference. GreenSpot businesses have reported bike racks and priority carpool parking to encourage staff to use alternative transportation, while many have conducted waste audits. The GreenSpot businesses carry the educational environmental messages to their customers and employees. GreenSpot has partnered with the publication *Business First* to provide incentives through discounted ad

rates, while GreenSpot businesses are recognized on the program website www.columbusgreenspot.org.

The ESO also coordinated with community leaders by participating on various councils and agency teams to provide insight on green issues. The Environmental Steward Program Summary outlines the operation of the program in the reference year:

Program Summary – Environmental Steward Office	
Description	Details
Program Number	SWACO-EA-11
SWACO Budget Number	3-D-102
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$210,910
Program Operator/Contractor	SWACO, City of Columbus

The strengths of this program include:

- Partnership between the City of Columbus and SWACO is mutually beneficial because of overlapping missions to promote sustainable lifestyles and business practices through waste reduction and recycling.
- The ESO strengthens the relationship between SWACO and the largest municipality in the District.
- This program targets a wide ranging audience, including individuals, businesses and community groups.

The challenges of this program include:

- The need for the ESO to balance responsibilities of two different organizations.
- There are a large number of communities, councils, businesses, and agencies that need to be reached by a single person.

2. **Industrial Waste Reduction Strategies**

A. **INDUSTRIAL RECYCLING AND WASTE REDUCTION PROGRAMS**

Industry is responsible for eleven percent of the mixed solid waste generated within the District. SWACO has created programs to continue to assist industries with waste reduction and recycling and to help industries assess their solid waste management needs by hosting business roundtables, conducting waste assessments, and through the promotion of the waste exchange on the SWACO website.

SWACO assists business and industry with innovative waste management strategies that can reduce solid waste materials, reduce business costs for waste management and reduce the reliance on landfills. SWACO has developed three primary services that offer business and industry the specific assistance needed. These services include:

1. **Solid Waste Assessments**

In order to meet state guidelines, SWACO provides industry and businesses with the tools to complete a self assessment of their solid waste situation. A do-it-yourself waste assessment is available on the SWACO website for industries to print and use to conduct their own assessment. This form may be found in Appendix J. Users answer a series of questions to determine the composition of their waste stream and gain a better understanding of their existing solid waste system. This data can be employed by users to make informed decisions about the type of waste reduction and recycling programs to implement. In special circumstances, SWACO will conduct a waste assessment on smaller businesses with common waste streams. The Solid Waste Assessment Program Summary outlines the operation of the program in the reference year:

Program Summary – Solid Waste Assessments	
Description	Details
Program Number	SWACO-IP-1
SWACO Budget Number	3-D-615
OEPA Program Number	5335
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a

Program Summary – Solid Waste Assessments	
Description	Details
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Raises awareness among businesses about the expense of waste disposal, the costs of waste hauling contracts and savings that can be achieved.
- Increase awareness of how businesses can reduce waste streams without recycling.
- Positions SWACO as a resource for technical assistance, information and innovation regarding solid waste streams, solid waste reduction, re-use and recycling.
- Waste assessments provide a baseline of information that serves as a reminder to businesses to continue to review their processes and build on their initial efforts to reduce their waste stream.
- Availability of the “do-it-yourself” waste assessment resource on the SWACO website reduces businesses program costs.
- Walk-through waste assessments provide businesses the opportunity to review their waste hauling practices and develop strategies on how to reduce costs.

The challenges of this program are:

- Businesses are encouraged to conduct their own waste assessments and come to their own conclusions, which require an investment in time and resources.
- Conducting waste assessments at large facilities puts a strain on SWACO’s available resources.

2. OMEX and Local Recyclers (formerly Virtual Landfill)

SWACO encouraged the use of an Internet-based website sponsored by the Association of Ohio Recyclers for industries to sell unused materials, overruns and manufacturing by-products. The Ohio Materials Exchange website (OMEX) functions as an online “swap shop” to buy and sell materials. A link to OMEX is provided on the SWACO website. In addition to providing a link to OMEX, a resource list is located on the SWACO website that lists the names and contact information for some recyclers located within and outside

the District. The list also includes a description of the type of materials each recycler accepts. The OMEX and Local Recyclers Program Summary outlines the operation of the program in the reference year:

Program Summary – OMEX & Local Recyclers	
Description	Details
Program Number	SWACO-IP-2
SWACO Budget Number	n/a
OEPA Program Number	5337
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

The strengths of this program include:

- OMEX provides generators of Industrial Sector waste with access to waste exchange opportunities via the internet. This makes waste exchange opportunities continually available and easily updated.
- The OMEX website provides an opportunity to link up with websites belonging to other organizations and facilitating flow between the sites.
- Listing recyclers within and outside the District on the SWACO website gives SWACO the ability to easily update the list.

The challenges of this program include:

- Users must approach and access the Web site on their own.
- Advertising of this program to industries could be improved.
- Data is not collected on the number of businesses that access OMEX from the SWACO website.

3. Business Round Table

A Business Round Table is assembled four times annually for businesses with up to, and in most cases, over 100+ employees. In 2008, the Business Round Table met in March, June, September and December. The Business Round Table provides a forum to learn about disposal options, the latest innovations in waste reduction, re-use and recycling and other subjects that

address sustainability. The Business Round Table also provides businesses with the ability to network with other businesses on environmental strategies and projects. Copies of the agendas for the four meetings that took place in 2008 are located in Appendix K.

Information is provided to businesses seeking alternatives to disposal of unusual materials, the purchasing of recycled content materials and other solid waste issues. In 2008, approximately 165 attended the meetings and 41 speakers provided information on various topics.

The Business Round Table Program Summary outlines the operation of the program in the reference year:

Program Summary – Business Round Table	
Description	Details
Program Number	SWACO-IP-3
SWACO Budget Number	3-D-101
OEPA Program Number	5336
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$1,800
Program Operator/Contractor	SWACO

The strengths of this program are:

- Interaction between companies allows review of innovative solid waste technology and a comparison of contracted solid waste and recycling services.
- This forum creates an opportunity for industries to network on a regional basis and form relationships that can be carried on outside of the quarterly meetings.
- SWACO provides the opportunity for businesses to hear directly from other companies that have faced the challenges of creating environmental programs, to learn from the recyclers and processors how they can best recycle and/or reuse products. The Business Round Table provides the opportunity for businesses to hear about innovative ideas, programs, legislation, etc. to assist them in developing their programs.

The challenges of this program are:

- Retaining businesses throughout the year can be difficult and lead to inconsistent levels of participation.
- Providing lunch for business representatives can be costly.
- Participation in the roundtable has been expanded to business with 100+ employees and to some businesses with less than 100 to allow for more participation.

3. Other Programs

A. LITTER AND ILLEGAL DUMPING PROGRAMS

In the ongoing effort to minimize the negative aesthetic, economic, safety and health impacts of litter and illegal dumping, SWACO has implemented programs to combat these challenges. Community leaders have told SWACO that litter is one of the top priorities in maintaining a high quality of life in their neighborhoods and communities. SWACO has designed a variety of programming that targets high litter areas, strengthens enforcement and prosecution of those caught littering and involves citizens in the reporting and clean up of littered areas and illegal dump sites. Additionally, SWACO has found an increased incidence of unlicensed facilities that may impermissibly mix solid waste with construction and demolition debris. A disaster debris plan is in place to manage storm generated debris clean-up. SWACO also provides funding annually to the Franklin County Board of Health to investigate and prosecute those who litter, illegally dump waste or violate District Rules. Litter and illegal dumping programs administered in 2008 include:

1. Anti-Litter and Illegal Dumping Programs

Adopt-a-Roadway

In 2008, SWACO continued to administer this program for community organizations, clubs and schools to donate time to pick up litter and debris along designated stretches of roads and highways in Franklin County (outside of Columbus corporate limits). Groups commit to cleaning a 2-mile stretch of road four times a year. SWACO provides participating organizations with a how-to video, gloves, orange vests and bags.

Nail-a-Dumper: Illegal Dumping Prevention

In 2008, SWACO continued to provide funding for the Nail-a-Dumper program. SWACO and the Franklin County Board of Health partnered in a joint effort to provide comprehensive, multi-agency, anti-dumping enforcement services to Franklin County officials to educate law enforcement personnel, health department sanitarians and zoning officials about the laws, ordinances and regulations that prohibit illegal disposal of solid waste. The Franklin County Board of Health, Franklin County Prosecuting Attorney's Office, Franklin County Sheriff's Office and the City of Columbus Division of Refuse assist SWACO with administration of this program. The Nail-a-Dumper program provides the residents of the District with a phone number and a website where they can report illegal dumping of garbage, tires and other debris. Team members identify, locate, investigate and, when appropriate, prosecute all reported cases of illegal dumping within the District.

Litter Marshall

SWACO also partners with the Franklin County Board of Health, Franklin County Prosecuting Attorney's Office, Franklin County Sheriff's Office and the City of Columbus Division of Refuse in administering the Litter Marshall, a component of anti-litter and illegal dumping efforts. Litter Marshals are citizens who are usually recruited when they call the Nail-a-Dumper hotline to report an instance of littering by another citizen. By reporting violations of litter laws, citizens aid in the enforcement of such laws. The Litter Marshall program partners with all subdivisions within the District to strengthen enforcement of litter laws and prosecution of offenders so that cooperative efforts lead to a litter-free community. Complaints of littering can be reported through the Nail-a-Dumper Hotline or on its website.

Litter Management

SWACO Communications continues to battle litter and illegal dumping through a media and public outreach program. This program includes advertising and public service announcements via broadcast and print. SWACO also continues to promote anti-litter efforts and battle illegal dumping by making sure convictions are promoted heavily in the news media. SWACO educates

the public by providing radio messages and billboard advertising to broadcast an anti-litter message as well as reinforce recycling and waste reduction messages. SWACO also has a program to encourage people to report litter. In cooperation with the Franklin County Sheriff's Office SWACO operates a litter reporting hotline. SWACO provides a litter crew which cleans the I-71 and I-270 freeways in southern Franklin County on an as-needed basis.

The Anti-Litter and Illegal Dumping Program Summary outlines the operation of the program in the reference year:

Program Summary – Anti-Litter and Illegal Dumping	
Description	Details
Program Number	SWACO-LID-1
SWACO Budget Number	3-D-702 3-D-700 3-D-705 3-D-800
OEPA Program Number	5339, 5342, 5341, 5340
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$443,587
Program Operator/Contractor	SWACO, Franklin County Board of Health

The strengths of this program are:

- Program controls litter and helps beautify roads and highways.
- Promotes community pride. Encourages law enforcement officials to participate in and vigorously enforce anti-litter efforts.
- Encourages citizens to anonymously report incidents of littering and illegal dumping in their community.
- The effort is a cooperative and mutually beneficial program for involved agencies.
- The program's success has enabled it to continue since 1992 and has evolved from a hotline to become web based.
- The program reduces the amount of scrap tires illegally disposed and abates a potential breeding

ground for mosquitoes that carry diseases including the West Nile virus.

The challenges of this program are:

- Program needs more participation from organizations, communities and individuals to assist with litter clean-up efforts and identify and report illegal dumping.
- It is difficult to catch someone in the act of littering or dumping.
- Costs for the program are extremely high.

2. Franklin County Emergency Management Agency (FCEMA) Debris Management Plan

SWACO's Debris Management Plan is designed to facilitate the removal of debris and waste material in the event of natural or technological emergencies or acts of civil hostility. The plan has been completed, and in 2008 partners continued to meet periodically to review/update the Debris Management Plan.

The plan is designed to operate in coordination with the Franklin County Emergency Operations Plan. Two phases of Debris Management are addressed in the plan. The first phase is the emergency clearance of debris to assist emergency operations for fire, law enforcement, emergency medical services and other authorized first responders. The second phase provides for the clean-up, transportation, volume reduction and the final disposal of debris and waste.

If a natural or manmade debris generating disaster occurs, SWACO may choose to waive all or a portion of its tipping fees. Clean-ups on public property performed by non-profit organizations using volunteers may have tipping and generation fees waived. The Executive Director may waive tipping fees in excess of fifty percent of the direct disposal costs for townships, villages, and municipal corporations that conduct residential bulk clean-up projects. A copy of Resolution 14-97 may be found in Appendix L.

The Debris Management Plan Program Summary outlines the operation of the program in the reference year:

Program Summary – Debris Management Plan	
Description	Details
Program Number	SWACO-LID-2
SWACO Budget Number	3-D-100
OEPA Program Number	5343
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Better prepares the District and its communities to manage a debris disaster.
- Facilitates the safe and immediate removal of debris and waste material in the event of natural and technological emergencies to ensure public safety.

The challenges of this program are:

- Resource availability for collecting debris.
- Limited funding available to clean-up and dispose of debris and waste.

3. Health Department Support

SWACO maintains a \$5,000 budget to pay for financial assistance to Franklin County Board of Health (FCBH) in return for increased enforcement of solid waste laws and regulations pursuant to Section 343.011 of the Ohio Revised Code. The focus is on the testing of public and private wells adjacent to the landfill to verify that the landfill is secure and not leaching anything into the water table. In 2008, no landowner requested this service; therefore SWACO did not pay the FCBH in 2008. The Health Department Support Program Summary outlines the operation of the program in the reference year:

Program Summary – Health Department Support	
Description	Details
Program Number	SWACO-LID-3
SWACO Budget Number	3-D-801
OEPA Program Number	5344
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO

Program Summary – Health Department Support	
Description	Details
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Cooperation results in a mutually beneficial relationship between SWACO/FCBH.
- Enforcement inspections for the host community are strengthened by this partnership.

The challenges of this program are:

- Funding of the program.

B. OTHER PROGRAMS

1. Strategic Planning and Program Development

Strategic Planning Process

SWACO initiated a strategic planning process during late 2007. The process was identified as a critical need at a Board of Trustees Retreat. SWACO took the direction of the Board of Trustees and began to identify key goals for the organization. The key goals initially developed focused upon the entire organization. SWACO's management team worked through a process that identified the sub-goals and objectives and strategies to achieve the key goals. Milestones for achieving the sub-goals and objectives were added. Those responsible for achieving the goals were identified. After the initial sub-goals were developed, the SWACO Executive Director determined that the Strategic Planning Process should be expanded to each of the SWACO departments. The process for developing goals, objectives, strategies, milestones and responsible entities was developed within each department. By the middle of 2008, a complete draft of the first SWACO Strategic Plan was complete. During the fall of 2008, SWACO began to revisit the Strategic Plan and established goals for 2009, and an outline of sub-goals for the next five years for the organization. It is the intent of SWACO management to continually update and revise the Strategic Plan to continuously improve the organization. A complete copy

of the Strategic Plan is included as a disc attached to the *Plan Update* and specific goals are presented in Section III pages 18-19. Program costs were for consulting assistance.

Program Development

The Strategic Plan includes a Planning Goal #09-08 for the purpose of producing a comprehensive, cost effective and implementable plan that will incorporate strategic activities and programs supporting SWACO's core activities and complying with Ohio EPA Solid Waste Management requirements. The Planning Goal in the Strategic Plan includes a sub-section on development goals directed at applying policies and procedures established by the SWACO development team to attract and incorporate technologies enhancing SWACO's core activities and operations. The sub-section includes objectives and strategies to utilize an established review and recommendation process to evaluate proposed projects and partnerships. There is also a strategy to use a tracking mechanism to ensure project expectations and deadlines are met. SWACO developed internal procedures to review proposed new technology systems and facilities that could be of value to SWACO's overall Mission.

The Strategic Planning and Program Development Program Summary outlines the operation of the program in the reference year:

Program Summary – Strategic Planning and Program Development	
Description	Details
Program Number	SWACO-OP-1
SWACO Budget Number	1-A-100
OEPA Program Number	5356
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

The strengths of this program are:

- Provides the Board of Trustees with a management tool to evaluate the organization and Executive Management.
- Provides the SWACO Executive Management team with a management tool to evaluate departments.
- Provides goals and objectives for the management team to achieve.
- Provides SWACO associates at all levels with an opportunity to provide input into the organizations goals and objectives.
- Provides SWACO associates with a road map of goals and objectives for their work assignments.
- Provides a road map for reviewing new technology and projects.

The challenges of this program are:

- Preparing and implementing the Strategic Plan is time consuming for all parts of the organization.
- Not all associates of the organization are aware of the details of the Strategic Plan.

2. Solid Waste Plan Update

SWACO is required to prepare and update the Solid Waste Management Plan in accordance with the Ohio Revised Code. The *Plan Update* plays a key role in assisting SWACO in achieving its overall mission. This *Plan Update* is a five year revision.

The purpose of the five year *Plan Update* is to review the changes that have taken place in the past five years and look 15 years into the future. The solid waste industry and marketplace is constantly changing. New technology and marketplace opportunities develop quickly and the planning process allows SWACO to make adjustments in the course taken for specific programming, infrastructure and financial obligations.

The Solid Waste Plan Update Program Summary outlines the operation of the program in the reference year:

Program Summary – Solid Waste Plan Update	
Description	Details
Program Number	SWACO-OP-2

Program Summary – Solid Waste Plan Update	
Description	Details
SWACO Budget Number	3-D-105
OEPA Program Number	5345
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$93,677
Program Operator/Contractor	SWACO

The strengths of this program are:

- SWACO achieves the mandate in the Ohio Revised Code.
- SWACO completes a thorough review of programming and projects.
- Provides a mechanism to look at the entire infrastructure system and determine goals and activities.
- SWACO evaluates opportunities to enhance education and awareness opportunities.

The challenges of this program are:

- Funding has become a significant issue requiring prioritization of existing and future programs.
- The submission of data is not required for brokers, businesses and industry, which can hamper projections for programming.
- Political subdivisions determine and develop their recycling and waste reduction programs based on local needs and challenges. This may impact SWACO's ability to achieve state mandated goals.

3. Market Development

SWACO works to enhance markets for recyclable materials in numerous ways. There are many types of solid waste markets, including markets for specific materials (paper, plastic, metals) or market collection opportunities at targeted underserved facilities (schools, multi-family, etc.). This includes:

- Developing programs such as JITRS to provide specific targeted recycling services for the office paper market to small commercial companies.

- Pursuing opportunities with private sector companies and non-profit organizations to develop markets for recyclable materials such as the effort to obtain an ODNR Market Development Grant for Geo-Tech Polymers to expand their ability to recycle plastics for a closed-loop application in the automotive industry.
- Completing education and awareness programs that focus on recycling and commodity markets.
- Providing drop-off recycling containers to areas that are underserved by curbside recycling.
- Providing drop-off recycling containers to schools to collect materials for end use markets.
- Providing information regarding recycling on the website.

In 2008, SWACO also served as the administrator for two ODNR grants for Market Development and Community Development. The Market Development two-year grant of \$250,000 was awarded to Frank Road C&D for the purchase of equipment to recycle wood and other materials into marketable products. The 2008 Community Development Grant was awarded to Habitat for Humanity in the amount of \$38,666 to purchase trucks to increase the capacity to recycled deconstruction materials for re-sale. The Market Development Program Summary outlines the operation of the program in the reference year:

Program Summary – Market Development	
Description	Details
Program Number	SWACO-OP-3
SWACO Budget Number	4-D-106 3-O-670
OEPA Program Number	5346
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$168,433
Program Operator/Contractor	SWACO

The strengths of this program are:

- SWACO provides marketing power to underserved collection opportunities such as schools, multi-family and small businesses.

- SWACO provides marketing opportunities by serving as the grant administrator to private companies and non-profits that seek to create or increase a marketplace with a significant volume of materials to attract end users.

The challenges of this program are:

- Funding programs that are not revenue positive can be difficult to continue as a high priority.
- Ensuring that existing facilities are used to the maximum extent feasible.

4. SWACO Grants Program (formerly Buy Recycled Program)

General Grants

SWACO offers competitive grants to encourage re-use programs, reduction projects, and the use of recycled content equipment and materials. A SWACO Grants Committee has been established and a review process is in place. The grants require a 25% match on the total project cost and grantees have one year to complete their projects. Communities, community groups, schools and institutions, and non-profit organizations have all received grants. In 2008, SWACO offered Buy Recycled and Smart Community grants and also decided to establish one General Grant Program which would combine all grants in the future. Two funding periods were tried in 2008 and then changed back to one the following year. Twenty grants were awarded in 2008 and the list of all awards made in 2008 is attached. A copy of the grant guidelines and application may be found in Appendix M. The SWACO General Grants Program Summary outlines the operation of the program in the reference year:

Special Grants

SWACO received a special assistance grant that is a pass-through from ODNR for recycling at the Ohio State Fair for \$100,000.

Pass Through Grants - ODNR

SWACO continues to seek grant funding periodically from ODNR. In 2008, SWACO received a grant from

ODNR for a Community Development Grant for Habitat for Humanity for trucks to pickup deconstruction materials for approximately \$40,000. A market development grant was also received to assist a C&D facility with their expansion of recycling materials for \$250,000.

Program Summary – SWACO Grants Program	
Description	Details
Program Number	SWACO-OP-4
SWACO Budget Number	3-D-304 4-D-313 4-D-314 3-D-315 3-D-398
OEPA Program Number	5347
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs (reflects actual paid in 2008 and not the award amount)	\$158,182
Program Operator/Contractor	SWACO

The strengths of this program are:

- Provides communities, community groups, organizations and schools with additional funding that can only be used for recycling, education and waste reduction activities.
- All communities, community groups, organizations and schools are eligible for the grant program.

The challenges of this program are:

- Smaller communities may have difficulty providing the 25 percent match or the personnel resources to administer the grant program.
- Funding for this program is limited.

5. Surveys - SWACO Computer Survey Systems

SWACO has contracted with Emerge Knowledge Design to provide a web-based data management system for collecting data on solid waste and recycling in the District. SWACO uses the following programs to collect data:

Communities

SWACO administers the Re-TRAC program for all the cities, villages and townships located within the District. A representative from each community is provided with a username and password where he/she can log onto the web-based system to enter data on solid waste and recycling. Each community is asked to enter this data at least once each year, but they can enter the data on a monthly, quarterly or annual basis if desired. SWACO administration and individual communities are able to generate standard and environmental reports that use solid waste and recycling data to display rates of waste diversion and the community's carbon footprint. SWACO may from time to time change software products or vendors for computer assisted tracking.

One-Time Commercial/Industrial Survey

In 2008, SWACO re-designed its one-time online survey for Commercial and Industrial businesses and institutions. The survey is now more user friendly and includes the ability to estimate the weight of trash or recyclable materials by dumpster. SWACO may from time to time change software products or vendors for computer assisted tracking.

Broker Survey

SWACO uses a broker survey each year to survey the prominent waste haulers, processors and brokers operating within the District. Brokers are asked to sign up for the survey by creating a username and password. Brokers are then given the option to fill out a survey each month or fill out the December survey if they would prefer to only report once a year. In 2008, there were ten brokers that filled out SWACO's survey. SWACO may from time to time change software products or vendors for computer assisted tracking.

SWACO New Survey Program Development

During 2008, SWACO began developing a new product that is an improvement in functionality over the Re-TRAC one-time survey. SWACO E-TRAC is a program that allows businesses to set-up an account where they can log in and enter data monthly, quarterly or annually on solid waste and recycling by invoice, pull or dumpster.

Businesses have access to the same standard and environmental reports as the communities. SWACO may from time to time change software products or vendors for computer assisted tracking.

The Surveys E-TRAC & Re-TRAC Program Summary outlines the operation of the program in the reference year:

Program Summary – Surveys E-TRAC & Re-TRAC	
Description	Details
Program Number	SWACO-OP-5
SWACO Budget Number	3-D-105
OEPA Program Number	none
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$5,000
Program Operator/Contractor	SWACO

The strengths of this program are:

- Creates numerous opportunities for businesses to submit and maintain data on solid waste and recycling.
- Saves staff time by having businesses, political subdivisions and industries enter data on the web. There is no need for spreadsheet data entry.
- Provides brokers with an opportunity to directly enter their data.
- Reduced data entry errors because of easy to use drop-down menus.
- Provides reports to the user on solid waste and recycling.
- Provides reports to the user on carbon savings.
- Provides a service and value directly to political subdivisions, businesses and industry located in Franklin County.
- Makes it easier for SWACO to report to the State of Ohio.

The challenges of this program are:

- Since SWACO E-TRAC is a new product, there was a low first time usage in 2009 for 2008 data.

- Some smaller townships and villages are still reluctant or unable to use the standard Re-TRAC system.
- Using the Re-TRAC and survey systems to their full capacity.
- Remaining current with software products and suppliers as computing technology changes.

6. SWACO Solid Waste Consortiums

Prior to the reference year, SWACO worked with several suburban communities to create a solid waste consortium. The first consortium consisted of the following communities:

- City of Dublin
- City of Gahanna
- City of Westerville
- City of Bexley
- Mifflin Township
- Plain Township
- Washington Township
- Village of New Albany

The consortium communities negotiated a bid specification that allowed each of the consortium communities to establish preferences for collection days and service from the selected waste hauler. The purpose of the consortium is to increase negotiation power when contracting for solid waste and recycling collection services. The expectation was that the consortium would provide a significant increase in volume for trash and recycling. This would lead to better pricing for the consortium communities as compared to each community bidding for services separately. SWACO provided the coordination and funding for the consortium's development of the bid specs and bid review.

The SWACO Solid Waste Consortiums Program Summary outlines the operation of the program in the reference year:

Program Summary – SWACO Solid Waste Consortiums	
Description	Details
Program Number	SWACO-OP-6
SWACO Budget Number	See Other Admin. Program Expenditures

Program Summary – SWACO Solid Waste Consortiums	
Description	Details
OEPA Program Number	none
Entity Responsible for Maintaining Program	Political Subdivisions
Service Area for Program	SWACO
Materials Reduced/Recycled	Aluminum and steel cans, glass, plastic, newspaper, mixed paper, cardboard, magazines, office paper
2008 Recycled Tonnage	n/a
2008 Program Costs	\$170,291
Program Operator/Contractor	SWACO

The strengths of this program are:

- Better service is provided for lower prices.
- Small communities have access to the same contracting benefits as larger communities by partnering.

The challenges of this program are:

- Additional competition is needed to attract multiple haulers to bid on the consortium.

Other Program Expenditures	SWACO Budget #	2008 Program Costs
District Administration & General	3-D-100	\$53,080
Project Development	3-D-101	
Contract Technical Assistance	3-D-326	

C. SWACO INFRASTRUCTURE

In Ohio, there are few solid waste districts with the infrastructure to comprehensively manage solid waste generation. SWACO’s infrastructure has been established during the twenty-two years since its creation. There are pieces that were established many years ago that continue to be in service. There are other parts of the system that have been discontinued. The following facilities listed below are part of the 2008 SWACO Infrastructure to meet the mission of the organization.

1. Franklin County Sanitary Landfill

SWACO owns and operates the Franklin County Sanitary Landfill located just west of I-71 on London-Groveport Road in southern Franklin County. As of December 31, 2008, the landfill had over 29 years of landfill capacity remaining based on current volumes received. The SWACO Landfill managed approximately 846,000 tons of solid waste in 2008. The Franklin County Sanitary Landfill is one of the key components of infrastructure within the District. The landfill provides residents, businesses and industry with a market competitive, safe, environmentally sound option for disposing of solid waste materials.

The Franklin County Sanitary Landfill is highly regulated. The facility must protect the environment and meet Ohio's solid waste requirements. Some of these requirements include the following:

- Synthetic Liners
- Re-compacted Clay Liner
- Leachate Collection System
- Ground Water Monitoring System
- Storm Water Retention Pond System
- Landfill Gas Collection System
- Closure and Post Closure Financial Assurance
- Separatory Liner System

SWACO's Strategic Plan includes goals and objectives for SWACO Infrastructure including the landfill. SWACO will be working on a long term plan to economically manage the carbon footprint at the landfill and other SWACO facilities. An initial strategy is to create a carbon footprint inventory. Another strategy is to explore a management plan that looks at alternative development projects while at the same time having an objective that realizes cost savings through reduced energy consumption. A third strategy is to explore long-term emissions reductions options. Through these strategies, SWACO will remain at the cutting edge of technology to manage the carbon footprint at the Franklin County Sanitary Landfill and other SWACO infrastructure facilities that are cost effective and sustainable.

The Franklin County Sanitary Landfill Program Summary outlines the operation of the program in the reference year:

Program Summary – Franklin County Sanitary Landfill	
Description	Details
Program Number	SWACO-FAC-1 A.
SWACO Budget Number	1-0-200
OEPA Program Number	5227
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	\$0
Program Operator/Contractor	SWACO

2. SWACO Transfer Facilities

SWACO operates three transfer facilities. The three facilities are located at Georgesville Road, Jackson Pike, and Morse Road in the City of Columbus. The waste received at these three transfer facilities is delivered to the Franklin County Sanitary Landfill.

The SWACO Transfer Facilities were built several decades ago to prepare solid waste for the Waste-to-Energy Facility, a facility which was demolished. The transfer facilities have limitations due to their age and location. They are, in some cases, not adequately sized or and do not have design features associated with modern transfer stations. Over time, these facilities have had neighborhoods and commercial business grow around them leaving them in settings that may not be favorable to continued use or expansion. SWACO has completed some preliminary analysis of transfer facility needs, and will continue to review and update its system needs during the planning period. Section V will include more details on future plans for transfer capacity needs.

The SWACO Transfer Facilities Program Summary outlines the operation of the program in the reference year:

Program Summary – SWACO Transfer Facilities	
Description	Details
Program Number	SWACO-FAC-1 B.
SWACO Budget Number	1-0-405, 1-0-410, 1-0-415, 1-0-400
OEPA Program Number	5230, 5228, 5229
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO

Program Summary – SWACO Transfer Facilities	
Description	Details
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

3. Green Energy Centre Landfill Gas Recovery

SWACO entered into an agreement with a private firm to construct the SWACO owned Green Energy Centre. This landfill gas processing facility and fueling station utilizes a portion of the landfill gas to create compressed natural gas (“CNG”). The facility collects and cleans the raw landfill gas (methane) using a proprietary process developed in Ohio by Acricon Technologies. The cleaned methane is then converted into renewable compressed natural gas for use in CNG powered cars and medium duty trucks.

The facility was commissioned in September 2008 and is Phase I of a planned multi-phase development. Phase I is producing approximately 250,000 Gasoline Gallon Equivalents (GGE) annually. SWACO will pursue treatment of remaining portions of the Franklin County Sanitary Landfill’s landfill gas. Currently, SWACO is under contract with FirmGreen Fuels of Ohio for a Phase II project. If that project is unable to be completed, SWACO will pursue alternative projects for the beneficial reuse of the landfill gas.

The Landfill Gas Recovery Program Summary outlines the operation of the program in the reference year:

Program Summary – Green Energy Centre Landfill Gas Recovery	
Description	Details
Program Number	SWACO-FAC-1 C.
SWACO Budget Number	1-0-910
OEPA Program Number	5355
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

The strengths of this program are:

- Takes a waste product and converts it to a reusable fuel.
- Reduces the landfill's carbon footprint.
- Provides the opportunity to convert fleet vehicles to a lower environmental impact fuel.

The challenges of this program are:

- Ensuring the infrastructure is available to fuel fleet vehicles.
- Developing enough users for the fuel production.
- Market cost of renewable compressed natural gas.

4. **Central Ohio Transformation Center formerly WTEF Multi-Plex Enterprise**

SWACO leases the former site of the Waste to Energy Facility (WTEF), which was closed in 1993. Since 1993, SWACO sold the equipment and formulated a plan to develop a "Resource Recovery Park" and lease the facility to generate income. The goal was to attract businesses that assist in waste reduction, re-use and develop and implement recycling technologies. In 2008, the site was backfilled and graded for construction of a complex containing three entities:

- Material Recovery Facility operated by the Grossman Group.
- RASTRA, a business that would produce insulated concrete forms from polystyrene.
- An Anaerobic Digestion Facility, operated by Kurtz Brothers Inc.

For more a more detailed description of these three projects, see individual program details in proceeding paragraphs.

Program Summary – Central Ohio Transformation Center	
Description	Details
Program Number	SWACO-FAC-1 D.
SWACO Budget Number	5-0-905, 6-0-905
OEPA Program Number	5357
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a

Program Summary – Central Ohio Transformation Center	
Description	Details
Program Operator/Contractor	SWACO

5. Material Recovery Facility (Fiber Recovery Facility)

SWACO established an agreement with the Grossman Group to operate a Fiber Recovery Facility. The facility opened in early 2006. The facility was operated on the rdf tipping floor of the former waste-to-energy facility. In 2008, the facility caught on fire and burned most of the inventory, equipment and the facility structure. The Fiber Recovery Facility is not expected to return. In 2008, prior to the fire, this facility processed approximately 17,700 tons of fiber materials.

6. RASTRA

SWACO leased space to RASTRA in the Resource Recovery Park at the former Waste to Energy Facility. The company would have produced insulated concrete forms (ICFs) made from polystyrene that were to be used as building material. The ICFs are comprised of 85 percent recycled polystyrene that would otherwise end up in landfills. Buildings constructed from ICFs may experience decreased energy consumption and a reduction in energy costs due to the material's insulating capabilities. RASTRA failed to complete construction of the facility and SWACO has terminated the contract with RASTRA.

7. Anaerobic Digester

SWACO has an Agreement with Kurtz Brothers Inc. for the construction and operation of an anaerobic digestion facility in Columbus, Ohio. SWACO is financially supporting the development of the anaerobic digestion facility via the contract with Kurtz Brothers Inc. to process yard waste. The digester will process up to 70,000 tons of organic material (biomass) per year from several sources, including the City of Columbus waste water treatment plants, and convert this biomass into renewable resources. This process will also produce a valuable soil amendment that can be utilized in specific land applications.

The current agreement requires the facility to be constructed and operational by December 1, 2010. The facility will be located at the former Waste-to-Energy facility located at 2500 Jackson Pike.

The Organic Waste Facility Program Summary outlines the operation of the program in the reference year:

Program Summary – Anaerobic Digester	
Description	Details
Program Number	SWACO-FAC-1 E.
SWACO Budget Number	n/a
OEPA Program Number	5351
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	Organic material
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

8. Digital-On-Container Tracking System

SWACO is currently researching a Digital-On-Container Tracking System (DOTS) for solid waste haulers and facilities. SWACO would like to procure a DOTS system that will allow for the monitoring of the location and generation of solid waste, yard waste and recyclables and their ultimate delivery to appropriate solid waste facilities.

Program Summary – Digital-On-Container Tracking System	
Description	Details
Program Number	SWACO-FAC-1 F.
SWACO Budget Number	n/a
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

9. SWACO Collection Operations

SWACO currently operates a collection system for over 200 publically available and 18 private use only recycling drop-off locations. The drop-off recycling operation requires collection seven days per week. During the planning period, SWACO may consider providing additional refuse or recycling collection services to the following:

- Political Subdivisions

- Waste Consortiums
- Private Commercial/Institutional Facilities

The provision of these services could be at the request of a political subdivision, consortium or private facility or to ensure adequate competition in the marketplace.

Program Summary – SWACO Collection Operations	
Description	Details
Program Number	SWACO-FAC-1 G.
SWACO Budget Number	n/a
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

10. SWACO Waiver Program

SWACO has waiver agreements with identified solid waste facilities. Waiver agreements may be used as a management tool in the future for identified solid waste streams. Currently, SWACO has one year waiver agreements for solid waste transfer/disposal, and food waste composting for 2010.

Program Summary – SWACO Waiver Programs	
Description	Details
Program Number	SWACO-FAC-1 H.
SWACO Budget Number	n/a
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

11. Other Infrastructure Facilities

There are several other pieces of infrastructure that are important to SWACO's solid waste system that have already been discussed in Section IV as separate programs. They include the recycling infrastructure (both curbside collection and

the comprehensive drop-off facilities located throughout Columbus and the city schools), commercial recycling programs, the yard waste composting facilities and several other private sector transfer facilities, recycling facilities, electronic waste recycling facilities and scrap tire processing facilities.

Program Summary – Other Infrastructure Facilities	
Description	Details
Program Number	SWACO-FAC-1
SWACO Budget Number	n/a
OEPA Program Number	n/a
Entity Responsible for Maintaining Program	SWACO
Service Area for Program	SWACO
Materials Reduced/Recycled	n/a
2008 Recycled Tonnage	n/a
2008 Program Costs	n/a
Program Operator/Contractor	SWACO

The strengths of these programs are:

- SWACO's infrastructure is comprehensive and covers all aspects of the solid waste management system.
- SWACO's infrastructure provides alternatives to landfill disposal for recyclables and organic materials.
- The infrastructure produces renewable energy.
- The infrastructure facilities produce a valuable soil amendment as an end product.
- The infrastructure provides a mix of public and private sector facilities and public/private partnerships.

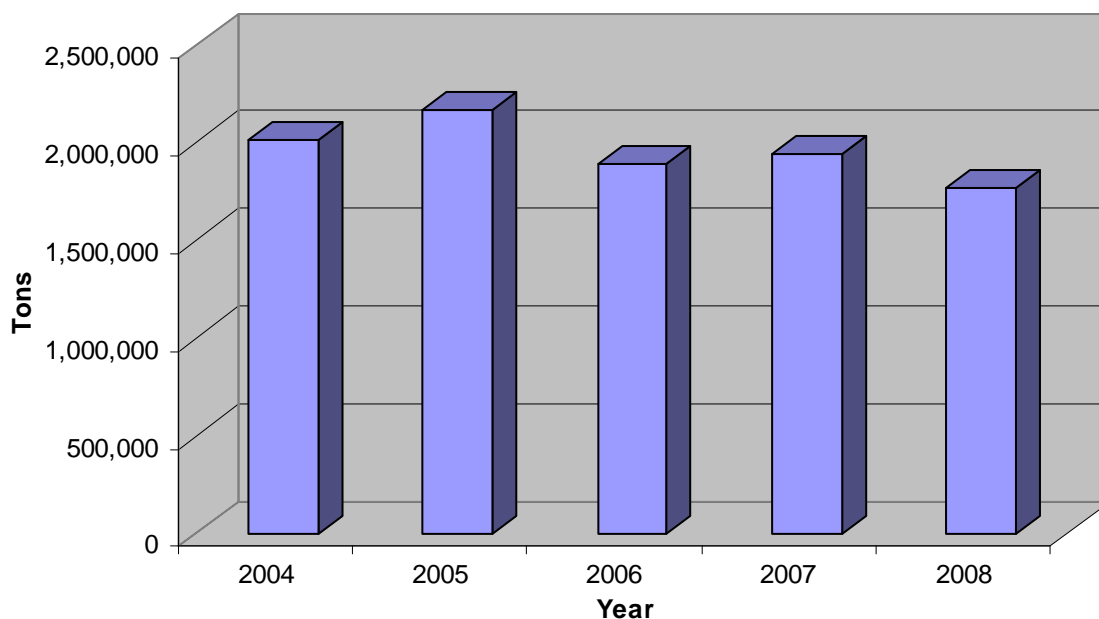
The challenges of these programs are:

- Some of the infrastructure facilities are inadequate for today's modern solid waste system.
- End use markets have recently felt a sharp downturn which impacts the economic viability of the programs.
- The landfill has more than 29 years of capacity. SWACO will need to develop strategies and goals to determine what facilities and programs will be necessary for operating beyond the current landfill capacity.
- Revenues from the landfill are decreasing because of the economic downturn and reduction in residential, commercial and Industrial Sector solid waste generation.

F. Total Waste Generation: Historical Trends Plus Waste Reduction

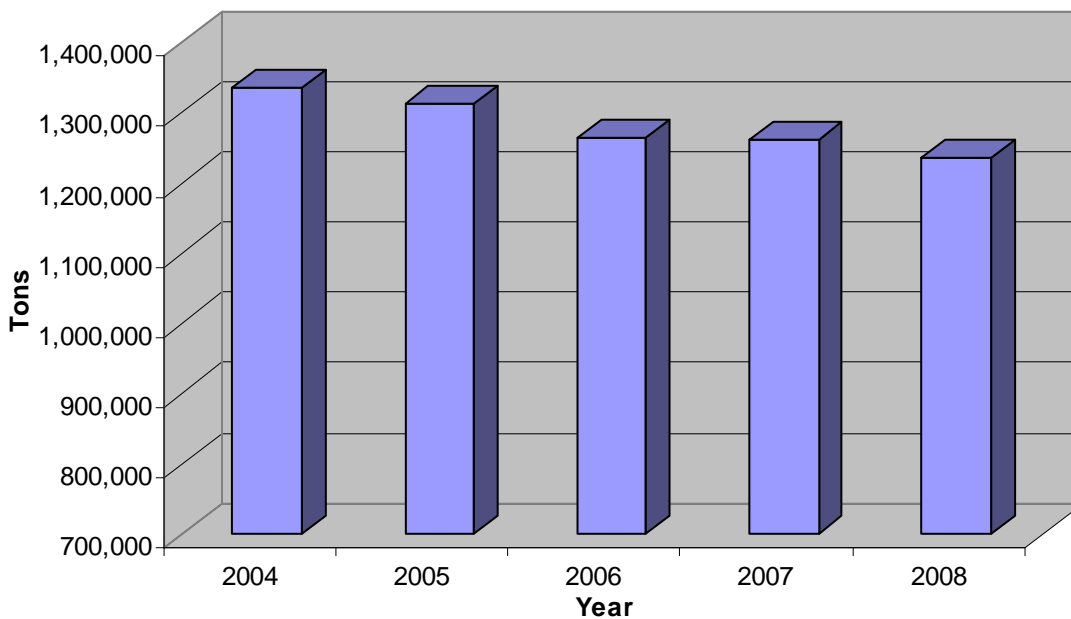
Table IV-7 presents total waste generation based upon disposal plus waste reduction. In 2008, SWACO generated approximately 1,767,550 tons of solid waste based on landfill disposal, yard waste composting and source reduction and recycling. In 2004, SWACO generated 2,016,360 tons. In 2008, the total waste generated decreased by more than 172,500 tons from the previous year. Waste generation has fluctuated over the past five years as depicted in Figure IV-5.

Figure IV-5 – SWACO Historical Total Generation



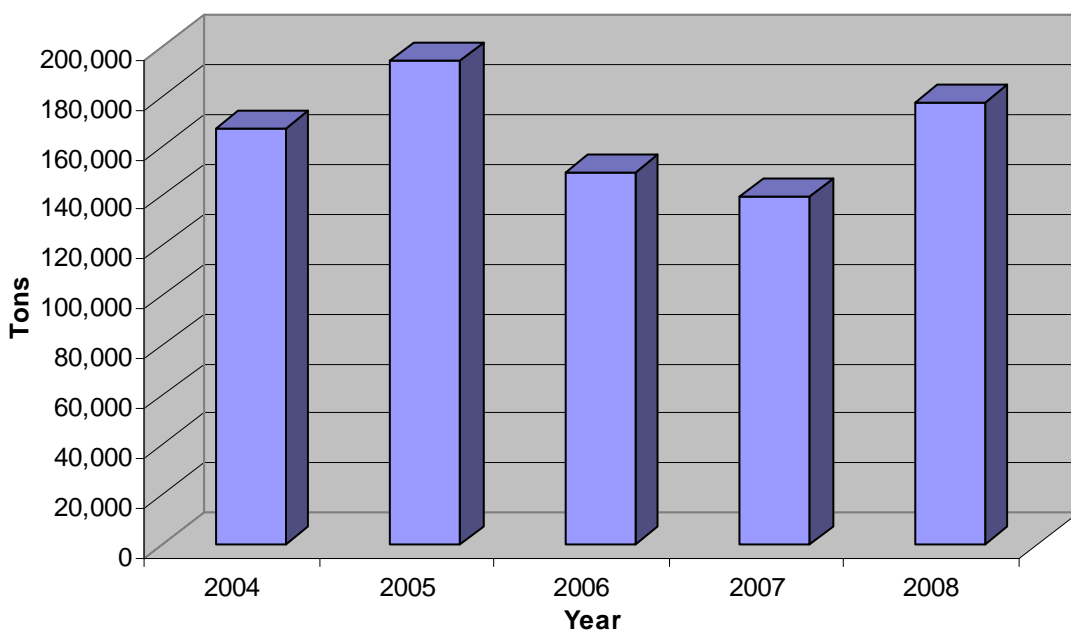
Landfilled waste tonnage has gradually decreased from 2004-2008. Landfilled waste has ranged from a high of 1,337,338 in 2004 to a low of approximately 1,235,700 in 2008. Figure IV-6 depicts the historical landfill totals from 2004-2008.

Figure IV-6 – SWACO Historical Landfill Disposal



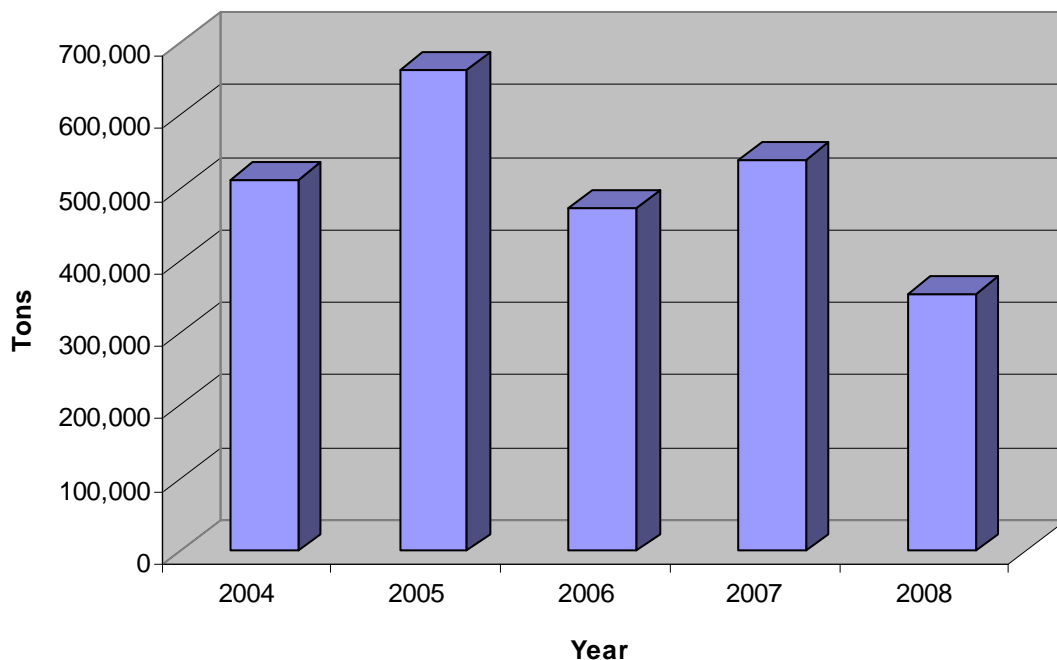
Yard waste steadily decreased from 2005-2007. Yard waste has ranged from a low in 2007 of approximately 139,500 tons to a high of more than 194,000 in 2005. In 2008, Hurricane Ike caused a major wind storm that contributed significantly to the amount of wood waste that was managed. Figure IV-7 depicts the historical yard waste totals from 2004-2008.

Figure IV-7 – SWACO Historical Yard Waste Management



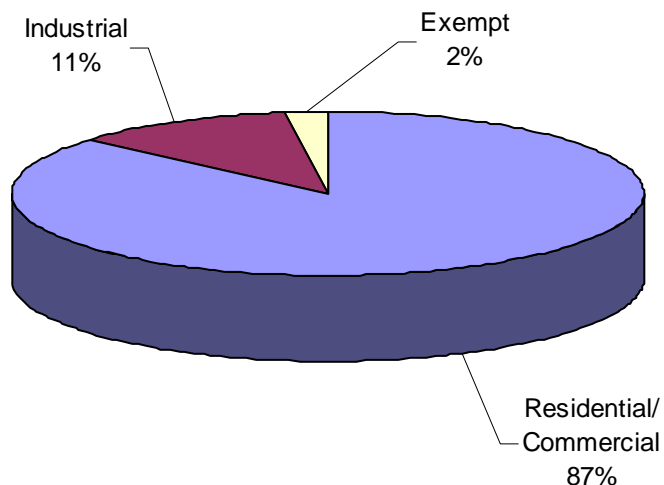
Waste reduction has fluctuated slightly over the five year period from a high of almost 662,000 in 2005 to a low of approximately 354,000 in 2008. Figure IV-8 depicts the historical waste reduction totals from 2004-2008.

Figure IV-8 – SWACO Historical Waste Reduction



G. Reconciliation of Waste Generation (based on reported recycling and disposal)

Table IV-8, “Adjusted Reference Year Total Waste Generation for the District”, presents adjusted reference year total waste generation for the District. SWACO is using historic trends and actual disposal and recycling rates to calculate waste generation. For 2008, SWACO residents, businesses and industry generated approximately 1,767,550 tons of waste. This includes recycling and waste disposal from all sectors. The Residential/Commercial Sector generated about 1,529,000 tons, or 7.22 pounds of waste per person per day which includes recycling and yard waste composting. The Industrial Sector generated approximately 197,000 tons, or about 0.93 pounds of waste per person per day. Figure IV-9 depicts the adjusted reference year waste generation by sector.

Figure IV-9 – 2008 Adjusted Waste Generation by Sector

Utilizing actual disposal and recycling tonnages to calculate waste generation provides the most accurate method of projecting waste generation throughout the planning period. Using national averages could skew the projections and decrease the amount of waste generated by the Residential/Commercial Sector by almost 509,000 tons, and increase the waste generation by the Industrial Sector by almost 573,000 tons.

The generation rate for Residential/Commercial Sector waste is about 2.5 pounds per person higher than the national average of 4.82 pounds. Historical waste generation rates for the Residential/Commercial Sector supports using the higher generation rate per person and more accurately reflects the solid waste generation conditions in SWACO's District. Using this generation rate shows that SWACO's residents and commercial businesses are recycling approximately 25 percent of the waste stream. If SWACO used the national average generation rate of 4.82 pounds, SWACO would show a recycling rate of over 37 percent. This high recycling rate would not be in line with historical projections and current expectations. Waste volumes reported at the landfill/transfer facilities could be labeled incorrectly when weighed at the scales. For example, waste haulers often collect waste from many companies on a single route. Unless the collected waste is delivered via a roll-off container, it is possible that the waste from many commercial facilities could be mixed with the waste from several smaller industrial facilities and characterized upon delivery at the landfill or transfer facility to be all commercial waste. Even with that inconsistency, SWACO has determined the results for calculating solid waste generation are likely to be more accurate using the reported disposal and recycling data from local facilities than national averages and industrial survey waste generation projections. For these reasons, SWACO uses the information provided by landfills, transfer facilities, recycling brokers

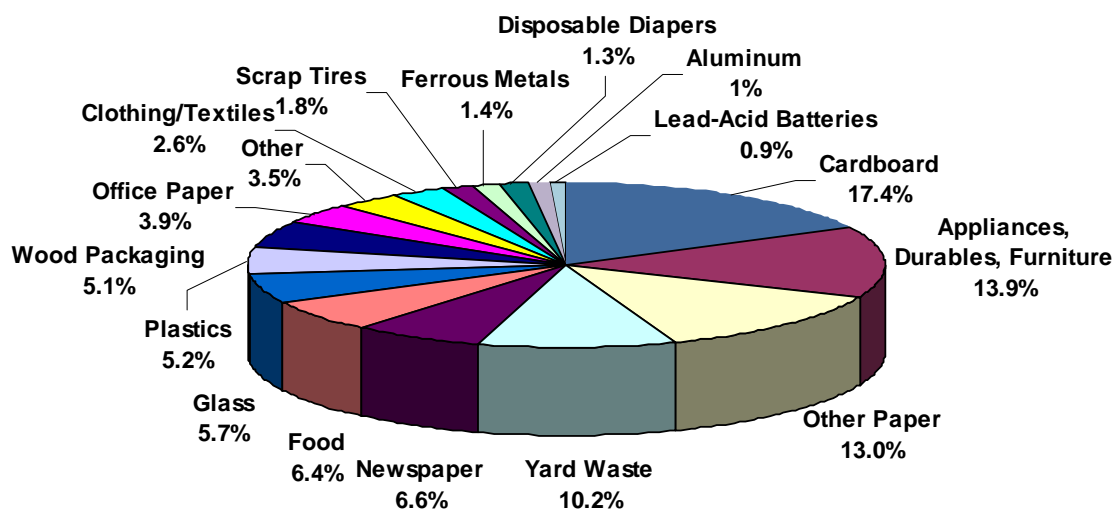
and survey data instead of the national averages for future projections in this *Plan Update*.

H. Waste Composition

Residential/Commercial Sector waste stream composition is defined using the national averages from Appendix KK of the Plan Format. The main purpose of reviewing the waste composition is to review the types of materials generated and determine if programs are adequate to manage the diversion of the largest components of the waste stream.

Cardboard made up the largest component of the Residential/Commercial Sector waste stream with an estimated 266,100 tons (Table IV-9). All of the non-subscription and subscription curbside solid waste programs and drop-offs collected cardboard, in addition to office paper, newspaper, and magazines. Appliances, durables, and furniture contributed approximately 212,600 tons and made up the second largest component of the Residential/Commercial Sector waste stream. Other paper contributed about 200,000 tons. Yard waste contributed approximately 156,000 tons. Figure IV-10 depicts the Residential/Commercial Sector waste composition for the reference year.

Figure IV-10 – 2008 Residential/Commercial Waste Composition

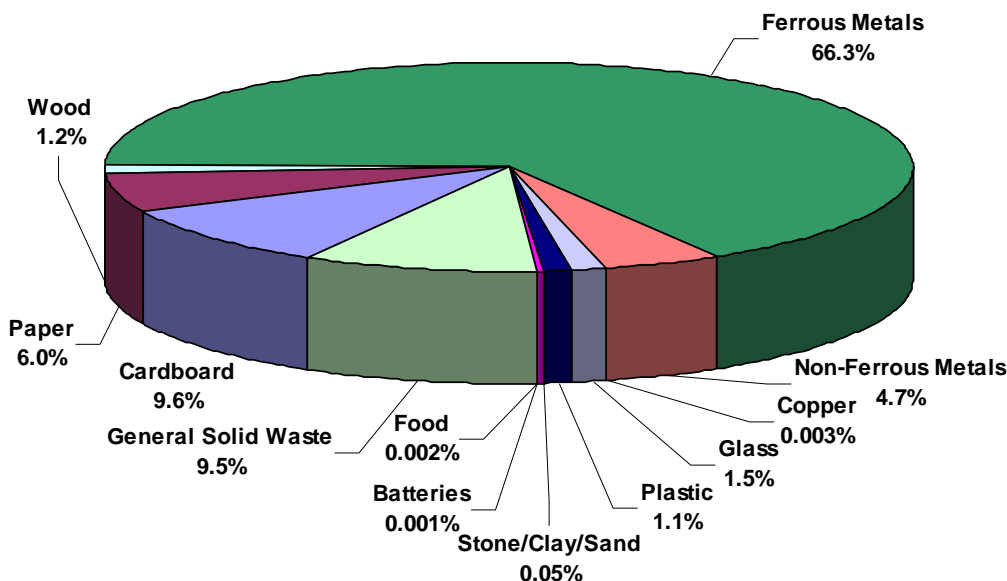


Similar to the Residential/Commercial Sector waste stream, the purpose for reviewing the Industrial Sector waste stream is to determine what types of materials comprise the largest volumes and identify the programs and activities that are in place to manage these materials.

Industrial Sector waste composition included in Table IV-10 was estimated based on the amount of Industrial Sector waste disposed and recycled. Information for Industrial Sector recycling and disposal was obtained from industries, recycling facilities and brokers. Non-hazardous waste, concrete, ash and sludge were eliminated from the acceptable waste materials for recycling calculations only. All recycled materials are provided as actual totals. The remainder of material disposed in the landfill is categorized as general solid waste.

The largest component of the Industrial Sector waste stream was ferrous metals. Cardboard and general solid wastes were the next two largest components of the Industrial Sector waste stream. The District also has significant quantities of non-ferrous metals and paper. Figure IV-11 depicts the industrial waste composition for the reference year.

Figure IV-11 – 2008 Industrial Waste Composition



**Table IV-1
Reference Year Population and Residential/Commercial Generation**

County/Community Name	2008 Population		2008 Generation Rate (lbs/person/day)	2008 District Residential/Commercial Generation (Tons)
	Before Adjustment	After Adjustment		
Franklin County	1,129,067			
Canal Winchester-Fairfield County	695	1,129,762		
Columbus-Delaware County	3,347	1,133,109		
Columbus-Fairfield County	8,174	1,141,283		
Dublin-Delaware County	5,174	1,146,457		
Dublin-Union County	363	1,146,820		
Harrisburg -Pickaway County	6	1,146,826	4.82	1,020,659
New Albany-Licking County	209	1,147,035		
Reynoldsburg-Licking County	6,418	1,153,453		
Reynoldsburg-Fairfield County	316	1,153,769		
Westerville-Delaware County	6,877	1,160,646		
Lithopolis Village-Fairfield County	(61)	1,160,585		
Pickerington-Fairfield County	(284)	1,160,301		
Total		1,160,301		

Source(s) of information:
Population- Ohio Department of Development Office of Strategic Research, 2008 Population Estimates for Cities, Villages, and Townships

Example Calculation:
Residential/Commercial Waste Generation (tons) = $\frac{\text{Population} \times \text{National Generation Rate} \times 365 \text{ days/year}}{2,000 \text{ pounds/ton}}$

$$1,020,659 = \frac{1,160,301 \times 4.82 \times 365}{2000}$$

**Table IV-2
Industrial Waste Generation Survey Respondents vs. Unreported**

Standard Industrial Classification Category (SIC)	Survey Respondents			Amounts Based Upon Secondary Data (Unreported)			Total Industrial Waste Generated (Tons)		
	# of Industries	# of Employees	Tons of Waste Generated	Generation Rate (T/employee)	# of Industries	# of Employees		Generation Rate (T/employee)	Tons of Waste Generated
20	3	1,375	8,242	5.99	67	10,776	13.92	150,002	158,244
22	0	0	0	0.00	20	402	9.99	4,016	4,016
23	0	0	0	0.00	41	701	2.80	1,963	1,963
24	0	0	0	0.00	49	575	51.62	29,682	29,682
25	0	0	0	0.00	31	808	1.79	1,446	1,446
26	1	8	0	0.04	33	1,185	17.50	20,738	20,738
27	6	1,000	10,148	10.15	258	8,375	6.70	56,113	66,261
28	5	1,394	2,253	1.62	63	6,027	12.43	74,916	77,168
29	1	9	39	4.33	12	248	7.33	1,818	1,857
30	4	690	3,605	5.22	46	1,930	7.29	14,070	17,674
31	0	0	0	0.00	6	39	3.41	133	133
32	1	342	3,273	9.57	55	2,331	10.55	24,592	27,865
33	1	10	314	31.37	24	3,228	36.93	119,210	119,524
34	8	409	1,215	2.97	115	4,813	11.16	53,713	54,928
35	1	115	1,901	16.53	172	4,384	5.72	25,076	26,977
36	2	272	199	0.73	48	2,925	2.98	8,717	8,915
37	0	0	0	0.00	37	3,874	3.21	12,436	12,436
38	1	80	113	1.41	61	1,112	1.74	1,935	2,048
39	17	9,143	132,283	14.47	96	1,330	4.62	6,145	138,428
Total	51	14,847	163,584	11.02	1,234	55,063	n/a	606,718	770,301

Source(s) of information:

Survey respondents are from the Industrial Waste Survey
 Unreported number of industries and number of employees is from the non-responder industrial waste survey
 Unreported Generation Rate is from the District Solid Waste Management Plan Format (1994) Table JJ-2

Generation Rate (Survey Respondents) = tons of waste generated / number of employees
 Waste Generated (unreported) = number of employees x generation rate
 Total Waste Generated = waste generated (survey respondents) + waste generated (unreported)

Example Calculations: SIC Code 20

$$\text{Survey Respondents} \quad 5.99 = \frac{8,242}{1,375}$$

$$\text{Generation Rate} = \frac{\text{Waste Generated}}{\text{\# of Employees}}$$

$$\text{Non-Respondents} \quad 150,002 = 10,776 \times 13.92$$

$$\text{Tons of Waste Generated} = \text{\# of Employees} \times \text{Generation Rate (T/employee)}$$

$$158,244 = 8,242 + 150,002$$

$$\text{Total Industrial Waste Generated} = \text{Total Reported} + \text{Total Unreported}$$

**Table IV-3
Exempt Waste Generated in the District
and Disposed in Publicly Available Landfills**

Type of Waste Stream	Generation Rate (lb/person/day)	Total Exempt Waste Generation (TPY)
C&D Waste; Asbestos	0.19	40,666
Total	0.19	40,666

Source(s) of information:

2008 Landfill and Transfer Station Operation Reports/Table III-1

$$\text{Generation Rate (lbs/person/day)} = \frac{\text{Total Exempt Waste (tons/yr)} \times 2,000 \text{ (lb/ton)}}{\text{Population} \times 365 \text{ days/yr}}$$

Example Calculation:

$$0.19 = \frac{40,666 \times 2,000}{1,160,301 \times 365}$$

**Table IV-4
Reference Year Total Waste Generation for the District**

Type of Waste	Generation Rate (lbs/person/day)	Tons/Year
Residential/Commercial	4.82	0
Industrial	3.64	770,301
Exempt	0.19	40,666
Total Waste Generation	8.65	810,968

Source(s) of information:

Residential/Commercial- Table IV-1

Exempt -Table IV-3

Industrial- Tons/yr-Table IV-2

Industrial- Generation Rate calculated using the following equation:

$$\text{Generation Rate (lbs/person/day)} = \frac{\text{Total Industrial Waste (tons/yr)} \times 2,000 \text{ (lb/ton)}}{\text{Population} \times 365 \text{ days/yr}}$$

Example Calculation:

$$3.64 = \frac{770,301 \times 2,000}{1,160,301 \times 365}$$

**Table IV-5
Reference Year Residential/Commercial Waste Reduction in the District**

Type of Waste Source Reduced	TPY	Type of Waste Recycled	TPY	Incineration, Composting, Resource Recovery		
				2008 Total Waste Received	2008 Residual Landfilled	2008 Net Waste Reduced
None	0	Commingled Recyclables	68,655	Incineration*	Ash	Net Incineration*
		Ferrous	49,099	0	0	0
		Cardboard	29,416	Composting	Residuals	Net Compost
		Other Paper	28,871	177,596	0	177,596
		Rubber	9,679	Resource Recovery	Ash	Net Resource
		Non-Ferrous	5,999	0	0	0
		Appliances	4,452			
		Other	3,362			
		Plastic	3,093			
		Food	654			
		HHW	641			
		Batteries	263			
		Used Oil	232			
		Wood	60			
		Glass	7			
Subtotal	0		204,483	177,596	0	177,596
Grand Total						382,079

Source(s) of information:

2008 District Annual Report, 2008 Re-TRAC Community and Commercial Surveys and 2008 Broker Surveys for Residential/Commercial Sectors. Compost data includes 119,552 tons reported by registered compost facilities and 58,044 tons from wood that was not reported to Ohio EPA, but reported to SWACO through their contract with the facility. Rubber data was provided by the Ohio EPA and does not include any data reported in surveys to eliminate double counting.

**Table IV-6
Reference Year Industrial Waste Reduction in the District**

Type of Waste Source Reduced	TPY	Type of Waste Recycled	TPY	Incineration, Composting, Resource Recovery		
				Total Waste Received	Residual Landfilled	Net Waste Processed
None	0	Appliances	835	Incineration*	Ash	Net Incineration
		Batteries	1		0	0
		Glass	2,461	Resource Recovery	Ash	Net Resource
		Ferrous	107,549		0	0
		Non-Ferrous	7,565	Composting	Residuals	Net Composted
		Cardboard	15,636		0	0
		Other Paper	9,744			
		Plastic	1,776			
		Rubber	0			
		Wood	1,895			
		Commingled Recyclables	1,966			
		Stone/Clay/Sand	88			
		Ceramic Shells	244			
		Other	0.33			
Subtotal	0		149,760		0	0
			Grand Total			149,760

Source(s) of information:
2008 District Annual Report, 2008 Re-TRAC Industrial Surveys and 2008 Broker Surveys for Industrial Sector

**Table IV-7
Total Waste Generation Based Upon Disposal Plus Waste Reduction**

Year	Management Method Used (TPY)						Total Waste
	Source Reduction & Recycling	Yard Waste Composting	Yard Waste Land Application	Incineration Waste Reduction	MSW Composting	Landfill Disposal	
2004	511,762	167,260	0	0	0	1,337,338	2,016,360
2005	661,967	194,079	0	0	0	1,314,824	2,170,870
2006	471,807	149,678	0	0	0	1,266,352	1,887,837
2007	538,812	139,501	0	0	0	1,261,765	1,940,078
2008	354,243	177,596	0	0	0	1,235,713	1,767,553

Source(s) of information:
District Annual Reports and Ohio EPA Facility Data Reports

**Table IV-8
Adjusted Reference Year Total Waste Generation for the District**

Type of Waste	Generation Rate (lbs/person/day)	Tons/Year
Residential/ Commercial	7.22	1,529,419
Industrial	0.93	197,467
Exempt	0.19	40,666
Total Waste Generation	8.35	1,767,553

Source(s) of information:

Exempt -Table IV-3

Residential/Commercial and Industrial - Tons/year : Tons/ year waste reported by the landfills (Table III-1)
+ Recycling (Table IV-5 or Table IV-6)

Example Calculation:

$$\text{Generation Rate (lbs/person/day)} = \frac{\text{Total Waste (tons/yr)} \times 2,000 \text{ (lb/ton)}}{\text{Population} \times 365 \text{ days/yr}}$$

$$7.22 = \frac{1,529,419 \times 2,000}{1,160,301 \times 365}$$

**Table IV-9
Estimated Residential/Commercial Waste Stream
Composition for the District for the Reference Year**

Waste Stream Type	Percentage of the Waste Stream	Tons
Cardboard	17.4%	266,100
Appliances, Durables, Furniture	13.9%	212,574
Other Paper	13.1%	199,575
Yard Waste	10.2%	155,990
Newspaper	6.6%	100,935
Food	6.4%	97,876
Glass	5.7%	87,171
Plastics	5.2%	79,524
Wood Packaging	5.1%	77,995
Office Paper	3.9%	59,750
Other	3.5%	53,526
Clothing/Textiles	2.6%	39,762
Scrap Tires	1.8%	27,528
Ferrous Metals	1.5%	22,175
Disposable Diapers	1.3%	19,881
Aluminum	1.0%	15,293
Lead-Acid Batteries	0.9%	13,764
Totals	100.0%	1,529,419

Source(s) of information:

Percentage of the waste stream from national averages in Appendix KK of District Solid Waste Management Plan Format (1996)

Table IV-10
Estimated Industrial Waste Composition for the Reference Year in the District

Waste Stream Type	TPY	Waste Stream Type	TPY	Waste Stream Type	TPY
Cardboard	18,887	Non-Ferrous Metals	9,130	Stone/Clay/Sand	106
Paper	11,788	Copper	6	Batteries	2
Cloth & Fabrics	0	Glass	2,971	Food	4
Wood	2,292	Plastic	2,169	General Solid Waste	18,673
Ferrous Metals	129,826	Rubber/Tires	0	Misc.	1,613
Subtotal	162,794	Subtotal	14,276	Subtotal	20,397
Grand Total					197,467

Source(s) of information:

District Industrial Waste Survey for calendar year 2008 solid waste generation by type of waste and SIC number. Total Waste generation for each type of waste and SIC number may be found in Appendix F Generated. Each industrial waste component was projected using the adjustment factor to account for nonrespondent industries.

Example Calculation:

$$\text{Adjustment Factor} = \frac{\text{Total Industrial Waste Generated (Table IV-8)}}{\text{Total Industrial Waste Generated (Table IV-2 - Survey)}}$$

$$\text{Adjustment Factor} = 1.207133 = 197,467 / 163,584$$

$$\begin{aligned} &\text{Type of Industrial} \\ &\text{Waste Generated (tons)} = \text{Type of Industrial Waste Generated (Appendix F Generated)} \times \text{Adjustment Factor} \\ &= \end{aligned}$$

$$4,011 \text{ (tons of cardboard)} = 15,647 \text{ (tons of cardboard from Appendix F Generated)} \times 1.207$$