

## **V. Planning Period Projections and Strategies [ORC Section 3734.53(A)(5)-(6)]**

### **A. Planning Period**

The reference year for this plan is 2012. The draft plan update was due to be submitted to Ohio EPA for review in early 2014. The final approval deadline is August 2015. The Solid Waste Management Plan Format requires the District to establish a planning period that begins the calendar year following the draft plan due date. Therefore, the planning period will begin on January 1, 2015. The planning period is fifteen years. The planning period will end December 31, 2029.

### **B. Populations Projections for the Planning Period**

The population of Darke County in the reference year, 2012, was estimated to be 52,507. This estimate was published by the U.S. Census Bureau and is based on the 2010 census.<sup>1</sup> Ohio's solid waste law states that when a municipal corporation is located in more than one solid waste district, the entire corporation is to be included in the jurisdiction of the solid waste district where the majority of the population resides. The adjusted population of the Darke County Solid Waste Management District for the reference year is 51,675.

The population projections in Table V-1 are based on the 2010 U.S. Census. In March, 2013 The Ohio Development Services Agency published population projections based on the 2010 census for each county in Ohio for 2015, 2020, and 2030.<sup>2</sup>

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<sup>1</sup> <http://quickfacts.census.gov/qfd/states/39/39037.html>

<sup>2</sup> <http://development.ohio.gov/files/research/P6090.pdf>

**Table V-1 District Population Projections for the Planning Period**

<b>Year</b>	<b>Darke County Population</b>	<b>Adjustment (subtract population of Bradford and Burkettsville)</b>	<b>District Population</b>
2010 census	52,959	839	52,120
2012 reference year	52,507	832	51,675
2015 1st year	52,190	827	51,363
2016	52,006	824	51,182
2017	51,822	821	51,001
2018	51,638	818	50,820
2019	51,454	815	50,639
2020	51,270	812	50,458
2021	50,971	808	50,163
2022	50,672	803	49,869
2023	50,373	798	49,575
2024	50,074	793	49,281
2025	49,775	789	48,986
2026	49,476	784	48,692
2027	49,177	779	48,398
2028	48,878	774	48,104
2029 15th year	48,579	770	47,809

Population Calculations: The published population projections were used for 2015, 2020, 2025, and 2030. Straight line averaging is used for the years in between the years for which population projections were made. Sample calculation: Population 2016 was calculated as follows: 52,190 (estimated 2015 population) - 51,270 (estimated 2020 population) = 920/5 = 184 change in population in each of five years. 2016 population = 52,006. The same calculation was used to arrive at the figure for the population of Bradford and Burkettsville.

### C. Waste Generation Projections

#### 1. Residential/Commercial Sector

The residential/commercial waste generation figure for the District for the reference year, 2012 is 6.18 pounds per person per day which is substantially more than the national average for waste generation as published by the United State Environmental Protection Agency which was 4.40

pounds per person per day for 2011.<sup>3</sup> The residential/commercial waste generation rate has fluctuated from year to year. Reasons for this fluctuation were discussed in Chapter IV, Section F. The projected future waste generation that we are using for planning purposes is an average of the waste generation figures for the past eight years. The rate will obviously fluctuate from year to year, but there is no local evidence nor national waste generation projections to support either long term growth or long term reduction. Table V-1.A. shows the per capita residential/commercial waste generation for 2005 through 2012.

**Table V-2.A. Average Per Capita Res/Com Generation Rate**

<b>Year</b>	<b>Per Capita Generation Rate</b>	<b>Year</b>	<b>Per Capita Generation Rate</b>
2005	6.34	2009	4.77
2006	5.41	2010	4.99
2007	5.58	2011	5.46
2008	5.15	2012	6.18
<b>Average over 8 years</b>			<b>5.49</b>

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<sup>3</sup> Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2011, United States Environmental Protection Agency, Solid Waste and Emergency Response (5306P), Washington, DC

**Table V-2.B. Projected Residential/Commercial Waste Generation Rate for the Planning Period**

<b>Year</b>	<b>District Population</b>	<b>Per Capita Generation Rate</b>	<b>Total Res/Com Generation</b>
2012 reference year	51,675	6.18	58,254
2015 1st year	51,363	5.49	51,462
2016	51,182	5.49	51,281
2017	51,001	5.49	51,099
2018	50,820	5.49	50,918
2019	50,639	5.49	50,736
2020	50,458	5.49	50,555
2021	50,163	5.49	50,260
2022	49,869	5.49	49,965
2023	49,575	5.49	49,670
2024	49,281	5.49	49,376
2025	48,986	5.49	49,081
2026	48,692	5.49	48,786
2027	48,398	5.49	48,491
2028	48,104	5.49	48,196
2029 15th year	47,809	5.49	47,901

## 2. Industrial Sector

The industrial waste generation for the District in the reference year, 2012 was 17,461 tons. Details regarding 2012 industrial waste generation are included in Chapter IV, pages 2 and 3.

It is very difficult to project future industrial waste generation because the amount that is generated is tied directly to the production of industries in the District. Industrial waste generation has decreased substantially since the reference year for the last plan, 2005. For this plan the District is projecting a slow, but steady decrease in industrial waste generation of 1% each year until 2022 and remaining stable in the last eight years of the planning period.

**Table V-3      Projected Industrial Waste Generation for the Planning Period**

<b>Year</b>	<b>Total Industrial Waste Generation</b>	<b>Year</b>	<b>Total Industrial Waste Generation</b>
2012 reference year	17,461	2022	15,900
2015 1st year	16,937	2023	15,900
2016	16,768	2024	15,900
2017	16,600	2025	15,900
2018	16,434	2026	15,900
2019	16,270	2027	15,900
2020	16,107	2028	15,900
2021	15,946	2029	15,900

Assumption: Downward trend of 1% per year from 2012 to 2021 and remaining stable in the later years of the planning period

### 3. Exempt Waste

The amount of exempt waste projected for each year of the planning period is 3,177 tons. This is the average amount of exempt total exempt waste (not per capita) generated in each years from 2005 through 2012. The amount has fluctuated from year to year as shown in Table IV-8. Since exempt waste takes up landfill space, it is important not to drastically underestimate the amount that will be generated. However, exempt waste has usually been a small percentage of the total waste disposal from the District. Since the District does not receive fee revenue based on the amount of exempt waste disposal, inadvertently overestimating the amount will not cause fee revenue estimates to be inflated.

Table V-4 on the next page shows the total projected waste generation for all categories for the entire planning period.

**Table V-4                      Projected Total Waste Generation for the Planning Period**

<b>Year</b>	<b>Residential/Commercial (Table V-2)</b>	<b>Industrial Waste (Table V-3)</b>	<b>Exempt Waste</b>	<b>Total Waste Generation</b>	<b>Generation Rate (lbs./person/day)</b>
2012	58,254	17,461	3,588.86	79,304	8.41
2015	51,462	16,937	3,176.57	71,576	7.64
2016	51,281	16,768	3,176.57	71,225	7.63
2017	51,099	16,600	3,176.57	70,876	7.61
2018	50,918	16,434	3,176.57	70,529	7.60
2019	50,736	16,270	3,176.57	70,183	7.59
2020	50,555	16,107	3,176.57	69,839	7.58
2021	50,260	15,946	3,176.57	69,383	7.58
2022	49,965	15,900	3,176.57	69,042	7.59
2023	49,670	15,900	3,176.57	68,747	7.60
2024	49,376	15,900	3,176.57	68,452	7.61
2025	49,081	15,900	3,176.57	68,157	7.62
2026	48,786	15,900	3,176.57	67,862	7.64
2027	48,491	15,900	3,176.57	67,568	7.65
2028	48,196	15,900	3,176.57	67,273	7.66
2029	47,901	15,900	3,176.57	66,978	7.68

**D. Projections for Waste Stream Composition**

At the present time, the District has not identified any major changes in the types of industries or in industrial production that will have an effect on the type of waste that is sent for disposal or the material that is available for recycling during the planning period. Unlike residential/commercial waste which may change slowly over time, changes in industrial waste usually happen abruptly if a new industry opens or a major industry makes a major change in production.

The programs for residential and commercial waste reduction and recycling have been in place for a number of years and have been successful. Although the District will continue to work to reduce waste and to increase recycling, there is not one part of the waste stream that can be singled out for special emphasis. The general composition of both the materials being recycled and the waste sent for disposal will probably remain very much the same as it is now. The emphasis in this plan will be to continue to improve participation in residential recycling programs with the goal of increasing the amount of all types of recyclable materials diverted from disposal.

#### E. Waste Reduction Strategies for the Planning Period

The 2001 State Plan requires Solid Waste Management Districts to implement (or continue) waste reduction strategies which will enable the Districts to meet the goals established by the 2001 State Plan. In general, these goals are as follows:

Goal #1 - ensures the availability of reduction and recycling opportunities/programs for residential/commercial waste.

Goal #2 - by the year 2000, a) 25 percent waste reduction rate for the residential/commercial sector and b) 50 percent waste reduction for the industrial sector.<sup>4</sup>

Goal #3 - Provide information and technical assistance on source reduction to the residential, commercial and industrial sectors.

Goal #4 - Provide information and technical assistance on recycling, reuse and composting opportunities to the residential, commercial and industrial sectors.

Goal #5 - Develop strategies for managing scrap tires and household hazardous waste (HHW).

Goal #6 - Evaluate the feasibility of incorporating economic incentives into source reduction and recycling programs.

Goal #7 - Market development strategy, optional.

Goal #8 - Annual reporting of plan implementation (Accomplished through the preparation of the Annual Authority Report submitted to Ohio EPA.)

Plans for strategies and programs to address each of these goals, except the annual reporting goal, are included in the discussion which follows. To make this presentation clear and useful, the narrative for each goal will list the strategies that will address the goal. Current programs will be listed first, expansions or revisions of existing programs will be explained. For each strategy or program the following information is provided:

Program description    Responsible entity  
Area of benefit/audience  
Materials designated

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<sup>4</sup> The revised Ohio Solid Waste Management plan format that reflects recent changes in the State Plan will soon be finalized. However, this Plan is being prepared using the old format. Even though we are well beyond 2000, the plan format still refers to 2000 as the date by which certain goals are to be attained.

Date of implementation

Measurement method

Waste reduction--actual or projected amount of waste reduction

Many of the planned strategies and programs address more than one goal. The explanation of a strategy or program will not be repeated under each goal. Many of the programs listed in this Chapter are the same as the programs discussed in Chapter IV. The descriptions are repeated to assure that there is no ambiguity about how these programs will be implemented in the future. The numbering system for the programs is not the same as that used in Chapter IV.

All the programs and facilities mentioned in the narrative and tables in Chapter III and Chapter IV or that will become available during the planning period make a contribution to waste management and waste reduction, but some of these programs do not address specific goals and/or the District has no control or influence over the operation of the program or facility. These programs are not included by program name, but are included in categorical groupings.

Waste Reduction Rates as Calculated for the Reference Year:

**The residential/commercial waste reduction rate for 2012, is calculated to be 43.1%.**

Calculation: waste disposal + waste reduction + recycling + composting = waste generation

$$\frac{\text{waste reduction} + \text{recycling} + \text{composting/field spreading}}{\text{waste generation}} \times 100 = \text{waste reduction rate}$$

33,121 tons disposed + 25,133 tons recycled and composted = 58,254 tons (see Table IV-8, 2012 adjusted)

$$\frac{25,133}{58,254} \times 100 = 43.1\% \text{ waste reduction rate}$$

**The industrial waste reduction rate is 84.7%**

Calculation:

$$\frac{\text{waste reduction} + \text{recycling} + \text{composting}}{\text{waste generation}} \times 100 = \text{waste reduction rate}$$

2,675 tons disposed + 14,786 recycled = 17,461 tons waste generation

$$\frac{14,786}{17,461} \times 100 = 84.7\%$$



The overall recycling rate of residential/commercial and industrial waste generation and recycling combined is

$$\frac{25,133 \text{ tons r/c recycling/composting} + 14,786 \text{ tons industrial recycling}}{58,254 \text{ r/c waste generation} + 17,461 \text{ industrial generation}} \times 100 = 52.7\%$$

If exempt waste is included in the total for waste generation, the waste reduction rate is as follow:

$$\frac{25,133 \text{ tons r/c recycling/composting} + 14,786 \text{ tons industrial recycling}}{58,254 \text{ r/c waste generation} + 17,461 \text{ industrial generation} + 3,589 \text{ exempt}} \times 100 = 50.3\%$$

The *2001 and the 2009 State Plans* encourage Districts to implement programs that will lead to compliance with Goal #1 and Goal #2, but compliance with only one goal is required. Goals #1 and #2 as stated in the 2001 State Plan are listed on page V-4. Goals #1 and #2 from the 2009 State Plan are as follows:

Goal #1 The SWMD shall provide access to recycling and waste minimization opportunities for municipal solid waste to its residents and businesses. The State Plan provides specifics as to how access can be demonstrated.

Goal #2 The SWMD shall reduce and/or recycle at least 25 percent of the solid waste generated in the residential/commercial sector and at least 66 percent of the solid waste generated by the industrial sector.

The District exceeded the residential/commercial and the industrial requirements of Goal #2 in the reference year, 2012 and as exceeded the goal for the past eight years.

The District is prepared in this Plan Update to comply with both Goal #1 and Goal #2. Details of how this Plan meets the access requirements of Goal #1 are supplied in Chapter VII. An explanation of the requirements that apply to the Darke County Solid Waste Management District is included here since the recycling programs described here will be used to provide the access required by Goal #1.

The *2001 State Solid Waste Management Plan* states:

“To obtain an Ohio EPA approved plan, a SWMD must demonstrate that at least 90 percent of the residential population in each county comprising the SWMD will have access to waste reduction and recycling programs by the third year following approval of the SWMD's solid waste management plan. These programs can be existing or new programs, but all programs used to demonstrate 90 percent access must be in place within three years of obtaining an approved solid waste management plan. All programs and activities being used to demonstrate compliance with the residential sector component of Goal #1 must collect a minimum of five of the materials identified as highly amenable to recovery from solid waste generated by the residential sector. The SWMD must also demonstrate that generators in the commercial/institutional sector have access to recycling or other alternative

management methods for at least five of the materials identified as highly amenable to recovery from solid waste generated by the commercial/institutional sector.”

The twelve “highly amenable” materials<sup>5</sup> are corrugated cardboard, office paper, newspaper, glass containers, steel containers (food and beverage cans), aluminum containers, plastic containers, wood packaging including pallets, lead acid batteries, major appliances, yard waste, and food waste.

The District is planning for the present curbside and drop-off programs to continue throughout the planning period. The District’s emphasis will be on increasing participation in the existing programs. The programs that follow are the same programs that are discussed in Chapter IV. The descriptions are repeated to assure that there is no ambiguity about how these programs will be implemented in the future.

The District will utilize the following programs to meet the Authority’s recycling access goal, Goal #1. These programs also are the means by which the District has been able to exceed the recycling goals set out in the State Solid Waste Management Plan. However, the District certainly cannot take all of the credit for meeting and exceed recycling goals. Private waste haulers, recyclers, and commercial businesses have invested significant resources into creating and maintaining the infrastructure and the programs which have made attaining these goals possible.

***Goal #1 The SWMD shall provide access to recycling and waste minimization opportunities for municipal solid waste to its residents and businesses. The State Plan provides specifics as to how access can be demonstrated.***

***Goal #2 - by the year 2000, a) 25 percent waste reduction rate for the residential/commercial sector and b) 50 percent waste reduction for the industrial sector.***

## **Residential Programs**

### ***1. Residential Curbside Recycling***

As of early 2014 the same four curbside recycling programs that were offered in 2012 are operating and are managed in the same manner as they were in the reference year. The City of Greenville and Arcanum Village provide curbside recycling and separate yard waste collection to city and village residents. As February 2014, both have contracts with Rumpke Waste, Inc. However, the City of Greenville is currently considering all of the possible options for delivering residential waste collection and curbside recycling services before entering into a new service contract. So, although the same services are expected to continue, it is possible that the manner in which the services are provided will change. The method of service delivery and the price structure for the Greenville curbside program are presently and will continue to be made by the City of Greenville.

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<sup>5</sup> Eleven materials are the same in the 1995 State Plan and the 2001 State Plan. Food waste was added in the 2001 State Plan.

Subscription curbside recycling is available in the Village of Palestine for residents who subscribe to the service provided by Rumpke. Rumpke provides a pay-as-you throw bag option or the fixed price container option for Palestine residents.

Versailles Village collects recyclables at curbside from residents using Village staff and equipment. The program is available to all village residents and is included in the price of waste collection. Versailles also collects recyclables from businesses in the Village. The District expects curbside recycling to continue in Arcanum, Palestine, and Versailles. The details of collection, processing and marketing of materials and the price structure for the program are and will remain the responsibility of the municipality.

All of the curbside programs have the support of the residents. However, with the exception of Versailles which keeps its own records, it has not been possible to compare program performance year to year or to make comparisons among programs because the amount collected in the curbside programs is not reported to each program individually. The amounts collected are reported in the totals submitted annually by the waste hauling firms that provide the services. In these reports, the material from individual curbside programs is reported with the material from all the residential and commercial recycling collection managed by the reporting hauler/recycler.

*Responsible entity for curbside program:* The curbside programs are the responsibility of municipal governments. However, the programs are crucial to meeting Goals #1 and #2 of this Plan. The District will do the following:

District responsibilities for curbside recycling:

1. The District is currently studying the feasibility of developing a collection consortium. A collection consortium is a program where communities bid their trash and recycling services together. Consortia have been formed in areas of Ohio and other states and it has been shown that bidding as a group enables the participating communities to realize economies of scale. Joint bidding also encourages increased competition between vendors, which may lead to lower prices and/or enhanced service. The District hopes to begin discussions about this concept with local governments in late 2014 or early 2015.
2. If communities continue the present waste collection and recycling bidding practices (each municipality or township bidding separately) or as part of a consolidated bid process the District will work with municipalities or townships and service providers to ensure that new collection and recycling contracts include, to the extent feasible, specific requirements for waste collection and recycling data to be collected and reported on a community or program specific basis. This information will be extremely helpful in promoting each program within the community and in maintaining and increasing the quantity and quality of resident participation.

3. Continue to encourage local governments and solid residential/commercial waste haulers to offer curbside recycling in areas not currently served, preferably as a non-subscription service in conjunction with pay-as-you-throw collection, but in any format that the community or hauler finds to be feasible. Even though there are only 3 non-subscription curbside programs operating in the District, the three communities that are served by these programs represent more than one-third of the District population. Another one-third or more of the District lives in very sparsely populated townships where curbside recycling is not likely to be economically feasible. The most likely candidates for new curbside programs are the more populous townships, specifically the portion of Greenville Township outside the Greenville City limits, Twin Township, and Brown Township if the Village of Ansonia were included. The District will, at a minimum, provide assistance with program planning and with intensive public education for program start-up.

4. The District budget, which is presented in this Plan in Chapter VIII, includes \$10,000 to assist villages in starting new curbside recycling programs or in making substantial improvements to increase the efficiency and effectiveness of existing programs. Preference will be given to non-subscription curbside programs that are coupled with pay-as-you-throw collection. The money may be used for one-time costs only, not for ongoing operations. The District Board of Directors in consultation with District staff will develop, approve and publish specific criteria and establish an application process after this Plan is approved and before any funds are awarded.

*Service area benefit:* Local government jurisdiction in which curbside is implemented.

*Materials to be recycled:* In this plan, we are calling the materials that are collected in Greenville, Arcanum and Versailles (even though Rumpke is not necessarily the processor) the “Rumpke Mix,” which is all colors of glass bottles and jars, aluminum, steel (tin), and aerosol cans, #1 & #2 and #6 plastic (natural and colored) containers, newspaper, mixed paper, magazines, phone books, regular and coated paperboard cartons, and corrugated cardboard. It is the intention of this Plan that all programs will continue to collect all of these materials as listed here or as described on page IV-12. However, the following are the materials that will be considered as the minimum for a program to be recognized as an approved curbside recycling program under this Plan: newspaper, mixed paper, aluminum cans, steel (tin) cans, plastic bottles #1 and #2, and corrugated cardboard.

*Date of implementation:* Existing curbside programs will be ongoing. New programs may be started at any time during the planning period. The only specified date is that by or before December 31, 2015, meetings with all the existing curbside programs and service providers regarding record keeping and reporting will be completed. The results of these meetings and, if necessary, a schedule for continued planning and implementation of new recycling data reporting systems will be included in the District’s Annual District report for 2015 and will be reported to the District Board of Directors.

*Measurement method:* The District will continue to survey both the municipalities and the service providers and will gather data relevant to the curbside programs. The data reporting system should be improved so that relevant comparisons can be made year to year and community to community.

*Waste reduction projections:* Since at the present time, the material recycled from curbside is reported with drop-off programs, the future recycling projections will be discussed at the end of the discussion of drop-off recycling.

## **2. Residential Drop-off Recycling**

*2. a. Darke County Solid Waste Management District Recycling Drop-off Bins:* In order to extend recycling services to the areas in the county not served by curbside, the District will continue to fund a system of drop-off bins which are available 24 hours a day, 7 days a week.

The drop-offs consist of 8 yard bins which are placed in locations where they are easy to access and also can be monitored to reduce the chances of litter and illegal dumping. The bins include signs that clearly state the materials that are and are not accepted. Most of the sites have two bins which are emptied weekly. However the size of the bins, the number of bins at a location, and the service schedule is adjusted as necessary to accommodate the amount of use and to be sure that participation is not discouraged by bins that are full or overflowing.

The following is a list of bins that are currently in service. The District's Plan Implementation Schedule (Chapter VI of this Plan) includes all of these sights as part of the District's network of drop-off to provide convenient recycling opportunities for all residents. However, the District reserves the right and acknowledges the responsibility to adjust the site locations as needed to maintain or improve service and participation. Sites may be closed if and when the area that it serves is served by a non-subscription curbside program which provides the same or improved access for the residents of the area that were using the drop-off site.

The following is a list of the locations where drop-off are located (updated January 2014):

Ansonia serving the village and Brown Twp.	
Arcanum serving the village and Twin Twp.	
Butler Township	
Gettysburg serving the village and Adams Twp.	
Hollansburg serving the village and Harrison Twp.	
New Madison Village	
New Weston serving the village and Allen Twp.	North
Star serving the village and Wabash Twp.	Palestine Village
Pittsburg serving the village and Monroe Twp.	
Union City serving the village and Jackson Twp.	
Wayne Township	
The Village of Wayne Lakes	

The bins are owned by Rumpke and the material is transported to the Rumpke MRF in Dayton for sorting and processing. The Darke County Solid Waste Management District pays for the service. Village and township governments and/or local businesses provide suitable sites for the bins. The District is responsible for selecting the service provider and overseeing the operation of the program.

The District budget, which is presented in this Plan in Chapter VIII, budgets an additional \$1,100 to accommodate the possibility of adding one or two additional drop-off sites. Since the draft of this Plan was completed and reviewed by Ohio EPA, one new site has been added in Yorkshire (2014) and the District is examining the possibility of adding a site in Osgood. These two sites would improve access in areas of the county which were not close to existing sites.

*Responsible entity for drop-off program:* The Darke County Solid Waste Management District is responsible for providing the program for the residents of the District. The District plans to continue working with and through an appropriate service provider. The service provider will supply and maintain the containers and arrange for collecting the containers and processing and marketing the recyclable materials. The District will continue to rely on local governments and private business to host suitable sites for the placement of containers.

*Service area benefit:* The service area is the village and/or township in which the drop-offs bin/s are located. Since residents do not always use the bin that is closest to their home, it is likely that many bins, particularly those on major cross-county routes and in more urban areas, serve an area that is bigger than the immediate community.

*Materials to be recycled:* The District funded drop-offs collect the "Rumpke Mix," which is all colors of glass bottles and jars, aluminum, steel (tin), and aerosol cans, #1, #2 and #6 plastic containers (natural and colored), newspaper, mixed paper, magazines, phone books, regular and coated paperboard cartons, and corrugated cardboard. If any changes are required in the drop-off program, the District will make an effort to assure that these same or the same and additional materials are collected.

*Date of Implementation:* Ongoing through-out the planning period.

*Future recovery rates:* Recycling from the drop-offs is not measured separately, it is mixed with recycling from curbside collections. Projected recovery rates will be addressed following "Other Multi-Material Recycling Drop-off Programs."

*2. b. Other Multi-Material Recycling Drop-off Programs:* In addition to the multi-material drop-off bins supported by the Darke County Solid Waste Management District, Rumpke Recycling and Transfer Facility provides a multi material drop-off box at the Rumpke Transfer Facility on Jaysville -St. Johns Road on the outskirts of Greenville. It is open 24 hours a day, seven days a week and accepts the "Rumpke Mix." It serves primarily the Greenville area, but is used by people bringing waste to the transfer facility from all over the county.

Rumpke is the responsible entity for this program, but the entire District benefits from the availability of this drop-off which is convenient for residents and businesses bringing waste to the transfer facility. This drop-off is listed in the "Where to Recycle" publications provided by the District. Since the District has no direct control over whether or not this site is available, it is not included in the calculations for access. However, since the material collected at this site is reported with the other

material collected by Rumpke from curbside and the District drop-off sites, the material collected at this site is included in the future recycling calculations.

The Village of Versailles supplements the Village residential curbside recycling program with drop-off using two compartmented recycling trailers. One is available near the Village Service Garage and one is near the Versailles School District Board of Education offices. They are on opposite ends of Center Street. The Village is responsible for the program, which collects glass bottles and jars, aluminum and steel (tin) cans, #1 and #2 plastic (natural and colored) containers, newspaper, mixed paper, magazines, phone books, and corrugated cardboard. The drop-offs are open 24 hours, 7 days a week. The amount collected is reported to the District along with the amount collected at curbside annually.

*2. c. Drop-off collection programs provided by various organizations:* Since this is an optional part of the plan, the program description and other relevant information are presented in an abbreviated form. Several nonprofit organizations operate drop-off recycling programs. These organizations are listed on Table III- 5. The organizations provide the drop-off opportunities as a community service and to raise funds. The District appreciates the efforts of these organizations and believes that they are a valuable service. Some people who probably would not otherwise participate in a recycling program participate in order to support the charity. The District will continue to provide information about these recycling opportunities in District publications and on the District's website. However, since the District realizes that these organizations must first consider their central mission in making decisions about maintaining recycling services, the District will not consider these programs to be a required part of this Plan.

These programs may operate at any time during the planning period. Some programs may be discontinued and others may start during the planning period. The individual organizations are responsible for all aspects of program operation. The District will support the programs by providing information about them to the public in District publications and other promotional efforts. The benefit will accrue primarily to the organization providing the drop-off and the public who participate. The materials designated are the choice of the organization. Most organizations currently collect paper and/or scrap metal. The District asks the organizations to voluntarily report the amount recycled as part of the survey process for the Annual District Report to OEPA. Since these programs are not a mandatory part of this plan, no specific waste reduction amount is attributed to the programs. However, they will continue to assist the District in maintaining and increasing the amount of material that is recycled from residential and small commercial sources.

Specific programs that were available in 2012 include the following:

Ansonia Boy Scouts semi-annual newspaper drive. The Scouts also provide year around storage for paper and do some door-to-door newspaper collection. The program serves primarily the Ansonia area.

Osgood Paper Recycling Monthly Drive (also known as Northern Darke County Recycling) which is held the first Saturday of every month at the Osgood Community Park. The materials collected are

newspaper, magazines, mixed paper, paperboard, phone books, and corrugated cardboard. The event serves primarily northern Darke County including Osgood.

Wayne Lakes Village collects aluminum cans primarily from residents of Wayne Lakes at a drop-off site near the entrance to the Wayne Lakes area.

Goodwill Industries, Christina's Consignments, and The Store accept clothing and used housewares for resale. In addition, drop-boxes for clothing and accessories bearing the Special Olympics logo are scattered around the Greenville area. The drop-off containers are a cooperative project between Special Olympics and Ohio Mills, a clothing and textile recycler.

### ***3. District Collection Events for Difficult to Manage Materials:***

In 2012, the District sponsored several events to assist residents, and in some cases, small businesses, municipalities and townships, to recycle materials that are difficult to manage. The District intends to continue all of these events on an annual basis, but none of these event are a mandatory part of this Plan for any or all years of the planning period. The descriptions are those that were included in Chapter IV for the reference year. The descriptions are repeated here because the District plans to continue to offer these programs in much the same manner as in previous years. If the District holds one or more of these events, the contractors, cooperating agencies or businesses, dates and times may change, but the essential element of the program/s will remain the same.

**Appliance Recycling Day:** Appliance Recycling Day was held in May 2012. The event collected 3.93 tons of appliances for recycling. The Darke County Solid Waste District and 1 Shot Services in Bradford teamed up to provide the event. Items accepted included refrigerators, washers, dryers, dishwashers, air conditioners, stoves, dehumidifiers, freezers, and furnaces. All CFC (Freon) removal and recycling was be done free of charge for any Darke County Resident.

**Electronics Recycling Day:** The 2012 event was held in May 24. The event is free to any Darke County resident or business. In order to avoid long lines and to be properly prepared, the District required preregistration. 83.64 tons of material was collected. The contractor for the event was Accurate IT Services from Columbus, Ohio.

**Shred Day:** The Darke County Solid Waste District teamed up with Mercer Savings Bank to host a Shred Day in June of 2012... This event was free to the public. Paper shredding and recycling were offered. The event was held at the Darke County Fairgrounds. 6 tons of paper was shredded by the contractor, Confidential Document Shredding.

**Tire Collection Day:** The District held a tire collection/recycling day on September 2012. The District worked with Rumpke. The District paid the tire collection fees so that residents could bring in passenger car tires at no charge. Preregistration was required and the limit was 25 tires per household. 99.14 tons of tires were collected. The District may charge a fee for tire management and recycling. However, the fee will never exceed the actual cost to the District.



**Dry-cell Battery Collection Program:** The District sponsors an ongoing dry-cell battery recycling program. Collection boxes are available at more than 25 locations around the District. The batteries are processed by Battery Solutions in Michigan.

**Responsible entity for drop-off program:** The District will continue to be responsible for special collection events for difficult to manage materials. The District may work with other government agencies, non-profit organizations, and private business as appropriate or necessary. The District considers these events optional parts of the plan. One or more events may be discontinued permanently or temporarily if the District Board of Directors determines that the event is no longer needed because other suitable options are available for managing the material that was collected by the event or there is not adequate funding to hold the event without jeopardizing funding for programs that are required by this Plan.

**Service area benefit:** The entire Darke County Solid Waste Management District.

**Materials to be recycled:** The materials to be recycled are specific to the event. Adjustments in the specific materials that are accepted may be made from year to year as needed to assure the success and financial viability of an event.

**Date of Implementation:** Any of the special events that are listed above or another event that addresses a collection need in the District may be held in any year of the planning period, but no event is required in any year of the planning period.

**Measurement method:** The District will keep records of the amount of material recycled, the number of participants and any other information that is necessary for the District to measure the success and cost effectiveness of an event. The data will also be used to compare participation and the amount of material recycled from year to year. These comparison can help the District identify trends and provide information to the District about the effectiveness of promotional efforts and. The data may also provide information regarding the need for the event.

**Future recovery rate:** The future recovery rate for special events is included in the residential projections below.

***Future waste reduction projections from residential curbside, multi material drop-offs programs, and special recycling events:***

We have the following information about residential recycling in Darke County in 2012:

- Households served by residential programs: Approximately one third of the households in Darke County, (6,890 households) were in the municipalities that have non-subscription curbside recycling. The other two thirds (13,780 households) have access to multi-material recycling drop-offs.

- The City of Versailles, population, 2,664 (about 1,066 households) reported recycling 403.5 tons in 2012. This includes residential curbside, some commercial recycling collection, and two multi-material drop-offs available to both residents and commercial establishments. If half of the material reported was commercial the amount of residential material recycled per household was .189 tons or 379 pounds per household per year or 1.04 pounds per household per day. The amount per household per year is calculated by dividing 201.75 tons by 1,066 households. The amount per household per day is calculated by dividing the annual amount by 365 days.
- Rumpke reported 1,642.37 tons recycled from residential sources. This amount includes residential curbside and the multi-material drop-offs. Although the drop-offs are primarily for residential recyclers, some commercial material may be included. There are about 19,600 households in the remainder of Darke County (excluding Versailles). The amount recycled by the programs serviced by Rumpke was .084 tons or 168 pounds per household per year or .46 pounds per household per day.
- Residential recycling reported by limited material drop-off programs and by the District for special recycling events including tire recycling, shred-it day, appliance recycling, and electronics recycling after adjustments to avoid double counting amounted to 835 tons.
- the total amount of residential recycling countywide for Darke County was 2,679 tons or 103 pounds per person per year or 259 pounds per household per year. In 2012, residential recycling was 4.6% of total residential/commercial waste generation. In the District's last Plan update, the District projected that residential recycling would increase from 2% to 3.7% of total residential/commercial waste generation in the first five years of the planning period. By 2012, The District exceeded the projected amount by .9%.
- reported residential recycling for 2012 was 2,679 tons which was 11% of the total reported residential/commercial recycling and yard waste composting. Yard waste was 23%. Commercial recycling was 66%

The residential portion of the waste stream is estimated to be 55% to 65% of the total residential/commercial generation. The materials that are collected by the curbside programs represent roughly 40% of the total residential waste stream.

The following is a calculation of the amount of material that would theoretically be available for recycling in the existing residential programs.

58,254 tons res/com waste x 60% (residential portion) = 34,952 tons

34,952 tons x 40% (the portion of district residential waste that is potentially recyclable) = 13,980 tons.

Some of the 13,980 tons are not actually available for recycling because it's wet, soiled with food, reused for purposes that render it not recyclable, or for a variety of other reasons. If only 60% of the potential recyclables are actually available for recycling, 8,388 tons is still available. If that amount

were recycled, the residential recycling rate excluding yard waste would be more than 14% as compared to the 4.6% calculated for the reference year. Obviously the amount that potentially can be recycled from the residential sector far exceeds present residential recycling.

**The District is setting a goal to increase the residential recycling rate in the first seven years of the planning period by .2% per year to 6% by 2021 and by .1% per year for each year thereafter.**

The calculation is shown in Table V-5. The District is projecting the rate (not the amount recycled) for 2013, and 2014 will be the same as 2012. If the rate for 2013, when it is calculated, is significantly different than the rate for 2012, this draft Plan may be revised before the final Plan is submitted for public review and comment. It also should be noted that although the District Plan projects waste reduction rates for 15 years, revisions are made every five years and so the projections will be revised for the years following 2021.

Note that the actual tonnage of projected residential recycling in 2015 entered in Table V-5 is less than that in 2012 even though the percent of total residential/commercial waste generation that is to be recycled or reduced is increased by .2%. This is because total residential/commercial waste generation in 2015 is projected to be less than in 2012.

The district cannot site any specific program/s that will be responsible for attaining the modest increases projected. The District is a relatively small, rural District. At the present time more than one-third of the population is served by non-subscription curbside service. Although the District will do all that is feasible to support additional curbside, new programs will depend upon action of municipalities and townships. The District does not have funds available to subsidize new curbside. The District has plans to add at least two new drop-offs, (see District drop-off recycling), but it is unlikely that other new drop-off will be developed. Drop-off access is very good across the District with locations convenient to virtually all residents.

Therefore, the increase in residential/commercial recycling is expected to come primarily from a growth in the use of the existing programs offered by the District and private service providers. As was demonstrated above, the amount of material diverted by recycling programs is a relatively small portion of the material that could be diverted. The keys are 1) adding additional users to these programs, particularly the residential programs, and 2) increasing the percentage of individual households and commercial enterprises that divert from their waste. This responsibility will primarily rest upon the District's public education and marketing programs instead of on the creation of new programs.

#### **Commercial and Institutional Programs**

The District has been and will continue to be active in providing education, training, and leadership for businesses and institutions in waste reduction and recycling. The public education programs and recycling promotion will be discussed later in this chapter.

The following are the commercial/institutional programs in which the District has direct participation:

#### **4. School Recycling Program**

The District, in cooperation with Rumpke, provides 6 yard recycling bins which are serviced weekly for Ansonia Local Schools, Anthony Wayne Schools, Franklin Monroe Local Schools, St. Mary's School in Greenville, Arcanum Butler Local Schools, Mississinawa Valley Local Schools, and Versailles Exempted Schools. The Greenville City School District was added to the program in 2013.

*Responsible entity for drop-off program:* The Darke County Solid Waste Management District is responsible for funding the bins and coordinating the program. Rumpke provides the bins and the service. The school districts are very involved in managing and implementing the recycling programs in the schools.

*Service area benefit:* The school districts benefit. Reducing waste for disposal save money. The Solid Waste District and the community benefit because the school recycling program allows students to actively participate in recycling from kindergarten through high school in addition to being educated about recycling in the classroom.

*Materials to be recycled:* The drop-off bins accept all the materials that are collected by Rumpke, but the primary materials that are recycled are paper and cardboard.

Date of Implementation: Ongoing throughout the planning period.

Future recovery rates: Recycling from the school bins is not measured separately, it is mixed with recycling from other institutional and commercial sources. Projected recovery rates will be at the end of this section on commercial and institutional recycling.

#### **5. The Darke County Government Recycling Program**

The Darke County government agency recycling program collects ferrous and non-ferrous metals, mixed paper, corrugated cardboard, plastic #1 and #2, and wood and other recyclable items from county government facilities and operations including offices and maintenance facilities. Most of the material that is collected is included in the commercial recycling amount reported by the Rumpke MRF.

Responsible entity: The Darke County Solid Waste Management District continues to promote the program within Darke County government, but county maintenance staff oversee the day to day implementation of the program. It has become part of standard operations. The various agencies report the quantities of material that are recycled through recyclers other than Rumpke directly to the District staff.

Service area benefit: Darke County government agencies.

Materials to be recycled: All of the materials that are normally accepted by Rumpke, all sorts of scrap metal, lead acid batteries and used motor oil.

Date of Implementation: Ongoing throughout the planning period.

Future recovery rates: Projected recovery rates will be at the end of this section on commercial and institutional recycling.

The following are programs in which the District has a keen interest because they contribute to the overall residential/commercial recycling rate. However, the District has no direct relationship to these programs. They are implemented by the private sector.

#### ***6. The Rumpke paper drop-off in central Greenville***

Rumpke maintains a drop-off for all types of paper and cardboard in central Greenville at a location that is convenient for small businesses and government offices to drop-off all types of paper and cardboard. The drop-off is available 24 hours a day, seven days a week. There is no cost for using the drop-off and there is no charge to the District for this service.

Responsible entity: Rumpke and the participating businesses

Service area of benefit: The businesses and institutions in central Greenville.

Materials to be recycled: The bulk of the materials collected at this site is office paper, mixed paper and corrugated cardboard.

Date of implementation: On-going throughout the planning period.

Future recovery rates: Future recycling will be discussed at the end of this section on commercial recycling.

#### ***7. Rumpke Recycling Materials Recovery Facility***

The Rumpke Material Recovery Facility in Dayton is an important component of the curbside, drop-off and commercial drop-off recycling programs in Darke County. The material that is collected through Rumpke's many programs in the District is either transported directly to this facility for processing or is dropped at the Rumpke Greenville Facility to be consolidated and transported to Dayton for processing. The Dayton material recovery facility has the equipment necessary to sort and process the materials to meet the needs of the markets.

Although the District is confident that this facility will continue to operate and have the capacity to provide the types of sorting, processing and marketing services that are currently offered, the District

understands that there is always a possibility that the services offered by private sector providers can change. Should there be evidence that the services offered by Rumpke will no longer be available, the District will immediately seek bids from other service providers to maintain the District drop-off program and will consult with municipal recycling programs to assure that the recycling programs that are mandatory parts of this Plan continue.

Responsible entity: Rumpke

Service area of benefit: Darke County Solid Waste Management District

Materials to be recycled: All of the materials referred to in this Plan as the "Rumpke mix."

Date of implementation: On-going throughout the planning period.

Future recovery rates: See Future Recovery Rate for Residential Recycling, Commercial Recycling and Industrial Recycling.

#### ***8. Self-reported commercial recycling and commercial recycling through MRF's and internal supply chains***

This commercial recycling is accomplished by large and small wholesale, retail, and service businesses, and non-profit organizations in the District. These businesses are actively involved in recycling materials recovered from their waste without any specific intervention by the District. The businesses voluntarily maintain records of the amount recycled and report to the District. The reporting businesses worked with a number of waste collectors and recyclers. Some delivered the material to a recycling location and others utilized collection services. Many national and regional retail and wholesale businesses set up recycling programs which utilize internal company supply chains and/or regional recycling contracts.

Responsible entity: The individual business or organization is primarily responsible for the program. The District's responsibility is to provide information and technical assistance when needed and to keep in contact with businesses to gather information about commercial recycling programs including data about the amount recycled. The District will continue to make businesses aware of the services that the District provides. The District acknowledges the value of the assistance that Ohio EPA has provided in collecting recycling data from material recovery facilities and from national and regional "chain" stores and reporting that data back to the District. This reporting program has been very helpful in retrieving data that had not previously been available to the District.

Service area benefit: The greatest benefit is to the business or institution that recycles.

Materials to be recycled: The materials that are recycled will vary depending on the waste stream that the business generates.

Date of Implementation: Ongoing throughout the planning period.

Future recovery rates: Projected recovery rates will be at the end of this section on commercial and institutional recycling.

**9. Commercial and industrial recycling through in-district and out-of-district private scrap yards and brokers**

The private recyclers that receive materials from the District are listed in Table III-5. The one In-district scrap yard, and several out-of-district scrap yards/recyclers, particularly Ohio Recycling, in Chickasaw, Ohio, and Richmond Recycling in Indiana, receive material from residential, commercial, and industrial sources. Most of the other scrap yards listed in table III-5 receive some commercial scrap but deal primarily in industrial and demolition scrap.

The Darke County Solid Waste Management District will continue to rely on private sector providers for material recovery services and for scrap processing throughout the planning period. No specific service provider is necessary for the implementation of this Plan. The District is confident that there will continue to be enough materials sorting and processing capacity within a reasonable hauling distance of the District to supply needed services in a competitive environment.

Responsible entity: Private scrap yards and the commercial business or industry that has the scrap to be recycled are the responsible parties. The District appreciates the important contribution made by private scrap yards in diverting recyclable material from disposal. Private scrap yards attract the materials that have monetary value. The District will continue to maintain a list of private recyclers which includes the materials accepted, location, business hours, and other pertinent information. The benefit, including in most cases payment for the recyclables, goes to the individuals and businesses that recycle materials.

Service area of benefit: The entire District.

Materials to be recycled: The type of material that is recycled depends on the business or institution. In the District, retail and wholesale businesses recycle mostly office paper and mixed paper, corrugated cardboard and wooden pallets. The implementation for Goal #1 for the commercial sector includes the following:

“The SWMD must . . . demonstrate that generators in the commercial/institutional [sector] have access to recycling or other alternative management methods for at least five of the materials identified as highly amenable to recovery from solid waste generated by the commercial/industrial sector”

The five “highly amenable” materials that are selected to meet Goal #1 in this plan and which are addressed primarily by private scrap yards and recyclers are: corrugated cardboard, office paper,

aluminum containers, wood packaging, and lead acid batteries. The demonstration of compliance with Goal #1 for the commercial/institutional sector is included in Chapter VII of this Plan.

Date of implementation: On-going throughout the planning period.

***Future waste reduction projections for commercial recycling:***

The District provides some educational and technical support for commercial recycling and encourages small businesses that generate small quantities of recyclables to use the District drop-boxes, the Rumpke drop-boxes or recycle with one of the non-profit organizations in the community. However, the District's influence is insignificant compared to other factors that impact commercial recycling.

It has already been noted that in 2012, the District's residential/commercial recycling rate spiked to an all-time high because one large commercial generator reported an unusually large amount of recycling. One large business opening or closing or reporting or not reporting can make a significant difference in a rural county. Looking back at the reported residential/commercial recycling amounts for the past eight years (Table IV-8), there was a definite increase in reported recycling in 2010. 2010 was the first year in which a significant amount of data from MFRs and tire recycling was made available to the District by Ohio EPA. Although there were other small gains in commercial recycling that year, the improved reporting made a big difference.

The District believes that reported commercial recycling for 2012 was skewed by the unusual amount of wood recycling from one business. This may not be repeated. For the purpose of projecting future commercial recycling, it is more realistic to use an adjusted amount of commercial recycling as a starting point.<sup>6</sup> Therefore, we are using the amount of wood recycling shown in Table IV-10.B. to recalculate commercial recycling for 2012 for projection purposes only. The amount of commercial recycling for 2012 will not be changed in any of the tables used in this plan. The starting point for projections will be 9,583 tons in 2015 unless 2013 commercial recycling data clearly indicates that a revision should be made in the final District Plan. The calculation for this figure is shown in the table titled, Reported Residential/Commercial Recycling, 2012 Data which is included in Appendix F of this Plan.

The estimated recycling rates for each of the materials in the residential/commercial waste stream come close to, meet or exceed the national recycling rates with the exception of paper and plastic. Some of this "missing" paper and plastic may be hidden in the "other" category which includes commingled material. It is also quite possible that the percentage of paper in the waste stream in Darke County is somewhat less than in urban areas where there are more and larger daily newspapers (although newspapers are being downsized everywhere) and more large commercial and institutional administrative centers. The District can continue to promote recycling within the business

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<sup>6</sup> By the time this Plan is revised for public review and comment, the District will have commercial recycling data for 2013. The commercial recycling projections can be revised if the higher amount of recycling reported for 2012 is shown to be sustained in 2013.



community, but large gains in commercial recycling are unlikely. If anything, reported recycling could decrease if businesses implement aggressive waste reduction programs. For instance, when reusable shipping containers replace corrugated boxes, recycling tonnages decrease. The decrease is only offset if the waste reduction is reported, and then only in the first year of program implementation. **For these reasons, we have projected only a 1% increase in commercial recycling. .2% per year, in commercial recycling in the first five year segment of the planning period starting with 2015 and no increase in the rest of the planning period.**

The calculation is shown in Table V-5. The District is projecting the rate (not the amount recycled) for 2013, and 2014 will be the same as 2012. If the rate for 2013, when it is calculated, is significantly different than the rate for 2012, this draft Plan may be revised before the final Plan is submitted for public review and comment.

### **Composting and Yard Waste Diversion**

#### ***10. Yard waste diversion through yard waste composting and the field spreading of leaves***

The yard waste management and composting programs and facilities used in the reference year are listed on Table III-6.

Greenville and Versailles have yard waste collection programs which start in early spring and continue through autumn as part of the regular residential waste collection services. Yard waste from Greenville is collected by Rumpke. In 2012, the materials were taken to Fitzwater Tree and Lawn Care for processing. In Versailles, yard waste is collected by the village and is composted at the village's registered Class 4 Composting Facility.

In 2012, the following villages reported that leaves were collected in the autumn and spread them on area farm fields: Ansonia, Arcanum, Gettysburg, New Madison, Palestine, Union City, and Wayne Lakes Village. Wayne Lakes operates a drop-off to which residents bring yard waste. Wayne Lakes chips the material on-site, and if is used for landscaping.

The following registered compost facilities reported receiving yard waste from the District in 2012. Although there is no way to trace the origin of the yard waste that was not delivered by a municipal collection program, the District assumes that the reported yard waste was delivered by residents, lawn care and landscaping companies, tree care companies, and excavators.

- Fitzwater Tree & Lawn Care-Registered Class 4 facility (In-district)
- Fresh Air Farms-Registered Class 3 facility (In-district)
- Versailles Village-Registered Class 4 facility (In-district)
- Brookside Wood Products- -Registered Class 4 facility (Out-of-district)

Responsible entity: Local governments are responsible for programs for separate collections of yard waste and/or leaves. Local governments are responsible for programs for separate collections of yard

waste and/or leaves. The District anticipates that at least one privately operated yard waste composting facility will be available to the public throughout the entire planning period.

It is the responsibility of residents to collect and manage their own yard waste utilizing the public and private services that are available or by backyard composting. The District realizes that residents in rural areas often yard waste on their own gardens or fields or make arrangement with neighbors for field spreading of yards waste. This practice is an acceptable diversion method as long as only yard waste, free food waste, plastic bags, paper, and other materials that may attract pests or constitute litter are not included.

The District's education and awareness program will provide :

- a. Public education through brochures, the website, displays, and other communications;
- b. Continue to encourage local governments to provide yard waste collection or to divert leaves through composting and field spreading;
- c. Will make information readily available about private sector facilities that except yard waste from the public.

Materials recycled: Yard waste including grass clippings, garden debris, leaves, and brush.

Service area: The service area is the city or village for municipal collection programs. The entire county is the service area for yard waste management education programs. (Yard waste and composting education will be discussed later in this Chapter.) At least one yard waste composting facility, private or publicly owned, will be available to accept yard waste from residents anywhere in the county.

Date of implementation: Yard waste composting and field spreading of leaves are ongoing programs and will be continued throughout the planning period.

***Future waste reduction projections from yard waste composting and field spreading of leaves.***

The amount of diversion from yard waste composting has fluctuated over the years. Much of this fluctuation can probably be attributed to reporting. Some of the villages that field spread leaves have not always reported to the District. The amount reported in 2012 was higher than in the years immediately preceding and much of that increase is attributable to improved reporting. The number of villages that turned in surveys with useable information was higher than in previous years. It also should be noted that the amount of reported yard waste diversion in the District is significantly higher than the national average. **For this reason, the District is not projected an increase in the actual reported amount during the planning period. However, because the total amount of waste generation is expected to decrease, the percentage of reduction due to yard waste diversion will increase during the planning period.** See Table V-5.

**Goal #2 - by the year 2000, a) 25 percent waste reduction rate for the residential/commercial sector and b) 50 percent waste reduction for the industrial sector.**

### **Industrial Recycling**

The calculated industrial recycling rate for 2012 was 84.7%. The District has exceeded a 50% industrial recycling rate each year since the District started calculating the industrial recycling rate. Virtually all industrial recycling is accomplished by the initiative of Darke County manufacturers working with private waste haulers/recyclers and private scrap yards. The same services and facilities that were discussed under residential/commercial recycling. The District's responsibilities for industrial recycling are focused on promotion, education, and technical assistance and will be discussed during the discussion of programs that satisfy the requirements of Goals #3 and #4 which follows.

**Goal #3 - Provide information and technical assistance on source reduction to the residential, commercial and industrial sectors.**

**Goal #4 - Provide information and technical assistance on recycling, reuse and composting opportunities to the residential, commercial and industrial sectors.**

Goal #3 and #4 will be considered together because the same basic strategies and programs will deliver both waste reduction and recycling education and assistance. This discussion will first address strategies aimed primarily at the residential sector. The programs aimed at the commercial sector will be included with the industrial sector discussion. Although commercial and manufacturing businesses are different, most manufacturers have office and sales operations which have, as far as waste generation and waste management are concerned, much in common with commercial businesses. The same strategies and staff assignments will usually address both business and industry.

Many of the strategies listed below will be implemented by District staff. The District has two full-time employees—a District Director and a Program Assistant. The position descriptions for District staff are included in Appendix J. The District is committed to implementing the strategies described in this plan. The number of District staff and job descriptions may vary as needed to assure that District programs are implemented effectively and efficiently.

The District started out with a strong community education program called "Model Community". The program involved businesses, industries, and individual citizens in an intensive program of training, planning, and guided waste reduction and recycling program implementation. Although the District no longer operates its commercial and industrial waste reduction programs under the Model Community name, the District is still grounded in the "Model Community" principle of continuous evaluation and improvement. The District surveys all area manufacturers and many businesses including some of the original Model Community industries and businesses as part of the District's data collection to complete the Annual District Report for Ohio EPA.

**11. Programs for residential waste reduction, recycling, reuse and composting information, education and technical assistance.**

The Darke County Solid Waste Management District feels that the District information, education and technical assistance program has been successful and that the success is reflected in the District's recycling rates. The District plans to continue the programs initiated in previous plans updating the themes, information and delivery methods as appropriate to keep the message fresh and relevant. The District will intentionally and specifically focus on strategies intended to increase participation in existing residential and commercial recycling programs to increase participation and to increase the amount of material that is recycled by each participating resident or businesses.

The following programs are aimed at adult residents. In each year of the planning period, the District will implement at least five of the following public education measures. The District will select the approaches to be used carefully to support the intention of increasing participation. It is anticipated that in each year of the planning period the District will maintain the website which is listed as "g" below as one of the five required programs. Minimum requirements for each program element are listed. Please note that these are minimum requirements.

District programs normally exceed the required level of activity.

- a. Presentations by the Darke County District staff and volunteers to area business, civic and service organizations regarding recycling and waste prevention in the home with emphasis on why, where, and how to utilize available curbside and drop-off programs. These programs may also include household hazardous waste (HHW) reduction and yard waste composting. Minimum requirement: 5 presentations and/or a total audience of at least 100. Reporting: The District will report the number of presentations, the total audience reached and the topic/s covered in the Annual District Report.
- b. Provide and staff a display promoting waste reduction and recycling, HHW management, and/or "buy-recycled" for at least one public event which attracts a broad cross section of the County's population. Examples of appropriate events are the Darke County Fair or the Home Show. The District will report the event attended, the topics addressed by the display, and the type and amount of materials distributed in the Annual District Report.
- c. The District maintains a resource library that includes information on all aspects of waste management, source reduction, recycling, composting, HHW management, and buying recycled. The library includes books, videos, and brochures. There are resources suitable for use by adults and there are resources that can be used with children and youth. District staff can also provide advice on locating additional resources. The library is available to local officials, business and industry, teachers and youth leaders and the general public. The District will continue to add resources to assure that the library contains up-to-date information. The District will report on new resources and the number of use occasions in the Annual District Report.

d. The District uses both publicity and advertising to educate the public about waste reduction and recycling. The minimum requirement will be 10 print communication occasions (newspaper articles and/or paid advertising) in newspapers of general circulation and at least one radio campaign (a series of radio spots on a selected topic on one or more radio stations) each year. The District will report the number of articles and advertisements published and the number of radio spots broadcast in the Annual District Report. The District will pay particular attention to utilizing these media opportunities to promote participation in existing programs. The District will utilize partnerships with local governments, and private waste and recycling service providers to broaden the scope of the District's outreach efforts. Possible partnerships might include the placement of educational and promotional materials in utility billing, and the inclusion of recycling messages in business advertising.

e. The District has prepared and distributed flyers and brochures on a variety of topics to educate the public about recycling, waste management, waste reduction, yard waste composting, and HHW management. The production method, the number of publications printed, and other details vary depending on the use of the publication. For instance, in the past the District designed and printed a full color, glossy brochure and distributed it to all residents of Greenville to assist the city in educating the public about the curbside recycling program. If a new curbside program is to be initiated or if a municipality with curbside recycling launches a major campaign to increase participation, the District will work with the municipality or township to design and implement an appropriate education and promotion campaign which may, among other possible actions, include printing enough quality educational materials to distribute to every household. Other brochures, like those on yard waste composting, are published and copied "in house" in small quantities as needed. The minimum requirement will be that the District has on hand at least one up-to-date information source in quantities adequate for public distribution on the following topics: where, when and how to recycle and yard waste composting. The District will report a list of the types of materials distributed and the approximate numbers distributed in the Annual District Report.

f. The District will hold at least one special promotion or event each year which will focus the attention of the general public or a targeted segment of the public (example: school age youth or small business owners/manager) on a specific area or waste reduction or recycling. The promotion may also, if appropriate, include the collection of targeted materials for recycling. For example, in 2012, the District held a special public education and recycling collection event for appliances, tires, and electronics and used the events as center pieces for public education through feature stories and interviews on recycling difficult to manage materials.

g. The District maintains a website which will provide information about District services and recycling opportunities. The site is updated frequently so that it provides a comprehensive calendar of District events and provides up-to-date information on how, where, and when to recycle virtually all of the materials that are generated by residential, commercial and industrial waste generators.

Date of implementation: On-going, each year of the planning period. Implementation of at least 5 of the listed activities including continuous maintenance of the website is a mandatory part of this Plan.

Who will implement: District staff.

Audience: The residents of the District. Specific education and information campaigns may support specific local waste reduction and recycling initiatives. For example, the District may assist a specific city or village with public education and promotion related to starting or revitalizing a curbside or drop-off recycling program.

Projected waste reduction: No specific amount of waste reduction will be attributed to the education program. It supports all waste reduction and recycling efforts.

***12. Programs for residential waste reduction, recycling, reuse and composting information, education for school age youth.***

In keeping with the Model Community philosophy of educating the educator, the District primarily relies on schools and youth organizations to deliver waste management education to children. The District has encouraged and facilitated this activity by providing teacher training through workshops and seminars and by providing education resources including curriculum guides. The District maintains a resource center at the District office which provides a number of resources for use by teachers in classrooms.

Since many of the District's teachers have already participated in District sponsored training programs and have incorporated waste reduction, recycling, and other solid waste related topics in the classroom curriculum, the District does not feel it is necessary or productive to continuously repeat training programs. The District has found that teachers and schools are reluctant to devote time to "outside" programs unless they are directly related to the curriculum requirements and learning outcomes on which student proficiency will be tested. However, the District will provide additional programs for teachers if a specific need is identified or the opportunity arises to provide an outstanding program. This will be an optional part of the plan. Special programs or seminars for teachers may be provided in place of or in addition to the special public education events listed in 11.f. above.

Date of implementation: Any time during the planning period.

Who will implement: Solid Waste District staff with the assistance of state agencies, teacher trainers, and other solid waste districts as appropriate.

Audience: Teachers and adult youth leaders.

Measurement method: The District will report the number and type of training events and the number of adults trained.

***13. Commercial and industrial waste reduction, recycling, reuse and composting information, education and technical assistance.***

The District will continue efforts to educate business, industry, and institutions and to engage them in improving their waste management and waste reduction programs. One of the primary resources for continuing business and industry education is the Environmental Council. The Council, for which the District provides staff support, is a voluntary membership organization the agenda of which is directed by the participants.

At a minimum, the District will provide the following programs for business and industry:

- a. Technical assistance for business and industry. District staff will continue to provide information and assistance to business and industry on waste reduction and recycling issues. District staff will serve as a resource link with other agencies and experts in the field. The District will maintain a list of markets for commercial and industrial recyclables. The District website and the annual commercial and industrial surveys will be the primary tools for communicating with business and industry.
- b. Continue contact with business and industry through the annual waste reduction and recycling surveys. Use the surveys to identify needs and opportunities for additional assistance or training. Report total waste reduction and recycling in the Annual District Report. Also, report findings of need for assistance and training and the steps implemented or planned to meet identified needs.
- c. The District may host an educational meeting, seminar, or information sharing session for all or a segment of the Darke County business community at any time during the planning period. In addition, the District Director will seek appropriate opportunities to speak to business groups such as the Chamber of Commerce regarding any topic related to the mission and/or services provided by the District. This activity is not required in any specific year of the planning period.

Date of implementation: The business/industry program will be on-going throughout the entire planning period.

Who will implement: Individual businesses, institutions and industries with the District providing the services listed above on an as needed basis.

Audience: The primary audience is business to which the benefit will accrue.

Materials designated: The District will encourage industries to recycle any material for which there is a market. The specific materials designated for business recycling in this plan are corrugated cardboard, office paper, aluminum containers, wood packaging, and lead acid batteries.

Measurement method: The District will annually survey businesses, industries, recyclers, and waste haulers to gain information about the amount of industrial material that is being reduced or recycled. Business and industry surveys will be a mechanism for learning what types of assistance and services businesses need. The District will record and report the activities of the Environmental Council and

will report the number of requests for technical assistance and information for which a response is given.

Waste reduction: No specific amount of recycling is anticipated as a result of business and industry waste reduction and recycling education and technical assistance programs. The activities listed here are designed to support the actual recycling efforts.

***Future waste reduction projections industrial recycling:***

The future industrial recycling rates are just as difficult to project as is industrial waste generation. Although Darke County still has an active manufacturing base, the addition or loss of just one major industrial facility could have a substantial impact on both waste generation and recycling. Although the District plans to remain active in providing information and technical assistance to industry, the impact that the District can have on industrial recycling and waste reduction is far outweighed by other factors. Therefore, the District is projecting the amount industrial waste reduction and recycling to remain stable as a percentage of overall industrial waste generation. If total industrial waste generation declines as projected, this will result in a decrease in the amount of reported recycling.

***Goal #5 - Develop strategies for managing tires and household hazardous waste (HHW).***

Tires: The Scrap Tire Management Council estimates that on average one scrap tire is generated annually for each person in the U. S. population. The average car passenger tire is approximately 20 pounds.

As was the case when the District's present Plan was approved, most waste tires seem to be flowing smoothly through the collection system provided by the tire dealers who sell new tires. The illegal dumping or storage of waste tires is not a significant problem in Darke County. When there is a tire dumping incident, the District works with local governments (city, village, or township) to assure that the tires are cleaned-up promptly. The District reimburses the local government for the tire disposal fee charged at the Greenville Recycling and Transfer Facility. The Greenville Recycling and Transfer Facility accepts waste tires from the public. The District will continue to publish legitimate tire recycling and disposal options in District publications.

***14. Tire management strategy.***

- a. Assure that there is at least one facility or location that will accept tires from the public for legal recycling or disposal at a reasonable cost. At the present time the Rumpke Greenville Recycling and Transfer Facility provides this service.
- b. Provide information to the public about legal tire recycling and disposal options.
- c. Provide reimbursement to local governments for the cost of disposing of cleaned-up tires and or provide a tire recycling event at which passenger car tires may be recycled for free. The number of



tires accepted by household may be limited. The limit will not apply to local governments that are recycling tires collected as a result of a cleanup of illegally dumped material.

The District will report on tire disposal options and will list the type of informational materials that have been distributed about tire recycling and disposal in the Annual District Report. The District may hold tire collection and recycling events from time to time. These events can be used as a focus for public education about the appropriate management of spent tires and offer the public a chance to get rid of any old tires that they may have stored. The 2012 Tire Recycling Day was discussed earlier in this Chapter under Residential Recycling.

### **15. Household Hazardous Waste Management (HHW)**

The reduction of the use of toxic materials was one of the four main themes of the Model Community program. The District continues to emphasize reducing and properly managing toxic materials not only by business and industry but also in the home. District staff includes HHW management in public presentations whenever possible. Literature about reducing and properly disposing of HHW is distributed at public display and events. Information about HHW management is posted on the District website.

The District is committed to providing the following as a minimum level of HHW programming:

- a. District staff will answer inquiries from the public about replacements for hazardous products used in the home and about environmentally acceptable disposal options for household hazardous products.
- b. The District will include HHW in public presentation, displays, literature distribution and publicity and advertising. The District will report the occasions for HHW education in the Annual District Report.

In addition, the District may sponsor the following programs:

- c. The District plans to continue to sponsor a household battery collection. Containers for household batteries will be distributed at convenient locations around the county for recycling. The District will collect the batteries and send them to a recycler for processing. This program was initiated in 2006 and plans to continue throughout the planning period. However, the District Board of Directors may suspend the program for one or more years or may discontinue the program in the event 1) that the District Board of Directors determines that the private sector is providing adequate recycling opportunities for household batteries so that the program is no longer needed, or 2) the District does not have adequate funds to continue the program without jeopardizing programs that are mandatory programs in this Plan.
- d. The District plans to sponsor an electronic only collection event at least every other year unless the District Board of Directors suspends or discontinues the program because 1) the event is no longer needed because there are other legitimate recycling opportunities for electronics, 2) the District does

not have adequate funds to continue the program without jeopardizing programs that are mandatory programs in this Plan.

e. The District may sponsor a HHW collection event in any year of the planning period if funds are available. The District held the first HHW collection event in 2010 and has held an event every year since then. An event is planned for 2014. Although the District hopes to continue to hold an annual event, the event is optional and is dependent upon the availability of adequate funding after mandatory programs are funded.

Strategies for managing other materials restricted from landfill disposal:

#### ***16. Lead acid batteries***

The private enterprise system for collecting batteries seems to be working smoothly. Virtually all area automotive supply stores and repair shops accept old batteries in exchange when new batteries are purchased and some use a deposit system. Several area scrap recyclers buy batteries. Unless conditions change, no intervention is planned. The District will continue to include opportunities to recycle lead acid batteries in the recycling information provided to the public.

The District reports the amount (in tons) of lead acid batteries from the District reported as recycled in the Annual District Report. We believe that recycling rate for lead acid batteries is approximately the same as it is nationally, 95%. However, we doubt that the reporting system will ever be thorough enough to substantiate that figure.

#### ***17. Yard waste diversion education***

Yard waste composting and field spreading were discussed earlier in this Chapter under residential recycling. Although the District knows that there will always be some yard waste, the District believes that the most effective method for managing the grass portion of yard waste is to promote "Don't Bag It."

The following are the District's planned strategies for yard waste:

- a. Provide public education regarding yard waste diversion methods through brochures, composting manuals, newsletters and other District communications and publicize the availability of registered composting facilities at which the public may deposit yard waste.
- b. Continue separate yard waste collection in Greenville, Arcanum, and Versailles and collection and field spreading of fall leaves in villages. Encourage additional villages and townships to collect leaves for composting or field spreading.
- c. The District has relied on private sector yard waste composting facilities to manage the yard waste generated in municipalities and townships that do not have a composting facility. The District is quite

confident that the private sector will continue to fill this need. Therefore the District is not planning on developing or maintaining a yard waste composting facility during the planning period.

Date of implementation: Ongoing through the entire planning period.

Who will implement: Separate collection will be implemented by individual local governments. The District will provide information and education to encourage “don’t bag it” and yard waste composting.

Audience: The primary audience is residential waste generators.

Materials designated: Yard waste—leaves, grass, brush, and other vegetative debris.

Measurement method: The District will annually survey composting facilities and local governments to get reports of the amount of yard waste collected

***Goal #6 - Evaluate the feasibility of incorporating economic incentives into source reduction and recycling programs.***

The 2001 State Plan includes the requirement that districts evaluate the use of economic incentives to encourage participation in recycling. Economic incentives are the primary drivers of commercial and industrial recycling. Businesses and industry can save money and/or generate revenue by diverting recyclable materials from the waste stream. They save money on disposal costs and, in some cases, are paid for the materials that are recycled.

Volume or weight based rates for residential waste collection, sometimes called “pay-as-you-throw,” when paired with free recycling collection extends the same type of economic incentive to the residential waste generator. The residential customer can save money by moving designated material from the waste container to the recycling container.

***18. Pay-as-you-throw (PAYT)***

Greenville and the Village of Palestine have pay-as-you throw options available for residential waste service. Customers can pay by the bag. However, both of these programs also include the option of a large fixed price container which is the most popular option. In both communities, curbside recycling is included at no additional charge.

The District will continue to encourage communities to change to pay-as-you throw particularly in conjunction with curbside recycling. See the section on curbside recycling, “District responsibility for curbside recycling” Chapter V, pages 11 and 12 for District actions which may be used to promote additional pay as you throw programs,

**Goal #7 - Prepare a market development strategy (optional)**

The District understands that strong markets pull recyclables through the system. Without markets recycling collection efforts are futile.

**19. Market development strategy**

- a. The District will assist residents, business and industry in locating information on recycled products.
- b. The Solid Waste District will purchase and use recycled content products whenever suitable products are available at competitive prices and will encourage other county agencies, local governments and private businesses to "buy recycled."
- c. The District will include "buy-recycled" in the District's public education programs.
- d. "Buy recycled" will be integrated into business and industry waste reduction and recycling programs and education materials whenever appropriate.

Date of implementation: Ongoing through the entire planning period.

Who will implement: The District will provide the information and assistance listed.

Audience: The audience includes residents, businesses, industry, organization and local governments.

Measurement method: The District will report and record the information distributed and the number and types of presentations and programs that include a substantial emphasis on "buy-recycled."

Waste reduction: No specific amount of waste reduction can be credited to this program.

**Other District Programs Not Directed at Specific Goals**

The following are activities, programs and facilities that the District may utilize during the planning period. None of the listed programs is necessary to meet a specific goal of the State Solid Waste Management Plan or of this Plan. Therefore, all of these programs are optional and will be utilized by the District if the District believes there is a need for the program or activity and if the funds are available without jeopardizing the current or future funding of programs and services that are required by this Plan.

**20. Darke County Health Department:** The District may provide funding for the Darke County Health Department for the monitoring of solid waste related facilities and services and for the enforcement of solid waste related violations. In the reference year 2012 and continuing, the relationship

between the District and the Health Department is clearly defined in a written agreement which is signed by both entities. The District intends to continue an agreement with the DCGHD for the services that were provided in the reference year and which have been continued through the duration of the present Plan.

The Contract stipulates that the Darke County General Health District (DCGHD) implement and maintain a coordinated solid waste enforcement program for enforcement of solid waste laws, rules, orders, terms and conditions of permits, and licenses. DCGHD's will provide assistance for the enforcement of the SWD's rules, including but not limited to, enforcement of the SWD's designation of solid waste facilities pursuant to R.C. 343.01(1)(2) requiring all solid waste generated within the SWD to be delivered to designated solid waste facilities only.

The specific elements of the monitoring and enforcement program include:

- licensing solid waste facilities within the SWD;
- regular inspections of the Rumpke Construction and Demolition Debris Landfill;
- unannounced inspections of all other solid waste construction and demolition debris facilities and composting facilities within the SWD;
- investigate all solid waste related complaints;
- investigate any allegations of violations of SWD rules, immediately report any suspected violation to the SWD, and cooperate in the investigation and pursuit of enforcement action against alleged violators.

The District requires the submission of daily logs and periodic reports that include a record of inspections and investigations, and the results of the inspections and investigations. In 2012, 22 investigations and 33 inspections were reported.

The DCGHD conducts regular inspections of collection bins for recyclable paper and cardboard placed by the SWD in Greenville, and, when necessary conducts inspections of collection bins for commingled recyclable materials to assure compliance with all state, local and SWD laws, rules and regulations and to assure that the collection sites are not constituting a public nuisance or a hazard detrimental to the public health or the environment.

The DCGHD provides a program for registration of solid waste haulers operating within the SWD and conducts regular inspections of waste hauler activities within the SWD to assure hauler compliance with state, local and SWD requirements, including compliance with SWD rules.

The DCGHD maintains a program for the investigation and surveillance of illegal dumpsites and illegal littering which includes, but is not limited to, taking complaints, gathering evidence and completing reports in a timely manner.

**21. Litter Clean-up:** The District may provide financial support, planning, coordination and/or supervision for the purpose of cleaning up litter or illegal dumping on public property. As of 2014, the

District is providing funds to the Darke County Common Pleas Court to utilize persons assigned to a crew by the Court's offender community service program to complete agreed upon clean-up projects. The District provides support a supervisor, fuel and supplies. The court assigns workers and pays a portion of the cost of the program. A contract between the District and the Court sets out the responsibilities of both parties. The District budget (Chapter VIII) includes funding for the continuation of this program until 2021. However, this activity is not a mandatory part of the Plan and the District Board of Directors may suspend or discontinue the program, if they determine that the cooperating agency is no longer able to administer the program effectively, or the District does not have adequate funds to continue the program without jeopardizing the current or future funding of programs and services that are required by this Plan.

***22. Private Sector Involvement and Incorporation of Existing Waste Management and Recycling Businesses in the Programs and Services Needed to Implement This Plan***

Virtually all of the waste and recycling collection and processing programs and the yard waste composting programs that are included in this plan are currently being provided through private sector service providers. It is the intention of the Darke County Solid Waste Management District to maintain private sector involvement in the waste management system and to obtain the maximum private sector involvement in implementation of the recycling programs identified in this plan.

This plan continues to incorporate existing recycling programs and businesses to provide the recycling opportunities required by this plan in so far as the existing programs and businesses intend to continue to provide these services.

Table V-5 and Table V-6 show the projected amounts of waste to be diverted from disposal through recycling in each year of the planning period. Although the District is aware that generators in the residential, commercial and industrial sectors are reducing waste, no projections have been made for waste reduction because waste reduction is often difficult to verify and measure.

Table V-5. Residential Commercial Waste Reduction Strategies

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	Reference Year 2012	2015	2016	2017	2018	2019
	RESIDENTIAL RECYCLING									
1	Existing Residential Curbside Recycling									
	1	Greenville City Curbside	Primarily Residential	See Residential Calculation Below						
	2	Arcanum Village Curbside								
	3	Palestine Village								
	4	Versailles Village Curbside								
	New Residential Curbside									
	5	New Curbside (If implemented)	Residential	See Below						
2.a.	Darke Co. SWMD Drop-off Recycling									
	6	Ansonia/Brown Twp.	Primarily Residential	See Residential Calculation Below						
	7	Arcanum/Twin Twp.								
	8	Butler Twp.								
	9	Gettysburg/Adams Twp.								
	10	Hollansburg/Harrison Twps.								
	11	New Madison Village								
	12	New Weston/ Allen Twp.								
	13	North Star/Wabash Twp.								
	14	Palestine Village								
	15	Pitsburg/Monroe Twp.								
	16	Union City/Jackson Twp.								
	17	Wayne Twp.								
	18	Village of Wayne Lakes								
2.b.	Multi-material drop-off opportunities provided by others									
	19	Rumpke Transfer Facility Drop-off	Res/Com	See Residential Calculation Below						
	20	Versailles	Res/Com							
2.c	21	Drop-offs for selected materials sponsored by various organizations	Residential/ commercial	See Residential Calculation Below						
3	District collection events for difficult to manage materials									
	22	Appliance Recycling								
	23	Electronics Recycling								

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	Reference Year 2012	2015	2016	2017	2018	2019
	24	Paper Shred Day								
	25	Tire Collection								
	26	Dry Cell Battery Collection								
	Calculation of <b>residential recycling</b> increase: 4.6% of total waste generation in 2012 with a .2% increase starting in 2015 and continuing through 2012. .1% each year thereafter.				2,679	2,470	2,563	2,657	2,749	2,841
	Percent of total res/com waste generation				4.6%	4.8%	5.0%	5.2%	5.4%	5.6%
	<b>COMMERCIAL AND INSTITUTIONAL RECYCLING</b>									
4	27	School Recycling Program	Institutional	See Commercial/ Institutional Calculation Below						
5	28	Darke Co. Gov't. Recycling	Institutional							
6	29	Rumpke Paper Drop-off	Res/Com and Industrial							
7	30	Rumpke MRF	Industrial							
8	31	Self-reported commercial recycling	Commercial							
9	32	Residential, comemrcial and industrial recycling through provate scrap yards	Res/Com	To the extent possible. Only res/commercial is included in the calcuation below.						
	Calculation of <b>commercial recycling</b> : An amount of commercial recycling is use for 2012 is the actual amount. The projected commercial recycling in 2015 is 9,583 tons and is based on an adjusted amount for 2012. See the narrative on pages V-22-23. There is a .2% increase in the first five years of the Plan and no projected increase in the later years of the Plan.				16,693	9,583	9,652	9,720	9,787	9,854
	Percent of total res/com waste generation				28.7%	18.6%	18.8%	19.0%	19.2%	19.4%
	<b>COMPOSTING AND OTHER YARD WASTE DIVERSION</b>									
10	33	All yard waste porgrams	Residential							
	Calculation of <b>composting and yard waste diversion</b> based on actual 2012 amount.				5,760	5,760	5,760	5,760	5,760	5,760
	Percent of total res/com waste generation				9.9%	11.2%	11.2%	11.3%	11.3%	11.4%



Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	Reference Year 2012	2015	2016	2017	2018	2019
	<b>OTHER PROGRAMS THAT SUPPORT RESIDENTIAL/COMMERCIAL RECYCLING - not specific amount of reduction are attributed to these programs</b>									
11	34a-34g	Programs for residential waste reduction, recycling, reuse and composting information, education and technical assistance.								
12	35	Programs for residential waste reduction, recycling, reuse and composting information, education for school age youth.								
13	36a-36c	Commercial and industrial waste reduction, recycling, reuse and composting information, education and technical assistance.								
14	37a-37c	Tire management strategy. (Amount included above in residential and commercial)								
15	38a-38e	Household hazardous waste								
16	39	Lead acid battery recycling								
17	40a-40c	Yard waste diversion education								
18	41	Pay-as-you-throw								
19	42a-42d	Market development strategies								
	<b>Total Residential/Commercial Waste Generation</b>				58,254	51,462	51,281	51,099	50,918	50,736
	<b>Total Residential/Commercial Recycling/Composting/Diversion</b>				25,132	17,813	17,975	18,136	18,296	18,454
	<b>Percent Waste Reduction</b>				43.1%	34.6%	35.1%	35.5%	35.9%	36.4%
	2012 Percentage if 90% of the 7,900 tons of wood recycling from a single commercial source is subtracted from both the amount recycled and the amount of waste generated.				35.2%					

Table V-5. Residential Commercial Waste Reduction Strategies

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2020	2021	2022	2023	2024	2025
	RESIDENTIAL RECYCLING									
1	Existing Residential Curbside Recycling									
	1	Greenville City Curbside	Primarily Residential	See Residential Calculation Below						
	2	Arcanum Village Curbside								
	3	Palestine Village								
	4	Versailles Village Curbside								
	New Residential Curbside									
	5	New Curbside (If implemented)	Residential	See Below						
2.a.	Darke Co. SWMD Drop-off Recycling									
	6	Ansonia/Brown Twp.	Primarily Residential	See Residential Calculation Below						
	7	Arcanum/Twin Twp,								
	8	Butler Twp.								
	9	Gettysburg/Adams Twp.								
	10	Hollansburg/Harrison Twps.								
	11	New Madison Village								
	12	New Weston/ Allen Twp.								
	13	North Star/Wabash Twp.								
	14	Palestine Village								
	15	Pitsburg/Monroe Twp.								
	16	Union City/Jackson Twp.								
	17	Wayne Twp.								
	18	Village of Wayne Lakes								
2.b.	Multi-material drop-off opportunities provided by others									
	19	Rumpke Transfer Facility Drop-off	Res/Com	See Residential Calculation Below						
	20	Versailles	Res/Com							
2.c	21	Drop-offs for selected materials sponsored by various organizations	Residential/ commercial	See Residential Calculation Below						
3	District collection events for difficult to manage materials									
	22	Appliance Recycling								
	23	Electronics Recycling								

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2020	2021	2022	2023	2024	2025
	24	Paper Shred Day								
	25	Tire Collection								
	26	Dry Cell Battery Collection								
	Calculation of <b>residential recycling</b> increase: 4.6% of total waste generation in 2012 with a .2% increase starting in 2015 and continuing through 2012. .1% each year thereafter.				2,932	3,015	3,047	3,079	3,110	3,141
	Percent of total res/com waste generation				5.8%	6.0%	6.1%	6.2%	6.3%	6.4%
	<b>COMMERCIAL AND INSTITUTIONAL RECYCLING</b>									
4	27	School Recycling Program	Institutional	See Commercial/ Institutional Calculation Below						
5	28	Darke Co. Gov't. Recycling	Institutional							
6	29	Rumpke Paper Drop-off	Res/Com and Industrial							
7	30	Rumpke MRF	Industrial							
8	31	Self-reported commercial recycling	Commercial							
9	32	Residential, comemrcial and industrial recycling through provate scrap yards	Res/Com	To the extent possible. Only res/commercial is included in the calcuation below.						
	Calculation of <b>commercial recycling</b> : An amount of commercial recycling is use for 2012 is the actual amount. The projected commercial recycling in 2015 is 9,583 tons and is based on an adjusted amount for 2012. See the narrative on pages V-22-23. There is a .2% increase in the first five years of the Plan and no projected increase in the later years of the Plan.				9,920	9,862	9,804	9,746	9,688	9,630
	Percent of total res/com waste generation				19.6%	19.6%	19.6%	19.6%	19.6%	19.6%
	<b>COMPOSTING AND OTHER YARD WASTE DIVERSION</b>									
10	33	All yard waste porgrams	Residential							
	Calculation of <b>composting and yard waste diversion</b> based on actual 2012 amount.				5,760	5,760	5,760	5,760	5,760	5,760
	Percent of total res/com waste generation				11.4%	11.5%	11.5%	11.6%	11.7%	11.7%

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2020	2021	2022	2023	2024	2025
	<b>OTHER PROGRAMS THAT SUPPORT RESIDENTIAL/COMMERCIAL RECYCLING - not specific amount of reduction are attributed to these programs</b>									
11	34a-34g	Programs for residential waste reduction, recycling, reuse and composting information, education and technical assistance.								
12	35	Programs for residential waste reduction, recycling, reuse and composting information, education for school age youth.								
13	36a-36c	Commercial and industrial waste reduction, recycling, reuse and composting information, education and technical assistance.								
14	37a-37c	Tire management strategy. (Amount included above in residential and commercial)								
15	38a-38e	Household hazardous waste								
16	39	Lead acid battery recycling								
17	40a-40c	Yard waste diversion education								
18	41	Pay-as-you-throw								
19	42a-42d	Market development strategies								
	<b>Total Residential/Commercial Waste Generation</b>				50,555	50,260	49,965	49,670	49,376	49,081
	<b>Total Residential/Commercial Recycling/Composting/Diversion</b>				18,611	18,637	18,611	18,585	18,558	18,531
	<b>Percent Waste Reduction</b>				36.8%	37.1%	37.2%	37.4%	37.6%	37.8%
	2012 Percentage if 90% of the 7,900 tons of wood recycling from a single commercial source is subtracted from both the amount recycled and the amount of waste generated.									

Table V-5. Residential Commercial Waste Reduction Strategies

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2026	2027	2028	2029
	RESIDENTIAL RECYCLING							
1	Existing Residential Curbside Recycling							
	1	Greenville City Curbside	Primarily Residential	See Residential Calculation Below				
	2	Arcanum Village Curbside						
	3	Palestine Village						
	4	Versailles Village Curbside						
	New Residential Curbside							
	5	New Curbside (If implemented)	Residential	See Below				
2.a.	Darke Co. SWMD Drop-off Recycling							
	6	Ansonia/Brown Twp.	Primarily Residential	See Residential Calculation Below				
	7	Arcanum/Twin Twp,						
	8	Butler Twp.						
	9	Gettysburg/Adams Twp.						
	10	Hollansburg/Harrison Twps.						
	11	New Madison Village						
	12	New Weston/ Allen Twp.						
	13	North Star/Wabash Twp.						
	14	Palestine Village						
	15	Pitsburg/Monroe Twp.						
	16	Union City/Jackson Twp.						
	17	Wayne Twp.						
	18	Village of Wayne Lakes						
2.b.	Multi-material drop-off opportunities provided by others							
	19	Rumpke Transfer Facility Drop-off	Res/Com	See Residential Calculation Below				
	20	Versailles	Res/Com					
2.c	21	Drop-offs for selected materials sponsored by various organizations	Residential/ commercial	See Residential Calculation Below				
3	District collection events for difficult to manage materials							
	22	Appliance Recycling						
	23	Electronics Recycling						

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2026	2027	2028	2029
	24	Paper Shred Day						
	25	Tire Collection						
	26	Dry Cell Battery Collection						
	Calculation of <b>residential recycling</b> increase: 4.6% of total waste generation in 2012 with a .2% increase starting in 2015 and continuing through 2012. .1% each year thereafter.				3,171	3,200	3,229	3,257
	Percent of total res/com waste generation				6.5%	6.6%	6.7%	6.8%
	<b>COMMERCIAL AND INSTITUTIONAL RECYCLING</b>							
4	27	School Recycling Program	Institutional	See Commercial/ Institutional Calculation Below				
5	28	Darke Co. Gov't. Recycling	Institutional					
6	29	Rumpke Paper Drop-off	Res/Com and Industrial					
7	30	Rumpke MRF	Industrial					
8	31	Self-reported commercial recycling	Commercial					
9	32	Residential, comemrcial and industrial recycling through provate scrap yards	Res/Com	To the extent possible. Only res/commercial is included in the calcuation below.				
	Calculation of <b>commercial recycling</b> : An amount of commercial recycling is use for 2012 is the actual amount. The projected commercial recycling in 2015 is 9,583 tons and is based on an adjusted amount for 2012. See the narrative on pages V-22-23. There is a .2% increase in the first five years of the Plan and no projected increase in the later years of the Plan.				9,573	9,515	9,457	9,399
	Percent of total res/com waste generation				19.6%	19.6%	19.6%	19.6%
	<b>COMPOSTING AND OTHER YARD WASTE DIVERSION</b>							
10	33	All yard waste porgrams	Residential					
	Calculation of <b>composting and yard waste diversion</b> based on actual 2012 amount.				5,760	5,760	5,760	5,760
	Percent of total res/com waste generation				11.8%	11.9%	12.0%	12.0%

Program No. from Chapter V	Activity No.	Strategy/Activity	Primary Type of Material Reduced or Recycled	Calculation	2026	2027	2028	2029
	<b>OTHER PROGRAMS THAT SUPPORT RESIDENTIAL/COMMERCIAL RECYCLING - not specific amount of reduction are attributed to these programs</b>							
11	34a-34g	Programs for residential waste reduction, recycling, reuse and composting information, education and technical assistance.						
12	35	Programs for residential waste reduction, recycling, reuse and composting information, education for school age youth.						
13	36a-36c	Commercial and industrial waste reduction, recycling, reuse and composting information, education and technical assistance.						
14	37a-37c	Tire management strategy. (Amount included above in residential and commercial)						
15	38a-38e	Household hazardous waste						
16	39	Lead acid battery recycling						
17	40a-40c	Yard waste diversion education						
18	41	Pay-as-you-throw						
19	42a-42d	Market development strategies						
	<b>Total Residential/Commercial Waste Generation</b>				48,786	48,491	48,196	47,901
	<b>Total Residential/Commercial Recycling/Composting/Diversion</b>				<b>18,503</b>	<b>18,475</b>	<b>18,445</b>	<b>18,416</b>
	<b>Percent Waste Reduction</b>				37.9%	38.1%	38.3%	38.4%
	2012 Percentage if 90% of the 7,900 tons of wood recycling from a single commercial source is subtracted from both the amount recycled and the amount of waste generated.							

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Table V-6. Industrial Waste Reduction Strategies

Program No. from Chapter V	Activity No.	Strategy/Activity	2012	2015	2016	2017	2018	2019	2020	2021
		<i>PROGRAMS THAT SUPPORT INDUSTRIAL RECYCLING - no specific amount of reduction is attributed to this program. The recycling and waste disposal data were reported by industry on industrial waste and recycling surveys.</i>								
13	36a-36c	Commercial and <u>industrial</u> waste reduction, recycling, reuse and composting information, education and technical assistance.								
	<b>Total Industrial Waste Generation (Table IV-3.B.)</b>		17,461	16,937	16,768	16,600	16,434	16,270	16,107	15,946
	<b>Total Industrial Recycling/Waste Reduction( Table IV-3,B,)</b>		<b>14,786</b>	<b>14,346</b>	<b>14,202</b>	<b>14,060</b>	<b>13,920</b>	<b>13,781</b>	<b>13,643</b>	<b>13,506</b>
	<b>Percent Waste Reduction</b>		84.7%	84.7%	84.7%	84.7%	84.7%	84.7%	84.7%	84.7%

Table V-6. Industrial Waste Reduction Strategies

Program No. from Chapter V	Activity No.	Strategy/Activity	2022	2023	2024	2025	2026	2027	2028	2029
		<i>PROGRAMS THAT SUPPORT INDUSTRIAL RECYCLING - no specific amount of reduction is attributed to this program. The recycling and waste disposal data were reported by industry on industrial waste and recycling surveys.</i>								
13	36a-36c	Commercial and <u>industrial</u> waste reduction, recycling, reuse and composting information, education and technical assistance.								
	<b>Total Industrial Waste Generation (Table IV-3.B.)</b>		15,900	15,900	15,900	15,900	15,900	15,900	15,900	15,900
	<b>Total Industrial Recycling/Waste Reduction( Table IV-3,B,)</b>		<b>13,467</b>	<b>13,467</b>	<b>13,467</b>	<b>13,467</b>	<b>13,467</b>	<b>13,467</b>	<b>13,467</b>	<b>13,467</b>
	<b>Percent Waste Reduction</b>		84.7%	84.7%	84.7%	84.7%	84.7%	84.7%	84.7%	84.7%