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

A. Planning Period

The District has chosen a planning period that coincides with the projected year the plan will be approved by Ohio EPA. This *Plan Update* is scheduled to be completed, ratified and approved by Ohio EPA in April of 2014. Based on this information, the planning period for the *Plan Update* will be January 1, 2014 – December 31, 2028.

B. Population Projections

To determine County population projections for the planning period the District utilized the data provided by the Ohio Department of Development (ODOD) Office of Strategic Research. Using the 2000 census data ODOD estimated Henry County's population to increase approximately 2% from 2010 to 2030. These estimate projections produced in 2003 estimated population to increase from 29,450 in 2010 to 30,110 in 2030.

Recently, ODOD revised the 2009 and 2010 population estimates for all Ohio counties. The revised Henry County population number for 2010 is 28,215 (as discussed in Section IV). While ODOD did revise the 2010 population figures, they did not revise the estimated projections for population through the year 2030. If the District uses the estimated projected population of 30,110 for year 2030 this would calculate to a population increase of approximately 6% over the 20 years. According to ODOD's "Ohio County Indicators" report dated June 2011, the county population declined from 2000 to 2010 by 3.4% but is expected to rise through 2030. ODOD did not state a specific increase or revise the projected population estimates and due to the decline already seen, the District feels a 6% increase in population over the 20 years is not supported.

Therefore the District estimated the planning period population projections by adjusting ODOD's estimated populations. Shown in the following table below are the estimated population projections determined by ODOD for years 2010, 2015, 2020, 2025, and 2030. To determine the adjusted population the 2010 revised population (28,215) was subtracted from the 2010 estimated projection (29,540). This adjustment factor of 1,325 was then applied to the following years: 2015, 2020, 2025, and 2030.

Year	Estimated Projection from ODOD	Adjusted Population
2010	29,540	28,215 (revised per ODOD)
2015	29,850	28,525

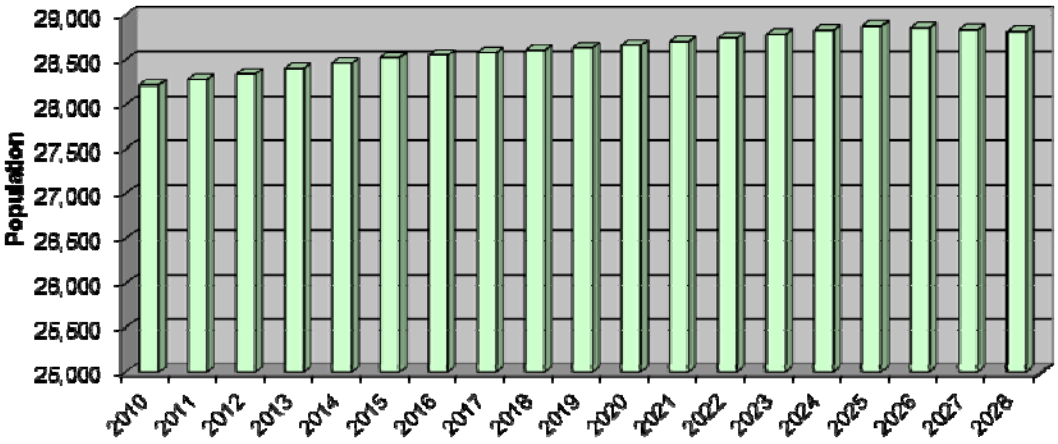
Year	Estimated Projection from ODOD	Adjusted Population
2020	29,990	28,665
2025	30,200	28,875
2030	30,110	28,785

Adjusting the population in this manner keeps the original intended rate growth for Henry County's population intact. Thus, the District is anticipating the population will increase approximately 2.15% from 2010 to 2028. The District's population projections are presented in Table V-1 (located at the end of this section), "District Population Projections". The District anticipates population will increase, on average, 0.12% annually from 2010 through 2028, the final year of the planning period.

The District is projected to start the planning period in 2014 with a population of 28,463 and end in 2028 with a total population of 28,821. This is a population increase of 1.26% for the planning period (2014 – 2028) or 0.09% annually.

The following graph depicts the estimated total District population throughout the planning period.

District Population from 2010 - 2028



C. Waste Generation Projections

1. Residential/Commercial Sector

The District's residential/commercial waste generation projections are presented in Table V-2 (located at the end of this section), "District Residential/Commercial Waste Generation (TPY)". Waste generation is presented for the 2010 reference year and each subsequent year through 2028. For 2010, the District calculated

the per capita generation rate based on Ohio EPA's Facility Data Reports for disposal and from the District's 2010 Annual District Report for recycling (with adjustments). The following data was used for this calculation:

2010 Disposal Tonnage: 15,909

2010 Recycling Tonnage: 10,641

2010 Total generation: 26,550

2010 Residential/Commercial
Per Capita Generation Rate: 5.16

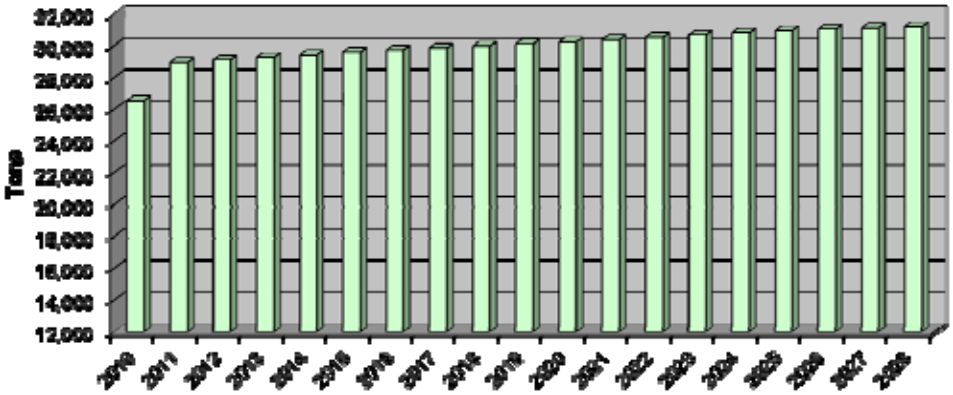
The total residential/commercial waste generation estimate for 2010 was 26,550 tons. Waste generation is projected to increase throughout the planning period from 2014 – 2028. Since 2000, the District has experienced yearly fluctuations in recycling and disposal. Overall, waste generation grew 4% from 2000 – 2010 for the District. Future per capita generation rates were projected using the District's average changes from 2007 – 2011. The following table shows the data used to prepare residential/commercial waste generation projections:

Year	Generation	Percent Change	LB/Person/Day
2007	28,797	N/A	5.35
2008	28,888	0.32%	5.42
2009	29,139	0.86%	5.47
2010	26,550	-8.88%	5.16
2011	28,943	9.01%	5.61
2007 – 2011 Average:		**0.33%**	**5.40**

Per capita generation rates will increase 0.33% percent annually. Beginning in 2014, the first year of the planning period, residential/commercial waste is projected to be 29,423 tons. This is expected to increase to 31,199 tons in 2028, a 6% increase during the planning period.

The following graph depicts the estimated residential/commercial waste generation throughout the planning period.

District Residential/Commercial Waste Generation
(2010 – 2028)



2. Industrial Sector

The District's industrial waste generation projections are presented in Table V-3 (located at the end of this section), "Projected Industrial Waste Generation." Industrial waste generation is presented by Standard Industrial Classification (SIC) code for the 2010 reference year and each year of the planning period through 2028. A description of each SIC code is presented in Table V-3A (located at the end of this section).

Table V-3, presents industrial waste generation throughout the planning period and as projected for each SIC code. The District is using adjusted industrial waste generation figures presented in Table IV-8 for the reference year, 2010. The 2010 industrial waste generated for each SIC code 20 and 22-39, is calculated based on the survey results and the total industrial waste generation. See Table V-3 (located at the end of this section) for an example calculation.

The classifications for the SIC codes are summarized in Table V-3A, "Standard Industrial Classifications" (located at the end of this section).

Industrial waste generation projections are based on industrial employment projections provided by the Ohio Department of Job and Family Services. This department publishes three documents the District consulted for projecting industrial waste generation through the planning period. These are "2016 Job Outlook, Toledo Metropolitan Statistical Area", "2018 Ohio Job Outlook, Northwest Ohio Economic Development Region 2", and "2018 Ohio Job

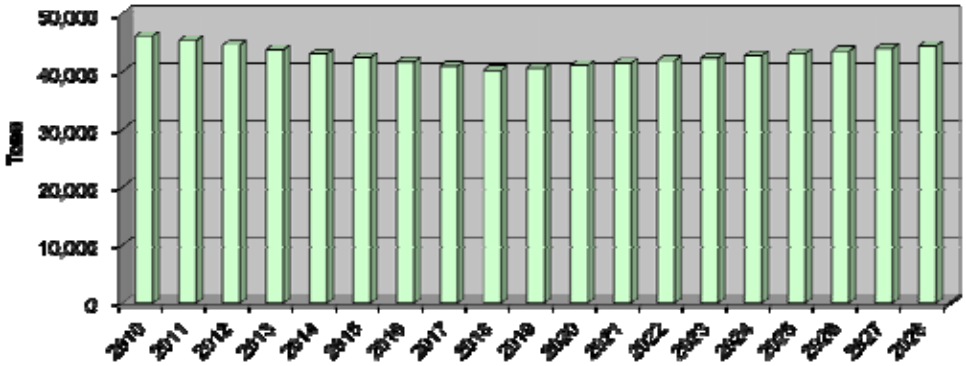
Outlook." Manufacturing employment in this region is projected to decline 16.9% over the ten year period from 2008-2018.

Based on the Northwest Economic Development Region's estimated decrease in manufacturing employment, the District is projecting an annual decrease of 1.69% for each year in the planning period through 2018. The District is estimating the industrial waste generation will decrease from 46,094 tons to 44,426 tons. The District analyzed the industrial generation using the 2.12% annual decline continued through the end of the planning period, 2028. A continuation of this decrease results in an overall decline in generation of 38% through the planning period. Considering historical trends from the past ten years, 2000-2010, the District saw growth in industrial generation. The District has been affected by the current economic recession, so a decline is to be expected. However, based on the historical data, the District does not feel a decline for the entire planning period would be expected. Beyond 2018 through the remaining planning period the District is projecting a 1% annual increase. Industrial generation is projected to reach a low of 40,219 tons in 2018 then increase to 44,426 tons in 2028.

Table V-3 (located at the end of this section) presents the average annual change in employment for each SIC code. Please note: employment projections per SIC code are based on manufacturing employment as a whole. The Ohio Department of Job and Family Services now uses the NAIC system for manufacturing facilities. Employment per SIC code is no longer tracked.

The following graph depicts the estimated industrial waste generation throughout the planning period.

District Industrial Waste Generation 2010 – 2028



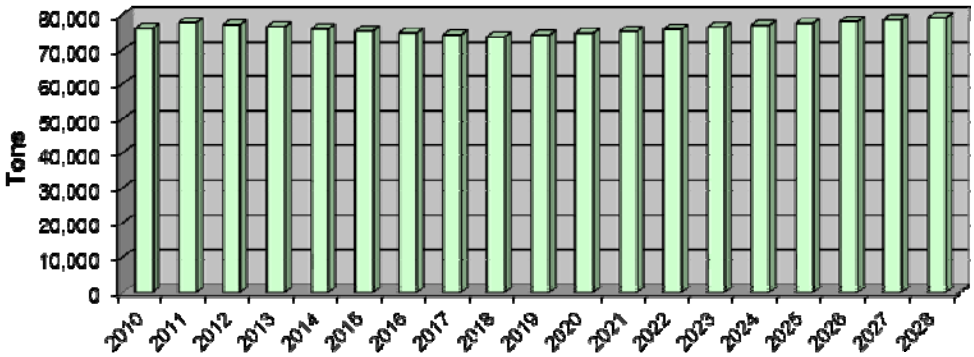
3. Total Waste Generation

Total waste generation projections for the District during the planning period are presented in Table V-4 (located at the end of this section), "Total Waste Generation for the District during the Planning Period (in TPY)". The total waste generation estimate for the 2010 reference year was 76,211 tons. This includes residential/commercial waste (26,550 tons), industrial waste (46,094 tons), and exempt waste (3,567 tons).

Exempt waste is projected to remain flat throughout the planning period. The generation rate in pounds per person per day for the reference year was 14.80. The total waste generation is projected to decrease until year 2018 as a result of the projected decline in industrial waste generation. Beyond 2018, total generation begins to increase and reaches a high of 79,192 tons by the end of the planning period, largely due to projected increases in residential/commercial waste generation. The waste generation rate decreased to 15.04 in 2028, the final year of the planning period.

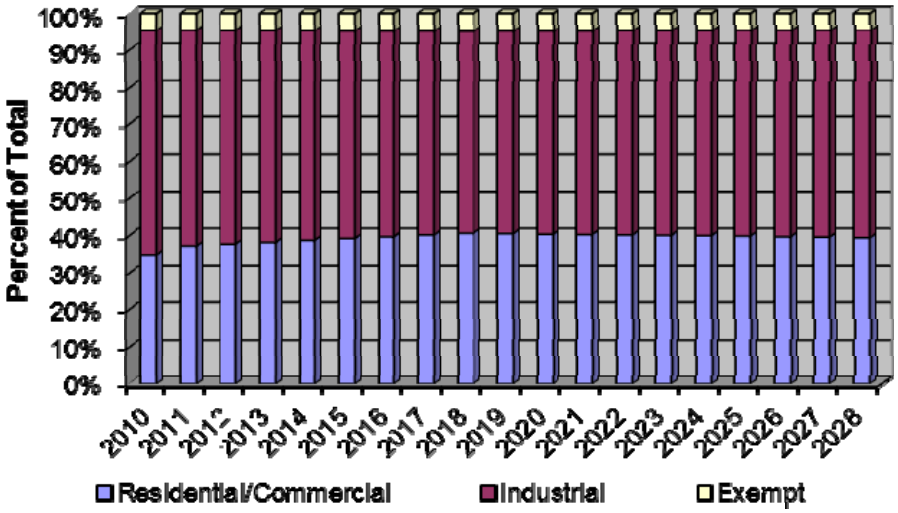
The following graph depicts the total waste generation from the reference year (2010) to the final year in the planning period (2028).

District Total Waste Generation (2010 – 2028)



The following graph depicts the waste generation per sector as a percentage of the total waste generation.

District Total Waste Generation (2010 – 2028)



D. Projections for Waste Stream Composition

The District does not anticipate any major changes in the composition of the waste stream during the planning period. However, a change in economic conditions, or the closure of an industrial facility could greatly impact the industrial, as well as residential/commercial projections. Current projections indicate the District's residential/commercial and industrial solid waste stream will remain stable over the fifteen-year planning period.

The District's periodic survey of industries should alert the District to any major changes in the industrial sector. The District will report any significant changes in waste stream composition in the Annual Report.

E. Waste Reduction and Recycling Strategies through the Planning Period

The District must continue to develop recycling and waste reduction strategies to meet the goals established in the *1995 State Plan.* The goals include:

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

Goal # 2 Reduce and/or recycle at least 25% of the residential/commercial waste generated and 50% of the industrial waste generated.

Goal # 3 Provide informational and technical assistance on source reduction.

Goal # 4 Provide informational and technical assistance on recycling, reuse and composting opportunities.

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

Goal # 6 Annual reporting of plan implementation.

Goal # 7 Prepare a market development strategy (optional).

The following table summarizes all of the District strategies for meeting the 1995 State Plan Goals:

Program	Program #	1995 State Plan Goals						
		#1	#2	#3	#4	#5	#6	#7
Curbside Recycling	HC-01	✓	✓					
Drop-Off Recycling	HC-02	✓	✓					
Yard Waste Management	HC-03		✓					
Household Hazardous Waste Management	HC-04		✓			✓		
Compact and Fluorescent Light Bulb Take-Back	HC-05		✓			✓		
Lead Acid Battery Management	HC-06		✓			✓		
Electronics Recycling	HC-07		✓			✓		
Scrap Tire Management	HC-08		✓			✓		
Market Development Support	HC-09							✓
Education and Awareness	HC-10			✓	✓			
Industrial Sector Data Collection	HC-11		✓				✓	
Litter Collection	HC-12							
Volume Based Rate Support	HC-13		✓					
District Facilities	HC-14		✓					
Number of Strategies Per Goal		**2**	**11**	**1**	**1**	**5**	**1**	**1**

Residential/Commercial Waste Reduction/Recycling and Education Strategies

The District's residential/commercial waste reduction strategies are presented in Table V-5, "Residential/Commercial Waste Reduction Strategies" (located at the end of this section). The District considered using historical recycling data to calculate waste reduction projections, but ultimately decided to base projections on population growth, which is a 0.12% increase annually. Projections based on population growth appear to be more conservative and reliable than using voluntary survey-submitted data, which shows a considerable degree of variability from year to year.

The District anticipates that residential/commercial recycling will increase from 10,641 tons in 2010 to 10,872 tons by 2028.

RESIDENTIAL/COMMERCIAL RECYCLING AND COLLECTION PROGRAMS

The District's primary strategy for this *Plan Update* is to continue with the successful core programs detailed in Section IV with a few exceptions and modifications. The District is committed to implementing these programs and to continue their success throughout the planning period.

The following section details the specific initiatives by program that will be implemented during the planning period. In addition, the District evaluated each of the programs in Section IV for their strengths and challenges. The District also conducted a series of strategic planning sessions with various stakeholders in the County. The stakeholders consisted of the following:

- Cities, Village and Townships in Henry County
- Commercial, Industrial and Institutional Generators
- Solid Waste Haulers
- District Policy Committee
- District Litter Board

The planning sessions were conducted will all stakeholders listed above on November 9, 2011. Each session was conducted in the following manner:

- Review of planning process
- Review of reference year programs
- Brain storming session covering the following facilitated questions:

City, Villages and Townships

- ✓ Of the programs offered or managed by the District, which one(s) are the most valuable or work well?
- ✓ Does the District do a good job of educating residents on waste reduction and recycling?
- ✓ Of the programs offered or managed by the District, what improvements would you suggest be made?
- ✓ Should there be more curbside recycling programs in the County?
- ✓ Is the recycling drop-off infrastructure adequate?
- ✓ Is the yard waste management infrastructure adequate?
- ✓ Should the District collect more types of HHW?
- ✓ Should the District charge residents for the collection of HHW?
- ✓ What assistance or programs can the District provide that are not currently offered?

Haulers, Commercial, Industrial and Institutional Generators

- ✓ Of the programs offered or managed by the District, which one(s) are the most valuable or work well?
- ✓ Does the District do a good job of educating residents on waste reduction and recycling?
- ✓ Of the programs offered or managed by the District, what improvements would you suggest be made?
- ✓ What materials are hard to recycle in the County for your businesses?
- ✓ For the haulers here today, what is preventing you from offering curbside recycling?
- ✓ For the haulers here today, if one or more villages offered a contract for trash and recycling at the curb, would you bid on the contract?
- ✓ Is there interest in developing new recycling systems at your businesses?
- ✓ Is there interest in ODNR grants for Market Development projects?
- ✓ Should the District collect more types of materials at the landfill to help businesses?
- ✓ What assistance or programs can the District provide that are not currently offered?

The District collected all ideas and suggestions from the strategic planning session. The District Policy Committee then ranked the ideas according to their order of importance. Each Policy Committee member was asked to rate each idea on a scale of 1-5 with 5 being the highest priority and 1 being the lowest. The following table summarizes this process:

Program/Initiative	District PC Prioritization Results							
	1	2	3	4	5	6	7	Total
Collect HHW at Landfill with User Fees	5	5	5	4	5	4	DNR	**28.00**
Florescent bulb recycling program	4	5	2	5	4	5	DNR	**25.00**
Expand surveying to commercial businesses	3	5	4	4	3	5	DNR	**24.00**
Promote ODNR Grants (Market Development, Community Development, Scrap Tire and Litter)	5	5	3	4	2	5	DNR	**24.00**
Prescription drug/medicine take back program	4	1	5	3	5	4	DNR	**22.00**
Create HHW resource guide (how to manage difficult materials)	4	5	2	3	5	2	DNR	**21.00**
Create Recycling Resource Guide	5	1	3	3	5	4	DNR	**21.00**
Create mini-school grants to buy recycling containers and set-up recycling programs	2	3	3	4	3	5	DNR	**20.00**
Household battery collection (rechargeable batteries)	3	3	3	3	3	4	DNR	**19.50**
Disseminate Resource Guide/ Brochures to Local Businesses	4	3	3	3	3	2	DNR	**18.00**
TV recycling program	2	1	2	3	5	5	DNR	**18.00**
Develop cooperatives with villages to contract for single hauler trash and recycling curbside services	4	5	1	2	1	4	DNR	**17.00**
Expand drop-off program	3	3	3	4	1	3	DNR	**17.00**
Recycle cardboard, scrap metals, paper and plastics, construction debris from Transfer Station operations	3	1	2	3	5	2	DNR	**16.00**

The results of this analysis assisted the District with the improvements of the programs contained in this section.

Unless a program is new or a change is being initiated, this section does not provide the details of how each program operates, as that information is contained in Section IV.

1. HC-1 – Curbside Recycling Program
(State Plan Goals #1 and #2)

This program will continue (see description in Section IV).

The District will continue to work with political subdivisions in the county to promote and support curbside recycling. The District's main objective with this program is to increase the availability of curbside recycling in the county as well as to improve participation.

The District's overall goal for the planning period is to maintain the existing curbside program in Napoleon and add new programs if possible. The following strategies and initiatives may be conducted throughout the planning period to accomplish this goal.

Strategy 1

For any planned or existing curbside recycling program that ceases to operate during the planning period, the District will implement the following initiatives:

Initiative 1-1

Meet with the operator of the curbside program to determine cause of program elimination.

Implementation Schedule: As Needed

Initiative 1-2

Offer any assistance permitted under this *Plan Update* to re-start the program.

Implementation Schedule: As Needed

Strategy 2

The District desires to support and assist municipalities, villages and townships to develop curbside recycling programs.

This strategy may involve the following initiatives:

Initiative 2-1

The District will conduct stakeholder meetings with community leadership including township trustees and public service personnel, residents, and haulers to understand the issues preventing the development of curbside recycling services and to determine possible solutions.

Implementation Schedule: 2014-2018

Initiative 2-2

The District will work with targeted communities to assist the development of curbside recycling services. This level of assistance could include the following:

- Determining barriers and other issues preventing program development
- Provide technical assistance in the development of programs
- Provide contract bid specifications and sample contracts for private sector engagement
- Evaluate willingness to work with other communities on a joint contract for services
- Program promotion

The District will target the following communities that do not have curbside recycling services to develop programs that best fit their community needs.

- Village of Deshler
- Village of Hamler
- Village of Holgate
- Village of Malinta
- Village of Mcclure
- Village of Liberty Center
- Village of Florida
- Napoleon Township
- Washington Township

Implementation Schedule: 2014-2018

Initiative 2-3

The District may survey residents from targeted political subdivisions on their willingness to support the community in contracting with a single waste hauler to provide non-subscription curbside waste and recycling services with bulky item pick-up.

This initiative may be used to complement other initiatives in this strategy if deemed appropriate by the District and/or the targeted community.

Implementation Schedule: As Needed

2. HC-2 – Drop-off Recycling Program
(State Plan Goals #1 and #2)

This program will continue (see description in Section IV).

The District will work with any community and or drop-off site operator who wishes to expand its operation either in materials collected and or hours of operation.

3. HC-3 – Yard Waste Management Program
(State Plan Goal #2)

This program will continue; see Section IV for program details. The District reserves the right to adjust funding for the Napoleon Yard Waste Facility on a year by year basis as determined by the Board of Directors.

4. HC-4 – Household Hazardous Waste (HHW) Collection Program
(State Plan Goals #2 and #5)

This program will continue (see description in Section IV). To address the challenges identified in Section IV, the District will conduct the following strategies:

Strategy 1

Transition the current limited HHW collection system at the Henry County Landfill to a permanent full service collection system with user fees.

<u>Initiative 1-1</u>

Evaluate the costs of providing weekly, monthly, or quarterly collection at the Henry County Landfill and charge residents a user fee for proper management. Currently the District only collects latex paint, lead acid batteries and Freon containing appliances at the Henry County Landfill. The evaluation planned for this initiative will look at providing full service HHW collection at the Center for the following materials:

- **Cleaners** - Corrosives, Bleach, Acids and Caustics
- **Flammables** - Paints and Stains, Aerosol Cans, Turpentine, Paint

Thinner, Adhesives/Caulks, Used Oil Filters, Solvents, Hydraulic Fluid, Acetylene Tanks, Household Cleaners, Lighter Fluid, Butane Cylinders, Road Flares, Roofing Tar

- **Reactive Materials** - Cyanide Poisons, Fertilizers, Pool Chlorine, Pool Chemicals, Oxidizers

- **Toxics** - Rat Poison, Antifreeze, Weed Killers, Insect Killers, Mercury & Mercury Devices

- **Other** - Smoke Detectors, Oxygen/Other Gas Cylinders, Asbestos, Fire Extinguishers Batteries (Rechargeable)

In addition, the District will also evaluate the feasibility of adding fluorescent bulbs and prescription drugs/unused medicine to the list of acceptable items collected. Currently the Sheriff collects prescription drugs 1-2 times per year as a special collection event.

Implementation Schedule: 2015

Based on the above evaluation, the District may transition to collecting HHW at the Henry County Landfill on a more permanent basis with user fees to off-set program costs.

The District has projected in the budget section (VIII) that user fees will be collected starting in 2015. If the evaluation above determines that a user fee system is not feasible or desirable, then the projected additional revenue will not be collected.

Strategy 2

The District will develop a resource guide for the proper management of HHW. The guide will be designed to include the following:

- Waste reduction and reuse options
- Proper management techniques
- Local recycling and disposal options
- If developed, procedures for participating in District HHW program at the Henry County Landfill

Implementation Schedule: 2015

5. HC-5 – Compact and Fluorescent Light Bulb Take-Back Program
(State Plan Goals #2 and #5)

This program will continue (see description in Section IV).

6. HC-6 – Lead Acid Battery Collection Program
(State Plan Goals #2 and #5)

This program will continue (see description in Section IV).

7. HC-7 – Electronics Recycling Program
(State Plan Goals #2 and #5)

This program will continue (see description in Section IV).

8. HC-8 – Scrap Tire Management
(State Plan Goal #2)

This program will continue (see description in Section IV).

9. HC-9 – Market Development Support
(State Plan Goal #7)

This program will continue (see description in Section IV).

The District will expand its effort to solicit quality projects that fit the requirements of the Ohio EPA Market Development Grant Program. This effort will include:

- Expanding promotion of the grant through the District's Web site and other publications
- Identifying a list of potential commercial and industrial companies that can be targeted for promotion of the program directly
- The District will assist companies with their applications for funding when it is determined viable candidates for the funds have been identified

RESIDENTIAL/COMMERCIAL/INDUSTRIAL SECTOR EDUCATION AND AWARENESS PROGRAMS

1. HC-10 – Education and Awareness Program

(State Plan Goals #3 and #4 for Residential/Commercial and Industrial Sectors)

This program will continue (see description in Section IV).

The District offered a vast array of education, awareness and promotional services to residents and businesses in the reference year (2010). These services included the following:

- Youth Presentations
- Educational Videos
- Brochures/Resource Guide
- Commercial/Industrial/Institutional Sector Presentations
- District Web Site

The District reserves the right to conduct different program promotions and initiatives than those listed in Section IV based on current events, programs and policies of the District in the new planning period.

To address the challenges listed in Section IV, the District may conduct the following improvements or changes by initiative:

Youth Presentations

The District is not planning any major improvements or changes to this initiative for the planning period. The District reserves the right to adjust or make changes to this initiative when deemed necessary.

Educational Videos

The District is not planning any major improvements or changes to this initiative for the planning period. The District reserves the right to adjust or make changes to this initiative when deemed necessary.

Brochures

The District will work with the larger commercial and industrial businesses and institutions to include District information and brochures for employees and visitors on a routine basis.

The District will also develop a resource guide for the proper management of recyclables for the residential, commercial, institutional and industrial sector. The guide will be designed to include the following:

- Waste reduction and reuse options
- Proper management techniques
- Local recycling and disposal options

The District reserves the right to adjust or make changes to this initiative when deemed necessary.

Commercial/Industrial/Institutional Presentations

The District is not planning any major improvements or changes to this initiative for the planning period. The District reserves the right to adjust or make changes to this initiative when deemed necessary.

The District will work with schools to try and expand recycling at the school level as appropriate. This will involve the following:

- Survey schools in the District to determine current recycling efforts, successes and failures
- Target schools that either do not have recycling or have failed to maintain a successful program,. Targeted schools will be contacted to determine their desire for technical assistance from the District in starting a recycling program. Technical assistance may include conducting a waste assessment, assisting schools with grant writing and providing information on local recycling resources.

District Web Site

The District is not planning any major changes to this initiative for the planning period. On occasion, the District will update the web site as appropriate or needed.

COMMERCIAL, INSTITUTIONAL AND INDUSTRIAL SECTOR PROGRAMS

Industrial Waste Reduction/Recycling and Education Strategies

The District's industrial waste reduction strategies are presented in Table V-6, "Industrial Waste Reduction Strategies". Industrial programs are projected to decrease at the same rate as employment in the manufacturing sector from 2010 to 2018. The decrease in employment is projected by the Ohio Department of Job and Family Services (ODJFS), 2018 industry and occupational projections for the Northwest Economic Development Region, including Defiance, Erie, Fulton, Henry, Lucas, Ottawa, Sandusky, Williams, and Wood Counties. The annual rate projected was -1.69%. From 2019-2028, the District is projecting a

conservative 1% increase annually in waste reduction tonnage. The District projects a decrease in industrial recycling from 30,917 tons in 2010 to 29,798 tons by 2028.

1. HC-11 – Industrial Sector Data Collection
(State Plan Goals #2, #6)

This program will continue (see description in Section IV).

The District will begin surveying the commercial sector in stages from 2014-2016. The time frame will allow the District to develop a detailed and consistent mail list of commercial businesses. All survey instruments will include a questionnaire that may include the following:

A. Does your company recycle? Yes No

B. Is your company interested in having a comprehensive solid waste and recycling assessment completed free of charge by the Henry County Solid Waste Management District? Yes No

2. HC-11 – Business Waste Assessments
(State Plan Goals #3 and #4)

The District will offer free waste assessments to any business (commercial or industrial sector) that requests the service. The District will include the service option in the annual commercial and industrial survey as well as on the District's web site. The following waste assessment service will be offered in the planning period:

- Evaluation of current recycling and disposal practices
- Evaluation of current waste generation and waste reduction performance
- Analysis of waste generation sources to determine materials that can be diverted from waste stream
- Evaluation of cost effective system to manage disposal program
- Recommendations for new programs to divert materials from landfill
- Technical assistance to implement to waste reduction programs

OTHER PROGRAMS/INITIATIVES

1. HC-12 – Annual Litter Round-Up

This program will continue (see description in Section IV).

2. HC-13 – Volume-Based Rate Support

This program will continue (see description in Section IV).

3. HC-14 – District Facilities

This program will continue (see description in Section IV).

Henry County Landfill

The Henry County Landfill is one of the smallest landfills in Ohio. When the landfill reaches capacity, the District plans to close the landfill and operate the property as an exempt transfer station. This transition is projected to occur in 2012-2013.

Henry County Transfer Station

This facility began operation in 2000 on a limited basis with collected materials transferred to the Henry County Landfill. The facility is not classified as a regulated transfer station by Ohio EPA. It will begin shipping collected solid waste to out-of-district landfills when the Henry County Landfill reaches capacity. This facility is anticipated to operate as an exempt facility in the future once it begins shipping solid waste off-site versus to the Henry County Landfill. This transition is projected to occur in 2012-2013.

The transfer station may be operated with local inmate labor to source separate some additional recycles from the general solid waste stream such as:

- Cardboard
- Ferrous metals
- Non-ferrous metals
- To be determined

Table V-1
District Population Projections

Year	Henry County Population	Total District Population
2010	28,215	28,215
2011	28,277	28,277
2012	28,339	28,339
2013	28,401	28,401
2014	28,463	28,463
2015	28,525	28,525
2016	28,553	28,553
2017	28,581	28,581
2018	28,609	28,609
2019	28,637	28,637
2020	28,665	28,665
2021	28,707	28,707
2022	28,749	28,749
2023	28,791	28,791
2024	28,833	28,833
2025	28,875	28,875
2026	28,857	28,857
2027	28,839	28,839
2028	28,821	28,821

Source(s) of information: 2010 Population Estimates by County, City, Village, and Township, Ohio Department of Development

Notes:

Projections are based on the Ohio Department of Development Office of Strategic Research (July 2010) *Projected Percent Population Change 2010 to 2030.* See calculations below.

County	Percent Change 2010-2028	Annual Percent Change 2010-2028	Percent Change 2014-2028	Annual Percent Change 2014-2028
Henry	2.15%	0.12%	1.26%	0.09%

Example calculation (2011):

Step 1: (2010 Henry County Population Projection from ODOD's Population Change 2005 to 2030 - 2010 U.S. Census Bureau Henry County Population Estimate) = Adjustment number for ODOD's Projected Percent Population Change 2005 to 2030

29,540 - 28,215 = 1,325

Step 2: (2015 Henry County Population Projection from ODOD's Population Change 2005 to 2030 - Adjustment figure from Step 1) = 2015 Henry County Adjusted Population Projection

29,850 - 1,325 = 28,525

Step 3: (2015 Henry County Adjusted Population Projection - 2010 Henry County Population Estimate)/ Number of Years from 2010 - 2015 = Annual number to be added 2011 - 2014

(28,525 - 28,215) / 5 = 62

Step 4: 2010 U.S. Census Bureau Henry County Population Estimate + Annual number to be added 2011 - 2014 from Step 3 = 2011 Adjusted Henry County Population Estimate

28,215 + 62 = 28,277

Table V-2
District Residential/Commercial Waste Generation (TPY)

Year	District Population	Per Capita Generation Rate	Total Residential/Commercial Waste Generation (TPY)
2010	28,215	5.16	26,550
2011	28,277	5.61	28,943
2012	28,339	5.63	29,102
2013	28,401	5.65	29,262
2014	28,463	5.66	29,423
2015	28,525	5.68	29,584
2016	28,553	5.70	29,711
2017	28,581	5.72	29,838
2018	28,609	5.74	29,966
2019	28,637	5.76	30,094
2020	28,665	5.78	30,223
2021	28,707	5.80	30,367
2022	28,749	5.82	30,512
2023	28,791	5.83	30,657
2024	28,833	5.85	30,804
2025	28,875	5.87	30,950
2026	28,857	5.89	31,033
2027	28,839	5.91	31,116
2028	28,821	5.93	31,199

Source(s) of information:
District Population-Table V-1
2010 Per Capita Generation Rate- Table IV-8
2011 Per Capita Generation Rate - Actual Reported Data

Per Capita Generation Rate: Calculated using incremental increases recommended by Ohio EPA based on District-specific past generation data and average changes 2007 - 2011.

Example calculation (2012):

District population x per capita generation rate (lb/person/day) x 365 days/year x 1 ton/2,000 lbs = Total Residential/Commercial Generation (TPY)

2012 Total Residential/Commercial Waste Generation = 28,339 x 5.63 x 365 x 1/2,000 = 29,102

Table V-3
Projected Industrial Waste Generation

SIC Code	Year																		
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
20	30,905	30,383	29,869	29,364	28,868	28,380	27,901	27,429	26,966	27,235	27,508	27,783	28,060	28,341	28,624	28,911	29,200	29,492	29,787
22	233	230	226	222	218	214	211	207	204	206	208	210	212	214	216	218	221	223	225
23	39	39	38	37	37	36	35	35	34	35	35	35	36	36	36	37	37	37	38
24	1,933	1,900	1,868	1,837	1,806	1,775	1,745	1,716	1,687	1,703	1,720	1,738	1,755	1,773	1,790	1,808	1,826	1,845	1,863
25	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6	6	6	6	6
26	41	40	40	39	38	38	37	36	36	36	36	37	37	38	38	38	39	39	39
27	446	439	431	424	417	410	403	396	389	393	397	401	405	409	413	417	422	426	430
28	712	700	688	676	665	654	643	632	621	627	633	640	646	653	659	666	672	679	686
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	493	484	476	468	460	452	445	437	430	434	439	443	447	452	456	461	465	470	475
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	86	85	83	82	81	79	78	77	75	76	77	78	78	79	80	81	82	82	83
33	1,424	1,400	1,376	1,353	1,330	1,308	1,286	1,264	1,243	1,255	1,268	1,280	1,293	1,306	1,319	1,332	1,346	1,359	1,373
34	1,947	1,915	1,882	1,850	1,819	1,788	1,758	1,728	1,699	1,716	1,733	1,751	1,768	1,786	1,804	1,822	1,840	1,858	1,877
35	1,307	1,285	1,264	1,242	1,221	1,201	1,180	1,160	1,141	1,152	1,164	1,175	1,187	1,199	1,211	1,223	1,235	1,248	1,260
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	6,411	6,302	6,196	6,091	5,988	5,887	5,787	5,690	5,594	5,649	5,706	5,763	5,821	5,879	5,938	5,997	6,057	6,118	6,179
38	94	92	90	89	87	86	84	83	82	82	83	84	85	86	87	87	88	89	90
39	16	16	16	15	15	15	15	14	14	14	14	15	15	15	15	15	15	15	16
Totals	**46,094**	**45,315**	**44,549**	**43,796**	**43,056**	**42,329**	**41,613**	**40,910**	**40,219**	**40,621**	**41,027**	**41,437**	**41,852**	**42,270**	**42,693**	**43,120**	**43,551**	**43,986**	**44,426**

Projected Employment Growth For Manufacturing Industries		
NAICS Industry Category	**Percent Change 2008-2018**	**Annual Percent Change ***
Manufacturing	-16.90%	-1.69%

Source(s) of information:
Industrial Generation by SIC Code for 2010 from Table IV-2 adjusted to correspond to total industrial waste on Table IV-8
Change in industrial generation is calculated based on the change in employment for the manufacturing industries.

The Ohio Department of Job and Family Services (ODJFS), 2018 industry and occupational projections for the Northwest Economic Development Region, including Defiance, Erie, Fulton, Henry, Lucas, Ottawa, Sandusky, Williams, and Wood Counties.

* The percent annual change for SIC Code 20, 22-39 is calculated using the average annual change in employment for the broad category of manufacturing industries. Changes in employment by SIC code are no longer available as ODJFS no longer tracks data by SIC code, only the new NAICS codes are now used.

Notes: Industrial waste generation is projected to decrease at the same rate as employment in the manufacturing sector from 2010 to 2018. The rate increases at 1% annually from 2019 to 2028.

Example calculation (SIC 20):

(Tons of waste generated in 2010) + (tons waste generated in 2010 x assumed growth rate) = Tons of waste generated in 2011

30,905 + (30,905 x -1.69%) = 30,383

Table V-3A
Standard Industrial Classifications

SIC	Description
20	Food and Kindred Products
22	Textile Mill Products
23	Apparel and Other Finished Products Made from Fabric
24	Lumber and Wood Products, Except Furniture
25	Furniture and Fixtures
26	Paper and Allied Industries
27	Printing, Publishing, and Allied Products
28	Chemicals and Allied Products
29	Petroleum Refining and Related Industries
30	Rubber and Miscellaneous Plastic Products
31	Leather and Leather Products
32	Stone, Clay, Glass and Concrete Products
33	Primary Metal Industries
34	Fabricated Metal Products, Except Machinery and Transportation
35	Industrial and Commercial Machinery and Computer Equipment
36	Electronic and Other Electrical Equipment and Components
37	Transportation Equipment
38	Measuring, Analyzing and Controlling Instruments
39	Miscellaneous Manufacturing Industries

Table V-4
Total Waste Generation for the District During the Planning Period (TPY)

Year	Residential/ Commercial	Industrial	Exempt	Total Waste	Generation Rate (lbs/person/day)
2010	26,550	46,094	3,567	76,211	14.80
2011	28,943	45,315	3,567	77,825	15.08
2012	29,102	44,549	3,567	77,218	15.00
2013	29,262	43,796	3,567	76,625	14.85
2014	29,423	43,056	3,567	76,046	14.70
2015	29,584	42,329	3,567	75,480	14.56
2016	29,711	41,613	3,567	74,891	14.42
2017	29,838	40,910	3,567	74,315	14.28
2018	29,966	40,219	3,567	73,751	14.15
2019	30,094	40,621	3,567	74,282	14.24
2020	30,223	41,027	3,567	74,817	14.33
2021	30,367	41,437	3,567	75,371	14.42
2022	30,512	41,852	3,567	75,931	14.51
2023	30,657	42,270	3,567	76,494	14.60
2024	30,804	42,693	3,567	77,063	14.69
2025	30,950	43,120	3,567	77,637	14.78
2026	31,033	43,551	3,567	78,151	14.85
2027	31,116	43,986	3,567	78,669	14.93
2028	31,199	44,426	3,567	79,192	15.04

Source(s) of information:
Residential/Commercial - Table V-2
Industrial - Table V-3
Exempt Waste (Table V-1) is projected to remain at the 2010 level throughout the planning period.

Example calculation (2010 Total Waste):

Total Waste = Residential/Commercial + Industrial + Exempt
76,211 = 26,550 + 46,094 + 3,567

$$\text{Generation Rate (lb/person/day)} = \frac{\text{Total Waste Generated (tons) x 2,000 pounds /ton}}{\text{Population x 365 days/year}}$$

$$14.80 = \frac{76{,}211 \times 2{,}000}{28{,}215 \times 365}$$

Table V-5
Residential/Commercial Waste Reduction Strategies

Strategy	Ohio EPA Program ID	Program Number	Type of Material Reduced and/or Recycled	Tons of Waste Reduction																		
				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Residential/Commercial Recycling Collection Programs																						
Curbside Recycling	6608	HC-01	PL, GL, AC, BiM, OCC, PbB, ONP, Mag, MxP, OffP	745	746	747	748	749	749	750	751	752	753	754	755	756	757	758	758	759	760	761
Drop-Off Recycling	6609-6616, 6620-6625, 6627	HC-02	AC, BiM, GL, PL, ONP	2,340	2,343	2,346	2,348	2,351	2,354	2,357	2,360	2,362	2,365	2,368	2,371	2,374	2,377	2,379	2,382	2,385	2,388	2,391
Yard Waste Management	6644-6651, 6657	HC-03	YW	2,309	2,312	2,315	2,317	2,320	2,323	2,326	2,328	2,331	2,334	2,337	2,339	2,342	2,345	2,348	2,351	2,353	2,356	2,359
Household Hazardous Waste Management	6633, 6636, 6659	HC-04	UO, App, Oth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead Acid Battery Management	6636, 6652, 6653	HC-06	LAB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Electronics Recycling	N/A	HC-07	EW	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Scrap Tire Management	6619	HC-08	ST	306	306	307	307	307	308	308	309	309	309	310	310	310	311	311	312	312	312	313
Residential/Commercial Market Development Programs																						
Market Development Support	6661	HC-09	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential/Commercial Education and Awareness Programs																						
Education and Awareness	6628, 6630, 6632, 6634, 6635, 6656	HC-10	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential/Commercial Other Programs																						
Litter Collection	6637	HC-12	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume-Based Rate Support	6654	HC-13	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District Facilities	6618, 6617	HC-14	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Commercial Recycling Tonnage	N/A	N/A	N/A	4,933	4,939	4,945	4,951	4,957	4,963	4,969	4,975	4,980	4,986	4,992	4,998	5,004	5,010	5,016	5,022	5,028	5,034	5,040
Total				**10,641**	**10,654**	**10,667**	**10,679**	**10,692**	**10,705**	**10,718**	**10,731**	**10,743**	**10,756**	**10,769**	**10,782**	**10,795**	**10,808**	**10,820**	**10,833**	**10,846**	**10,859**	**10,872**

Source(s) of information:
2010 Recycling Data is from the ADR
Projected value for each residential/commercial recycling program is calculated at the same rate as the population change from Table V-I.

AC=Aluminum Containers; GL=Glass Containers; PL= Plastic Containers; ONP=Old Newspaper; OCC=Corrugated Cardboard; BiM=Bimetal Steel and Tin Containers; PBd=Paperboard; LAB=Lead Acid Battery; Mag=Magazines; OffP=Office Paper; MxP=Mixed Paper; ST=Scrap Tires; App=Appliances; Oth=Nicad Batteries, UO=Used Oil, HHB=Household Batteries, YW=Yard Waste, EW=Electronic Waste, Oth=Other, FW=Food Waste, N/A=Not Applicable

Example calculation:

2011 Curbside Recycling = 2010 Curbside Recycling + (2010 Curbside Recycling x Annual Population Growth)

746 = 745 + (745 x .12%)

Table V-6
Industrial Waste Reduction Strategies

Strategy	Ohio EPA Program ID	Program Number	Type of Material Reduced and/or Recycled	Tons of Source Reduction/Recycling																		
				2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Industrial Sector Other Programs																						
Industrial Sector Data Collection	6658, 6660	HC-11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Industrial Recycling Tonnage	N/A	N/A	AL, FM, NFM, PL, OCC, OffP, W, Oth	30,917	30,395	29,881	29,376	28,879	28,391	27,912	27,440	26,976	27,246	27,518	27,794	28,071	28,352	28,636	28,922	29,211	29,503	29,798
Total				**30,917**	**30,395**	**29,881**	**29,376**	**28,879**	**28,391**	**27,912**	**27,440**	**26,976**	**27,246**	**27,518**	**27,794**	**28,071**	**28,352**	**28,636**	**28,922**	**29,211**	**29,503**	**29,798**

AL=Aluminum, FM=Ferrous Metals, NFM=Non-Ferrous Metals, PL= Plastic ; OCC=Corrugated Cardboard; OffP=Office Paper, W=Wood, Oth=Other

Source(s) of information: 2010 recycling tonnage is from the 2010 Annual District Review and Industrial Sector survey responses.

Notes: 'Industrial recycling projections are based on the average annual percent change in employment for the manufacturing sector. Recycling decreases -1.69% annually from 2011 - 2018. From 2019 to 2028, industrial recycling increases at 1% annually. See Table V-3.

Example calculation:

2011 Curbside Recycling = 2010 Curbside Recycling + (2010 Curbside Recycling x Annual Population Growth)

30,395 = 30,917 + (30,917 x -1.69%)