
Section VII - MEASUREMENT OF PROGRESS TOWARD WASTE REDUCTION GOALS

A. DISTRICT WILL COMPLY WITH GOALS IDENTIFIED

The State Solid Waste Management Plan mandates that the Mahoning County Solid Waste Management District *ensure the availability for reduction, recycling, and other waste reduction alternatives for residential/commercial solid waste by the year 2000 (Goal #1), or a) 25 percent waste reduction rate for residential/commercial sector, and/or b) 50 percent waste reduction rate for the industrial sector (Goal #2).* The District has demonstrated compliance with Goal #1, see Section VII(B) below.

B. DEMONSTRATION OF COMPLIANCE GOAL NUMBER 1

Goal No.1 stipulates that the District ensure the availability of waste reduction, recycling and minimization programs and activities are in existence by the year 2000 for 90% of the residential/commercial sector. According to the *Solid Waste Management Plan Format (1996) Version 3.0*, to demonstrate compliance with this goal the District will show that:

- “Each sector of waste generators (residential and commercial/institutional) has access to recycling or other alternate management methods for at least four of the minimum seven materials;” and
- “Generators’ participation in recycling or alternate management methods meets or exceeds the minimum level of participation, or incentives are in place (or scheduled for implementation) to encourage participation.”

1. Residential

SERVICE AREA

The service area for the district is Mahoning County with a population of 254,620.

ACCESS

For the Mahoning County service area, the District must demonstrate access for at least 90% of the population of the service area and that four materials are identified as being recycled. From Table VII-1 the District has identified four materials as being recycled. These are newspaper, glass, aluminum and plastic containers. To demonstrate access for at least 90% of the population, the District separated the service area by the type of service or opportunity provided. The types of service the District offers the residential sectors are: non-subscription curbside, full-service drop-offs, and part-time drop-offs. Buybacks and composting sites are available for the service area residents; however, they are not used in this demonstration for access. Tables III-4 and III-5 list the communities which offer curbside and drop-off services.

Non-subscription curbside: Curbside collection is offered in four cities, three villages, and four townships and provides collection of: newspaper, glass containers, aluminum containers, and plastic containers. These are Campbell, Struthers, and Youngstown, Canfield; Lowellville, New Middletown, and Poland Village; Austintown Twp., Boardman Twp., Canfield Twp. and Poland Twp. For non-subscription curbside the Plan Format version 3.0 details the calculation procedure which assumes all households within the political jurisdiction have access. Thus the District

provides access for 226,299 persons for the above-mentioned jurisdictions through the curbside program. Appendix E illustrates the areas providing curbside services.

Full-service Drop-Offs: The District provides full-service drop-off services (open to the public for at least 40 hours per week and handles the four materials used to meet the access standard) in three urban and six rural areas. For the year 2003 the urban areas are Austintown Twp. (two drop-off bin locations), Boardman Twp. (two drop-off bin locations), Poland Twp., Struthers, Youngstown and Campbell. The rural areas are Berlin Twp., Coitsville Twp., Ellsworth Twp., Jackson Twp., Craig Beach and Sebring. The drop-off bin located in Craig Beach also provides access to Milton Twp. Likewise, the drop-off located in Sebring also provides access to Smith Twp. However, for the access demonstration calculation, only Craig Beach and Sebring populations were considered (see Table VII-2).

The Plan Format provides the assumption of 2,500 persons per rural drop-off (population less than 5,000) and 5,000 persons for urban drop-offs (population equal to or greater than 5,000 persons). The District provides eight urban full-service drop-off sites and six rural full-service drop-off sites. Thus the District provides access for 55,000 persons through the drop-off recycling program.

Part-time Drop-Offs: The District provides part-time drop-off services (open to the public at regularly scheduled times and handles the four materials used to meet the access standard) in six townships, three villages. These are Beaver Twp., Goshen Twp., Green Twp., Milton Twp., Springfield Twp., Beloit, New Middletown and Smith Twp. The drop-off located in New Middletown also provides access to Springfield Twp. However, for access demonstration, only New Middletown's population was considered (see Table VII-2).

The Plan Format assumes 2,500 persons per drop-off in both rural and urban areas. The District provides eight part-time drop-off sites. Thus the District provides access for 20,000 persons.

Access Demonstration:

<u># of Persons</u>	<u>Service Provided</u>
226,299	non-subscription curbside (11)
40,000	Urban full-service drop-offs (8)
15,000	rural full-service drop-offs (6)
<u>20,000</u>	<u>part-time drop-offs (8)</u>
301,299	Total Residents with Access

Percentage of population with access:

$$\frac{301,299 \text{ persons}}{254,620 \text{ persons}} * (100\%) = 118\%$$

Table VII-2 calculates the access for the residential sector. The District is planning at this time to continue and expand services to the Mahoning County service area for the duration of the planning period. The Opportunity to Recycle program identified in Table VII-2 is described in Section IV of the plan. This program is the basis of the measurable recycling for the District. Within this program, curbside and drop-off services are provided to the residents of Mahoning County

PARTICIPATION

The education and awareness programs that the District has in place to promote participation are: Recycling Promotion Campaign and Public Education and Awareness Program. These programs listed below are described in detail in Section IV.

- **Recycling Promotion Campaign**
 - **Public Education and Awareness Program**

The District will continue to reinforce the “reduce, reuse and recycle” message to the public. The District targets schools to reinforce recycling to the younger population in hopes that they will continue (or begin) to recycle. The District also has developed TV and radio commercials in hope that even more of the Mahoning County service area will be reached. Through various media resources the public is informed of the various recycling methods available and the need to participate.

The largest financial incentive to increase participation in recycling programs is the Allied Waste (BFI) contract. As the District contract stands now with Allied Waste, urban area residents are provided with free curbside recycling services. This is a 30-year contract that will continue through the planning period. Residents have the option of a “pay-as-you-throw” variable rate for trash pickup services. The District also offers “Cash for Cans”. “Cash for Cans is provided through the Public/Education and Awareness Program. It awards the schools payment for each pound of aluminum collected.

2. Commercial/Institutional

SERVICE AREA

The service area for the District is Mahoning County with a population of 254,620.

ACCESS

The District must demonstrate four of the seven materials used to meet the overall goal are recycled by entities that service this area. In addition to this, the District must also demonstrate that at least one drop-off or buyback is available; haulers which pickup recyclables for a fee or no charge; or at least one MRF recovering recyclables. The four materials that are recycled by entities that service this sector are: corrugated cardboard, office paper, aluminum containers and wood packaging.

Corrugated cardboard and office paper private collection services are provided in the District by BFI Commercial Services, Waste Management Cardboard and Associated Paper Stock. Additionally the District’s Commercial Office Paper Program as well as the School Fiber Program and District Drop-off Sites also provide access to cardboard and paper recycling.

District drop-off locations are available in all Townships throughout Mahoning County. All District drop-off sites provide commercial access to aluminum container recycling as well as an added feature of the Office Paper Recovery Program and the Cash-for-Cans program in the schools.

In addition, recycling centers accepting cardboard, paper, and glass are Howland Trumbull Recycling Center, Alliance Recycling Center. Two wood packaging buy-backs are available for District recycling, Penn-Ohio Pallets and Iron City Wood.

A new private MRF is under construction in the District and will accept cardboard, paper, glass, cans, and plastic.

PARTICIPATION

The education and awareness programs that the District has in place to promote participation are: Recycling Promotion Campaign, Office Paper Recovery Program, Public Education and Awareness Program, and Industrial/Commercial Waste Reduction Program. These programs are described in detail in Section V. The following information further describes these strategies:

- **Recycling Promotion Campaign**
 - **Institutional Promotional Activities**

- **Public Education and Awareness Program**
- **Office Paper Recovery Program**
- **School Fiber Program**
- **Industrial/Commercial Waste Reduction Program**

As demonstrated in Table VII-1, the District has designated corrugated cardboard, office paper, aluminum containers and wood packaging to show compliance with Goal #1. The total tonnage projections are provided in Table VII-3.

C. CALCULATING GOAL NUMBER 2, THE WASTE REDUCTION RATE

This is an "Access" based plan the District has demonstrated the attainment of goal #1. Pursuant to ORC 3724.53(A) the District is required to be in compliance with goal #1 (access), or goal #2 (percentage). In addition to maintaining compliance with Goal # 1, striving toward Goal No. 2 is now the primary priority of the District. The objective of Goal #2 is to demonstrate at least 25% recycling rate in the residential/commercial sector or 50% recycling rate in the industrial sector, by the year 2000. Current legislative does not require attainment of both goals, but given District compliance with goal #1, the District must strive toward goal #2 by identifying timeframes for their own percentage goals. At this time the District cannot demonstrate compliance with Goal No. 2 for 25% recycling in the residential/commercial sector. However, the District documents the current recycling rate and has included Tables VII-3, VII-4 and VII-5. Tables VII-3 and VII-4 identify the anticipated waste reduction percentages based on the programs and strategies discussed in early Sections of this plan for each year of the planning period. At the start of next plan update period (2011) the District is anticipating attainment of a 22% waste reduction rate in the residential/commercial sector and over 57.86 % in the industrial sector.

(As a point of clarification, it should be noted that the 2001 State Plan, which has not yet been legislated in Rule, calls for the attainment of Residential/commercial AND Industrial Recycling goals, with a 66% Industrial recycling goal, by 2010. However, the formal legislation of the goals in 2001 State Plan is not anticipated to occur in the near future. Therefore, this plan discusses the 1995 State Plan goals.)

The Format provides the following formula for determining the percent waste reduction in the baseline year.

$$\begin{aligned} \text{TWR} &= \mathbf{R + (C-NC) + (I-A) + RA;} \\ \text{TWR} &= \text{The tons of Waste Reduction for year I} \\ \mathbf{R_1} &= \text{Tons of waste source reduced and recycled in year I} \\ \mathbf{C_1} &= \text{Tons of waste composted in year I} \\ \mathbf{NC_1} &= \text{Tons of non-compostables delivered for composting, separated for landfill disposal in year I} \\ \mathbf{I_1} &= \text{Tons of waste incinerated in year I} \\ \mathbf{A_1} &= \text{Tons of incinerator ash plus bypass waste in year I} \\ \mathbf{RA_1} &= \text{Tons of recycled incinerator ash in year I} \end{aligned}$$

In 2003, the Waste Reduction Rate for Mahoning County is calculated for Goal No. 2 demonstration purposes. Both quantities and results are calculated as follows:

$$\begin{aligned} \mathbf{R_{03}} &= \text{Residential/Commercial 19,390 tons (Table VII-3) + Industrial 51,775 tons (Table VII-4)} \\ &= 71,165 \text{ total tons recycled} \\ \mathbf{C_{03}} &= 16,980 \text{ tons (Table VII-3)} \\ \mathbf{NC_{03}} &= 0 \\ &= 0 \text{ tons (Table VII-5)} \end{aligned}$$

$$\begin{aligned}
 I_{03} &= 0 \text{ tons (Table VII-5)} \\
 A_{03} &= 0 \\
 RA_{03} &= 0 \\
 TWR_{03} &= (71,165 + 16,980) \text{ tons} \\
 TWR_{03} &= 88,145 \text{ tons}
 \end{aligned}$$

The following formula is to be used to estimate the generation based upon disposal and waste reduction amounts:

$$EGDWR_1 = TWR_1 + DL_1$$

Where:

$$\begin{aligned}
 EGDWR &= \text{Estimated Generation based upon disposal plus waste reduction in year 2003} \\
 DL &= \text{Tons of waste disposal in sanitary landfill in year 2003} \\
 &= 88,145 \text{ tons} + 342,838 \text{ tons (Table VII-5)} \\
 EDGWR_{03} &= 430,983 \text{ tons}
 \end{aligned}$$

Dividing the TWR by the EGDWR generates the waste reduction rate in the following formulas:

Waste reduction rate for 2003

$$\begin{aligned}
 WRR_1 &= \frac{TWR_i}{EGDWR_i} * 100\% \\
 &= \frac{88,145}{430,983} * 100\% \\
 WRR_{03} &= 20.5\%
 \end{aligned}$$

The amount of waste reduction per capita per day for 2003 is calculated as follows:

$$PCWR_1 = \frac{TWR_1 * 2000 \text{ lbs.}}{P_1 * 365 \text{ days}}$$

Where,

$$\begin{aligned}
 PCWR_1 &= \text{Per Capita Waste Reduction rate in pounds per capita per day in year i} \\
 P_1 &= \text{District population in year I} \\
 PCWR_1 &= \frac{88,145 \text{ tons} * 2,000 \text{ lbs.}}{254,620 * 365 \text{ days}} \\
 &= 1.90 \text{ lbs./cap/day}
 \end{aligned}$$

Recycling Demonstrations

Residential/Commercial Sector:

$$\begin{aligned}
 \text{Total tons incinerated} &= 0 \text{ tons} \\
 \text{Total tons composted} &= 16,980 \text{ tons} \\
 \text{Total tons recycled} &= 19,390 \text{ tons} \\
 \text{Total tons ash} &= 0 \text{ tons} \\
 \text{Total tons disposed} &= 261,783 \text{ tons}
 \end{aligned}$$

Waste reduction rate for 2003 in the residential/commercial sector equals:

$$\frac{19,390 + 16,980 + 0 - 0 \text{ tons}}{261,783 + 19,390 + 16,980 + 0} * 100\% = 12\%$$

Industrial Sector:

Total tons incinerated	=	0 tons
Total tons recycled	=	51,775 tons
Total tons ash	=	0 tons
Total tons disposed	=	78,867 tons

Waste reduction rate for 2003 in the industrial sector equals:

$$\frac{51,775 \text{ tons} + 0 \text{ tons} - 0 \text{ tons}}{78,867 + 51,775 + 0 - 0} * 100\% = 39.6\%$$

For demonstration purposes, the Mahoning County District has met compliance with Goal #1. The District will continue to strive for compliance with Goal #2 by implementing the programs and strategies described in Chapters V and VI.

**MAHONING COUNTY SOLID WASTE MANAGEMENT DISTRICT
SOLID WASTE MANAGEMENT PLAN**

**TABLE VII-1
MATERIALS USED TO DEMONSTRATE COMPLIANCE WITH GOAL #1**

Eleven Materials Highly Amenable to Recycling, etc.	Four Materials Selected for Residential Sector	Four Materials Selected for Commercial/Institutional Sector	Number of Times Material is Selected
Corrugated Cardboard		X	1
Office Paper		X	1
Newspaper	X		1
Glass Containers ¹	X		1
Steel Containers ¹			
Aluminum Containers ¹	X	X	2
Plastic Containers ¹	X		1
Wood packaging		X	1
Lead-acid Batteries			
Major Appliances			
Yard Waste			
Totals	4	4	8

1. Includes food and beverage containers only.

**MAHONING COUNTY SOLID WASTE MANAGEMENT DISTRICT
SOLID WASTE MANAGEMENT PLAN**

**TABLE VII-2
CALCULATION OF ACCESS FOR RESIDENTIAL SECTOR:
MAHONING COUNTY SERVICE AREA**

Program ¹	2003		Program ¹	2006	
	Number of Households w/Access	Population w/Access		Number of Households w/Access	Population w/Access
Opportunity to Recycle Program:					
<i>Non-subscription Curbside</i>			<i>Non-subscription Curbside</i>		
Campbell	4,099	9,460	Campbell	4,099	9,336
Lowellville Village	553	1,281	Lowellville Village	553	1,264
Struthers	4,982	11,756	Struthers	4,982	11,602
Youngstown	37,158	82,026	Youngstown	37,158	80,951
Canfield City	3,043	7,374	Canfield City	3,043	7,277
Canfield Twp	5,941	14,624	Canfield Twp	5,941	14,432
Poland Village	1,123	2,866	Poland Village	1,123	2,828
Austintown Twp	16,478	38,001	Austintown Twp	16,478	37,503
Boardman Twp	19,149	42,518	Boardman Twp	19,149	41,961
Poland Twp	5,643	14,711	Poland Twp	5,643	14,518
New Middletown	727	1,682	New Middletown	727	1,660
		226,299			223,334
<i>Full Service Drop-Off (urban area)</i>			<i>Full Service Drop-Off (urban area)</i>		
Austintown Twp (2 sites)	16,478	10,000	Austintown Twp (4 sites)	16,478	20,000
Boardman Twp (2 sites)	19,149	10,000	Boardman Twp (3 sites)	19,149	15,000
Poland Twp	5,643	5,000	Poland Twp (2 sites)	5,643	10,000
Struthers	4,982	5,000	Struthers	4,982	5,000
Youngstown	37,158	5,000	Youngstown (5 sites)	37,158	25,000
Campbell	4,099	5,000	Campbell	4,099	5,000
		40,000	Canfield Twp (3 Sites)	5,941	15,000
					95,000
<i>Full Service Drop-Off (rural area)</i>			<i>Full Service Drop-Off (rural area)</i>		
Berlin Twp	857	2,500	Berlin Twp	857	2,500
Coitsville Twp.	695	2,500	Coitsville Twp.	695	2,500
Ellsworth Twp	854	2,500	Craig Beach	568	2,500
Jackson Twp.	876	2,500	Goshen Twp #1	1,294	2,500
Craig Beach	568	2,500	Ellsworth Twp	854	2,500
Sebring	2,252	2,500	Jackson Twp	876	2,500
			Lowellville Village	553	2,500
			Milton Twp	1,973	2,500
			Sebring	2,252	2,500
		15,000			22,500
<i>Part-Time Drop-Offs</i>			<i>Part-Time Drop-Offs</i>		
Beaver Twp	2,448	2,500	Beaver Twp	2,448	2,500
Goshen Twp	1,294	2,500	Goshen Twp #2	1,294	2,500
Green Twp	1,294	2,500	Green Twp	1,294	2,500
Milton Twp	1,973	2,500	Beloit	452	2,500
Beloit	452	2,500	Springfield Twp	2,443	2,500
Springfield Twp	2,443	2,500	New Middletown	727	2,500
New Middletown	727	2,500	Smith Twp	2,046	2,500
Smith Twp	2,046	2,500			
		20,000			17,500
Total Population with Access		301,299	Total Population with Access		358,334
	2003	2006		2003	2006
Service Area Population	254,620	251280	Access Percentage (Total Population with Access / Service Area Population)	118%	143%

Notes:

1. The programs listed are those that can measure the tonnage of recyclables. The District funds several programs which are centered around education, awareness and promotion of the various recycling opportunities within the District. Unfortunately the District has no methods of measuring the success of these programs.
Population for 2003 = 254,620

2006 Population figures derived from Ohio Department of Development,
Office of Strategic Research Projections 2005-2030

Housing should remain relatively static.

**MAHONING COUNTY SOLID WASTE MANAGEMENT DISTRICT
SOLID WASTE MANAGEMENT PLAN**

**TABLE VII-3
PROJECTIONS OF ANNUAL RATE OF WASTE REDUCTION
RESIDENTIAL/COMMERCIAL WASTE**

YEAR	R ¹	C ²	NC ³	I ⁴	A ⁵	RA ⁶	DL ⁷	TWR ⁸	EGDWR ⁹	P ¹⁰	WRR ¹¹	PCWR ¹²
2003	19,390	16,980	0	0	0	0	261,783	36,370	298,153	254,620	12%	0.78
2004	25,193	5,076	0	0	0	0	269,051	30,269	299,320	253,640	10%	0.65
2005	30,316	6,076	0	0	0	0	264,077	36,392	300,469	252,660	12%	0.79
2006	39,886	6,752	0	0	0	0	253,106	46,639	299,745	251,280	16%	1.02
2007	42,479	8,007	0	0	0	0	248,525	50,486	299,011	249,900	17%	1.11
2008	45,934	8,476	0	0	0	0	243,857	54,410	298,267	248,520	18%	1.20
2009	48,669	9,057	0	0	0	0	239,787	57,726	297,513	247,140	19%	1.28
2010	51,468	9,301	0	0	0	0	235,980	60,769	296,748	245,760	20%	1.35
2011	54,335	9,589	0	0	0	0	232,610	63,924	296,534	244,842	22%	1.43
2012	57,272	9,877	0	0	0	0	229,164	67,148	296,312	243,924	23%	1.51
2013	60,282	10,173	0	0	0	0	225,629	70,455	296,084	243,006	24%	1.59
2014	63,371	10,478	0	0	0	0	222,000	73,849	295,849	242,088	25%	1.67
2015	66,540	10,793	0	0	0	0	218,275	77,333	295,607	241,170	26%	1.76
2016	69,795	11,116	0	0	0	0	214,146	80,911	295,057	240,006	27%	1.85
2017	73,139	11,450	0	0	0	0	209,909	84,589	294,498	238,842	29%	1.94
2018	76,576	11,793	0	0	0	0	205,560	88,370	293,930	237,678	30%	2.04
2019	80,112	12,147	0	0	0	0	201,094	92,259	293,354	236,514	31%	2.14
2020	83,751	12,512	0	0	0	0	196,506	96,263	292,769	235,350	33%	2.24
2021	87,498	12,887	0	0	0	0	192,555	100,385	292,939	234,798	34%	2.34
2022	91,358	13,274	0	0	0	0	188,473	104,631	293,104	234,245	36%	2.45

1. Tons of residential/commercial waste source reduced and recycled as shown in Table VI-2.
2. Tons of residential/commercial waste composted as shown in Table VI-2.
3. Tons of non-compostable residential/commercial waste.
4. Tons of residential commercial waste incinerated as shown in Table VI-2.
5. Tons of residential/commercial waste incinerator ash and bypass waste produced.
6. Tons of residential/commercial incinerator ash recycled.
7. Tons of residential/commercial waste disposed in landfills as shown in Table VI-2.
8. Tons of residential/commercial waste reduction.
9. Tons of residential/commercial waste generated based upon disposal plus waste reduction.
10. District population as shown in Table V-1.
11. Residential/commercial waste reduction rate as a percentage.
12. Residential/commercial waste reduction per capita in pounds per person per day.

**MAHONING COUNTY SOLID WASTE MANAGEMENT DISTRICT
SOLID WASTE MANAGEMENT PLAN**

**TABLE VII-4
PROJECTIONS OF ANNUAL RATE OF WASTE REDUCTION
INDUSTRIAL WASTE**

YEAR	R¹ (tons)	C² (tons)	NC³ (tons)	I⁴ (tons)	A⁵ (tons)	RA⁶ (tons)	DL⁷ (tons)	TWR⁸ (tons)	EGDWR⁹ (tons)	P¹⁰ population	WRR¹¹ (%)	PCWR¹² #/person/d
2003	51,775	0	0	0	0	0	78,867	51,775	130,642	254,620	39.63	1.11
2004	51,535	0	0	0	0	0	77,088	51,535	128,623	253,640	40.07	1.11
2005	45,712	0	0	0	0	0	80,934	45,712	126,646	252,660	36.09	0.99
2006	53,630	0	0	0	0	0	71,079	53,630	124,709	251,280	43.00	1.17
2007	56,030	0	0	0	0	0	66,783	56,030	122,813	249,900	45.62	1.23
2008	58,550	0	0	0	0	0	62,406	58,550	120,956	248,520	48.41	1.29
2009	61,196	0	0	0	0	0	57,941	61,196	119,137	247,140	51.37	1.36
2010	63,974	0	0	0	0	0	53,380	63,974	117,354	245,760	54.51	1.43
2011	66,891	0	0	0	0	0	48,717	66,891	115,608	244,842	57.86	1.50
2012	69,954	0	0	0	0	0	43,943	69,954	113,897	243,924	61.42	1.57
2013	69,954	0	0	0	0	0	42,267	69,954	112,221	243,006	62.34	1.58
2014	69,954	0	0	0	0	0	40,624	69,954	110,578	242,088	63.26	1.58
2015	69,954	0	0	0	0	0	39,014	69,954	108,968	241,170	64.20	1.59
2016	69,954	0	0	0	0	0	37,436	69,954	107,390	240,006	65.14	1.60
2017	69,954	0	0	0	0	0	35,889	69,954	105,843	238,842	66.09	1.60
2018	69,954	0	0	0	0	0	34,372	69,954	104,326	237,678	67.05	1.61
2019	69,954	0	0	0	0	0	32,886	69,954	102,840	236,514	68.02	1.62
2020	69,954	0	0	0	0	0	31,428	69,954	101,382	235,350	69.00	1.63
2021	69,954	0	0	0	0	0	29,999	69,954	99,953	234,798	69.99	1.63
2022	69,954	0	0	0	0	0	28,597	69,954	98,551	234,245	70.98	1.64

1. Tons of industrial waste source reduced and recycled as shown in Table VI-3.
2. Tons of industrial waste composted as shown in Table VI-3.
3. Tons of non-compostable industrial waste.
4. Tons of industrial waste incinerated as shown in Table VI-3.
5. Tons of industrial waste incinerator ash and bypass waste produced.
6. Tons of industrial incinerator ash recycled.
7. Tons of industrial waste disposed in landfills as shown in Table VI-3.
8. Tons of industrial waste reduction.
9. Tons of industrial waste generated based upon disposal plus waste reduction.
10. District population as shown in Table IV-1.
11. Industrial waste reduction rate as a percentage.
12. Industrial waste reduction per capita in pounds per person per day.

**MAHONING COUNTY SOLID WASTE MANAGEMENT DISTRICT
SOLID WASTE MANAGEMENT PLAN**

**TABLE VII-5
PROJECTIONS OF ANNUAL RATE OF WASTE REDUCTION
TOTAL DISTRICT SOLID WASTE**

YEAR	R ¹	C ²	NC ³	I ⁴	A ⁵	RA ⁶	DL ⁷	TWR ⁸	EGDWR ⁹	P ¹⁰	WRR ¹¹	PCWR ¹²
2003	71,165	16,980	0	0	0	0	342,838	88,145	430,983	254,620	20.5	1.90
2004	76,728	5,076	0	0	0	0	350,612	81,804	432,416	253,640	18.9	1.77
2005	76,028	6,076	0	0	0	0	349,484	82,104	431,588	252,660	19.0	1.78
2006	93,517	6,752	0	0	0	0	328,658	100,269	428,927	251,280	23.4	2.19
2007	98,509	8,007	0	0	0	0	319,781	106,516	426,297	249,900	25.0	2.34
2008	104,484	8,476	0	0	0	0	310,735	112,960	423,696	248,520	26.7	2.49
2009	109,865	9,057	0	0	0	0	302,201	118,921	421,122	247,140	28.2	2.64
2010	115,442	9,301	0	0	0	0	293,833	124,743	418,576	245,760	29.8	2.78
2011	121,226	9,589	0	0	0	0	285,800	130,815	416,615	244,842	31.4	2.93
2012	127,226	9,877	0	0	0	0	277,580	137,102	414,683	243,924	33.1	3.08
2013	130,236	10,173	0	0	0	0	272,369	140,409	412,778	243,006	34.0	3.17
2014	133,325	10,478	0	0	0	0	267,097	143,803	410,900	242,088	35.0	3.25
2015	136,494	10,793	0	0	0	0	261,762	147,287	409,048	241,170	36.0	3.35
2016	139,749	11,116	0	0	0	0	256,054	150,865	406,920	240,006	37.1	3.44
2017	143,093	11,450	0	0	0	0	250,271	154,543	404,813	238,842	38.2	3.55
2018	146,530	11,793	0	0	0	0	244,406	158,324	402,729	237,678	39.3	3.65
2019	150,066	12,147	0	0	0	0	238,453	162,213	400,666	236,514	40.5	3.76
2020	153,705	12,512	0	0	0	0	232,407	166,217	398,624	235,350	41.7	3.87
2021	157,452	12,887	0	0	0	0	227,026	170,339	397,365	234,798	42.9	3.98
2022	161,312	13,274	0	0	0	0	221,543	174,585	396,128	234,245	44.1	4.08

1. Total tons of waste source reduced and recycled as shown in Table VI-1.
2. Total tons of waste composted as shown in Table VI-1.
3. Total tons of non-compostable waste.
4. Total tons of waste incinerated as shown in Table VI-1.
5. Total tons of waste incinerator ash and bypass waste produced.
6. Total tons of incinerator ash recycled.
7. Total tons of waste disposed in landfills as shown in Table VI-1.
8. Total tons of waste reduction.
9. Total tons of waste generation based upon disposal plus waste reduction.
10. District population as shown in Table IV-1.
11. Total waste reduction rate as a percentage.
12. Per capita waste reduction in pounds per person per day.