STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

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RUSSELL J. HARDING, Director

November 14, 2000

Mr. Jack White, Chairperson
Antrim County Board of Commissioners
P.O. Box 520
Bellaire, Michigan 49615

Dear Mr. White:

The Department of Environmental Quality (DEQ) received the locally approved update to the Antrim County Solid Waste Management Plan (Plan) on July 10, 2000. Except for the items indicated below, the Plan is approvable. As outlined in the August 4, 2000 letter to Mr. Peter Garwood, Coordinator/Planner, Antrim County Office of the Coordinator/Planner, from Mr. Stan Idziak, DEQ, Waste Management Division, and as confirmed by letter dated September 19, 2000, from you to Mr. Idziak, the DEQ makes certain modifications to the Plan as discussed below.

On page III-47 of the Plan, under Solid Waste Disposal Areas, Type II Landfill, the Kalkaska-Antrim Transfer Station operated by Northern A-1 is listed. This facility is a Type A Transfer Station and should be listed under the Type A Transfer Facility heading. In addition, Antrim County (County) has not authorized the export of solid waste to Kalkaska County in Table 2-A on page III-43, even though the County intends to send solid waste to this facility. Therefore, Kalkaska County is added to Table 2-A on page III-43. Also, the Kalkaska-Antrim Transfer Station is removed from the Solid Waste Disposal Areas Type II Landfill list on page III-47 and the facility description added to the list under the Type A Transfer Facility heading on the same page.

On page III-81 of the Plan, B.2 Recycling and Compost Processing Facility, line 2, the phrase "of any type" should be deleted from this sentence. The term "source separated" is defined in Section 11506(6) of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and has a specific application. Therefore, this sentence is modified to read: "A processing facility that processes only source separated materials does not require a construction permit and operating license from the DEQ."

On page III-90 of the Plan, Minimum Standard Siting Criteria Evaluation Checklist, A: Site Ownership; and Primary Siting Criteria Detailed Descriptions, A: "The site and respective parcel must be owned by the applicant or under a long term lease (20 years or greater) from a state agency." This criterion is unnecessary since the Plan only allows siting for disposal areas that are sponsored by the County Sponsorship by the County is defined in the Plan in Section A.2 on page III-80 to mean, at a minimum, County ownership of the land on which the disposal area is located. This criterion is hereby deleted from the Plan.

On page III-91 of the Plan, Siting Criterion H. reads as follows:

H. No part of the site and respective parcel(s) is located within or less than 100 feet from the boundary edge of:

1. Any surface water;

2. Beach contiguous to a lake of stream;

3. Existing public utility easements; and

4. Existing public rights of way.

We believe that the criteria under numbers 3 and 4 will effectively prohibit any new disposal area from being sited under this Plan, since virtually all property on which a disposal area might seek to locate, would abut a public road and would be located near the public utilities necessary to provide service to the property.

This situation is remedied by altering section H to read:

H. No part of the active work area of the site is located within or less than 100 feet from the boundary edge of:

1. Any surface water;

2. Beach contiguous to a lake or stream;

3. Existing public utility easements; and

4. Existing public rights of way.

The term, active work area, is the legally defined phrase most appropriate to the intent of this criterion. This term is defined in R 299.4101 (g) of the administrative rules for Part 115.

On page III-93 item R, section 1, defines the standards of a vegetation belt, buffer, screening, and service access area for facilities that are landfill disposal areas and landfill disposal area expansions. On page III-80, section A, subsection A.1, clearly states that no Type II or Type III landfill disposal areas may be sited by the Plan. Therefore, it is not necessary to define standards for a vegetation belt, buffer,

screening, and service access area for facilities that are landfill disposal areas and landfill disposal area expansions. Section 1, subsections a, b, and c are deleted from the Plan.

On page III-102 of the Plan, III-12, Local Ordinances and Regulations Affecting Solid Waste Disposal, 3: "a. Certain ancillary construction details,"

This statement is too vague. In general, the DEQ will not approve the broad inclusion of all local zoning authorizations in solid waste management plans as these ordinances (1) may include provisions that will have siting impacts not included in the Plan's siting criteria, (2) will provide for discretionary local decisions which will impermissibly impact siting decisions which by law are controlled by the siting provisions specified in the Plan, or (3) may interfere with or conflict with the DEQ's regulatory responsibilities.

This situation is remedied by revising the statement to read: "a. Certain ancillary construction details, such as landscaping and screening,"

With these modifications, the County's updated Plan is hereby approved, and the County now assumes responsibility for the enforcement and implementation of this Plan. Please ensure that a copy of this letter is included with copies of the approved Plan distributed by the County.

By approving the Plan with modifications, the DEQ has determined that it complies with the provisions of Part 115 and the Part 115 administrative rules concerning the required content of solid waste management plans. Specifically, the DEQ has determined that the Plan identifies the enforceable mechanisms that authorize the state, a county, a municipality, or a person to take legal action to guarantee compliance with the Plan, as required by Part 115. The Plan is enforceable, however, only to the extent the County properly implements these enforceable mechanisms under applicable enabling legislation. The Plan itself does not serve as such underlying enabling authority, and the DEQ approval of the Plan neither restricts nor expands the County authority to implement these enforceable mechanisms.

The Plan may also contain other provisions that are neither required nor expressly authorized for inclusion in a solid waste management plan. The DEQ approval of the Plan does not extend to any such provisions. Under Part 115, the DEQ has no statutory authority to determine whether such provisions have any force or effect.

The DEQ applauds your efforts and commitment in addressing the solid waste management issues in Antrim County. If you have any questions, please contact Mr. Seth Phillips, Chief, Solid Waste Management Unit, at 517-373-4750.

Sincerely,

Russell J. Harding
Director
517-373-7917

cc: Senator George A. McManus, Jr.
Representative Kenneth L. Bradstreet
Mr. Peter Garwood, Antrim County Office of the Coordinator/Planner
Mr. Arthur R. Nash Jr., Deputy Director, DEQ
Mr. Timothy R. Sowton, Legislative Liaison, DEQ
Mr. Jim Sygo, DEQ
Ms. Joan Peck, DEQ
Mr. Philip Roycraft, DEQ - Cadillac
Mr. Seth Phillips, DEQ
Mr. Stan Idziak, DEQ
Antrim County File
Kalkaska County File

Antrim County
Solid Waste Management Plan Update

As Approved by Board of Commissioners

February 18, 2000

AS REQUIRED BY SECTION 11539a OF

PART 115, SOLID WASTE MANAGEMENT, OF

THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT

1994 PA 451, AS AMENDED

DATE SUBMITTED TO THE DEQ: February 25, 2000

This solid waste management plan includes Antrim County. No other counties or municipalities outside the County have been included in this plan.

DESIGNATED PLANNING AGENCY PREPARING THIS PLAN UPDATE: Antrim County Planning Department

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Antrim County Solid Waste Management Plan Update

As Approved by Board of Commissioners and Local Units of Government

February 18, 2000

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I-1 EXECUTIVE SUMMARY

The following summarizes the solid waste management system selected to manage the solid waste within Antrim County. In case of conflicting information between the executive summary and the remaining contents of the Plan update, the information provided in the main body of the plan update found on the following pages will take precedence over the executive summary.

The following summarizes the solid waste management system selected to manage the solid waste within the County.

OVERVIEW OF THE COUNTY

Antrim County is located in the northwestern part of the Lower Peninsula of Michigan with a total land area of approximately 305,280 acres or 477 square miles. Antrim County features a wealth of natural resources, including lakes, forests, agricultural land and urban areas. Approximately 70,214 acres or 23 percent of the county is farmland, 147,058 acres or 48.2 percent is forested, 16,398 acres or 5.4 percent is developed and 27,520 acres or 8.3 percent is inland waters.

The topography of the county varies in relief from an altitude of over 1500 feet above mean sea level in the northeast to less than 585 feet above mean sea level along the Lake Michigan shoreline in the southwestern part of the county. The gently rolling and hilly uplands which characterize Antrim County terminate in abrupt bluffs along the shoreline of Lake Michigan. Generally, Antrim County is suited for most types of development with the exception of areas of steep slopes and wetlands. Some of the steep hills left by glaciers have been developed into excellent ski resorts.

Surface Water

One of the county's most notable and impressive features is Elk River/Chain-of-Lakes watershed system which flows into Grand Traverse Bay at Elk Rapids. This hydrologic basin comprises 100 miles of connecting waterways. In addition, there are numerous small lakes and rivers including the Scenic Jordan River, a designated Natural River. Together the lakes and rivers in Antrim County make up an area of nearly 27,520 acres. The shoreline of Grand Traverse Bay is also a great natural resource of the county. Consisting of sandy beaches, it extends along the entire western boundary for a distance of 13 miles.

Soils

Soil Types in Antrim County range from sands and related light soils to heavy clay loams. Well-drained sandy soils dominate most of the county and are associated with the glacial till and outwash plains of northwestern Michigan. Shale outcroppings around Ellsworth have provided raw material for the cement industry of Petoskey and Charlevoix. Poorly drained soils comprise much of the low areas around the lakes and streams of the county. The Jordan River flood plain constitutes the largest such area in Antrim County.

One soil grouping to note is sand soil on dunes and lake plains. This is a level to moderately steep excessively drained soil. It is dry, infertile and generally is unsuited for agriculture. Steep areas are severely limited for residential development and subject to extreme wind and water erosion. For more accurate information, consult the Soils Survey of Antrim County, Michigan (U.S.D.A. Soil Conservation Service, 1978).

Climate

The varied soil and climatic conditions in Antrim County provide the basis for diversified agricultural activities. The area once supported a hardwood forest and the cutover land left by lumbering operations proved of little value for agricultural uses. Most soils are composed of sand or sandy loams, incapable of retaining much moisture and of low fertility.

Transportation System

Antrim County is well served by a network of State and local roads. U.S. 131 runs from approximately the middle of the county's southern boundary to the northeast corner of the county and connects the area with Cadillac and Grand Rapids to the south as well as the Straits of Mackinaw to the north. U.S. 31 runs along the western portion of Antrim County and connects the area with Traverse City to the south and Charlevoix and Petoskey to the north. State Highway M-66 runs from Mancelona north to Charlevoix. M-32 runs through northeastern Antrim County and ties in with Gaylord to the east and East Jordan to the north. M-88 connects Eastport, Central Lake, Bellaire and Mancelona. An extensive system of paved and gravel roads connect outlying areas with these State and Federal highways. These county roads are located primarily on a one mile grid system

Land Use

Land use and projected future changes can impact the solid waste system in many ways, including siting of future facilities. For purposes of this plan, the general land use of Antrim County can be divided into four categories: developed, agriculture and open space, forested and Public Land.

A somewhat dated study, the 1964 Antrim County Comprehensive Plan documented data pertaining to the economy, land use, parks, schools, transportation network and population estimates. This study provided a land use plan which identified anticipated development trends and established land use proposals to direct this growth into planned development patterns throughout the county. The county adopted a Development Coordinating Committee to oversee subdivision development, and a Building Code in 1974, but other land use regulations and controls were not implemented. To date, seven townships and one village in Antrim County (Banks, Elk Rapids, Forest Home, Helena, Kearney, Milton, Torch Lake, and the Village of Elk Rapids) have zoning ordinances in effect.

Antrim County contains a large amount of agriculture and open space, forested, and public lands compared to developed land. The Bellaire area contains a large amount of industrial, commercial, institutional, and residential uses in the county.

Projected land uses for the 5 and 20 year period do not show major changes. Continued expansion of the parcels surrounding Bellaire, Elk Rapids, Mancelona will most likely occur and further development around inland lakes and rivers will continue over this time period.

Allocation of land under current conditions is shown in the chart below.

Land Use Type	*% County Land*
Surface Water	8.3%
Developed Land	5.4%
State forest land	23%
Agriculture	23%
Total forested	48.2%

Population

Population counts, estimates and projections are essential to effective solid waste management planning. Rarely does any community have an exact current population count. While the decade house to house census carried out by the U.S. Census Bureau forms our most reliable date, normal errors still occur from many factors including the incidence of seasonal migration. The numbers presented in this plan were compiled from sources available at the time. However, a re-analysis of the 1990 census data is recommended, as soon as it is available, by the Antrim County Planning Commission and/or staff to see if significant changes are recorded. 1990 Census figures will be used in the next update to the Antrim County Solid Waste Management Plan.

The 1980 U.S. Census of Antrim County indicated a population of 16,194. By 1998, population projections compiled by the Northwest Michigan Council of Governments estimated the number the number of persons at more than 21,000. Current population by municipality is characterized in the chart below. In addition to the projected growth of year-round residents, the population of the county increases seasonally. This is due to many factors including second home ownership, migrant labor, tourists, and other transients. Due to the large variation in seasonal population, good estimates of seasonal population are not available. By the height of the tourist season, (late summer), it has been estimated that the county experiences a population swell by an additional 25%. This is a general conservative estimate rendered for the county.

Employment, as reported to by the U.S. Bureau of the Census, shows the civilian labor force in 1995 was 4,426 employees. Of total employees in 1995, the most were employed in the service sector, at 1,715. Manufacturing employed just over 1,000. Note that these figures do not include individual farm employment.

Projected growth trends forecasts the population for the county to increase by 13% over the next ten years. The table below shows 1998 population month by month, and by municipality. This illustrates how the fluctuating seasonal population affects the total population.

1998 Estimated Seasonal Population - Antrim County

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg.
Seasonal Multiplier	*1.11*	*1.12*	*1.13*	*1.11*	*1.16*	*1.37*	*1.38*	*1.39*	*1.18*	*1.17*	*1.15*	*1.14*	*1.22*
Ellsworth village	529	534	539	529	553	653	658	663	562	558	548	543	581
Banks township	1416	1429	1441	1416	1480	1748	1760	1773	1505	1492	1467	1454	1556
Central Lake village	1224	1235	1246	1224	1279	1510	1521	1532	1301	1290	1268	1257	1345
Central Lake towns.	1249	1260	1271	1249	1305	1541	1553	1564	1328	1316	1294	1283	1373
Chestonia township	519	524	529	519	543	641	645	650	552	547	538	533	571
Custer township	815	822	830	815	852	1006	1013	1021	866	859	844	837	896
Echo township	992	1001	1009	992	1036	1224	1233	1242	1054	1045	1027	1018	1090
Elk Rapids village	2086	2105	2124	2086	2180	2575	2594	2612	2218	2199	2161	2143	2293
Elk Rapids township	969	978	986	969	1013	1196	1205	1213	1030	1021	1004	995	1065
Bellaire village (pt.)	616	622	627	616	644	761	766	772	655	650	638	633	677
Forest Home towns.	1200	1211	1222	1200	1254	1481	1492	1503	1276	1265	1243	1232	1319
Helena township	1084	1094	1103	1084	1133	1338	1348	1357	1152	1143	1123	1113	1191
Jordan township	755	762	768	755	789	932	938	945	802	796	782	775	830
Bellaire village (pt.)	788	795	802	788	823	972	979	986	837	830	816	809	866
Kearney township	1100	1110	1120	1100	1149	1357	1367	1377	1169	1159	1139	1129	1209
Mancelona village	1745	1760	1776	1745	1823	2153	2169	2185	1855	1839	1808	1792	1918
Mancelona township	2331	2352	2373	2331	2436	2877	2898	2919	2478	2457	2415	2394	2562
Milton township	1900	1917	1934	1900	1986	2345	2362	2379	2020	2003	1969	1951	2088
Star township	745	751	758	745	778	919	926	932	792	785	771	765	818
Torch Lake township	987	996	1005	987	1032	1218	1227	1236	1050	1041	1023	1014	1085
Warner township	372	376	379	372	389	460	463	466	396	393	386	383	409
Antrim County Total	23421	23632	23843	23421	24476	28907	29118	29329	24898	24687	24265	24054	25742

THE SOLID WASTE PLANNING PROCESS

The Designated Planning Agency (DPA) and the Solid Waste Planning Committee (SWPC) completed a comprehensive strategic planning process that outlined strengths, weaknesses, opportunities, and threats that are part of the current and potential future solid waste management system that services the County. This analysis was used to create goals and objectives which are provided immediately after this Executive Summary. These goals and the strategic analysis formed the basis for developing the solid waste management strategy and the selected alternative that is described in this Plan as the Plan's Enforceable Program and Process as provided for in Part 115, Section 11533 (1) of the Michigan Natural Resources and Environmental Protection Act (NREPA).

In developing the Plan's Enforceable Program and Process the DPA and SWPC first screened out strategies that were technically or economically unsuitable for the County. The DPA and SWPC then reviewed a set of solid waste management program strategies in the following eight areas that were viewed as technically and economically feasible:

- Clean Community
- Drop-Off Residential Recycling
- Residential Yard Waste Composting
- Material Transfer and Processing
- Recycling Incentives
- Curbside Residential Recycling
- Commercial Recycling
- Disposal

These program strategies were assembled as System Alternatives that varied by level of landfill diversion, capital and operating cost and implementation requirements. At this stage in the strategic planning process, some of the Strategic Alternatives were determined to be unsuitable for the County based on an evaluation of the overall technical and economic feasibility of each approach and its ability to:

- build on the strengths of the local and regional situation,
- address current deficiencies and weaknesses,
- work with organizational approaches that the County is willing to consider,
- be fundable through systems that the County can implement,
- respond to and build community involvement and support,
- be enforceable, and
- set measurable goals that can be tracked to determine progress.

Appendix B of the Plan contains further detail regarding the System Alternatives that were not selected as part of the Plan's Enforceable Program.

The strategic planning process was carried through to final conclusions regarding the program strategies that would make up the Plan's Selected Alternative and become the foundation for the Plan's Enforceable Program as required by statute. The strategic planning process included surveying of the views of key stakeholders in the planning process, and others considered to be critical to implementation of the plan - primarily local government officials. The Selected Alternative is described briefly below and in the balance of the Plan with further detail provided in Appendix A of the Plan.

THE PLAN'S SELECTED ALTERNATIVE

During Years 1 through 10 of the Planning Period the Plan's Enforceable Program provides for the implementation of System Alternative 1 in the first three years as Phase I and System Alternative 2 in years 4 through 10 as Phase II. These are described below, detailed further in Part III of this Plan with additional supporting material provided in Appendix A:

During Years 1 through 3 of the Planning Period, the County will implement System Alternative 1 as follows:

ANTRIM COUNTY SYSTEM ALTERNATIVE I PHASE I
EXPANDED CLEAN COMMUNITY AND DROP-OFF RECYCLING PROGRAM

Key features include a Clean Community program that operates at highly effective levels. Incentives to recycle boost program performance, increasing tons and lowering unit costs. Expanded recycling drop-off capabilities are made available throughout the County at permanent sites open for longer periods of time each week. Arrangements are made for processing of recyclables that allows complete or partial commingling of paper products (commingled fibers) and complete or partial commingling of containers (commingled containers), increasing the types of materials that can be recovered and further increasing overall convenience. Direct haul of collected solid waste to regional landfills would remain as the standard practice although more options for local drop-off by residents would become available.

Following is a more detailed description of the specific program elements that are part of this Phase 1 of the Selected Alternative and the Plan's Enforceable Program. Specific details on who will implement Phase 1 of the Plan's Enforceable Program are covered in the next section addressing the Plan's Authorized Management Program. The timing of implementation of the Plan's Enforceable Program are then provided in the Plan's Timetable for Implementation that follows. The County's Solid Waste Program, implemented jointly by units of government within the county in cooperation with other public agencies and private firms will include the following features:

Antrim County Selected System Alternative Phase 1:
Detailed System Component Descriptions

Clean Community:

Comprehensive solid waste collection services would be made available to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations. Spring/fall cleanup days would be provided in more urban areas with scavenging/trading/reuse encouraged and recycling of as many materials left as possible. Household hazardous waste collection services would be provided and expanded to include collection of small quantities of agricultural pesticides and herbicides. Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.

Recycling Incentives:

Proactive education and promotion strategies would encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be widespread throughout the County and heavily promoted. Recycling drop-offs would add more materials to encourage overall participation in program by more citizens and businesses. An ambitious outreach and education program would promote all aspects of the expanded system and improvements.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County, open at convenient hours most days of the week. Material would be collected in a more commingled form to make use of the drop-off facilities easier. A wide variety of recyclable materials would be collected at each of the drop-off sites. Existing drop-off stations in Elk Rapids and Central Lake would be improved, and new sites established possibly near Mancelona, Bellaire, the Elmira area and Alden.

Curbside Residential Recycling:

Subscription curbside recycling would be available for residents that were willing to make their own arrangements for the service with area haulers.

Residential Yard Waste Composting:

Fall leaf collection would be provided in Mancelona, Elk Rapids, Central Lake and Bellaire. Backyard composting would be encouraged through distribution of backyard bins at discount rates. At least one and possibly more permanent drop-off options for yard waste would be provided throughout the County. Elk Rapids would be a likely location for a permanent collection site for seasonal yard waste. An active compost management program would be pursued.

Commercial Recycling:

Businesses would be encouraged to use the drop-off recycling network for smaller volumes of commingled paper and commingled containers. Arrangements would be made for larger volumes to be delivered to a site capable of handling compacted or loose loads of commercial recyclables. Businesses would be encouraged to contract with their hauler for collection of cardboard and other high volume recyclable materials. Elk Rapids may be a good prospect for a site which would accept larger loads of commercial recyclables.

Material Transfer and Processing:

Arrangements would be made to provide access to a material recovery facility (MRF) to service all recycling collectors in the system. These arrangements would ideally include guarantees that sufficient capacity was available to meet the County's needs over the long term. Ideally the facility would be able to process commingled containers and commingled fibers as well as handle presorted recyclables like OCC. The Emmet County Transfer Station remains the best processing prospect, however, the Waste Management, Inc. (former United/USA Waste) facility in Grand Traverse County could also be considered.

Disposal:

Existing landfills in the region would be used with direct haul by compacting collection vehicles being the primary method of transportation to the landfills. Existing drop-off facilities for solid waste would be available.

During Years 4 through 10 of the Planning Period, the County will implement System Alternative 2 as follows:

ANTRIM COUNTY SYSTEM ALTERNATIVE 2 PHASE 2
EXPANDED CLEAN COMMUNITY AND CURBSIDE RECYCLING PROGRAM

Key features include a Clean Community program that operates at highly effective levels making sure that disposal and recycling services are provided in all areas of the County. Incentives to recycle boost program performance, increasing tonnage and lowering unit costs. Expanded recycling drop-off capabilities are developed at one or more flagship sites with other drop-off sites provided on a permanent basis. Development of curbside programs for cities, villages and towns is pursued in order to increase convenience for large sector of population. Expanding the types of materials at both drop-offs and curbside is made possible through arrangements with a processing facility that is capable of accepting recyclables that are more commingled than current practice allows. Commercial recycling is also further developed to increase convenience and diversion. Organics management options are made available throughout the year with the addition of one or more drop-offs for yard waste and development of an active compost program. The county would work with adjacent counties to coordinate on a ban on certain materials being landfilled with an effective date targeted for a period 5 years away should specific diversion levels not be reached. This is coordinated with adjacent counties and all available transfer stations and regional disposal options.

Following is a more detailed description of the specific program elements that are part of this Phase 2 of the Selected Alternative and the Plan's Enforceable Program. Specific details on who will implement Phase 2 of the Plan's Enforceable Program are covered in the next section covering the Plan's Authorized Management Program. The timing of implementation of the Plan's Enforceable

Program are then provided in the Plan's Timetable for Implementation that follows. The County's Solid Waste Program, implemented jointly by units of government within the county in cooperation with other public agencies and private firms will include the following features:

Antrim County Selected System Alternative Phase 2:
Detailed System Component Descriptions

Clean Community:

Comprehensive solid waste collection services would be made available to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations. Spring/fall cleanup days would be provided in more urban areas with scavenging/trading/reuse encouraged and recycling of as many materials left as possible. Household hazardous waste collection services would be provided including collection of agricultural pesticides and herbicides -- all coordinated from a single permanent drop-off site. Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.

Recycling Incentives:

Proactive education and promotion strategies would encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be evaluated, refined and emphasized throughout the County in all solid waste collection arrangements. Recycling collection programs as well as drop-offs would add more materials to encourage overall participation in program by more citizens and businesses. The County would coordinate with the counties that they export waste to in order to implement a ban on landfilling of certain materials (cardboard and newspaper as examples) that would be targeted for an effective date 3 to 5 years in the future. This will provide a further incentive for increased adoption and participation in recovery programs.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County, open at convenient hours most days of the week. Arrangements for processing of material would be made to allow recyclables to be collected in a commingled form to make use of the drop-offs easier - coordinated with development of the capability to process this material at the processor. At least two of the drop-off sites would be developed into "flagship" drop-off sites that are staffed, have an educational component, and collect the largest number of different types of materials.

Curbside Residential Recycling:

Two stream commingled curbside recycling would be provided to all residents in a designated curbside service district that included most villages/towns/cities as well as other densely populated areas. Subscription service outside this district would be strongly encouraged.

Residential Yard Waste Composting:

Fall leaf collection would be provided in all villages/town/cities. Backyard composting would be encouraged through distribution of backyard bins at discount rates. A similar mulching mower program would encourage grass cycling. Permanent drop-off options for yard waste would be provided throughout the County with at least one "flagship" site taking all types of yard waste and providing finished compost for distribution to residents. An active compost management program would be pursued.

Commercial Recycling:

Arrangements would be made for a permanent site for businesses to drop-off a wide variety of recyclables including commingled containers and commingled paper (as recycling facility capabilities are upgraded). A business recycling service district would be established and businesses

within the district encouraged to contract for the recycling collection services provided by licensed haulers.

Material Transfer and Processing:

Arrangements would be made for a material recovery facility (MRF) to be available to all recycling collectors in the system. The facility would be able to process commingled containers and commingled fibers as well as presorted recyclables like OCC. Commercial recyclables would be able to be tipped at the facility for a reasonable fee that was lower than the tipping fee at area landfills. Some capability would be provided to remove contaminants and small quantities of solid waste from loads of recyclables.

Disposal:

Existing landfills in the region would be used with direct haul by compacting collection vehicles being the primary method of transportation to the landfills. A network of two or more drop-off facilities for solid waste would be available including a "flagship" site that took other types of waste (bulky, C&D, etc.) with this system preferably located at same sites as recycling drop-offs. A waste transfer facility would be planned should direct haul options for landfilling no longer be available or be cost prohibitive. This option would most likely include a major upgrade of the Elk Rapids facility in order to receive C&D materials.

AUTHORIZED MANAGEMENT COMPONENT

The Selected Alternative as described above is established by this Plan as the Plan's Enforceable Program defining the Antrim County Solid Waste Management System, implemented jointly by units of government within the county in cooperation with other public agencies and private firms. The Plan's Enforceable Program includes a "Management Component" that defines details of who will take responsibility for implementation and how that will be accomplished. This Authorized Management Component is described briefly below and further detailed in Part III of the Plan under a section with the same name.

Development of an organizational and management structure as part of the Plan's Authorized Management Component is provided for as part of the Plan's Enforceable Program. These developments may take a number of forms and will only be initiated after an evaluation of the best steps that can be taken to build on the strengths of the current system already in place.

These action steps are expected to follow some, if not all, of the following description of an enhanced management system that will provide for a method of funding and implementing the selected alternative.

The following organizational/management system components are highlighted as part of the Authorized Management Component of the Plan's Enforceable Program, providing a means to implement the selected strategy.

- The Solid Waste and Recycling Office of Antrim County operating out of the Antrim County Planning Department would be established in this Plan as the "designated implementation agency" to take responsibility for necessary program development through public and private sector channels, working with the Solid Waste and Recycling Council (see below) and key stakeholders on the implementation process. The Office will be provided with continued staffing, supporting technical resources as well as a budget and all required delegated responsibilities in order to accomplish its task. Where appropriate, every effort will be made to link this implementation capability with other regional efforts out-of-county. As well, other alternate approaches for implementation will be allowed for should they be determined to be necessary including 1) a Department of Public Works, 2) a multi-governmental Authority organized as provided for in Michigan law; 3) a quasi-governmental consortium with staff provided by its member agencies (County and Cities); 4) a newly created non-profit agency; 5) an existing non-profit agency, or 6) contracting with a service provider.

- Establish a Solid Waste and Recycling Council as an advisory committee to the County Board that would function as the Plan's "implementation oversight committee" assigned the responsibility to facilitate program development through public and private sector channels, advising the County Board of Commissioners and key stakeholders on the implementation process. The Council will serve as the focal point for encouraging intergovernmental cooperation, regional collaboration and private sector participation as well as involving the local business sector and community groups. This Council could be made up of current members of the Waste Reduction Advisory Council and the Solid Waste Planning Committee.

- Full utilization of the statutory authorities and powers of the County and the organizational structure finally selected (as described in paragraph "A" above) as provided for by Michigan law, enabling support for implementation of the selected alternative and the Plan's Enforceable Program with appropriate legal, management and financial capabilities.

- Development of a comprehensive "Implementation Action Plan" covering all aspects of Solid Waste Plan program implementation, where specific milestones will be identified for the coming years -- serving as a road map to guide the Solid Waste and Recycling Council and the Solid Waste and Recycling Office of Antrim County. This action plan will have a strong emphasis on "planning to plan" in order to define required decisions, important decision factors, and expected timing/outcomes. The action plan format will also provide for a means to be updated on a regular basis based on monitoring of progress towards plan goals and targeted diversion rates and a mechanism for feeding these updates into the ordinance/contract structure should they need to be changed.

- Development and adoption of intergovernmental contracts between the County and participating local units of government that would activate the P.A. 138 funding system and take additional steps to assign certain powers and responsibilities to the County for coordinating programs funded by the P.A. 138 fees. This will require creation of an ordinance and administrative rules that coordinate the responsibilities delegated by the local units to the county. This will structure the basic framework of the solid waste and recycling system for the County and link it to the P.A. 138 funding mechanism and also incorporate hauler licensing and facility designation agreements as needed. Taking these steps will involve a negotiation process with communities in the County to identify and resolve specific issues that need to be addressed before the communities are comfortable with the planned approach. These communities as well as other key parties affected by the planned programs would need to be asked to participate in discussions on implementation details, scheduling and coordination issues. The resulting recommendations would then be incorporated into the Action Plan. This process should involve negotiations with nearby counties interested in working with the County on various program areas (e.g. recycling processing) so that these details can be worked out and incorporated into the Action Plan.

- System improvements, new services, required contracts and service arrangements (e.g. for recycling processing) would be further detailed, incorporated into the Action Plan and then implemented. Much of the implementation would be by private and/or non-profit or other governmental agencies with service contracts being the principal means to define services and the necessary flow of funds. In addition to the local intergovernmental contract, it is expected that service contracts would also be needed between the designated implementing agency and the recycling facility to be used. Other contracts may be needed for purchased services such as the household hazardous waste program.

- Upon implementation it is recommended that progress be tracked through methodical data compilation and analysis in order to measure, on an annual basis, overall waste generation, reduction and recycling, benchmark performance against goals, and target future implementation planning.

TIMETABLE FOR IMPLEMENTING THE PLAN'S ENFORCEABLE PROGRAM

The Plan's Enforceable Program includes an implementation timeline for the Plan's Authorized Management Component. The following table summarizes key milestones for implemented Plan's Enforceable Program and is further detailed in Part III of the Plan under a section with the same name.

Management Components	Timeline
1) Designate Solid Waste Plan Implementation Agency	1999
2) Designate Implementation Oversight Committee	1999
3) Develop/Adopt Implementation Action Plan	1999
4) Draft/Adopt Intergovernmental Agreements/Ordinance/Rules/Regs	1999
5) Preliminary Program Specifications for Planned Programs	1999
6) Establish Budgets for Planned Programs	1999
7) Finalize Funding Structure and Enforcement Mechanisms	1999
8) Contract for Recycling Processing Capacity	1999
9) Initiate all Outreach/Education Programs	1999
10) Procure all Other System Improvements	1999
11) Final Implementation of Funding Mechanisms	1999
12) Continued Evaluation of Need for Transfer Facility	2000-2008
13) Develop Transfer Facility if Needed	2000-2008
14) Preliminary Program Specifications for Planned Ph II Programs	2000-2001
15) Establish Budgets for Planned Phase II Programs	2000-2001
16) Finalize Any Upgrades to Funding Structure and Mechanisms	2000-2001
17) Initiate all Phase II outreach/education programs	2002-2008
18) Procure all other Phase II system improvements	2002-2008
19) Data Tracking to Assess Program Performance	Annual/Ongoing
20) Update Implementation Action Plan	Annual/Ongoing

I-2 INTRODUCTION

To comply with Part 115 and its requirements, the Antrim County Solid Waste Plan establishes an Enforceable Program and Process that is directed toward goals and objectives based on the purposes stated in Part 115, Section 11538 (1)(a), 11541 (4) and the State Solid Waste Policy adopted pursuant to this Section, and Administrative Rules 711 (b)(i) and (ii).

GOALS AND OBJECTIVES

Goals and Objectives for the Antrim County Plan's Enforceable Program and Process as adopted by the Solid Waste Planning Committee follow:

This Solid Waste Management Plan works toward the following goals through actions designed to meet the objectives described under the respective goals which they support:

Goal 1.0: Establish and maintain a high quality environment within Antrim County by developing and implementing a planned solid waste management system, which provides for the protection of public health and the natural environment through conserving natural resources.

Objective 1.1: Develop a solid waste management plan which provides adequate guidance for both short term and long term concerns.

Objective 1.2: Ensure that solid waste management methods comply with water and air quality standards.

Objective 1.3: Develop and enforce regulations governing odor, noise, and appearance of solid waste collection, recovery, disposal, and storage facilities.

Objective 1.4: Eliminate illegal dumping of waste in authorized areas by developing and enforcing a county ordinance which provides for fines and other penalties and encourage witness to report illegal dumping by offering cash rewards.

Objective 1.5: Encourage and support practices of volume reduction of solid waste.

Objective 1.6: Annually provide means for the proper disposal of household hazardous wastes.

Objective 1.7: Participate in or provide means for the proper disposal of waste generated by agricultural and manufacturing interests which may require special handling and disposal.

Objective 1.8: Annually provide means and submit evidence to the Michigan Department of Environmental Quality for at least sixty six months of landfill capacity for Antrim County's waste stream.

Goal 2.0: Educate the public in order to assure all citizens are properly informed and understand the solid waste management system within Antrim County

Objective 2.1: Establish a solid waste management educational program which makes information readily available to students in the Antrim County educational system.

Objective 2.2: Utilizing the available media (radio, T.V., newspapers, newsletters), provide advanced notification to citizens regarding the various solid waste management opportunities which exist, such as recycling, household hazardous waste collections, composting, and special planning concerns.

Objective 2.3: Involve and encourage citizen participation in all aspects of solid waste management, including education on costs of solid waste management facilities, funding alternatives, solid waste planning, resource recovery, and composting,

Objective 2.4: Involve and encourage the commercial/manufacturing sector of Antrim County to participate in waste reduction, recycling, and composting programs to reduce the amount of materials being disposed of in landfills.

Goal 3: Maintain support, and expand recycling programs and facilities to decrease the dependence on landfills for solid waste disposal.

Objective 3.1: Encourage local research and experimental efforts in volume reduction and recycling by private, governmental, and civic groups.

Objective 3.2: Support inter-county (regional) cooperation in the research and development of recycling and resource recovery programs and facilities.

Objective 3.3: Promote development of local industries which use recycled materials.

Objective 3.4: Encourage source separation of recyclables by providing drop off sites throughout the city.

Objective 3.5: Encourage reduction of non-recyclable materials in packaging.

Objective 3.6: Encourage solid waste management information sharing from private, public, and civic groups.

Objective 3.7: Encourage and pursue a county-wide coordinated recycling program for the County of Antrim.

Objective 3.8: Develop a waste exchange program with Antrim County which utilizes a waste exchange handbook which lists all the opportunities for recycling and the exchange of potential items which may still be available to other individuals/organizations.

Goal 4: Develop and implement a financially feasible solid waste management program.

Objective 4.1: Encourage development of multi-county disposal/recycling facilities which maximize energy and materials recovery while minimizing costs.

Objective 4.2: Develop recycling programs which are self-supporting

Objective 4.3: Where economically feasible, utilize private enterprise in the ownership and operation of solid waste management facilities

Goal 5: Provide for a solid waste management implementation program which best suites the solid waste management needs of Antrim County

Objective 5.1: Define the solid waste management authorities of the various units of government, private sector, and civic groups.

Objective 5.2: Identify opportunities for efficient and effective coordination between operations of solid waste facilities serving the various communities of northern lower and the State of Michigan.

Goal 6: Recommend being involved in waste-to-energy facilities as part of an integrated solid waste management program when technologically, economically, and environmentally feasible.

Objective 6.1: If solid waste management conditions warrant, identify and encourage additional inter-county research and cooperation in the development of waste-to-energy facilities

Objective 6.2: Encourage work in identifying potential customers and markets which will purchase the energy form such facilities

Goal 7: Develop inter-county and contingency agreements for collection, transportation, and disposal of solid waste to be utilized in the event that any portion of the primary system of use becomes unavailable.

Objective 7.1: Designate specific backup sites for all facilities included in the selected system.

Objective 7.2: Negotiate and sign inter-county agreements as needed for contingencies.

Objective 7.3: Encourage the use of landfills located in other regions of the state as a potential disposal option in order to assure the residents of Antrim County have economic feasible disposal of solid waste.

II-1 DATA BASE

This section identifies sources of waste generation within the county total quantity of solid waste generated to be disposed, and sources of the information

The following database is derived from the listed sources:

- County Business Patterns (1995)
- Northwest Michigan Council of Governments Population Study
- Local sources and interviews
- Resource Recycling Systems, Inc. data bases

Residential solid waste data was calculated by the consultant, Resource Recycling Systems, Inc. using rates between 2.6 and 3.0 pounds of solid waste generated per person per day (urban and resort areas) and 2.0 pounds per person per day for rural areas. These numbers were then modified to reflect seasonal population adjustments and overall population growth estimates for the next ten years. Finally, actual reported disposal and waste reduction data were used to adjust generation rates. These generation calculations are then presented as "centers of solid waste generation" in the chart below as required by the Plan Format. More detailed description of how estimates were calculated may be found in Attachment E.

Table II-1 Residential Waste Generation by Municipality

Municipality	1998 Tons	2003 Tons	2008 Tons
Ellsworth village	210	221	233
Balance of Banks township	559	601	641
Central Lake village	483	517	548
Balance of Central Lake twp	493	530	566
Chestonia township	205	220	235
Custer township	322	346	369
Echo township	392	421	449
Elk Rapids village	824	881	935
Balance of Elk Rapids twp	383	412	439
Bellaire village (pt.)	243	259	274
Balance of Forest Home twp	474	509	544
Helena township	428	460	491
Jordan township	298	320	342
Bellaire village (pt.)	311	330	348
Balance of Kearney twp	434	461	486
Mancelona village	689	733	774
Balance of Mancelona twp	921	989	1054
Milton township	751	807	861
Star township	294	316	337
Torch Lake township	390	419	448
Warner township	147	158	169
Antrim County Total	**9,254**	**9,911**	**10,543**

COMMERCIAL/INDUSTRIAL WASTE GENERATION

Commercial waste generation was determined by multiplying estimated pounds per employee per day for specific Standard Industrial Codes (SIC) by the actual employment numbers in Antrim County. Pounds per employee per day figures were generated by Resource Recycling Systems based on previous SIC code-specific surveys and studies of business waste generation throughout the United States. Employment numbers were obtained for the year 1995 from U.S. Census data on County Business Patterns. Waste generation numbers were then modified based on actual reported waste generation by a phone survey of major generators within the County. The number of work days per year is assumed to be 260. The resulting waste generation calculations are presented below as "centers of generation" for commercial and industrial SIC groups, as required by the Plan Format.

Table II-2 Commercial/Industrial Waste Generation

SIC	SIC Description	## of employees (1995)*	pds/ person/ day	Tons/ year (1995)
0700-0999	Agriculture, Forestry, Fishing	36	5	23
1000-1499	Mining	40	4	21
1500-1999	Construction	268	23	801
2000-3999	Manufacturing	1,021	19	2,522
4000-4999	Transportation/Public Utilities	60	5	39
5000-5199	Wholesale trade	121	12	189
5200-5999	Retail trade	932	12	1,454
6000-6999	Finance, Insurance, Real Estate	198	16	412
7000-7999	Services	1,715	8	1,784
99--	Unclassified establishments	35	6	27
			12.64	**7,272**
			Average	*Total*

**from 1995 County Business Patterns Data*

MAJOR WASTE GENERATORS

Table II-3 provides a list of major business and industrial waste generators in the County.

Table II-3 Major Waste Generators in Antrim County

Generator Name	Location	Description	# Empl
Dura Automotive Systems, Inc.	Mancelona	Auto parts	475
Lamina Bronze Products	Bellaire	Bronze products	125
Steel Tank & Fabricating	Mancelona	Steel tank manf.	120
Mancelona Manufacturing	Mancelona	Auto parts	
Traverse Bay Manufacturing	Elk Rapids	Clothing & Acces	
Shanty Creek/Schuss Mountain Resort	Bellaire	Golf/ski resort	
Second Chance Body Armor	Central Lake	Manufacturer	72
Antrim County News		Printer	
Burnett Foods, Inc.	Elk Rapids	Food processor	98-175
Great Lakes Packing Co.	Kewadin	Food processor	4-140+
Meeder Lumber & Dimension Products	Mancelona	Sawmill	30
Moeke Brothers Lumber	Mancelona	Lumber	16
Paris North, Div. of Paris Sawmill Inc.	Elmira	Sawmill	14

Antrim County continues to experience growth in the business sector, particularly retail and resort. Overall, the county does not anticipate major problems associated with managing the commercial and industrial solid waste generated within its borders.

Overall, the county does not anticipate major problems associated with managing the solid waste generated within its borders, although the number of solid waste haulers has decreased through recent mergers. This has raised concerns over lack of competition and increasing disposal prices.

SPECIAL WASTE STREAMS

Several industries in the County generate quantities of food processing waste, wood waste, sawdust and other special waste. To a major extent, this material is not currently landfilled.

TOTAL QUANTITY OF SOLID WASTE GENERATED:

Waste generation is shown in Tables II-4 below. Waste generation data was calculated using waste projection models (pounds per person per day for residential, and pounds per employee per day for commercial/industrial). Adjustments were made for seasonal population fluctuations and differences between rural and urban areas. Waste generation was projected into the future based on projected population growth patterns.

Table II-4: Total Waste Generated (Tons per year)

Sector	1998 Total Tons Generated	2003 Projected Tons Generated	2008 Projected Tons Generated
Residential	9,254	9,911	10,543
Commercial	4,750	5,314	5,653
Industrial	2,522	2,821	3,001
Total Annual Tons	**16,850**	**18,047**	**19,197**

TOTAL WASTE DISPOSAL

Table II-5 projects recovery (recycling and composting) for 1998 (based on actual tonnage reported for 1997) and projected for 2003 and 2008 assuming existing programs will grow according to the County's goals and objectives.

Table II-5: Program Recovery Estimates (tons per year)

	1998	*2003*	*2008*
Drop-off system	720	820	1,850
Curbside recycling	20	80	675
Commercial recycling	400	1,150	1,875
Yard waste	340	500	500
Total Recovery	**1,480**	**2,550**	**4,900**

These program recovery estimates were then applied to total waste generation estimates to determine the estimated disposal needs for the planning period, as shown in Table II-6 on the following page.

Table II-6: Total Disposal (tons per year)

Sector	1998 Total Tons Disposed	2003 Projected Tons Disposed	2008 Projected Tons Disposed
Residential	8,174	8,511	7,518
Commercial/Industrial	7,196	6,986	6,779
Total Annual Tons	**15,370**	**15,497**	**14,297**

II-2 SOLID WASTE DISPOSAL AREAS

The following includes an inventory and descriptions of all solid waste disposal areas within the County or to be utilized by the County to meet its disposal needs for the planning period.

Facilities used by Antrim County include:

- Kalkaska-Antrim Transfer Station operated by Northern A-1
- Central Lake Township Transfer Station
- Plum Valley Transfer Station
- Ellsworth Transfer Station
- Elk Rapids Transfer Station
- Cedar Ridge Landfill (WMI)
- Glen's Landfill (WMI)
- Ken's PS Type III Landfill (WMI)
- CES Waters Landfill (WMI)

Descriptions of these facilities follow.

II-3 SOLID WASTE FACILITY DESCRIPTIONS

Facility Type: **Type A Transfer Station**

Facility Name: **Kalkaska/Antrim Transfer Station (Northern A-1 Services)**

County: Kalkaska Location: Town T27N Range R7W Section(s) 4

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Glen's Landfill or CES Waters Landfill

____ Public x ____ Private Owner: U.S. Liquids

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	x	commercial
x	licensed	x	industrial
____	unlicensed	x	construction & demolition
____	construction permit	x	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	not applicable(NA)	acres
Total area sited for use:	NA	acres
Total area permitted:	____	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	____	
Estimated lifetime:	____	years
Estimated days open per year:	312	days
Estimated yearly disposal volume:	NA	

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type B Transfer Station**

Facility Name: **Central Lake Township Transfer Station**

County: Antrim Location: Town T31N Range R8W Section(s) 16

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Cedar Ridge Landfill or CES Waters Landfill

x Public ____ Private Owner: Central Lake Township

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	____	commercial
____	licensed	____	industrial
NA	unlicensed	____	construction & demolition
____	construction permit	____	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Also collects recyclables.

Site Size:

Total area of facility property:	7	acres
Total area sited for use:	7	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:		
Estimated lifetime:		years
Estimated days open per year:	104	days
Estimated yearly disposal volume:	1,100	compacted cubic yards

(if applicable)

Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type B Transfer Station**

Facility Name: **Ellsworth Transfer Station**

County: Antrim Location: Town 32N Range 8W Section(s) _____

Map identifying location included in Attachment Section: __Yes _____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Cedar Ridge Landfill

_____Public x_____Private Owner: Kenneth Groesser operates on Banks Twp property

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
_____	closed	_____	commercial
_____	licensed	_____	industrial
NA	unlicensed	_____	construction & demolition
_____	construction permit	_____	contaminated soils
_____	open, but closure pending	_____	special wastes *
		_____	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	_____	acres
Total area sited for use:	approx. 1	acres
Total area permitted:	_____	acres
Operating:	_____	acres
Not excavated:	_____	acres
Current capacity:	_____	
Estimated lifetime:	_____	years
Estimated days open per year:	approx. 52	days
Estimated yearly disposal volume:	_____	

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type A Transfer Station**

Facility Name: **Plum Valley Transfer Station**

County: Kalkaska Location: Town T28N Range R7W Section(s) 10

Map identifying location included in Attachment Section: X Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: CES Waters Landfill

____Public x____Private Owner: William Kiel

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
	construction permit		contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	not applicable(NA)	acres
Total area sited for use:	NA	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:		
Estimated lifetime:		years
Estimated days open per year:	NA	days
Estimated yearly disposal volume:	NA	

(if applicable)

Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type B Transfer Station**

Facility Name: **Village of Elk Rapids Transfer Station**

County: Antrim Location: Town T29N Range R9W Section(s) 16

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Glen's Landfill

x Public ____ Private Owner: Village of Elk Rapids

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed		commercial
	licensed		industrial
NA	unlicensed		construction & demolition
	construction permit		contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	80	acres
Total area sited for use:	0.5	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:		
Estimated lifetime:		years
Estimated days open per year:	104	days
Estimated yearly disposal volume:	2,942	compacted cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Cedar Ridge Landfill**

County: Charlevoix Location: Town T33N Range R7W Section(s) 19

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____Public x____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Foundry sand and flyash from East Jordan Iron Works.

Site Size:

Total area of facility property:	120	acres
Total area sited for use:	40	acres
Total area permitted:	40	acres
Operating:	21	acres
Not excavated:	0	acres
Current capacity:	approx. 370,000	bank cubic yards
Estimated lifetime:	2.5	years
Estimated days open per year:	260	days
Estimated yearly disposal volume:	311,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Glen's Sanitary Landfill**

County: Leelanau Location: Town T28N Range 13W Section(s) 35

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public _____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos (non-friable)

Site Size:

Total area of facility property:	460	acres
Total area sited for use:	133	acres
Total area permitted:	133	acres
Operating:	14.8	acres
Not excavated:	89.3	acres
Current capacity:	22,000,000	bank cubic yards
Estimated lifetime:	60	years
Estimated days open per year:	264	days
Estimated yearly disposal volume:	300,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type III Landfill**

Facility Name: **Ken's Landfill**

County: Grand Traverse Location: Town T27N Range R11W Section(s) NE1/4 of 7

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____Public x____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	____	residential
____	closed	____	commercial
x	licensed	____	industrial
____	unlicensed	x	construction & demolition
____	construction permit	____	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	16.8	acres
Total area sited for use:	13.5	acres
Total area permitted:	13.5	acres
Operating:	6.0	acres
Not excavated:	1.0	acres
Current capacity:	150,000	bank cubic yards
Estimated lifetime:	2.0	years
Estimated days open per year:	240	days
Estimated yearly disposal volume:	70,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

DATA BASE

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **City Environmental Svcs., Inc. of Waters (Crawford-Otsego Landfill)**

County: Crawford Location: Town T28N Range R8E Section(s) 1

Map identifying location included in Attachment Section: __Yes x No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public x Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other: _____

* Explanation of special wastes, including a specific list and/or conditions:

not avail.

Site Size:

Total area of facility property:	252.20	acres
Total area sited for use:	252.20	acres
Total area permitted:	79.07	acres
Operating:	9.7	acres
Not excavated:	64.87	acres
Current capacity:	8,200,000	bank cubic yards
Estimated lifetime:	>20	years
Estimated days open per year:	313	days
Estimated yearly disposal volume:	320,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

II-4 SOLID WASTE COLLECTION SERVICES AND TRANSPORTATION INFRASTRUCTURE

The following describes the solid waste collection services and transportation infrastructure that will be utilized within the County to collect and transport solid waste.

SOLID WASTE COLLECTION SERVICES

Solid waste collection in Antrim County is handled almost entirely by the private sector.

Service Provider	Service Type	Service Area	Disposal Facility
Waste Management (WMI)	Residential, commercial	County-wide	Glen's Landfill (WMI)
Northern Quality	Residential	Bellaire, Mancelona	
Waste Management (WMI)	Residential, commercial	Northern townships, and Alden, Atwood, Bellaire, Central Lake, Eastport, Ellsworth, Elk Rapids	
Top Rank Disposal	Residential, commercial	Primarily two northern townships (Banks, Echo)	
Plum Valley	Residential	Rapid River, Alden area	
A&K Disposal	Residential	Southern part of County	

RECYCLING COLLECTION SERVICES

Residential recycling opportunities mostly consist of a few limited drop-off facilities. Central Lake Township operates a collection center two days per week for residents in Central Lake and Torch Lake townships only. A local dairy farmer takes hoppers of fiber (mostly newsprint) for animal bedding. Other materials collection in Central Lake are serviced by Waste Management, Inc. (former USA Waste/United).

Service Provider	Service Type	Service Area	Recycling Facility
Waste Management (WMI)	Subscription curbside along U.S. 31 corridor	Elk Rapids	WMI (aka United Waste), Traverse City
Waste Management (WMI)	Drop-off collection	Central Lake Twp Elk Rapids	WMI (aka United Waste), Traverse City
Waste Management (WMI)	Commercial corrugated collection	County-wide	WMI (aka United Waste), Traverse City

The Village of Elk Rapids provides attended drop-off recycling station for residents of Village and four townships (Elk Rapids Twp, Milton Twp, Torch Twp, White Water Twp); Waste Management, Inc. provides a compactor for corrugated cardboard and roll-offs for glass, paper, tin, aluminum; HDPE is shredded on site and shipped to Clean Tech in Monroe. Residents can also drop off leaves and grass at the site, which are stockpiled near the site.

Some limited corrugated cardboard collection is available to businesses in the County through services of a private waste hauler.

YARD WASTE COLLECTION SERVICES

Service Provider	Service Type	Service Area	Compost Facility
Village of Bellaire	Drop-off	Bellaire residents	Village of Bellaire
Village of Elk Rapids	Drop-off and municipal collection	Elk Rapids residents	Village of Elk Rapids
Village of Mancelona	Drop-off	Mancelona residents	Mancelona Compost Facility
Central Lake Twp	Drop-off (leaves and grass)	Township residents	Compost site at Twp. Waste Receiving and Recycling Station

Overall, the recycling and composting opportunities in the County are viewed as limited by the County's Waste Reduction and Recycling Committee. Many county residents do not have access to drop-off facilities, particularly with the Mancelona drop-off facility recently closed. Curbside recycling services are available on a limited basis, by subscription, to residents living along the US-31 corridor, but participation is low due to the cost and lack of promotion of the service. Small and medium-sized businesses also have few opportunities to recycling cardboard and office paper.

II-5 EVALUATION OF DEFICIENCIES AND PROBLEMS

The following is a description of problems or deficiencies in the existing solid waste system.

Antrim County has experienced the same decline service provider options for solid waste as have neighboring communities. Although a few small haulers do remain in the area, the majority of County residents and businesses are now served by one hauler.

Antrim County residents have proven to be excellent recyclers and according to a recent survey done by the County's Waste Reduction Committee, residents are overwhelmingly supportive of increasing recycling services. Only a few, limited drop-off options are available, however, and services and promotion are not coordinated. Many residents are currently using drop-off stations in Grand Traverse County, due to convenience and proximity.

Incentives to reduce waste could also be improved through a more coordinated Pay as You Throw system for solid waste fees.

Finally, the county lacks coordinated processing options for both composting and recycling. Access to a regional facility continues to be the best option for recycling, however, some type of low tech, local compost site or land application program would help divert additional yard waste into composting.

II-6 DEMOGRAPHICS

The following section presents the current and projected population densities and centers for five and ten year periods. identification of current and projected centers of solid waste generation including industrial solid waste for five and ten year periods as related to the Selected Solid Waste Management System for the next five and ten year periods. Solid waste generation data is expressed in tons or cubic yards. and if it was extrapolated from yearly data. then it was calculated by using 365 days per year. or another number of days as indicated.

POPULATION

The following section presents the current and projected population densities and centers for five and ten year periods, identification of current and projected centers of solid waste generation including industrial solid waste for five and ten year periods as related to the Selected Solid Waste Management System for the next five and ten year periods. Solid waste generation data is expressed in tons or cubic yards, and if it was extrapolated from yearly data. then it was calculated by using 365 days per year, or another number of days as indicated.

The table below shows the permanent population of Antrim County projected through the planning period. Additional adjustments for seasonal population change were made using a multiplier for each jurisdiction ranging from 1.1 (January to 1.36 (August). Adjusted population totals were multiplied by a per capita generation rate as shown in Table I.1

Antrim County Permanent Population

Municipality	1990	1998	2003	2008
Ellsworth village	418	477	505	531
Balance of Banks township	1095	1276	1370	1461
Central Lake village	954	1,102	1,178	1,250
Balance of Central Lake township	965	1125	1209	1289
Chestonia township	401	468	503	536
Custer township	630	734	789	841
Echo township	766	893	960	1024
Elk Rapids village	1626	1879	2008	2131
Balance of Elk Rapids township	748	873	938	1002
Ballair village (pt.)	483	555	591	625
Balance of Forest Home township	927	1081	1162	1239
Helena township	837	977	1049	1120
Jordan township	583	680	731	780
Bellair village (pt.)	621	710	753	793
Balance of Kearney township	866	991	1052	1109
Mancelona village	1370	1572	1672	1766
Balance of Mancelona township	1803	2100	2254	2404
Milton township	1468	1712	1839	1962
Star township	575	671	721	770
Torch Lake township	762	889	956	1021
Warner township	287	336	361	386
Antrim County Total	**18,185**	**21,100**	**22,600**	**24,040**

II-7 LAND DEVELOPMENT

The following describes current and projected land development patterns, as related to the Selected Solid Waste Management System, for the next five and ten year periods

LAND USE

Land use and projected future changes can impact the solid waste system in many ways, including siting of future facilities. For purposes of this plan, the general land use of Antrim County can be divided into four categories: developed, agriculture and open space, forested and Public Land.

A somewhat dated study, the 1964 Antrim County Comprehensive Plan documented data pertaining to the economy, land use, parks, schools, transportation network and population estimates. This study provided a land use plan which identified anticipated development trends and established land use proposals to direct this growth into planned development patterns throughout the county. The county adopted a Development Coordinating Committee to oversee subdivision development, and a Building Code in 1974, but other land use regulations and controls were not implemented. To date, seven townships and one village in Antrim County (Banks, Elk Rapids, Forest Home, Helena, Kearney, Milton, Torch Lake, and the Village of Elk Rapids) have zoning ordinances in effect.

Antrim County contains a large amount of agriculture and open space, forested, and public lands compared to developed land. The Bellaire area contains a large amount of industrial, commercial, institutional, and residential uses in the county.

Projected land uses for the 5 and 20 year period do not show major changes. Continued expansion of the parcels surrounding Bellaire, Elk Rapids, Mancelona will most likely occur and further development around inland lakes and rivers will continue over this time period.

Allocation of land under current conditions is shown in the chart below.

Land Use Type	*% County Land*
Surface Water	8.3%
Developed Land	5.4%
State forest land	23%
Agriculture	23%
Total forested	48.2%

CENTERS OF SOLID WASTE GENERATION

The largest source of waste generation in the County is the residential sector, at approximately 9,254 tons in 1998, compared to 7,272 tons in the commercial/industrial sector. With a growing seasonal and tourist population, residential waste generation should continue as the dominant source of solid waste. This population growth is also expected to affect waste generation in the retail and service sectors, however, which together currently account for just under half the total commercial/industrial waste generated in the County.

II-8 SOLID WASTE MANAGEMENT ALTERNATIVES

The Designated Planning Agency (DPA) and the Solid Waste Planning Committee (SWPC) completed a strategic planning process that outlined strengths, weaknesses, opportunities, and threats that are part of the current and potential future solid waste management system that services the County. This analysis was used to create goals and objectives which are provided immediately after this Executive Summary. These goals and the strategic analysis formed the basis for developing the solid waste management strategy and the selected alternative that is described in this Plan as the Plan's Enforceable Program and Process as provided for in Part 115, Section 11533 (1) of the Michigan Natural Resources and Environmental Protection Act (NREPA).

In developing the Plan's Enforceable Program and Process the DPA and SWPC first screened out strategies that were technically or economically unsuitable for the County. Certain waste management technologies, incineration, for example, were determined based on historical data for the region to not be economically and technically appropriate for further analysis.

The DPA and SWPC then reviewed a set of remaining solid waste management program strategies in the following eight areas that were viewed as technically and economically feasible:

- Clean Community
- Drop-Off Residential Recycling
- Residential Yard Waste Composting
- Material Transfer and Processing
- Recycling Incentives
- Curbside Residential Recycling
- Commercial Recycling
- Disposal

These program strategies were assembled as six potential System Alternatives that varied by level of landfill diversion, capital and operating cost and implementation requirements:

A: Basic Waste Collection and Disposal Program
B: Level 1 Basic Clean Community and Drop-Off Recycling Program
C: Level 2 Expanded Clean Community and Drop-Off Recycling Program
D: Level 3 Expanded Clean Community and Curbside Recycling Program
E: Level 4 Expanded Clean Community and Comprehensive Recycling Program
F: Level 5 Advanced Recovery System

Each of the six options were then examined based on their key features, advantages, disadvantages, overall performance and cost impact and applicability for the county. These features were evaluated and ranked as they applied to Antrim County.

At this stage in the strategic planning process, some of the Strategic Alternatives were determined to be unsuitable for the County based on the evaluation and ranking of the overall technical and economic feasibility of each approach and its ability to:

- build on the strengths of the local and regional situation,
- address current deficiencies and weaknesses,
- work with organizational approaches that the County is willing to consider,
- be fundable through systems that the County can implement,
- respond to and build community involvement and support,
- be enforceable, and
- set measurable goals that can be tracked to determine progress.

System Alternatives "A" & "B" were determined to be economically feasible yet inadequate to reach the adopted Plan's Goals and Objectives which incorporate the hierarchy of "reduce, reuse, recycle" consistent with the state solid waste plan and which targeted significant diversion of solid waste from landfill disposal during the planning period. System Alternatives "E" & "F" were determined to be

unachievable during the 10 year planning time frame given the technical and economic constraints of the existing solid waste management system and the current level of organization of system participants. Two of the strategic alternatives ("C" and "D") were further developed as Antrim County System Alternative 1 and Antrim County System Alternative 2, as described below, for further consideration in the strategic planning process

ANTRIM COUNTY SYSTEM ALTERNATIVE 1:

Expanded Clean Community & Drop-Off Recycling Program is adapted from System Option C. Key features include a Clean Community program that operates at highly effective levels. Incentives to recycle boost program performance, increasing tons and lowering unit costs. Expanded recycling drop-off capabilities are made available throughout the County at permanent sites open for longer periods of time each week. Arrangements are made for processing of recyclables that allows complete or partial commingling of paper products (commingled fibers) and complete or partial commingling of containers (commingled containers), increasing the types of materials that can be recovered and further increasing overall convenience. Direct haul of collected solid waste to regional landfills would remain as the standard practice although more options for local drop-off by residents would become available.

ANTRIM COUNTY SYSTEM ALTERNATIVE 2:

Expanded Clean Community and Curbside Recycling Program is adapted from System Option D. Key features include a Clean Community program that operates at highly effective levels. Incentives to recycle boost program performance, increasing tons and lowering unit costs. Expanded recycling drop-off capabilities at one or more flagship sites increase options for recovering more materials. Curbside programs for cities, villages and towns are developed to increase convenience for large sectors of the population. Arrangements for commingled recycling processing capabilities as well as commercial recycling services are further developed to increase diversion. C&D recovery services are more closely coordinated with area service providers. Organics management options exist throughout year with addition of drop-offs for yard waste, and active compost management systems. Active management of yard waste through composting would be pursued. Direct haul of collected solid waste to regional landfills would remain as the standard practice. A network of drop-off facilities for solid waste would be available including one or more flagship sites that took other types of waste (bulky, C&D, etc.) with this system preferably located at same sites as recycling drop-offs. A waste transfer facility would be planned should direct haul options for landfilling no longer be available or be cost prohibitive. The County collaborates with nearby counties on a ban on certain materials being landfilled targeted for 5 years away and coordinated between any available transfer stations as well as any of the regional disposal options.

THE PLAN'S SELECTED ALTERNATIVE

The strategic planning process was carried through to final conclusions regarding the program strategies that would make up the Plan's Selected Alternative and become the foundation for the Plan's Enforceable Program as required by statute. The strategic planning process included final evaluation and ranking against the criteria as well as surveying of the views of key stakeholders in the planning process, and others considered to be critical to implementation of the plan - primarily local government officials.

The DPA and SWPC concluded that implementing "Antrim County System Alternative 1" in a year 1 through 3 Phase 1 leading to a year 4 through 10 Phase 2 development of "Antrim County System Alternative 2" was the optimum choice as the Selected Alternative for the Plan's Enforceable Program. This Selected Alternative is described in the balance of the Plan with further detail provided in Appendix A of the Plan. Appendix B of the Plan contains further detail regarding the System Alternatives that were not selected as part of the Plan's Enforceable Program.

III-1 THE SELECTED SOLID WASTE MANAGEMENT SYSTEM

The Selected Solid Waste Management System (Selected System) is a comprehensive approach to managing Antrim County's solid waste and recoverable materials. The Selected System addresses the generation, transfer and disposal of the County's solid waste. It aims to reduce the amount of solid waste sent for final disposal by volume reduction techniques and by various resource conservation and resource recovery programs. It also addresses collection processes and transportation needs that provide the most cost effective, efficient service to area residents and businesses. Proposed disposal area locations and capacity to accept solid waste are identified as well as program management, funding and enforcement roles for local agencies. Detailed information on recycling programs, evaluation, and coordination of the Selected System is included in Appendix B. Following is an overall description of the Selected System.

The County has selected a system alternative that is a combination of Alternative 1 and Alternative 2, modified to tailor the program specifics to the County's needs and phased in to allow system development to take place for the complete 10 year planning period.

During Years 1 through 3 of the Planning Period, the County will implement System Alternative 1 as follows:

ANTRIM COUNTY SYSTEM ALTERNATIVE 1
EXPANDED CLEAN COMMUNITY AND DROP-OFF RECYCLING PROGRAM

Key features include a Clean Community program that operates at highly effective levels. Incentives to recycle boost program performance, increasing tons and lowering unit costs. Expanded recycling drop-off capabilities are made available throughout the County at permanent sites open for longer periods of time each week. Arrangements are made for processing of recyclables that allows complete or partial commingling of paper products (commingled fibers) and complete or partial commingling of containers (commingled containers), increasing the types of materials that can be recovered and further increasing overall convenience. Direct haul of collected solid waste to regional landfills would remain as the standard practice although more options for local drop-off by residents would become available.

Following is a more detailed description of the specific program elements that are part of this Phase 1 of the Selected Alternative and the Plan's Enforceable Program. Specific details on who will implement Phase 1 of the Plan's Enforceable Program are covered in the next section addressing the Plan's Authorized Management Program. The timing of implementation of the Plan's Enforceable Program are then provided in the Plan's Timetable for Implementation that follows. The County's Solid Waste Program, implemented jointly by units of government within the county in cooperation with other public agencies and private firms will include the following features:

Antrim County Selected System Alternative Phase 1:
Detailed System Component Descriptions

Clean Community:

Comprehensive solid waste collection services would be made available to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations. Spring/fall cleanup days would be provided in more urban areas with scavenging/trading/reuse encouraged and recycling of as many materials left as possible. Household hazardous waste collection services would be provided and expanded to include collection of small quantities of agricultural pesticides and herbicides. Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.

Recycling Incentives:

Proactive education and promotion strategies would encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be

widespread throughout the County and heavily promoted. Recycling drop-offs would add more materials to encourage overall participation in program by more citizens and businesses. An ambitious outreach and education program would promote all aspects of the expanded system and improvements.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County open at convenient hours most days of the week. Material would be collected in a more commingled form to make use of the drop-off facilities easier. A wide variety of recyclable materials would be collected at each of the drop-off sites. Existing drop-off stations in Elk Rapids and Central Lake would be improved and new sites established possibly near Mancelona, Bellaire, the Elmira area and Alden.

Curbside Residential Recycling:

Subscription curbside recycling would be available for residents that were willing to make their own arrangements for the service with area haulers.

Residential Yard Waste Composting:

Fall leaf collection would be provided in Mancelona, Elk Rapids, Central Lake and Bellaire. Backyard composting would be encouraged through distribution of backyard bins at discount rates. At least one and possibly more permanent drop-off options for yard waste would be provided throughout the County. Elk Rapids would be a likely location for a permanent collection site for seasonal yard waste. Active management of yard waste through composting would be pursued.

Commercial Recycling:

Businesses would be encouraged to use the drop-off recycling network for smaller volumes of commingled paper and commingled containers. Arrangements would be made for larger volumes to be delivered to a site capable of handling compacted or loose loads of commercial recyclables. Businesses would be encouraged to contract with their hauler for collection of cardboard and other high volume recyclable materials. Elk Rapids may be a good prospect for a site which would accept larger loads of commercial recyclables.

Material Transfer and Processing:

Arrangements would be made to provide access to a material recovery facility (MRF) to service all recycling collectors in the system. These arrangements would ideally include guarantees that sufficient capacity was available to meet the County's needs over the long term. Ideally the facility would be able to process commingled containers and commingled fibers as well as handle presorted recyclables like OCC. The Emmet County Transfer Station remains the best processing prospect, however, the Waste Management, Inc. (former United/USA Waste) facility in Grand Traverse County could also be considered.

Disposal:

Existing landfills in the region would be used with direct haul by compacting collection vehicles being the primary method of transportation to the landfills. Existing drop-off facilities for solid waste would be available.

During Years 4 through 10 of the Planning Period, the County will implement System Alternative 2 as follows:

ANTRIM COUNTY SYSTEM ALTERNATIVE 2
EXPANDED CLEAN COMMUNITY AND CURBSIDE RECYCLING PROGRAM

Key features include a Clean Community program that operates at highly effective levels making sure that disposal and recycling services are provided in all areas of the County. Incentives to

recycle boost program performance, increasing tonnage and lowering unit costs. Expanded recycling drop-off capabilities are developed at one or more flagship sites with other drop-off sites provided on a permanent basis. Development of curbside programs for cities, villages and towns is pursued in order to increase convenience for large sector of population. Expanding the types of materials at both drop-offs and curbside is made possible through arrangements with a processing facility that is capable of accepting recyclables that are more commingled than current practice allows. Commercial recycling is also further developed to increase convenience and diversion. Organics management options are made available throughout the year with the addition of one or more drop-offs for yard waste. Active management of yard waste through composting would be pursued. The county would work with adjacent counties to coordinate on a ban on certain materials being landfilled with an effective date targeted for a period 5 years away should specific diversion levels not be reached. This is coordinated with adjacent counties and all available transfer stations and regional disposal options.

Following is a more detailed description of the specific program elements that are part of this Phase 2 of the Selected Alternative and the Plan's Enforceable Program. Specific details on who will implement Phase 2 of the Plan's Enforceable Program are covered in the next section covering the Plan's Authorized Management Program. The timing of implementation of the Plan's Enforceable Program are then provided in the Plan's Timetable for Implementation that follows. The County's Solid Waste Program, implemented jointly by units of government within the county in cooperation with other public agencies and private firms will include the following features:

Antrim County Selected System Alternative Phase 2:
Detailed System Component Descriptions

Clean Community:

Comprehensive solid waste collection services would be made available to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations. Spring/fall cleanup days would be provided in more urban areas with scavenging/trading/reuse encouraged and recycling of as many materials left as possible. Household hazardous waste collection services would be provided including collection of agricultural pesticides and herbicides -- all coordinated from a single permanent drop-off site. Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.

Recycling Incentives:

Proactive education and promotion strategies would encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be evaluated, refined and emphasized throughout the County in all solid waste collection arrangements. Recycling collection programs as well as drop-offs would add more materials to encourage overall participation in program by more citizens and businesses. The County would coordinate with the counties that they export waste to in order to implement a ban on landfilling of certain materials (cardboard and newspaper as examples) that would be targeted for an effective date 3 to 5 years in the future. This will provide a further incentive for increased adoption and participation in recovery programs.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County, open at convenient hours most days of the week. Arrangements for processing of material would be made to allow recyclables to be collected in a commingled form to make use of the drop-offs easier - coordinated with development of the capability to process this material at the processor. At least two of the drop-off sites would be developed into "flagship" drop-off sites that are staffed, have an educational component, and collect the largest number of different types of materials.

SELECTED SYSTEM

Curbside Residential Recycling:

Two stream commingled curbside recycling would be provided to all residents in a designated curbside service district that included most villages/towns/cities as well as other densely populated areas. Subscription service outside this district would be strongly encouraged.

Residential Yard Waste Composting:

Fall leaf collection would be provided in all villages/town/cities. Backyard composting would be encouraged through distribution of backyard bins at discount rates. A similar mulching mower program would encourage grass cycling. Permanent drop-off options for yard waste would be provided throughout the County with at least one "flagship" site taking all types of yard waste and providing finished compost for distribution to residents. Active management of yard waste through composting would be pursued.

Commercial Recycling:

Arrangements would be made for a permanent site for businesses to drop-off a wide variety of recyclables including commingled containers and commingled paper (as recycling facility capabilities are upgraded). A business recycling service district would be established and businesses within the district encouraged to contract for the recycling collection services provided by licensed haulers.

Material Transfer and Processing:

Arrangements would be made for a material recovery facility (MRF) to be available to all recycling collectors in the system. The facility would be able to process commingled containers and commingled fibers as well as presorted recyclables like OCC. Commercial recyclables would be able to be tipped at the facility for a reasonable fee that was lower than the tipping fee at area landfills. Some capability would be provided to remove contaminants and small quantities of solid waste from loads of recyclables.

Disposal:

Existing landfills in the region would be used with direct haul by compacting collection vehicles being the primary method of transportation to the landfills. A network of two or more drop-off facilities for solid waste would be available including a "flagship" site that took other types of waste (bulky, C&D, etc.) with this system preferably located at same sites as recycling drop-offs. A waste transfer facility would be planned should direct haul options for landfilling no longer be available or be cost prohibitive. This option would most likely include a major upgrade of the Elk Rapids facility in order to receive C&D materials.

The remainder of the descriptions that follow cover, as required by the Plan Format, the details regarding specific components of the Plan's Enforceable Program and Process, that answer the "who, what, when, where, and how" aspects of the Selected Alternative, including:

- Solid Waste Efforts including:
  - Current and Future Import/Export Authorization and Related Conditions
  - Disposal Areas to be Used in the Plan's Enforceable Program
  - Solid Waste Collection Services and Transportation

- Resource Conservation Efforts, including:
  - Projections of Diversion in Table III-1
  - Waste Reduction, Recycling and Composting Programs
  - Volume Reduction Techniques in Table III-2

- Resource Conservation Efforts, including:
  - Overview of Resource Recovery Programs
  - Recycling and Composting

- Details of Current and Future Programs in Tables III-3 through III-8
- Identification of Resource Recovery Management Entities
- Projections of Diversion in Table III-9
- Market Availability in Table III-10
- Educational and Informational Programs

These aspects of the Plan's Enforceable Program provide sufficient export capacity and specific disposal areas identified to document the necessary 10 years disposal capacity for the Planning Period. Further details on the "who, what, when, where, and how" of the Plan's Enforceable Program then continue with the following sections:

- Timetable for Selected System Implementation
- Siting Review Procedures
- Solid Waste Management Components
- Identification of Responsible Parties
- Local Ordinances and Regulations Affecting Solid Waste Disposal
- Capacity Certifications

III-2 IMPORT AUTHORIZATION

If a Licensed solid waste disposal area is currently operating within the County, disposal of solid waste generated by the EXPORTING COUNTY is authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 1-A.

Table 1-A: CURRENT IMPORT VOLUME AUTHORIZATION OF SOLID WASTE

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Not Applicable					

_____Additional authorizations and the above information for those authorizations are listed on an attached page.

1 Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county

2 Authorization indicated by P = Primary Disposal; C + Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section

SELECTED SYSTEM

If a new solid waste disposal area is constructed and operating in the future in the County, then disposal of solid waste generated by the EXPORTING COUNTY is authorized by the IMPORTING COUNTY up to the AUTHORIZED QUANTITY according to the AUTHORIZED CONDITIONS in Table 1-B.

Table 1-B: FUTURE IMPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Not Applicable					

_____Conditions for those authorizations are listed on an attached page.

---

1 Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county

2 Authorization indicated by P = Primary Disposal; C = Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section

Table 1-B Attachments Section
FUTURE IMPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

Not applicable

Table 2-A Attachments Section: CURRENT EXPORT VOLUME AUTHORIZATION OF SOLID WASTE

* Condition for Current Exports:

If a Solid Waste Transfer Station Disposal area is developed as described in this Plan, then export of Type II and Type III waste will be allowed to the identified counties only if such waste collected for export is collected in compliance with all applicable laws, ordinances, rules and regulations of the Antrim County Solid Waste Management System, consistent with the Plan's Enforceable Program. Special Industrial Waste shall be exempt from these conditions. All other wastes will be exempt from these conditions only on a temporary basis in the event of a temporary shutdown of the solid waste facilities provided for in the Plan's Enforceable Program and then only until such time that those facilities again begin to operate.

** Condition for Current Exports:

For export to these Counties to be consistent with import restrictions imposed by those counties then recycling, composting and household hazardous waste programs must be in place in Antrim County as specified in the Reciprocal Agreement shown in the Attachments section. No waste may be exported unless the receiving county authorizes import from Antrim County in its Plan.

No waste may be exported unless the receiving county authorizes imports from Antrim County in its Plan.

II-3 EXPORT AUTHORIZATION

If a Licensed solid waste disposal area is currently operating within another County, disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the CONDITIONS AUTHORIZED in Table 2-A if authorized for import in the approved Solid Waste Management Plan of the receiving County.

Table 2-A: CURRENT EXPORT VOLUME AUTHORIZATION OF SOLID WASTE

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Crawford	Antrim	CES Waters	NA	NA	P *
Leelanau	Antrim	NA	NA	NA	P * & **
Manistee	Antrim	NA	NA	NA	P *
Grand Traverse	Antrim	NA	NA	NA	P * & **
Chippewa	Antrim	NA	NA	NA	P *
Presque Isle	Antrim	NA	NA	NA	P *
Charlevoix	Antrim	NA	NA	NA	P *
Montmorency	Antrim	NA	NA	NA	P *
Wexford	Antrim	NA	NA	NA	P *
Bay	Antrim	NA	NA	NA	P *
Clare	Antrim	NA	NA	NA	P *
Wayne	Antrim	NA	NA	NA	P *
Monroe	Antrim	NA	NA	NA	P *
Washtenaw	Antrim	NA	NA	NA	P *
Calhoun	Antrim	NA	NA	NA	P *
Ottawa	Antrim	NA	NA	NA	P *
Kent	Antrim	NA	NA	NA	P *
Midland	Antrim	NA	NA	NA	P *
Shiawasee	Antrim	NA	NA	NA	P *
Genesee	Antrim	NA	NA	NA	P *
Saginaw	Antrim	NA	NA	NA	P *

__X__ Condition for those authorizations are listed on an attached page.

[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county

[2] Authorization indicated by P = Primary Disposal; C + Contingency Disposal; * & ** = Other conditions exist and detailed explanation is included in the Attachment Section on the following page

If a new solid waste disposal area is constructed and operates in the future in another County, then disposal of solid waste generated by the EXPORTING COUNTY is authorized up to the AUTHORIZED QUANTITY according to the AUTHORIZED CONDITIONS in Table 2-B if authorized for import in the approved Solid Waste Management Plan of the receiving County.

Table 2-B: FUTURE EXPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Crawford	Antrim	NA	NA	NA	P *
Leelanau	Antrim	NA	NA	NA	P *
Manistee	Antrim	NA	NA	NA	P *
Mecosta	Antrim	NA	NA	NA	P *
Chippewa	Antrim	NA	NA	NA	P *
Presque Isle	Antrim	NA	NA	NA	P *
Charlevoix	Antrim	NA	NA	NA	P *
Montmorency	Antrim	NA	NA	NA	P *
Wexford	Antrim	NA	NA	NA	P *
Bay	Antrim	NA	NA	NA	P *
Clare	Antrim	NA	NA	NA	P *
Osceola	Antrim	NA	NA	NA	P *
Muskegon	Antrim	NA	NA	NA	P *
Saginaw	Antrim	NA	NA	NA	P *
Sanilac	Antrim	NA	NA	NA	P *
Ottawa	Antrim	NA	NA	NA	P *
Kent	Antrim	NA	NA	NA	P *
Clinton	Antrim	NA	NA	NA	P *
Shiawasee	Antrim	NA	NA	NA	P *
Genesee	Antrim	NA	NA	NA	P *
Kalamazoo	Antrim	NA	NA	NA	P *
Barry	Antrim	NA	NA	NA	P *
Ingham	Antrim	NA	NA	NA	P *
Oakland	Antrim	NA	NA	NA	P *
Macomb	Antrim	NA	NA	NA	P *
Calhoun	Antrim	NA	NA	NA	P *
Jackson	Antrim	NA	NA	NA	P *
Washtenaw	Antrim	NA	NA	NA	P *
Wayne	Antrim	NA	NA	NA	P *
Berrien	Antrim	NA	NA	NA	P *
St. Joseph	Antrim	NA	NA	NA	P *
Lenawee	Antrim	NA	NA	NA	P *
Monroe	Antrim	NA	NA	NA	P *

__X__ Conditions for those authorizations are listed on an attached page

[1] Facilities are only listed if the exporting county is restricted to using specific facilities within the importing county

[2] Authorization indicated by P = Primary Disposal; C + Contingency Disposal; * = Other conditions exist and detailed explanation is included in the Attachment Section on the following page.

Table 2-B (continued): FUTURE EXPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

IMPORTING COUNTY	EXPORTING COUNTY	FACILITY NAME[1]	AUTHORIZED QUANTITY/ DAILY	AUTHORIZED QUANTITY/ ANNUAL	AUTHORIZED CONDITIONS[2]
Midland	Antrim	NA	NA	NA	P *
Montcalm	Antrim	NA	NA	NA	P*
Menominee	Antrim	NA	NA	NA	P*
Delta	Antrim	NA	NA	NA	P*
Ontonagon	Antrim	NA	NA	NA	P*
Emmet	Antrim	NA	NA	NA	P*

Table 2-B Attachments Section: FUTURE EXPORT VOLUME AUTHORIZATION OF SOLID WASTE CONTINGENT ON NEW FACILITIES BEING SITED

* Condition for Future Exports:

If a Solid Waste Transfer Station Disposal area is developed, as described in this Plan, then export of Type II and Type III waste will be allowed to the identified counties only if such waste collected for export is collected in compliance with all applicable laws, ordinances, rules and regulations of the Antrim County Solid Waste Management System, consistent with the Plan's Enforceable Program. Special Industrial Waste shall be exempt from these conditions. All other wastes will be exempt from these conditions only on a temporary basis in the event of a temporary shutdown of the solid waste facilities provided for in the Plan's Enforceable Program and then only until such time that those facilities again begin to operate. No waste may be exported unless the receiving county authorizes imports from Antrim County in its Plan.

III- 4 SOLID WASTE DISPOSAL AREAS

The following identifies the names of existing disposal areas which will be utilized to provide the required capacity and management needs for the solid waste generated within Antrim County for the next five years and, if possible, the next ten years. Descriptions of the solid waste disposal facilities located outside of the County which will be utilized by the County for the planning period follow. Additional facilities within the County with applicable permits and licenses may be utilized as they are sited by this Plan, or amended into this Plan, and become available for disposal. If this Plan update is amended to identify additional facilities in other counties outside the County, those facilities may only be used if such import is authorized in the receiving County's Plan. Facilities outside of Michigan may also be used if legally available for such use.

Type II Landfill:

Kalkaska-Antrim Transfer Station operated by Northern A-1

Cedar Ridge Landfill (WMI)

Glen's Sanitary Landfill (WMI)

Dafter Sanitary Landfill

CES Waters Landfill (WMI)

Elk Run Sanitary Landfill (Republic)

Whitefeather Landfill

Montmorency-Oscoda Joint Sanitary Landfill

Manistee County Landfill (aka Harland's)

Northern Oaks Recycling/Disposal Facility

Wexford County Landfill

Type III Landfill:

Ken's Landfill (WMI)

Incinerator:

Waste-to-Energy Incinerator:

Type A Transfer Facility:

Emmet County Transfer Station

Plum Valley Transfer Station

Type B Transfer Facility:

Central Lake Township Transfer Station

Elsworth Transfer Station

Village of Elk Rapids Transfer Station

Processing Plant:

Emmet County Recycling Facility

Waste Piles:

Other:

Additional facilities are listed on an attached page. Letters from or agreements with the listed disposal areas owners/operators stating their facility capacity and willingness to accept Antrim County's solid waste are in the Attachments Section.

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type A Transfer Station**

Facility Name: **Kalkaska/Antrim Transfer Station (Northern A-1 Services)**

County: Kalkaska Location: Town T27N Range R7W Section(s) 4

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Glen's Landfill or CES Waters Landfill

____ Public x Private Owner: U.S. Liquids

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	x	commercial
x	licensed	x	industrial
____	unlicensed	x	construction & demolition
____	construction permit	x	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	not applicable(NA)	acres
Total area sited for use:	NA	acres
Total area permitted:	____	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	____	
Estimated lifetime:	____	years
Estimated days open per year:	312	days
Estimated yearly disposal volume:	NA	

(if applicable)

Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Cedar Ridge Landfill**

County: Charlevoix Location: Town T33N Range R7W Section(s) 19

Map identifying location included in Attachment Section: __Yes _____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public x_____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Foundry sand and flyash from East Jordan Iron Works.

Site Size:

Total area of facility property:	120	acres
Total area sited for use:	40	acres
Total area permitted:	40	acres
Operating:	21	acres
Not excavated:	0	acres
Current capacity:	approx. 370,000	bank cubic yards
Estimated lifetime:	2.5	years
Estimated days open per year:	260	days
Estimated yearly disposal volume:	311,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Glen's Sanitary Landfill**

County: Leelanau Location: Town T28N Range 13W Section(s) 35

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public _____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos (non-friable)

Site Size:

Total area of facility property:	460	acres
Total area sited for use:	133	acres
Total area permitted:	133	acres
Operating:	14.8	acres
Not excavated:	89.3	acres
Current capacity:	22,000,000	cubic yards
Estimated lifetime:	60	years
Estimated days open per year:	264	days
Estimated yearly disposal volume:	300,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Dafter Sanitary Landfill/United Waste Systems**

County: Chippewa Location: Town T46N Range R1W Section(s) 33

Map identifying location included in Attachment Section: x Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____Public x____Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	x	commercial
x	licensed	x	industrial
____	unlicensed	x	construction & demolition
x	construction permit	____	contaminated soils
____	open, but closure pending	x	special wastes *
		____	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos

Site Size:

Total area of facility property:	87	acres
Total area sited for use:	43	acres
Total area permitted:	43	acres
Operating:	13	acres
Not excavated:	10	acres
Current capacity:	not avail.	
Estimated lifetime:	8-10	years
Estimated days open per year:	260	days
Estimated yearly disposal volume:	123,000	gate cubic yards

(if applicable)

Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **City Environmental Svcs., Inc. of Waters (Crawford-Otsego Landfill)**

County: Crawford Location: Town T28N Range R8E Section(s) 4

Map identifying location included in Attachment Section: __Yes x No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public x Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

not avail.

Site Size:

Total area of facility property:	252.20	acres
Total area sited for use:	252.20	acres
Total area permitted:	79.07	acres
Operating:	9.7	acres
Not excavated:	64.87	acres
Current capacity:	8.2 million	cy
Estimated lifetime:	>20	years
Estimated days open per year:	313	days
Estimated yearly disposal volume:	320,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Elk Run Sanitary Landfill**

County: Presque Isle Location: Town T33N Range R2E Section(s) NE1/4 of 5

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____Public x____Private Owner: Republic Waste Services

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
	open, but closure pending	x	special wastes *
			other: _____

* Explanation of special wastes, including a specific list and/or conditions:

Asbestos

Site Size:

Total area of facility property:	120	acres
Total area sited for use:	42	acres
Total area permitted:	42	acres
Operating:	approx. 3	acres
Not excavated:	approx. 39	acres
Current capacity:		
Estimated lifetime:	>20	years
Estimated days open per year:	286	days
Estimated yearly disposal volume:	48,000-140,000	gate cubic yards

(if applicable)

Annual energy production:		
Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Montmorency-Oscoda Joint Sanitary Landfill**

County: Montmorency Location: Town R29N Range R3E Section(s) 6

Map identifying location included in Attachment Section: __Yes _____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

x _____Public _____Private Owner: Montmorency /Oscoda/Alpena Counties

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
x	construction permit		contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	80	acres
Total area sited for use:	80	acres
Total area permitted:	80	acres
Operating:	3-4	acres
Not excavated:	37	acres
Current capacity:	3,500,000	
Estimated lifetime:	30	years
Estimated days open per year:	310	days
Estimated yearly disposal volume:	145,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	future	megawatts
Waste-to-energy incinerators:		megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Manistee County Landfill (aka: Harland's Landfill)**

County: Manistee Location: Town T21N Range R16W Section(s) 32

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____ Public x ____ Private Owner: Allied Disposal, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	x	commercial
x	licensed	x	industrial
____	unlicensed	x	construction & demolition
x	construction permit	x	contaminated soils
____	open, but closure pending	x	special wastes *
		____	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

asbestos, flyash

Site Size:

Total area of facility property:	336	acres
Total area sited for use:	40	acres
Total area permitted:	40	acres
Operating:	40	acres
Not excavated:	13	acres
Current capacity:	1,700,000	cy
Estimated lifetime:	14	years
Estimated days open per year:	250	days
Estimated yearly disposal volume:	200,000	cy

(if applicable)

Annual energy production:		
Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Northern Oaks Recycling and Disposal Facility**

County: Clare Location: Town T19N Range R4W Section(s) 32

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

____ Public x Private Owner: Waste Management, Inc.

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	x	commercial
x	licensed	x	industrial
____	unlicensed	x	construction & demolition
____	construction permit	x	contaminated soils
____	open, but closure pending	____	special wastes *
		x	other: water treatment filter cake

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	160	acres
Total area sited for use:	76	acres
Total area permitted:	76	acres
Operating:	19	acres
Not excavated:	57	acres
Current capacity:	8,755,100	cy
Estimated lifetime:	43	years
Estimated days open per year:	260	days
Estimated yearly disposal volume:	409,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type II Landfill**

Facility Name: **Wexford County Landfill**

County: Wexford Location: Town T23N Range R9W Section(s) 33/34

Map identifying location included in Attachment Section: __Yes _____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

x Public _____Private Owner: Wexford County Department of Public Works

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
	construction permit	x	contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	146	acres
Total area sited for use:	51	acres
Total area permitted:	51	acres
Operating:	4	acres
Not excavated:	0	acres
Current capacity:	2,000,000	
Estimated lifetime:	12-14 (with proposed vertical expansion)	years
Estimated days open per year:	260	days
Estimated yearly disposal volume:	220,000	gate cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type A Transfer Station**

Facility Name: **Emmet County Transfer Station**

County: Emmet Location: Town T35N Range R5W Section(s) 10

Map identifying location included in Attachment Section: x Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Cedar Ridge Landfill

x Public ____ Private Owner: Emmet County (on state land)

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed	x	commercial
x	licensed	x	industrial
	unlicensed	x	construction & demolition
	construction permit		contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	40	acres
Total area sited for use:	10	acres
Total area permitted:	10	acres
Operating:		acres
Not excavated:		acres
Current capacity:		
Estimated lifetime:		years
Estimated days open per year:	300	days
Estimated yearly disposal volume:	67,000	compacted cubic yards

(if applicable)

Annual energy production:		
Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type B Transfer Station**

Facility Name: **Central Lake Township Transfer Station**

County: Antrim Location: Town T31N Range R8W Section(s) 16

Map identifying location included in Attachment Section: x Yes ____ No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Cedar Ridge Landfill or CES Waters Landfill

x Public ____ Private Owner: Central Lake Township

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	____	commercial
____	licensed	____	industrial
NA	unlicensed	____	construction & demolition
____	construction permit	____	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Also collects recyclables.

Site Size:

Total area of facility property:	7	acres
Total area sited for use:	7	acres
Total area permitted:	____	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	____	
Estimated lifetime:	____	years
Estimated days open per year:	104	days
Estimated yearly disposal volume:	1,100	compacted cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: **Type B Transfer Station**

Facility Name: **Ellsworth Transfer Station**

County: Antrim Location: Town 32N Range 8W Section(s) ____

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Cedar Ridge Landfill

____Public x____Private Owner: Kenneth Groesser operates on Banks Twp property

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
____	closed	____	commercial
____	licensed	____	industrial
NA	unlicensed	____	construction & demolition
____	construction permit	____	contaminated soils
____	open, but closure pending	____	special wastes *
		____	other: ____

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	____	acres
Total area sited for use:	approx. 1	acres
Total area permitted:	____	acres
Operating:	____	acres
Not excavated:	____	acres
Current capacity:	____	
Estimated lifetime:	____	years
Estimated days open per year:	approx. 52	days
Estimated yearly disposal volume:	____	

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type B Transfer Station

Facility Name: Village of Elk Rapids Transfer Station

County: Antrim Location: Town T29N Range R9W Section(s) 16

Map identifying location included in Attachment Section: __Yes ____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: Glen's Landfill

x Public ____ Private Owner: Village of Elk Rapids

Operating Status (check)		Waste Types Received (check all that apply)	
x	open	x	residential
	closed		commercial
	licensed		industrial
NA	unlicensed		construction & demolition
	construction permit		contaminated soils
	open, but closure pending		special wastes *
			other:

* Explanation of special wastes, including a specific list and/or conditions:

Site Size:

Total area of facility property:	80	acres
Total area sited for use:	0.5	acres
Total area permitted:		acres
Operating:		acres
Not excavated:		acres
Current capacity:		
Estimated lifetime:		years
Estimated days open per year:	104	days
Estimated yearly disposal volume:	2,942	compacted cubic yards

(if applicable)
Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

SELECTED SYSTEM

FACILITY DESCRIPTIONS

Facility Type: Type III Landfill

Facility Name: Ken's Landfill

County: Grand Traverse Location: Town T27N Range R11W Section(s) NE1/4 of 7

Map identifying location included in Attachment Section: __Yes _____No

If facility is an Incinerator or a Transfer Station, list the final disposal site and location for Incinerator ash or Transfer Station wastes: _____

_____Public x_____Private Owner: Waste Management, Inc.

Operating Status (check)

x	open
	closed
x	licensed
	unlicensed
	construction permit
	open, but closure pending

Waste Types Received (check all that apply)

	residential
	commercial
	industrial
x	construction & demolition
	contaminated soils
	special wastes *
	other: _____

* Explanation of special wastes, including a specific list and/or conditions:

_____

Site Size:

Total area of facility property:	16.8	acres
Total area sited for use:	13.5	acres
Total area permitted:	13.5	acres
Operating:	6.0	acres
Not excavated:	1.0	acres
Current capacity:	150,000	cubic yards
Estimated lifetime:	2.0	years
Estimated days open per year:	240	days
Estimated yearly disposal volume:	70,000	cubic yards

(if applicable)

Annual energy production:

Landfill gas recovery projects:	NA	megawatts
Waste-to-energy incinerators:	NA	megawatts

III-5 SOLID WASTE COLLECTION & TRANSPORTATION

The following describes the solid waste collection services and transportation infrastructure which will be utilized within the County to collect and transport solid waste.

In Phase I of the Plan's Enforceable Program (1998-2002) comprehensive solid waste collection services would be made available to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations. Spring/fall cleanup days would be provided in more urban areas with scavenging/trading/reuse encouraged and recycling of as many materials left as possible. Household hazardous waste collection services would be provided. Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.

Existing landfills in the region would be used with direct haul by compacting collection vehicles being the primary method of transportation to the landfills. Existing drop-off facilities for solid waste would be available.

In Phase II of the Plan's Enforceable Program (2003-2008), the comprehensive solid waste collection services would continue to be available to all households and businesses in the County and use of these services strongly encouraged. Strong illegal dumping and litter policing would continue. Spring/fall cleanup days would be provided in the urban service district with scavenging/trading/reuse encouraged. Household hazardous waste collection services would be provided and expanded to include collection of small quantities of agricultural pesticides and herbicides. Adopt a "____" programs would be further developed with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests. A ban on selected types of recyclable materials would be considered, in cooperation w/adjacent counties and transfer/disposal facilities serving the county. An effective date for the ban would be targeted for a period 3 to 5 years in the future with the ban possible triggered by failure to reach specified diversion levels.

Compacting collection vehicles would continue to have to direct haul to the area landfills. Solid waste drop-off facilities for solid waste would continue to be available to complement a more comprehensive "flagship" site, possibly located in Elk Rapids, that would take other types of waste (bulky, C&D, etc.) as well as recyclables. A waste transfer facility would be planned should direct haul options for landfilling no longer be available or be cost prohibitive. Elk Rapids may also be the preferred site for this service.

III-6 RESOURCE CONSERVATION EFFORTS:

The following describes the selected system's proposed conservation efforts to reduce the amount of solid waste generated throughout the County. The annual amount of solid waste currently or proposed to be diverted from landfills and incinerators is estimated for each effort to be used, if possible. Since conservation efforts are provided voluntarily and change with technologies and public awareness, it is not this Plan's intention to limit the efforts to only what is listed. Instead citizens, businesses, and industries are encouraged to explore the options available to their lifestyles, practices, and processes which will reduce the amount of materials requiring disposal.

The Resource Conservation Efforts will use education and incentives to encourage source reduction, reuse and recycling with the following projected impact in measurable programs and additional impact in source reduction that cannot be measured.

Table III-1: Resource Conservation Effort

Effort Description	Est. Diversion Tons/Yr		
	Current	5th yr	10th yr
Recycling Drop-off	720	820	1,850
Curbside recycling	20	80	675
Commercial recycling	400	1,150	1,875
Yard waste collection	1,480	2,550	4,900
Household Hazardous waste collection		2	4
Antrim County Totals	**2,620**	**4,602**	**9,304**

III-7 WASTE REDUCTION, RECYCLING, & COMPOSTING:

VOLUME REDUCTION TECHNIQUES

The following describes the techniques utilized and proposed to be used throughout the County which reduces the volume of solid waste requiring disposal. The annual amount of landfill air space not used as a result of each of these techniques is estimated. Since volume reduction is practiced voluntarily and because technologies change and equipment may need replacing, it is not this Plan's intention to limit the techniques to only what is listed. Persons within the County are encouraged to utilize the technique that provides the most efficient and practical volume reduction for their needs. Documentation explaining achievements of implemented programs or expected results of proposed programs is attached.

The Plan's Enforceable Program provides for the development of a waste transfer in order to increase the density of loads that are transported to landfills, thus lowering tip fees at those landfills and/or reducing transportation costs. This will reduce the gate yards taken in at these landfills but will not impact bank yards (i.e.: estimated air space conserved in cubic yards) since the final compaction density at landfills is not expected to change. Landfills will use less energy, fuel, etc. to reach those densities, however, which does provide some economic benefit to the landfill owner.

Table III-2: Volume reduction techniques (Not Applicable)

Technique Description	Est. Air Space Conserved Yds^3/Yr		
	Current	5th yr	10th yr
N.A. (see discussion above)	NA	NA	NA
Antrim County Totals	NA	NA	NA

OVERVIEW OF RESOURCE RECOVERY AND RECYCLING PROGRAMS

The following describes the type and volume of material in the County's waste stream that may be available for recycling or composting programs. How conditions in the County affect or may affect a recycling or composting program and potential benefits derived from these programs is also discussed. Impediments to recycling or composting programs which exist or which may exist in the future are listed, followed by a discussion regarding reducing or eliminating such impediments.

Total waste generation for Antrim County was calculated using pounds per person per day (residential) and pounds per employee per day (commercial and industrial) models. These numbers were compared with actual disposal and recovery data to determine a final generation number. Using population projected out over the planning period (adjusted for seasonal population variation) waste generation was then estimated. The County then evaluated various material recovery and waste reduction strategies, and compared actual recovery rates for the current system against what may be possible given new program implementation. With target recovery goals in mind (14+ percent for 2003 and 25+ percent for 2008), the County was able to determine target material tonnage for recovery and then matched actual programs and recovery benchmarks from other communities, needed to meet those goals.

RECYCLING AND COMPOSTING

The following is a brief analysis of the recycling and composting programs selected for the County in this Plan. Additional information on operation of recycling and composting programs is included in Appendix A. The analysis covers various factors within the County and the impacts of these factors on recycling and composting. Tables that follow this subsection list the existing recycling, composting, and source separation of hazardous materials programs that are currently active in the County and which will be continued as part of this Plan. The second group of three tables that follow this subsection list the recycling, composting, and source separation of hazardous materials programs that are proposed in the future for the County. It is not the intent of this Plan's update to prohibit additional programs or expansions of current programs to be implemented beyond those listed.

Recycling

XX Recycling programs within the County are feasible. Details of existing and planned programs are included on the following pages.

___ Recycling programs for the County have been evaluated and it has been determined that it is not feasible to conduct any programs because of the following:

In Phase I of the Selected Alternative the following recycling systems would be developed:

Recycling Incentives:

Proactive education and promotion strategies would encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be widespread throughout the County and heavily promoted. Recycling drop-offs would add more materials to encourage overall participation in program by more citizens and businesses. An ambitious outreach and education program would promote all aspects of the expanded system and improvements.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County, open at convenient hours most days of the week. Material would be collected in a more commingled form to make use of the drop-off facilities easier. A wide variety of recyclable materials would be collected at each of the drop-off sites. Existing drop-off stations in Elk Rapids and Central Lake would be improved, and new sites established near Mancelona, Bellaire, and possibly Alden.

SELECTED SYSTEM

Curbside Residential Recycling:

Subscription curbside recycling would be available for residents that were willing to make their own arrangements for the service with area haulers.

Commercial Recycling:

Businesses would be encouraged to use the drop-off recycling network for smaller volumes of commingled paper and commingled containers. Arrangements would be made for larger volumes to be delivered to a site capable of handling compacted or loose loads of commercial recyclables. Businesses would be encouraged to contract with their hauler for collection of cardboard and other high volume recyclable materials. Elk Rapids may be a good prospect for a site which would accept larger loads of commercial recyclables.

Material Transfer and Processing:

Arrangements would be made to provide access to a material recovery facility (MRF) to service all recycling collectors in the system. These arrangements would ideally include guarantees that sufficient capacity was available to meet the County's needs over the long term. Ideally the facility would be able to process commingled containers and commingled fibers as well as handle presorted recyclables like OCC. The Emmet County Transfer Station remains the best processing prospect, however, the Waste Management, Inc. (former United/USA Waste) facility in Grand Traverse County could also be considered.

In Phase II of the Selected Alternative the following recycling systems would be further developed:

Recycling Incentives:

Proactive education and promotion strategies would continue to encourage responsible solid waste management and strong reduce/reuse/recycle behavior. Pay As You Throw (PAYT) programs would be further developed throughout the County in all solid waste collection arrangements. Recycling collection programs as well as drop-offs would continue to add more materials to encourage overall participation in program by more citizens and businesses. The County would coordinate with the counties that they export waste to in order to implement a ban on landfilling of certain materials (cardboard and newspaper as examples) that would be targeted for an effective date 3 to 5 years in the future. This will provide a further incentive for increased adoption and participation in recovery programs.

Drop-Off Residential Recycling:

A permanent network of drop-off sites for recycling would be located in the County, open at convenient hours most days of the week. Arrangements for processing of material would be made to allow recyclables to be collected in a commingled form to make use of the drop-offs easier - coordinated with development of the capability to process this material at the processor. At least two of the drop-off sites would be developed into "flagship" drop-off sites that are staffed, have an educational component, and collect the largest number of different types of materials.

Curbside Residential Recycling:

Two stream commingled curbside recycling would be provided to all residents in a designated curbside service district that included most villages/towns/cities as well as other densely populated areas. Subscription service outside this district would be strongly encouraged.

Commercial Recycling:

Arrangements would be made for a permanent site for businesses to drop-off a wide variety of recyclables including commingled containers and commingled paper (as recycling facility capabilities are upgraded). A business recycling service district would be established and businesses within the district encouraged to contract for the recycling collection services provided by licensed haulers.

Composting

XX Composting programs within the County are feasible. Details of existing and planned programs are included on the following pages.

___ Composting programs for the County have been evaluated and it has been determined that it is not feasible to conduct any programs because of the following:

Residential Yard Waste Composting:

In Phase I of the Selected Alternative the following composting systems would be developed:

Fall leaf collection would be provided in Mancelona, Elk Rapids, Central Lake and Bellaire. Backyard composting would be encouraged through distribution of backyard bins at discount rates. At least one and possibly more permanent drop-off options for yard waste would be provided throughout the County. Elk Rapids would be a likely location for a permanent collection site for seasonal yard waste.

In Phase II of the Selected Alternative the following composting systems would be further developed:

Residential Yard Waste Composting:

Fall leaf collection would be provided in all villages/town/cities. Backyard composting would be encouraged through distribution of backyard bins at discount rates. A similar mulching mower program would encourage grass cycling. Permanent drop-off options for yard waste would be provided throughout the County with at least one "flagship" site taking all types of yard waste and providing finished compost for distribution to residents. At least one site for active composting of yard waste would be provided.

Material Transfer and Processing:

Arrangements would be made for a material recovery facility (MRF) to be available to all recycling collectors in the system. The facility would be able to process commingled containers and commingled fibers as well as presorted recyclables like OCC. Commercial recyclables would be able to be tipped at the facility for a reasonable fee that was lower than the tipping fee at area landfills. Some capability would be provided to remove contaminants and small quantities of solid waste from loads of recyclables.

Clean Community

XX Programs for source separation of potentially hazardous materials are feasible and details are included on the following pages

___ Separation of potentially hazardous materials from the County's waste stream has been evaluated and it has been determined that it is not feasible

Clean Community Programs:

In Phase I of the Selected Alternative, household hazardous waste collection services would be provided and expanded to include collection of small quantities of agricultural pesticides and herbicides.

In Phase II of the Selected Alternative, household hazardous waste collection services would be provided including collection of agricultural pesticides and herbicides -- all coordinated from a single permanent drop-off site.

TABLE III-3

RECYCLING: Based on Current Programs

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Operation	Evaluation
Elk Rapids Transfer Station	SE portion of county	Public	d	d	A, B, C, D, E, G, L	6	Public; Private	Antrim Co. and municipalities
Central Lake Transfer Station	Central townships	Public	d	d	A, B, C, D, E, G, L			

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Material types: A=Plastics; B=Newspaper; C= Corrugated Containers; D=Other paper; E=Total Glass; F1=Other materials; G=Grass and Leaves; H=Wood waste; I=Construction & Demolition; J=Food & food processing; K=Tires; L=Total metals

TABLE III-4

COMPOSTING: Based on Current Programs

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Operation	Evaluation
Elk Rapids Transfer Station	SE portion of county	public	d	w	L, G, Br	Municipality	Public; Private	Municipality
Central Lake Transfer Station	Central townships	Public	d	w	L, G	Municipality	Public; Private	Municipality
Mancelona	Village of Mancelona	Public	d	w	L, G	Municipality	Public; Private	Municipality
Village of Bellaire	Village of Bellaire	Public	d	w	L, G	Municipality	Public; Private	Municipality

Additional programs and the above information for those programs are listed on an attached page.

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; w=weekly; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Material types: G=Grass; L=Leaves F=Food; Br=Brush; W=Wood; P=Paper; S=Municipal Sewage Sludge; A=Animal Waste/Bedding; M=Municipal Solid Waste

TABLE III-5

SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS: Based on Current Programs

Since improper disposal of nonregulated hazardous materials has the potential to create risks to the environment and human health, the following programs have been implemented to remove these materials from the County's solid waste stream.

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Operation	Evaluation
Grand Traverse County HHW Program	Multi-county	Public	do	quarterly	C, P, PS, PH	GTC	GTC	Antrim Co

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; w=weekly; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Materials: AR=Aerosol Cans; A=Automotive Products except Used Oil, Oil Filters & Antifreeze; AN=Antifreeze; B1=Lead Acid Batteries; B2=Household Batteries; C=Cleaners and Polishers; H=Hobby and Art Supplies; OF=Used Oil Filters; P=Paints and Solvents; PS=Pesticides and Herbicides; PH=Personal and Health Products; U=Used Oil; OT=Other Materials and identified

TABLE III-6

PROPOSED RECYCLING:

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Operation	Evaluation
Antrim County Drop-off Program	County-wide	Public/ Private	d	d	A, B, C, D, E, L, G, H, I	Antrim Co & municipalities	Private	Antrim Co & municipalities
			d	d				

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Material types: A=Plastics; B=Newspaper; C= Corrugated Containers; D=Other paper; E=Total Glass; F1=Other materials; G=Grass and Leaves; H=Wood waste; I=Construction & Demolition; J=Food & food processing; K=Tires; L=Total metals

TABLE III-7

PROPOSED COMPOSTING:

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Program Management Responsibilities[1] Operation	Program Management Responsibilities[1] Evaluation
Elk Rapids Transfer Station	SE portion of county	public	d	w	L, G, Br	Antrim Co. & municipality	Public; private	Antrim Co. & municipality
Central Lake Transfer Station	Central townships	Public	d	w	L, G	Antrim Co. & municipality	Public; private	Antrim Co. & municipality
Mancelona	Village of Mancelona	Public	d	w	L, G	Antrim Co. & municipality	Public; private	Antrim Co. & municipality
Village of Bellaire	Village of Bellaire	Public	d	w	L, G	Antrim Co. & municipality	Public; private	Antrim Co. & municipality

Additional programs and the above information for those programs are listed on an attached page.

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; w=weekly; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Material types: G=Grass; L=Leaves F=Food; Br=Brush; W=Wood; P=Paper; S=Municipal Sewage Sludge; A=Animal Waste/Bedding; M=Municipal Solid Waste

TABLE III-8

PROPOSED SOURCE SEPARATION OF POTENTIALLY HAZARDOUS MATERIALS:

Program Name	Service Area	Public or Private	Collection Point[2]	Collection Frequency[3]	Materials[4]	Program Management Responsibilities[1] Development	Operation	Evaluation
Antrim County Household Hazardous waste Program	county-wide	Public	d	by appt and scheduled weekends	AR, A, B1, B2, C, H, OF, P, PA,PH, U	Antrim Co.	Antrim Co w/ contractor	Antrim Co.

[1] Program Management responsibilities: 1=Designated Planning Agency; 2= County Board of Commissioners; 3=Department of Public Works; 4= Environmental Group; 5=Private Owner/Operator; 6=Other

[2] Collection Point: c=curbside; d=drop-off; o=onsite

[3] Collection Frequency: d=daily; w=weekly; b=bi-weekly; m=monthly; Sp=Spring; Su=Summer; Fa=Fall; Wi=Winter

[4] Materials: AR=Aerosol Cans; A=Automotive Products except Used Oil, Oil Filters & Antifreeze; AN=Antifreeze; B1=Lead Acid Batteries; B2=Household Batteries; C=Cleaners and Polishers; H=Hobby and Art Supplies; OF=Used Oil Filters; P=Paints and Solvents; PS=Pesticides and Herbicides; PH=Personal and Health Products; U=Used Oil; OT=Other Materials and identified

IDENTIFICATION OF RESOURCE RECOVERY MANAGEMENT ENTITIES:

The following identifies those current public and private parties, and the resource recovery or recycling programs for which they have management responsibilities.

Antrim County Planning Department or Solid Waste and Recycling Office

Administration of the Plan's Enforceable Program and resource recovery efforts including promotion and education for all resource recovery programs; operation of household hazardous waste collection program; oversight of county recycling and yard waste drop-off sites

Various Service Providers including Waste Management, Inc (USA Waste, United Waste)

These private sector and non-profit sector service providers will deliver solid waste and recycling services under the terms of the Plan's Enforceable Program as contained in the Antrim County Solid Waste Management System and organized under the County Ordinance, Rules/Regulations and related contracts. Resource recovery management services from these entities are expected to include corrugated and office paper collection routes for businesses throughout the county; servicing of recycling drop-off facilities; recycling processing facility operations; curbside recycling collection in designated service district; curbside recycling collection for out-county subscribers; yard waste collection.

Various Service Providers for Construction and Demolition Material Collection

These private sector and non-profit sector service providers will deliver on-site collection of construction and demolition material throughout the county

Various Landscaping/Nursery Companies

These private sector and non-profit sector service providers will deliver yard waste collection services and serve as hosts for yard waste drop-off sites

Local Municipalities

Operation of fall leaf collection and other solid waste/recycling services

PROJECTED DIVERSION RATES:

The following estimates the annual amount of solid waste which is expected to be diverted from landfills and incinerators as a result of the current resource recovery programs in years five and ten as a result of the Plan's Enforceable Program.

Table III-9: Projected Diversion

Collected Material:	Projected Annual Tons Diverted:*			Collected Material:	Projected Annual Tons Diverted:*		
	Year 0	Year 5	Year 10		Year 0	Year 5	Year 10
A. TOTAL PLASTICS:	23	41	88	G. GRASS AND LEAVES:	340	500	500
B. NEWSPAPER:	250	451	968	H. WOOD WASTE:			
C. CARDBOARD:	501	902	1,936	I. CONSTR. & DEMO.			
D. OTHER PAPER	216	385	776	J. FOOD PROCESSING			
E. GLASS	91	164	202	K. TIRES:			
F. OTHER MATERIALS:	23	41	88	L. TOTAL METALS:	34	41	88

*numbers are for residential/commercial recycling only, i.e. do not include industrial recovery programs

MARKET AVAILABILITY FOR COLLECTED MATERIALS:

The following identifies how much volume that existing markets are able to utilize of the recovered materials which were diverted from the County's solid waste stream.

Note that recyclable materials are commodity products and that the actual movement of these materials to end-markets fluctuates will change from time to time during the course of the plan. In some cases these commodities will only be used in-state due to the weight of the material, high transportation costs and relatively low value per ton. This is frequently the case for yard waste, wood waste and other similar materials. Other materials that have higher levels of demand worldwide will, from time to time, be shipped out-of-state and in some cases out of the country and overseas as market conditions dictate.

Collected Material:	In-State Markets	Out-of-State Markets	Collected Material	In-State Markets	Out-of-State Markets
A. TOTAL PLASTICS:	100 %		G. GRASS AND LEAVES:	100 %	
B. NEWSPAPER:	100 %		H. WOOD WASTE:	100 %	
C. CARDBOARD	100 %		I. CONSTR. & DEMO.:	100 %	
D. OTHER PAPER	100 %		J. FOOD PROCESSING	100 %	
G. GLASS	100 %		K. TIRES:	100 %	
F. OTHER MATERIALS:	100%		L. TOTAL METALS:	100 %	

EDUCATIONAL AND INFORMATIONAL PROGRAMS:

It is often necessary to provide educational and informational programs regarding the various components of a solid waste management system before and during its implementation. These programs are offered to avoid miscommunication which results in improper handling of solid waste and to provide assistance to the various entities who participate in such programs as waste reduction and waste recovery. Following is a listing of the programs offered or proposed to be offered in Antrim County

Program Topic	Delivery Medium	Targeted Audience	Program Provider
Recycling/general solid waste education	Display at public events	General public	DPA
Recycling, Composting	Radio ads	General public	DPA
Recycling, Composting	Newspaper ads	General public	DPA
General solid waste education	School presentations	School-age children	DPA
General solid waste education	Teacher Training/WISE curriculum	Teachers	DPA
Resource conservation	Presentations/workshops	Businesses/ public	DPA
All programs	Brochures, flyers	General public; businesses	DPA, Cooperative Extension, area Environmental Groups

III-8 TIMETABLE FOR SELECTED SYSTEM IMPLEMENTATION

This timetable is a guideline to implement components of the Plan's Enforceable Program. The Timeline gives a range of time in which the component will be implemented such as "1999-2000" or "On-going." Timelines may be adjusted later if necessary.

Management Components	Timeline
1) Designate Solid Waste Plan Implementation Agency	1999
2) Designate Implementation Oversight Committee	1999
3) Develop/Adopt Implementation Action Plan	1999
4) Draft/Adopt Intergovernmental Agreements/Ordinance/Rules/Regs	1999
5) Preliminary Program Specifications for Planned Programs	1999
6) Establish Budgets for Planned Programs	1999
7) Finalize Funding Structure and Enforcement Mechanisms	1999
8) Contract for Recycling Processing Capacity	1999
9) Initiate all Outreach/Education Programs	1999
10) Procure all Other System Improvements	1999
11) Final Implementation of Funding Mechanisms	1999
12) Continued Evaluation of Need for Transfer Facility	2000-2008
13) Develop Transfer Facility if Needed	2000-2008
14) Preliminary Program Specifications for Planned Ph II Programs	2000-2001
15) Establish Budgets for Planned Phase II Programs	2000-2001
16) Finalize Any Upgrades to Funding Structure and Mechanisms	2000-2001
17) Initiate all Phase II outreach/education programs	2002-2008
18) Procure all other Phase II system improvements	2002-2008
19) Data Tracking to Assess Program Performance	Annual/Ongoing
20) Update Implementation Action Plan	Annual/Ongoing

III-9 SITING REVIEW PROCEDURES

The Siting Review Procedures contained in this Plan begins with a description of *Authorized Disposal Area Types* followed by a description of the *Siting Criteria and Process*.

AUTHORIZED DISPOSAL AREA TYPES

Per the requirements of Part 115 Section 11533 of NREPA, this Plan includes an Enforceable Program and process that assures that the nonhazardous waste to be generated in the planning area over the next 10 years will be collected and recovered, processed, and disposed of at disposal areas that comply with state law and rules promulgated by the Michigan DEQ governing the location, design and operation of the disposal areas.

As provided for in Part 115 Section 11537 (a) of NREPA, this Plan demonstrates that the planning area has in excess of 66 months of available disposal capacity and will have in excess of 66 months of available disposal capacity for the duration of the 5 year planning period for which this Plan is provided. As a result, the County may refuse to utilize the siting mechanism contained herein until the County is no longer able to demonstrate 66 months of disposal capacity or until the County amends this Plan to provide for the annual certification process described in Part 115 Section 11538 (4) of NREPA.

If circumstances require that the County has to demonstrate 66 months of disposal capacity, then the County will prepare documentation similar in content to the chart in Section III-13, Capacity Certifications, covering all available Disposal Area capacity being used by the County and available within reasonable hauling distance for use by the County as provided for in this Plan. The determination of reasonable hauling distance will assume availability of the transfer station provided for in the Plan's Enforceable Program. Available Disposal Area capacity shall be based on information on those Disposal Area's based on the DEQ's *Annual Report of Disposal Area Capacity*.

If that information is insufficient to demonstrate 66 months of Disposal Area capacity then the documentation shall be revised to include all available Disposal Area acreage identified in the respective Plans, and calculation of all available Disposal Area capacity for those Disposal Areas after providing for required buffer areas, required slopes (2 to 1) for both beneath-grade and above-grade disposal area, all required distances from ground water, compaction of in-place bank yards at 1,200 pounds per cubic yard and suitable deductions for daily cover, roads, and other site requirements (at 15% unless otherwise documented).

This Plan does not include an annual certification process, as provided for in Part 115 Section 11538 (2) of NREPA, since specific disposal areas are identified in this Plan for the five year period after approval of the Plan and, as such, is not required to provide the annual certification process described in Part 115 Section 11538 (4) of NREPA, or the interim siting mechanism described in Part 115 Section 11538 (3) of NREPA.

A: <u>Facilities Included in this Plan</u>:

This Plan's Enforceable Program and process, per the requirements of Part 115 Section 11533 of NREPA, includes new disposal areas within the County as described below. Disposal areas at specific sites identified in this Plan are automatically included in the Plan. Disposal areas without specific sites identified will be sited following the Plan's siting mechanism as provided for in this Chapter as will any changes in type or expansions of any existing disposal area unless provided for elsewhere in this Plan.

A.1: <u>Type II Landfill Disposal Area</u>: Not Applicable. No Type II or Type III Landfill disposal areas may be sited by this Plan.

A.2: <u>Solid Waste Transfer Station Disposal Area</u>: A Solid Waste Transfer Station disposal area or areas, as described in the Plan's Enforceable Program, constructed with recycling/material recovery capabilities and sponsored by the County, is included in the Plan. Sponsorship by the County is defined to mean, at a minimum, ownership of the land on which the disposal area is located with solid

waste directed to the disposal area by ordinance, contract or other similar mechanism as provided for in the Plan's Enforceable Program. Such a Solid Waste Transfer Station disposal area or areas will be sited following the Plan's siting mechanisms as provided for in this chapter since no specific sites have been identified in the Plan for a Solid Waste Transfer Station disposal area. No other Solid Waste Transfer Station disposal areas may be sited by this Plan

B: Exempt Facilities:

The following types of facilities do not require a construction permit and operating license from DEQ under Part 115 of NREPA.

B.1: Solid Waste Transfer Facility Disposal Area: Part 115 of NREPA specifies that the following types of solid waste transfer facility disposal areas do not require a construction permit and operating license from DEQ if either of the following circumstances exist:

i: The solid waste transfer facility disposal area is not designed to accept wastes from vehicles with mechanical compaction devices.

ii: The solid waste transfer facility disposal area accepts less than 200 uncompacted cubic yards per day.

These types of solid waste transfer facility disposal areas are still subject to the Plan's siting mechanism as provided for in this chapter and are still exempt from local zoning.

B.2: Recycling and Compost Processing Facility: A processing facility that processes only source separated materials of any type does not require a construction permit and operating license from DEQ. These types of facilities do not have be sited by the Plan in order to be constructed and are subject to local zoning. These types of facilities can be sited with the approval of the local unit of government that has jurisdiction over a proposed site with the enforcement of local ordinances, including zoning, applicable to that siting being authorized elsewhere in this Plan.

C: Facilities Not Included in this Plan:

A proposal for any other disposal area as defined in Part 115 or NREPA, whether a solid waste transfer facility, incinerator, sanitary landfill, processing plant or other solid waste handling or disposal area utilized in the disposal of solid waste is not included in this Plan and, thus, will not be allowed to trigger the Plan's siting mechanism.

D: Plan Amendment to Include a Facility Not Included in this Plan:

If a proposed facility is not consistent with or compliance with this Plan, the facility proposer can request that the County amend the Plan. The procedure to amend this Plan is the same as the process for adopting this Plan, as provided for in Section 115 of NREPA. A request to amend the Plan should be made to the appropriate County Agency identified below. Upon receipt of such a request to amend the Plan, the County shall prepare a budget showing the costs anticipated to amend the Plan. Upon adoption of that Budget by the County Board of Commissioners the total amount of that budget shall become the fee charged to consider a proposed amendment to the Plan.

SITING CRITERIA AND PROCESS

The following process describes the application process and site review criteria to be used to site solid waste disposal facilities and determine consistency with this Plan.

If a disposal area being considered for development is included in the Plan's Authorized Disposal Area Types as described above then the Plan's Siting Review Process can be triggered as follows:

A: Initiating the Plan's Siting Review Process: To initiate the Plan's Siting Review Process, the Applicant shall submit 17 copies of an administratively complete application and the Application Fee to:

Antrim County Planning Department
P O. Box 187
Bellaire, MI 49615
616 533-6265

The above office will act as the administrator and staffing for the County in this Siting Review Process and will be referred to below as the "Agency".

B: Application Fee: *Application Fee Structure*: An administratively complete application shall include the Application Fee in the form of a certified check or money order in the amount identified for the type of facility being proposed:

Type of Facility Requiring Permit	Application Fee
*Landfill	$15,000
*Incinerator	$15,000
*Processing Facility	$15,000
Transfer Station	$4,000

*applicable only if siting process is required to operate due to less than 66 months of capacity as described in "Authorized Disposal Area Types" section of this Siting Review Procedure.

The Application Fees will be used, at the discretion of the County, in evaluating the Application including but not limited to 1) staff time spent on the Siting Review Procedures and related tasks, 2) costs of required public meetings and related services, 3) costs for publication and mailing of notices and printing of documents, and 4) costs for consulting fees and other technical assistance as required related to the Siting Review Process. The above fee schedule may be modified by the County Board of Commissioners at their sole discretion. It is the responsibility of the Applicant to contact the County to determine the current fee amount that must be included with the application.

C: An Administratively Complete Application: An administratively complete application shall include all the items identified below. The required information shall be used in this Siting Review Process to apply the minimum siting criteria as provided for in Part 115 Section 11538 (3) or NREPA. Some of the requirements for an administratively complete application are for informational purposes in order to assist in completing the Siting Review Process.

1: Type of Facility (landfill, incinerator, processing facility, transfer station)

2: Legal description of all parcels included in the proposed disposal area.

3: Name, address and telephone number for:

a) The applicant and its parent company, if any;

b) Property owner of the site (if different);

c) Operator of the proposed disposal area (if different);

d) Designer/Engineer of the proposed disposal area; and

e) Designated contact for the Siting Review Process.

4: A statement that the applicant is the owner of all the parcels involved in the application or, if the owner of any of the parcels is different than the applicant, documentation in the form of land contracts, purchase agreements, or other binding legal instruments which substantiate the applicant's ability to proceed with development and operation of all parcels involved in the application.

5: General site location map(s). The general site location map(s) shall include more than one drawing where required for clarity. One set of the general site location map(s) shall be drawn at a scale and of such accuracy that one can readily interpret the general site location map(s). Another set of the general site location map(s) shall be reduced so each sheet shall fit on 8 1/2

by 11 inch, or 8 1/2 by 14 inch, paper. Such general site location map(s) shall be designed and prepared by a registered professional architect, landscape architect, engineer, land surveyor, or community planner. The general site location map(s) shall include the following information:

a) The parcel(s) within the general site location map, identified by parcel lines and location including dimensions, angles and size, correlated with the legal description of said parcel(s).

b) The scale, north point, boundary dimensions, topography, and natural features such as woodlots, streams, rivers, lakes, drainage and similar features.

c) Existing man-made features such as roads, buildings, structures, high tension towers, pipelines, existing utilities such as water and sewer lines, excavations, bridges, culverts, drains and easements, and shall identify adjacent properties and their existing uses including:

i) Access roads to the site;

ii) Proposed access point(s) to the site;

iii) Location of any public use airports licensed by the Bureau of Aeronautics Michigan Department of Transportation that are within ten thousand (10,000) feet of the proposed active disposal area;

iv) Location of public and private water wells within one mile of the proposed active disposal area and showing established/approved wellhead protection areas; and

v) Residences, commercial establishments, industries, institutions including schools, churches, hospitals and historic or archaeological sites within one mile of the proposed active disposal area.

d) Current zoning at the site and for adjacent land uses.

6: A detailed site plan or plans describing 1) the site as it exists, and 2) the site in use as a solid waste disposal area. The site plan shall include more than one drawing where required for clarity. One set of the site plans shall be drawn at a scale not to be greater than one (1) inch equals twenty (20) feet nor less than one (1) inch equals two hundred (200) feet, and of such accuracy one can readily interpret the site plan. Another set of the site plan shall be reduced so each sheet shall fit on 8 1/2 by 11 inch, or 8 1/2 by 14 inch, paper. Such site plan shall be designed and prepared by a registered professional architect, landscape architect, engineer, land surveyor, or community planner. The site plan shall include the following information:

a) The parcel(s), identified by parcel lines and location including dimensions, angles and size, correlated with the legal description of said parcel(s).

b) The scale, north point, boundary dimensions, existing topography (at least two (2) feet contour intervals), and existing natural features including woodlots, streams, rivers, ponds, lakes, wetlands, high risk erosion areas, slopes over 25%, beach, sand dunes, drainage and similar features, including:

i) One hundred year flood plains (as identified by DNR flood plain maps and as defined in the Part 115 Administrative Rules) within the boundaries of the site;

ii) Lands regulated under the Farmland and Open Space Preservation Act, 1974, Part 361 of NREPA, as emended, that are within the boundaries of the site;

iii) Location of surface water within the boundaries of the site;

iv) All wetlands (regulated and non-regulated) within the boundaries of the site;

v) Location of drains within the boundaries of the site;

vi) Topography information based on USGS datum, or selected on-site elevations; and

vii) Soil analysis based on a Modern Progressive Soil Survey of the County. If such survey is not completed for the site, then generalized soil analysis data regarding the soils and their adaptability to the use must be submitted.

c) Location and boundary dimensions of existing man-made features within the boundaries of the site including buildings, structures, high tension towers, pipelines, water wells, existing

utilities including water and sewer lines, excavations, bridges, culverts, drains, easements and any known existing contamination.

d) The location and boundary dimensions of proposed changes within the boundaries of the site including:

i) Solid waste processing and disposal areas;

ii) Individual landfill cells (if applicable) with an estimate of volumetric air space capacities and when individual cells would be developed during the life of the facility.

iii) On site roads, driveways, sidewalks and other vehicular and pedestrian circulation features within and adjacent to the site including staging area for trucks waiting to use the facility, parking spaces in the off-street parking areas and the identification of service lanes and service parking;

iv) Main and accessory buildings, their relation one to another and to any existing structures on the site, the height of all buildings and square footage of floor space, finished floor and grade line elevations;

v) Open spaces, landscaping and buffering and security features, greenbelts, fences and walls;

vi) Connections to existing utilities and proposed extensions thereof;

vii) Soil erosion and sediment control measures including preventative soil erosion devices or measures, both during and after any site work related to the development, when required;

viii) Interior and exterior areas and structures to be used for storage, use, loading/unloading, recycling, or disposal of hazardous substances;

ix) Underground and above ground storage tanks for such uses as fuel storage, waste oil holding tanks, chemical storage, hazardous waste storage, collection of contaminated stormwater or wash water, and all similar uses;

x) Exterior and interior drains, on-site sewage systems, dry wells; catch basins; retention/detention areas; sumps and other facilities designed to collect, store or transport stormwater or wastewater including point of discharge for all drains; and

xi) Any other man-made features not specifically described above.

e) Conceptual engineering plans for construction of the facility.

7: A written narrative that shall include the following information:

a) Name and type of solid waste facility.

b) General description of the facility and how it functions (for informational purposes in the Permit Review Process) including the types and quantities of waste to be delivered to the facility, the targeted service area (e.g. communities, major commercial and industrial establishments, institutions, and waste haulers) for the facility, useful life and capacities of the facility, description of how each type of material will be handled at the facility, the eventual disposition of the materials to be handled by the facility, the proposed operating schedules (days and hours), a description of any resource recovery, recycling and composting activity planned for the site, the expected employment of the facility, a discussion of the economic and engineering feasibility of the final use plan for the site, and the applicant's rationale for developing the facility.

c) Summary of the results of the DEQ advisory analysis (if completed), with responses to any points raised in the advisory analysis and a copy of the advisory analysis attached as an exhibit.

d) Summary of the results of an Environmental Permits Checklist (with a copy attached as an exhibit), with discussion regarding any required permits along with current permit status documentation including either copies of received permits attached as exhibits, letters of intent to approve and issue a permit, letters of understanding for concurrent approval (issuing a permit) from those agencies or summary of discussions held with authorities

responsible for issuing those permits. The site plans should be drawn to show design/placement as required for compliance with each of the applicable permits. Permits to be covered where applicable include:

i) Well permit.
ii) Type II water supply permit.
iii) Type III water supply permit.
iv) On site sewage disposal permit.
v) Soil erosion permit.
vi) Land division or subdivision approval.
vii) Waste disposal or storage or monitor wells permit(s),
viii) Sand dune mining permit,
ix) Permit to cut forest products,
x) Forestry use or special use permit.
xi) Easements for utilities and public agencies (on state or federal lands),
xii) Dam construction permit,
xiii) Certificate of Public Convenience and necessity for pipelines,
xiv) Air quality installation permit, operating permit,
xv) National Pollutant discharge elimination system permit,
xvi) Groundwater discharge permit,
xvii) Wastewater collection and treatment facilities construction permit,
xviii) Great Lakes Shorelands permit.
xix) Inland Lakes and Streams permit, and
xx) Wetlands permit.

e) An inventory of public services (fire protection, sewer, water, sanitation, emergency services/response, quasi-public utility companies (gas, electric, telephone)) showing:

   i) Public services which are required by the solid waste facility,

   ii) Public services which exist to service the site of the solid waste facility.

f) Statements relative to the impact of the proposed development on soil erosion, shoreline protection, wildlife habitat, air pollution, water pollution (ground and surface), noise and the scale of development in terms of the surrounding environment.

g) Other narrative statements necessary which specifically address the siting standards listed in part two of this chapter.

h) Other narrative statements necessary regarding design and operation of the proposed facility in response to applicable requirements of County and local ordinances and rules/regulations.

D: Step One: Application Review - Administratively Complete Finding: Upon receipt of an application the Agency shall review the application and determine if the application is complete. The Agency shall complete a checklist documenting the satisfactory submittal of each item required in an administratively complete application or noting the specific area that is not satisfactory. The checklist shall then be provided to the Applicant should additional information be required. This shall be completed within 60 days of submission of the Application. If the Agency does not make a finding the Application is either complete or not complete within the 60 days then the application automatically proceeds to the next step below.

E: Step Two: Application Review - Engagement of Review Committee: Upon receipt of an Application, the Agency shall notify the County Board of Commissioners (Board) who shall appoint the Solid Waste Facility Siting Committee (SWFSC) as described below.

The SWFSC will consist of membership as defined in Attachment A to this Plan Siting Mechanism. The County Board or designee shall call for the first meeting of the SWFSC and, upon election of the Chairperson, the Chair shall officially convene each meeting of the SWFSC. The SWFSC will be dissolved when either the Application is deemed inconsistent with the Plan, or the Michigan DEQ has issued the facility an operating permit. The County Board shall make provisions for appropriate staff

and technical resources through the Application Fee or other funding mechanisms as may be identified.

The SWFSC will then review the Application as guided by this Permit Review Process and the Minimum Standard Siting Criteria contained in Attachment B to this Siting Review Process.

F: Step Three: Application Review - Public Notice of First SWFSC Meeting: Within 10 days of the determination of an administratively complete application, or the creation of the SWFSC, whichever is later, the Agency shall set a date for the first SWFSC meeting and mail agendas.

a) The agenda shall be mailed to the routine list of recipients of County agendas as well as:

i) The applicant;
ii) The owners of the property for which approval is being considered;
iii) the owners of the property within 300 feet of the boundary of the property for which approval is being considered, as shown by the latest equalization roll;
iv) All occupants of structures within 300 feet of the property in question. If the name of an occupant is not known, the term "occupant" may be used in the notice. Notification need not be given to more than one (1) occupant of a structure, except that, if a structure contains more than one (1) dwelling unit or spatial area owned or leased by different individuals, partnerships, businesses or organizations, one (1) occupant of each unit or spatial area shall receive notice. In the case of a single structure containing more than four (4) dwelling units or other distinct spatial areas owned or leased by different individuals, partnerships, businesses, or organizations, notice may be given to the manager or owner of the structure who shall be requested to post the notice at the primary entrance to the structure:
v) The chief elected official of the municipality the site is proposed to be located in;
vi) Members of the SWFSC;
vi) Any other notification required by the Michigan Open Meeting Act; P.A. 267 of 1976, as amended; and
vii) Any other notification required by Part 115 of NREPA.

b) The agenda shall indicate:

i) The applicant;
ii) The property which is the subject of the application;
iii) The date, time and location of the first SWFSC meeting;
iv) The order of business for the meeting with action items identified; and
v) A short overview of the Site Review Process.

c) The agenda shall be sent out at least 10 days prior to the date of the meeting.

G: Step Four: Application Review - First SWFSC Meeting: Within 30 days of the determination of an administratively complete application, the SWFSC shall hold its first meeting.

a) The SWFSC shall elect a chair and vice chair as the first order of business at the first meeting

b) At, or prior to the meeting the Agency shall distribute the Application to the SWFSC along with documentation of it being administratively complete.

c) The SWFSC shall make an initial discussion of the Application.

d) The Agency shall then communicate its work plan for background review of the Application and preliminary scoring against the Minimum Standard Siting Criteria.

e) The SWFSC shall then establish a date for their formal review and consideration of the Application.

f) Public comment will then be received and the meeting adjourned.

H: Step Five: Application Review - Agency Evaluation of Application: Within 80 days of the first SWFSC meeting, the Agency shall complete its review of the Application and prepare a written review of the Application including preliminary findings and scoring of the Application against the Minimum Standard Siting Criteria provided in Attachment B to this Siting Mechanism.

I: Step Six: Application Review - Meeting to Consider Application: Within 90 days of the first SWFSC meeting, the SWFSC shall meet to formally consider the Application.

a) The agenda shall be mailed to the routine list of recipients of County agendas as well as the list specified in E (a) above.

b) The agenda shall indicate:

   i) The applicant;
   ii) The property which is the subject of the application;
   iii) The date, time and location of the SWFSC meeting for formal consideration of the Application;
   iv) The order of business for the meeting with action items identified; and
   v) A short overview of the Site Review Process; and
   vi) When and where written and verbal public comments can be delivered.

c) A meeting packet, containing a copy of the Agency's written review of the Application, including preliminary findings and scoring of the Application against the Minimum Standard Siting Criteria, shall accompany the agenda for the following recipients of the agenda:

   i) The applicant;
   ii) The owners of the property for which approval is being considered;
   iii) the owners of the property within 300 feet of the boundary of the property for which approval is being considered, as shown by the latest equalization roll;
   iv) All occupants of structures within 300 feet of the property in question. If the name of an occupant is not known, the term "occupant" may be used in the notice. Notification need not be given to more than one (1) occupant of a structure, except that, if a structure contains more than one (1) dwelling unit or spatial area owned or leased by different individuals, partnerships, businesses or organizations, one (1) occupant of each unit or spatial area shall receive notice. In the case of a single structure containing more than four (4) dwelling units or other distinct spatial areas owned or leased by different individuals, partnerships, businesses, or organizations, notice may be given to the manager or owner of the structure who shall be requested to post the notice at the primary entrance to the structure;
   v) The chief elected official of the municipality the site is proposed to be located in;
   vi) Members of the SWFSC; and
   vii) Any individuals that have made a request in writing to the Agency to receive the meeting packet.

d) The agenda and meeting packet shall be sent out at least 10 days prior to the date of the meeting.

e) Notice of the meeting shall be published in a newspaper which circulates in the municipality the site is proposed to be located in and shall be mailed or personally delivered to the newspaper fifteen (15) days prior to the date the application will be considered. The Notice shall include information on where the meeting packet can be viewed.

f) At the meeting the Agency shall present its findings resulting from completing the work plan for background review of the Application and preliminary scoring against the Minimum Standard Siting Criteria.

g) The SWFSC shall then complete a discussion of the findings of the Agency in their review of the Application and preliminary scoring against the Minimum Standard Siting Criteria. The result of these discussions will be a vote by the SWFSC on the final scoring of the Application against the Minimum Standard Siting Criteria.

h) Applications that do not meet the Minimum Standard Siting Criteria will be determined inconsistent with and not in compliance with the Plan and will not undergo further evaluation. Applications that do meet the Minimum Standard Siting Criteria will be determined to be consistent with and in compliance with the Plan. The written findings shall be communicated to the Michigan DEQ and the Applicant.

J: Step Seven: Application Review - Notification of Finding: Within 15 days of the conclusion of the formal SWFSC meeting to consider the Application, the Agency shall provide its recommendations to the County Board for the final consistency determination. If an Application if found to be consistent with the Plan, formal notice will be forwarded to the Michigan DEQ with a copy to the Applicant. If an Application is found to be not consistent with the Plan formal notice will be forwarded to the Applicant. If formal notice is not provided to the Applicant within 160 days from the initial determination of an administratively complete application, then the Application shall automatically be considered by the County to be consistent with the Plan whether or not such notice is provided to the Michigan DEQ by the County, unless both parties mutually agree in writing to extend this 160 day requirement for action. The Michigan DEQ will then make the final determination, to the extent provided for in Part 115 of NREPA, as part of its review of the Construction Permit application.

K: Step Eight: Application Review - Followup: The SWFSC shall receive formal written notice from the County Agency at the time that the Applicant receives its Construction Permit from the Michigan DEQ or is rejected for that Construction Permit and at the time that the Applicant receives its Operating License. At the discretion of the chair or a simple majority of the members of the SWFSC it will reconvene as needed during this period (before its final dissolution 10 days after the Operating License is issued or after rejection of the Application by Michigan DEQ).

Attachment A to Plan Siting Mechanism
Definition of the Facility Siting Committee

The SWFSC will consist of membership as defined below:

- 1 Person representing environmental concerns
- 1 Person representing the County Soil Conservation Service
- 1 Person representing the County Board of Public Works or Equivalent
- 1 Person representing the County Planning Commission
- 1 Person representing the County Road Commission
- 1 Person representing the Regional Solid Waste Planning Agency
- 2 Persons representing the municipality in which the facility site is proposed including the chief elected official or designee
- 2 Persons from any municipality located within three (3) miles of the active work area of the proposed site including the chief elected official or designee, and another representative from that municipality. Only one (1) of these persons will be a voting member, the other will be an ex-officio member. In the event that more than one municipality is located within three (3) miles of the active work area of the proposed site, then these municipalities will together choose only one person to be a voting member to represent these municipalities, and each municipality will designate one (1) ex-officio member.

The representatives from the County Road Commission and from the local municipality(s) will be selected by that agency and government(s), respectively. The names of the selected individuals will be submitted to the County Board for confirmation of appointment. All other members of the SWFSC will be appointed by the County Board.

The County Board or designee shall call for the first meeting of the SWFSC and, upon election of the Chairperson, the Chair shall officially convene each meeting of the SWFSC.

The SWFSC will be dissolved when either the Application is deemed inconsistent with the Plan, or 10 days after the Michigan DEQ issues an Operating License to the Applicant.

Attachment B to Plan Siting Mechanism
Minimum Standard Siting Criteria

Minimum Standard Siting Criteria are considered minimum standards that any proposed facility must meet. Each criterion listed below must be answered in the affirmative in order for a facility to fulfill the Minimum Standard Siting Criteria requirements. Detailed descriptions of each criteria follow the yes/no checklist below

MINIMUM STANDARD SITING CRITERIA EVALUATION CHECKLIST

	YES	NO	CRITERION (See detailed descriptions following checklist)
A			Site Ownership
B			Frontage on Appropriate Roads
C			Distance from Wetlands
D			Distance from Farmland and Open Space Part 361 NREPA Lands
E			Distance from Designated Historic Sites
F			Distance from 100 Year Flood Plains
G			Distance from Designated Wellhead Protection Zones
H			Distance from Water, Beaches, Utility Easements, Public Right of Way
I			Distance from Water Well Serving a Dwelling
J			Distance from Specified Building Types
K			Distance from Land Conservancy Parcels
L			Distance from Schools and Educational Establishments
M			Distance from Certain Recreational Facilities
N			Distance from MDEQ Natural Features Inventory Lands
O			Distance from Specified Types of Natural Resource Lands
P			Distance from Certain Additional Recreational Lands
Q			Distance from a Licensed Public Use Runway
R			Design Incorporates Certain Setback Requirements w/Signed Statement
S			Analysis Submitted Documenting Availability of Required Public Services
T			Signed Statement to Abide by Certain Regulatory Requirements
U			Written Agreement to Abide by Certain Non-locational Zoning Requirements

PRIMARY SITING CRITERIA DETAILED DESCRIPTIONS

A. The site and respective parcel must be owned by the applicant or under long term lease (20 years or greater) from a state agency.

B. The proposed site has frontage on or direct access to a paved county primary road or state trunk line which is designed to handle the type and volume of additional traffic associated with the facility.

C. No part of the site and respective parcel(s) is located within or less than 100 feet from a regulated wetland as defined by Part 303 of P.A. 451 of 1994, as amended (being the

Wetlands part of the Michigan NREPA, M.C.L. 324.30301 *et. seq.*) or local wetland ordinance.

D. No part of the site and respective parcel(s) is located within or less than 100 feet from land enrolled under the Farmland and Open Space Preservation Act, 1974, Part 361 of NREPA.

E. No part of the site and respective parcel(s) is located within or less than 100 feet from land that is a designated historic or archaeological area as defined by the State Historic Preservation Officer (SHPO) or by local historic preservation districts.

F. No part of the site and respective parcel(s) is located within or less than 100 feet from one hundred year flood plains (as identified by Michigan DNR flood plain maps and as defined in the Part 115 Administrative Rules).

G. No part of the site and respective parcel(s) is located within or less than 100 feet from the boundary edge of a Wellhead Protection Zone established around municipal Type I public water supplies as created pursuant to a Wellhead Protection Program established, or being established under Michigan Wellhead Protection guidelines unless the disposal area to be located on the site and respect parcel(s) is a Solid Waste Transfer Station.

H. No part of the site and respective parcel(s) is located within or less than 100 feet from the boundary edge of:

1. Any surface water;

2. Beach contiguous to a lake or stream;

3. Existing public utility easements; and

4. Existing public rights-of-way.

I. No part of the site and respective parcel(s) is located within or less than 300 feet from a water well which services a dwelling (which is drilled by a licensed well driller and a well log is filed with the Geological Survey Division of the DEQ and district Health Department) in existence on the date the disposal area application was found complete.

J. No part of the site and respective parcel(s) is located within or less than 300 feet from dwellings, duplexes, apartment buildings, hospital, medical care facilities and foster care facilities in existence on the date the disposal area application was found complete.

K. No part of the site and respective parcel(s) is located within or less than 300 feet from lands which are held by a land conservancy or which have development restrictions held by a land conservancy, either of which were in existence on the date the disposal area application was found complete.

L. No part of the site and respective parcel(s) is located less than one half mile from the boundary edge of schools and education establishments in existence on the date the disposal area application was found complete.

M. No part of the site and respective parcel(s) is located less than one half mile from the boundary edge of certain recreation facilities:

1. Snowmobile and all terrain vehicle trails which are marked and signed and receive care, grooming with public funds;

2. Horse, bicycle, hiking and ski trails which are marked and signed and receive care, grooming with public funds;

3. Abandoned rail road right-of-ways when owned by a railroad company or a public agency;

4. The parcel boundary of state game area;

5. The parcel boundary of municipal and county parks with recreation facility improvements;

6. A national park or recreation area designated by the U.S. Department of Interior;

7. A national scenic river designated by the U.S. Department of Interior; and

8. A special interest area as designated by the U.S. Forest Service.

N. No part of the site and respective parcel(s) is located within or less than one half mile from land listed on the MDNR Natural Features Inventory, as determined by the MDNR through the Environmental Review process for compliance with Act 365, Endangered Species Protection, of the NREPA as amended.

O. No part of the site and respective parcel(s) is located within or less than one half mile from land regulated under parts 351 through 361 of P.A. 451 of 1994, as amended (being the Wilderness and Natural Areas, Sand Dunes, Biological Diversity, Natural Beauty Roads, Sanctuaries, Farmland and Open Space preservation part of the Michigan NREPA, M.C.L. 324.35101 *et. seq.* through 324.35101 *et. seq.*) and part 511 of P.A. 451 of 1994, as amended (being the Commercial Forests part of the Michigan NREPA, M.C.L. 324.51101 *et seq.*).

P. No part of the site and respective parcel(s) is located less than one mile from the boundary edge of certain recreation lands:

1. The parcel boundary of a state park;

2. The licensed area of public and private campgrounds licensed by the District Health Department;

3. The parcel boundary of day, summer and retreat camps;

4. Federally designated wild and scenic river corridors;

5. State designated natural river's water's edge; and

6. The parcel boundary of arboretums, sanctuaries established under statute.

Q. No part of the site and respective parcel(s) is located less than 10,000 feet from the boundary edge of a licensed public use airport runway(s), unless the proposed facility is only an enclosed solid waste transfer station or processing facility disposal area.

R. Applicant's Proposal demonstrates that the facility as designed and constructed will incorporate the following setback, buffering, screening and service access requirements and includes a written and signed statement from the Applicant indicating that they will abide by and remain in compliance with these requirements at all times.

1: For facilities which are landfill disposal areas or landfill disposal area expansions, vegetation belt, buffer, screening and service access area shall meet standards which are not less than:

a: Vegetation Belt: A vegetation belt of 100 feet from the parcel line toward the center of the parcel will be maintained in natural vegetation to provide visual screening from roads and adjacent property. The vegetation belt will not include any improvements, buildings, fences, except for an entrance drive(s), utilities and identification signs.

i: If the site, prior to the date of application, has mature forest cover it will be maintained within this vegetation belt except for the entrance drive, utilities.

ii: If the site, prior to the date of application, does not have mature forest cover, or mature forest cover is lost at any time during the operation of the facility, then the mature forest will be established by planting a variety of native forest species under consultation of a professional forester. The planting will be designed with use of appropriate species to have fast maturing trees to have a mature forest as soon as possible and species which will be mature trees with a long life span.

iii: The mature forest cover will be maintained by the landfill operator and will not be removed.

b: Buffers: Toward the center of the landfill property, but not within the 100 foot vegetation belt, a buffer shall be established which will include an earth berm. The berm shall:

i: Be eight (8) feet, or more, higher than the original grade within the buffer area, and

ii: Not be sloped greater than one (1) unit vertical for each of the same two (2) units horizontal.

iii: Be covered with a healthy grass, lawn, ground cover or other indigenous vegetation.

c: Service Access Area: Toward the center of the Landfill property, but not within the 100 foot vegetation belt, or buffer will be established a minimum of a ten (10) foot wide service access area maintained between the berm and nearest edge of the landfill's active fill area.

2: For facilities which are not landfill disposal areas, vegetation belt, buffer, screening and service access area shall meet standards which are not less than:

a: Vegetation Belt: A vegetation belt of five (5) feet from the parcel line toward the center of the parcel will be maintained in woody plant vegetation to provide visual screening from roads and adjacent property. The vegetation belt will not include any improvements, buildings or fences except for an entrance drive(s), utilities and identification signs.

b: Buffers: Measuring toward the center of the disposal area property, but not within the 5 foot vegetation belt, a buffer shall be established which:

i: Shall not be occupied by any structure, storage of equipment, materials, operations, or be similarly activities;

ii: Shall consist of the following for any side of the parcel that is adjacent to a industrial or commercial zoned area:
- a buffer area setback of fifty (50) feet, or
- a berm four (4) feet, or more high not sloped greater than (1) vertical for each of the same two units horizontal, or
- a solid wall four (4) feet, or more, in height, or
- a proportionately adjusted combination of the above.

ii: Shall consist of the following for any side of the parcel that is adjacent to all other uses:
- a buffer area setback of one hundred (100) feet, or
- a buffer area setback of fifty (50) feet followed by a berm four (4) feet, or more high not sloped greater than (1) vertical for each of the same two units horizontal, or
- a buffer area setback of twenty-five (25) feet followed by a solid wall four (4) feet, or more, in height.

c: No Service Access Area is required.

S An analysis has been submitted that defines the public services which are required by the solid waste disposal area, that inventories existing public services (fire protection, sewer, water, sanitation, County emergency services/response, and utilities including gas, electric, telephone) available at the site boundaries and that documents that the existing public services are the same as or exceed the public services required by the solid waste disposal area. Submittal of this analysis is all that is required to meet this criteria.

T Applicant has submitted a written and signed statement legally declaring to the County that the disposal area will abide by and remain in compliance with any applicable part of the Michigan Subdivision Control Act; Michigan Soil Erosion and Sedimentation Control Act; Michigan Construction Code; applicable state air and water pollution standards; local wellhead protection ordinances, applicable building codes, state and local health codes, local noise ordinances and local junk ordinances as determined with the advice of appropriate state and local officials and as specified in Section III of the Solid Waste Plan, Local Ordinances and Regulations. Submittal of this statement is all that is required to meet this criteria.

U Applicant has submitted a written and signed statement legally declaring to the County that the disposal area will abide by and remain in compliance with any applicable part of the respective zoning ordinance's regulations dealing with: parcel size, road frontage, setback requirements, buffering and screening, off street parking, signs, as specified in Section III of the Solid Waste Plan, Local Ordinances and Regulations but not subject to zoning regulation of location of a solid waste disposal area as a land use. Submittal of this statement is all that is required to meet this criteria.

III-10 SOLID WASTE MANAGEMENT COMPONENTS

The following identifies the management responsibilities and institutional arrangements necessary for the implementation of the Plan's Enforceable Program and Process. Also included is a description of the technical, administrative, financial and legal capabilities of each identified existing structure of persons, municipalities, counties and state and federal agencies responsible for solid waste management including planning, implementation, and enforcement.

NEEDS OF THE MANAGEMENT COMPONENT

There are two principal gaps that need to be addressed in the Plan's Enforceable Program and developing a management component capable of funding the selected alternative.

1) Setting up a funding mechanism as part of the selected system is a critical element of the necessary management component. This is especially critical given the need for facilities to be open to all haulers and recycling collectors servicing the region at fair and equitable rates.

2) Setting up a funding mechanism for "value added" programs as part of the selected system is a critical element of the necessary management component. The "value added" programs are the services and program functions that are difficult to link to a particular user under a typical system and include household hazardous waste services, overall education/promotion of the programs, drop-off recycling programs, overall program management, planning and development costs, selected program capital and operating costs and other services as deemed necessary.

The Management Components that are authorized by the Plan's Enforceable Program and Process include all organizational mechanisms deemed necessary to enable the above two funding mechanisms to work.

DEVELOPMENT OF THE MANAGEMENT COMPONENT

The Authorized Management Component builds on the County's current organizational and management structure. Further development of the Plan's Authorized Management Component is provided for as part of the Plan's Enforceable Program and Process as deemed necessary to enable the two funding mechanisms to work that were referenced in the prior subsection.

These developments may take a number of forms and will only be initiated after an evaluation of the best steps that can be taken to build on the strengths of the current system already in place. These steps will be detailed in an "implementation action plan" that the Plan's Implementation Agency will coordinate development of in order to provide for necessary details required to carry out the Plan's Enforceable Program. These action steps are expected to follow some, if not all, of the following description of an enhanced management system that will provide for a method of funding the selected alternative, including the implementation of all aspects of the Plan's Enforceable Program.

Every effort will be made during further development of the Management Component, to build a system that is supportive of and enables development of similar services and management capabilities throughout the region out-of-county.

Components of the Management System will include:

- The county will establish the role of a designated implementation agency with necessary staffing/administrative capability to reach project goals.
- An oversight committee will be established that has the endorsement of the key stakeholders and that provides a mechanism for community input into the system.
- A legal/ordinance framework will be developed that will help establish necessary controls for the funding mechanisms and the delegation of authority.

- Contracts between the various participants in the system will be developed that will specify services, exchange of resources, etc.

IMPLEMENTATION OF THE MANAGEMENT COMPONENT

In evaluating options and making final decisions, the Management Component of the Plan's Enforceable Program provides for the County to take steps required for implementing the selected alternative, both organizationally and legally. These steps are expected to follow some, if not all, of the following more detailed description of a management system that will provide for a method of funding the Selected Alternative.

These key components of the organizational and management structure required to develop a suitable funding mechanism to implement the Selected Alternative include:

A; The Solid Waste and Recycling Office of Antrim County operating out of the Antrim County Planning Department would be established in this Plan as the "designated implementation agency" to take responsibility for necessary program development through public and private sector channels, working with the Solid Waste and Recycling Council (see below) and key stakeholders on the implementation process. The Office will be provided with continued staffing, supporting technical resources as well as a budget and all required delegated responsibilities in order to accomplish its task. Where appropriate, every effort will be made to link this implementation capability with other regional efforts out-of-county. As well, other alternate approaches for implementation will be allowed for should they be determined to be necessary including 1) a Department of Public Works, 2) a multi-governmental Authority organized as provided for in Michigan law; 3) a quasi-governmental consortium with staff provided by its member agencies (County and Cities); 4) a newly created non-profit agency; 5) an existing non-profit agency, or 6) contracting with a service provider.

B: Establish a Solid Waste and Recycling Council as an advisory committee to the County Board that would function as the Plan's "implementation oversight committee" assigned the responsibility to facilitate program development through public and private sector channels, advising the County Board of Commissioners and key stakeholders on the implementation process. The Council will serve as the focal point for encouraging intergovernmental cooperation, regional collaboration and private sector participation as well as involving the local business sector and community groups. This Council could be made up of current members of the Waste Reduction Advisory Council and the Solid Waste Planning Committee.

C: Full utilization of the statutory authorities and powers of the County and the organizational structure finally selected (as described in paragraph "A" above) as provided for by Michigan law, enabling support for implementation of the selected alternative and the Plan's Enforceable Program with appropriate legal, management and financial capabilities.

D: Full utilization of the County authority to create subcommittees to address specific issues in program implementation as needed.

E: The assignment, via intergovernmental contracts, of certain powers and responsibilities to the County organizational structure by local units of government in the County.

F: Drafting and adoption of an Antrim County Solid Waste Ordinance, that takes these powers and responsibilities and structures the basic framework of the Antrim County solid waste and recycling system.

G: Drafting and adoption of Administrative Rules for the Antrim County Solid Waste Ordinance that prescribes in greater detail the specific components of the system.

H: Administration of Hauler Licensing Agreements authorized by the Ordinance and Administrative Rules.

I: Administration of facility designation arrangements authorized by the Ordinance and Administrative Rules for solid waste.

J: Assignment of County management/operational staff to oversee County programs.

K: Full utilization of the County organizational structure's contracting capability for operating programs (e.g. household hazardous waste services).

These organizational and management structures as just described are deemed to be consistent with the Plan and authorized as the basis for further development of the Plan's Management Component with all the assignment of powers able to be provided for by the Plan.

The capital and operational funding required to implement the planned programs can build on some of the current structure that is already in place with some key modifications that are needed. These include:

L: User fees will need to be an even stronger component of the system than they are right now, especially for solid waste collection services as well as all disposal/processing facilities. Specifically, *at point of waste generation* the current practice of a resident or business paying a monthly or quarterly fee for their solid waste management services will need to continue with the following enhancements: 1) the fees structure should include "pay as you throw" (PAYT) features that result in the generator incurring additional costs as volumes of solid waste increase, 2) costs for residential curbside and/or commercial recycling collection (e.g. OCC) should be bundled into the monthly or quarterly fee paid for solid waste services, and 3) the fee should be a single fee, without a broken out separate charge for the recycling component. It is important that the hauler's costs for the total service package (solid waste collection/disposal as well as recycling collection/disposal) be covered along with profit, but it is also important that the generator have an incentive to use the recycling systems as much as possible. These modifications to the current practices for user fees in the area will accomplish this.

M: Use of P.A. 138 or similar generator fee collection system should be initiated right away. Its coverage should include all jurisdictions within the county - if possible. If that is not possible then steps should be taken to make sure that a non-participating unit of government doesn't directly benefit from funded services. The level of fee should be set based on the required budget determined based on the planned programs. The fund that these fees accumulate to should be set up as a revenue fund in which other sources of funds should also be deposited including potential revenue from sale of recycled materials (See item N below) or such items as a regional landfill tip fee surcharge should such a system ever be developed. The fund should have rules directing its use solely for the Plan's selected system and specifically directed at those program costs that are difficult to fund through other means. This includes the Drop-off recycling system, education/promotion of reduce/reuse/recycle, the year 6 household hazardous waste program, and similar components of the selected system. The fund should have a well recognized name, (e.g. County's Solid Waste and Recycling Revenue Fund), include an independent annual audit and a regular reporting to participants and to the community of sources and uses of the fund.

N. One of these sources of revenue that would be deposited into the fund should be revenue received from recycled materials that are collected in some parts of system. We recommend that arrangements for drop-off recycling services be set up so that costs of providing the service are paid to the service provider out of the fund and that some portion of the revenue that the processor gets for marketing the material be returned to the County's Solid Waste and Recycling Revenue Fund. These additional revenues would then be distributed in ways that encourage community oriented recycling programming, modeled after a successful approach that is used by the Lakeshore Industries recycling drop-off system serving Manistee and Benzie Counties.

Other steps that will be taken as part of the Management Component include:

O: Development of a comprehensive "Implementation Action Plan" covering all aspects of Solid Waste Plan program implementation, where specific milestones will be identified for the coming years -- serving as a road map to guide the Solid Waste and Recycling Council and the Solid Waste and Recycling Office of Antrim County. This action plan will have a strong emphasis on "planning to plan" in order to define required decisions, important decision factors, and expected timing/outcomes. The action plan format will also provide for a means to be updated on a regular basis based on monitoring of progress towards plan goals and targeted diversion

rates and a mechanism for feeding these updates into the ordinance/contract structure should they need to be changed.

P: Development and adoption of intergovernmental contracts between the County and participating local units of government that would activate the P.A. 138 funding system and take additional steps to assign certain powers and responsibilities to the County for coordinating programs funded by the P.A. 138 fees. This will require creation of an ordinance and administrative rules that coordinate the responsibilities delegated by the local units to the county. This will structure the basic framework of the solid waste and recycling system for the County and link it to the P.A. 138 funding mechanism and also incorporate hauler licensing and facility designation agreements as needed. Taking these steps will involve a negotiation process with communities in the County to identify and resolve specific issues that need to be addressed before the communities are comfortable with the planned approach. These communities as well as other key parties affected by the planned programs would need to be asked to participate in discussions on implementation details, scheduling and coordination issues. The resulting recommendations would then be incorporated into the Action Plan. This process should involve negotiations with nearby counties interested in working with the County on various program areas (e.g. recycling processing) so that these details can be worked out and incorporated into the Action Plan.

Q: System improvements, new services, required contract/licensing structures and processing facility expansions would be further detailed, incorporated into the Action Plan and then implemented. Much of the implementation would be by private and/or non-profit or other governmental agencies with service contracts being the principal means to define services and the necessary flow of funds. In addition to the local intergovernmental contract and the hauler licensing contracts, it is expected that service contracts would also be needed between the designated implementing agency and the recycling facility to be used and the yard waste composting facility to be used. Other contracts may be needed for purchased services such as the household hazardous waste program. Some of the larger municipalities will also need to contract with haulers for curbside recycling for all their households as part of the second phase of the planned program.

R: Contracting for Services should be continued as a means to reduce costs and control costs. For example, residential customers within a City, Village or Town can purchase their solid waste and recycling services together from private sector service providers, either through their municipality or through groups of municipalities functioning as an "authority". Doing so provides better control over service features and also is proven to result in costs that are sometimes 35% lower than prevailing "subscription" rates. Contracting for drop-off recycling services through a proposal solicitation process is another example of how the contracting approach can be used to most effectively allocate scarce publicly controlled funds. Longer term contracts will enable the service provider to provide lower pricing and are also better structured to enable private and non-profit to seek any required bank financing for their capital equipment.

S: Upon implementation progress will be tracked through methodical data compilation and analysis in order to measure, on an annual basis, overall waste generation, reduction and recycling, benchmark performance against goals, and target future implementation planning. Regular updates of system performance and new goals will be incorporated into the continuously updated Implementation Action Plan as they develop.

T: Leveraging of contributed resources will be encouraged in order to reduce program budget requirements. The best model of this is again the Lakeshore Industries recycling drop-off system serving Benzie and Manistee Counties which benefits from donated funds, equipment, services and labor in order to lower capital and operating costs. These approaches will be used to build the perception for residents and businesses that the "community recycling program" is theirs - run for their benefit and for an improved quality of life and better business climate. Public and private service agencies as well as school groups will be brought involved as much as practical. It will be important to work with these groups to make sure that the full range of materials are recycled in drop-off systems.

U: Private bank financing will be expected to be available for capital improvements made by private companies and non-profits that are involved in the system -- supported by the contracting framework described above with long contract timelines, sufficient funds and suitable allocation of risk.

V: Agency funds from public entities will be an important part of the mix of operating and capital funding that are needed to sustain the system. These funds will be part of ongoing operational cost areas that are already part of municipal budgets. In addition, these agency funds will be used to assist in part with capital requirements for some of the projects.

W: Bond financing may be a funding mechanism that is used depending on how the overall system is structured and the level of involvement by the county and/or area municipalities.

X: Further steps should be taken to access the fundraising power of private giving and foundations to build off the good will that private donors are ready to contribute to recycling and the environment. A "friends of Antrim County recycling" will be created to leverage additional private donations from individuals, estates, foundations as well as corporations and other granting agencies that can strengthen the overall program across the County. These efforts will be used to provide support for education and promotion of clean community initiatives, reduce/reuse/recycle programming and capital funds for informational exhibits, displays, educational facilities and school programs. It will also be used as a tool for channeling volunteer time and overall community good-will to assure that funds are available to cover costs of quality programming that is supported by the public.

III-11 IDENTIFICATION OF RESPONSIBLE PARTIES

The following entities within the County will have management responsibilities over the following areas of the Plan.

Antrim County Board of Commissioners: The County Board is responsible for the overall supervision of the solid waste management system and the Plan's Enforceable Program for the county acting through its Solid Waste Management Planning Committee. Solid Waste and Recycling Council and the Solid Waste and Recycling Office of Antrim County.

Solid Waste Management Planning Committee (SWMPC): The Antrim County SWMPC is responsible for updating the County five-year and 10-year Solid Waste Management Plan, as is the purpose of this report. The SWMPC is also responsible to the County Board to assist in the approval process of the plan. Some portion or all of the SWMPC may also function as the Solid Waste and Recycling Council (see below).

Solid Waste and Recycling Council: This entity shall be appointed by the Board of Commissioners and shall serve as the Plan Implementation Advisory Committee for the Solid Waste and Recycling Office of Antrim County (see below).

Solid Waste and Recycling Office of Antrim County: This entity shall be created by the Board of Commissioners to serve as the Designated Plan Implementation Agency reporting to the Solid Waste and Recycling Council and responsible for implementing the Plan's Enforceable Program including its Selected Alternative, Management Component and Enforcement Mechanisms.

Municipal and Township Governments: All local units of government will be asked to participate in the development of the County's Solid Waste Management System Ordinance, Intergovernmental Agreements and Administrative Rules and to work with the County to implement the Plan's Selected Alternative, Management Component and Enforcement Mechanisms.

Private Solid Waste Haulers: Private sector waste haulers will provide for collection of solid waste and management of certain facilities within the structure of the County's Solid Waste Management System Ordinance, Intergovernmental Agreements and Administrative Rules.

The following lists which entities within the County will have management responsibilities over various areas of the Plan:

Resource Conservation:	**Responsible Parties**
Source or Waste Reduction -	Solid Waste and Recycling Office (SWRO)
Product Reuse -	SWRO/private/non-profit
Reduced Material Volume -	SWRO/private/non-profit
Increased Product Lifetime -	SWRO/private/non-profit
Decreased Consumption -	SWRO/private/non-profit

Resource Recovery Programs	**Responsible Parties**
Composting -	SWRO/private/non-profit/local units of govt. Private waste companies
Recycling -	SWRO/private/non-profit/local units of govt.
Energy Production -	not applicable
Volume Reduction Techniques:	SWRO/private/non-profit
Collection Processes:	SWRO/private/non-profit Private waste companies

Transportation:	SWRO/private/non-profit Private waste companies
Disposal Areas:	
Processing Plants	SWRO and Private waste haulers
Incineration -	n/a
Transfer Stations -	SWRO
Sanitary Landfills -	Private waste companies
Ultimate Disposal Area Uses:	Designated Plan Implementation Agency
Local Responsibility for Plan Update Monitoring & Enforcement:	SWRO and area user/producers
Educational and Informational Programs:	SWRO and area user/producers

Documentation of acceptance of responsibilities is contained in Appendix D.

III-12 LOCAL ORDINANCES AND REGULATIONS AFFECTING SOLID WASTE DISPOSAL

_____1 Section 11538 (8) and rule 710 (3) of Part 115, prohibits enforcement of all County and local ordinances and regulations pertaining to solid waste disposal areas, unless explicitly included in an approved Solid Waste Management Plan. Local regulations and ordinances intended to be part of this Plan must be specified below and the manner in which they will be applied described.

_____2. This Plan recognizes, and incorporates as enforceable, the following specific provisions based on existing zoning ordinances:

A. Geographic area/Unit of government:
Type of disposal area affected:
Ordinance or other legal basis:
Requirement/restriction:

__X__3. This Plan authorizes adoption and implementation of local regulations governing the following subjects by the indicated units of government without further authorization from or amendment to the Plan.

Regulations meeting these qualifications may be adopted and implemented by the appropriate governmental unit without additional authorization from, or formal amendment to, the Solid Waste Management Plan. Allowable areas of local regulation, beyond those specified elsewhere in this document, include:

a. Certain ancillary construction details,

b. Hours of operation,

c. Noise, litter, odor and dust controls as well as other site nuisances,

d. Operating records and reports,

e. Facility security and safety,

f. Monitoring requirements for wastes accepted, banned or prohibited, and

g. Volume reduction, recycling and composting requirements.

III-13 CAPACITY CERTIFICATIONS

Every County with less than ten years of capacity identified in their Plan is required to annually prepare and submit to the DEQ an analysis and certification of solid waste disposal capacity validly available to the County. This certification is required to be prepared and approved by the County Board of Commissioners.

____X____ This County has more than ten years capacity identified in this Plan and an annual certification process is not included in this Plan.

_____ Ten years of disposal capacity has not been identified in this Plan. The County will annually submit capacity certifications to the DEQ by June 30 of each year on the form provided by DEQ. The County's process for determination of annual capacity and submission of the County's capacity certification is as follows:

The table below identifies landfill disposal areas, their expected life, historical usage rates, and supporting analysis that demonstrates that the County will have more than ten years of disposal capacity for the duration of the ten year planning period. These facilities have all been included in the Plan and appropriate export arrangements made.

Identified Disposal Area Capacity	Available Air Space (Gate CY)	Gate CY Delivered 1995/96	Landfill Life (in yrs) Based on 1995/96 Delivery Rates	Landfill Life (in yrs) Based on 1995/96 Rates w/2% Growth
Manistee (Allied)	7,000,000	151,083	74	60
Glen's (WMI)	22,000,000	278,469	126	102
Cedar Ridge (WMI)	370,000	279,593	2	2
Ken's (WMI)	140,000	77,020	3	2
Wexford	2,000,000	215,027	15	12
CES Waters (WMI)	8,200,000	217,314	60	49
TOTAL	39,710,000	1,218,506	52	42

The calculations of landfill life assume that 20% of available air space is lost to cover and liner components and that gate cubic yards to in-place compaction is 50%. Available air space and delivery rates are based on information provided by landfills either to the State of Michigan or directly to Resource Recycling Systems, Inc.. Available air space for Manistee (Allied) was estimated based on the site that is currently approved in the County Plan and assuming approximately 2 million cubic yards per 40 acres with 2 million cubic yards for overfill, minus 1 million cubic yards for existing filled space.

A demonstration of available capacity for Antrim's primary disposal needs is provided in the form of letters from two landfills (Glen's and CES Waters) as shown in Attachment B

APPENDICES

APPENDIX A: ADDITIONAL INFORMATION REGARDING THE SELECTED SYSTEM

APPENDIX B: ADDITIONAL INFORMATION REGARDING THE NON-SELECTED SYSTEMS

APPENDIX C: PUBLIC PARTICIPATION AND APPROVAL

APPENDIX D: PLAN IMPLEMENTATION STRATEGY

APPENDIX A: ADDITIONAL INFORMATION REGARDING THE SELECTED SYSTEM

EVALUATION OF RECYCLING

The following provides additional information regarding implementation and evaluations of various components of the Selected System.

The following table shows estimated total waste composition and volumes by material type. Totals include all sectors (residential, commercial, industrial). Nearly all materials in the waste stream are available for recycling or composting, however, it is not at this time practical to recycle or compost the entire waste stream in Antrim County.

Table A-1: Total Waste Composition (tons per year)

	Percent of Total Waste	1998 Tons	2003 Tons	2008 Tons
Totals	100%	16,850	18,047	19,197
Newsprint (ONP)	5%	854	915	973
Mixed Office	6%	945	1,012	1,077
Old Corrugated Containers (OCC)	19%	3,254	3,485	3,707
Mixed Other Paper	8%	1,400	1,500	1,595
All Metals	12%	1,955	2,093	2,227
All Textiles	2%	366	392	417
All Glass	6%	928	994	1,058
All Plastic	7%	1,238	1,326	1,411
All Yard Waste	17%	2,806	3,005	3,196
Food Waste	10%	1,638	1,754	1,866
Wood Waste	5%	758	812	864
Misc. Bio-degradable	2%	388	415	442
Misc. Non Bio-degradable	2%	320	343	365

The table below projects estimates of material recovery by program type.

Table A-2: Program Recovery Estimates (tons per year)

	1998	2003	2008
Drop-off system	720	920	1,850
Curbside recycling	20	80	675
Commercial recycling	400	1,150	1,875
Yard waste	340	500	500
Total Recovery	1,480	2,650	4,900

Program recovery estimates assume full implementation of the selected system, and include material currently being recovered in recycling and composting programs. It does not estimate industrial source reduction and recovery that is not currently being processed by local brokers and processors.

EQUIPMENT SELECTION

The following briefly describes the processes used or to be used to select the equipment and locations of the recycling and composting programs included in the Selected System.

The Selected System is intended to provide waste collection, recycling and composting opportunities throughout the County

Existing Programs:

Drop-off recycling stations - Residential drop-off recycling services are provided by several townships and municipalities. Equipment is selected, provided and operated by contracted service providers and/or the municipality.

Curbside Collection: Private waste haulers that currently provide service by subscription select their own equipment.

Commercial Collection: Waste collectors operating in the County offer collection of old corrugated containers (OCC) and office paper to customers. The operators are able to select the equipment that they use for this service.

Recycling Processing - Waste Management, Inc. (aka: USA Waste/United) currently operates one of the only local recycling processing facilities, located on the south side of Traverse City. Equipment in the facility is selected, provided and operated by the owner. It consists primarily of a sorting line for mixed containers (plastic, cans and glass), a paper baler, and equipment used to move material around the facility, such as loaders and fork lifts. Emmet County also owns and operates a processing facility, consisting of a sorting line and baling and crushing equipment.

Composting - No composting equipment is currently available in the County

Proposed Programs:

Drop-off recycling stations - Antrim County plans to continue using municipal crews, volunteers and private contractors to operate drop-off stations. As the County begins to implement its selected system, equipment for existing and new drop-off sites would be coordinated and specified by the County. If contractors are unable to provide adequate and reasonable service, the County may choose to operate some portion of the drop-off collection system. In that case the County would be responsible for selection of new equipment as needed.

Curbside Collection: Waste collectors operating in a future urban curbside district would be required to offer curbside collection to residential customers. The operators would select the equipment that they use for this service. When service contracts are bid, it is expected that private collectors will continue to select and provide their own equipment. The bid language may include requirements that would affect equipment selected.

Commercial Collection: The operators are able to select the equipment that they use for this service. In the future, the County may choose to assist businesses in bundling a service agreement that could include designation of certain bags, bins, carts, dumpsters or other collection containers.

Recycling Processing - Waste Management, Inc. (aka: USA Waste/United) currently operates a recycling processing facility. Equipment in the facility is selected, provided and operated by the owner. If that facility is expanded to handle more material or types of material, the owner will select the equipment.

Composting - The County would work with local municipalities in sharing or leasing equipment for a potential new compost site.

Site Availability & Selection

Existing Programs:

Drop-offs - Existing sites will continue to operate. Location of new drop-off sites operated through the County drop-off program will be approved through the Recycling Implementation Committee.

Recycling Processing/Transfer - Existing programs will continue to use existing facilities, until such time as the County develops a new recycling processing and waste transfer facility.

Composting - Existing programs will continue to use existing facilities.

Proposed Programs:

Drop-offs - Existing sites will continue to operate. Additional sites will be added by agreement between local entities and the County.

Recycling Processing/Transfer - The County may choose to participate in a regional facility that includes transfer capability, a site selection committee will be convened and the Plan site selection process will be followed.

Composting - The county would select any potential sites.

Composting Operating Parameters:

The following identifies some of the operating parameters which are to be used or are planned to be used to monitor the composting programs.

Future Programs:

Program Name	pH Range	Heat Range	Stability
Antrim County compost site	ph: 5.0-8.5	140-160 degrees during active composting	Finished compost shall be a mature, stabilized, humus-like material, capable of supporting plant growth without the addition of fertilizers or other soil amendments; should contain less than 1% of plastic, glass, metal and other physical contaminants

Proposed Programs:

Any new compost programs (public or private) should meet the parameters stated above.

COORDINATION OF EFFORTS:

Solid Waste Management Plans need to be developed and implemented with due regard for both local conditions and the state and federal regulatory framework for protecting public health and the quality of the air, water, and land. The following states the ways in which coordination will be achieved to minimize potential conflicts with other programs and, if possible, to enhance those programs.

It may be necessary to enter into various types of agreements between public and private sectors to be able to implement the various components of this solid waste management system. The known existing arrangements are described below which are considered necessary to successfully implement this system within the County. In addition, proposed arrangements are recommended which address any discrepancies that the existing arrangements may have created or overlooked. Since arrangements may exist between two or more private parties that are not public knowledge, this section may not be comprehensive of all the arrangements within the County. Additionally, it may be necessary to cancel or enter into new or revised arrangements as conditions change during the planning period. The entities responsible for developing, approving, and enforcing these arrangements are also noted.

Implementation of the selected alternative will be completed in full compliance with the state and federal laws and in coordination with both local and regional public health, planning and environmental agencies. Section III of the Plan provides detail on the Management Component of the Plan.

The County, through intergovernmental agreements with participating communities will administer a comprehensive solid waste management system that includes funding mechanisms, a county-wide ordinance, administrative rules, hauler licensing and facility designation agreements, import/export conditions, contractual arrangements for MRF/Transfer Station development if needed and service contracts for other supporting programs. Participating communities as well as private solid waste management companies will work with the County in developing and operating the selected alternative.

COSTS & FUNDING:

The following estimates the necessary management, capital, and operational and maintenance requirements for each applicable component of the solid waste management system. In addition, potential funding sources have been identified to support those components.

These system options assume certain organizational and management variables such as service provider roles, in order to estimate costs. However, long-term capital and operating funding, intergovernmental arrangements and other organizational and management roles must be determined by the County.

Clean Community:

Program Description	Estimated Costs Per Year	Timeline
Solid waste collection services: provided to all households and businesses in the County. Illegal dumping and litter would be policed with enforcement of violations.	Status quo (residents contract with service provider, or township/municipality provides collection)	1998-2008
Spring/fall cleanup days: Municipalities would provide annual clean-up programs with scavenging/trading/reuse encouraged and recycling of as many materials left as possible.	Dependent on individual community programs	1998-2008
Household hazardous waste collection services: Collection arranged four times per year at a temporary site, with services provided by private vendor.	$10,800; assumes 600 participants @ $18 per use and hauler assumes site liability	1998-2003
Household hazardous waste collection services: A permanent collection site would be established, and services would be extended to small quantities of agricultural pesticides and herbicides, and possibly small businesses willing to pay a fee for drop-off	Operating Costs: $16,000/yr, assumes 1000 participants @ $18 per use Capital Costs: $35,000 for containment building, site improvements, staff training Additional Costs: Staff time, emergency cleanup	2003-2008
Adopt a "____" programs would be organized with volunteers and business/service group sponsorship for periodic cleaning of roadsides, streambanks, lakeshores, parks and forests.	Largely based on volunteer efforts and intergovernmental cooperation	1998-2003

Recycling Incentives:

Program Description	Estimated Costs Per Year	Timeline
Promotion and Education: a range of outreach efforts would support all system programs, including recycling, composting, household hazardous waste collection and businesses waste reduction; county-wide mailings (twice per year); radio ads, newspaper ads, presentations and public displays are recommended	$2-$4 per household per year, with cost escalating as new programs are added	1998-2008
Pay as You Throw (PAYT): residents pay for solid waste collection depending on the volume they put at curb, including option for pay by the bag	Approximately $1-$1.50 per bag (paid by resident); other rates for cart service	1999-2008

Residential Recycling:

Program Description	Estimated Costs Per Year	Timeline
Expanded Drop-off Sites: existing drop-off sites in Central Lake and Elk Rapids would be improved and expanded, and sites added in Alden, Mancelona and Bellaire; acceptable materials and collection methods would be consistent between all sites which would be open to all County residents and small businesses; sites would be several days per week and would consistent of roll-off containers and OCC-only dumpsters Recovery Estimate: 920 tons/year	Servicing: $100 per pull x 400 pulls per year (two containers per site x 5 sites) = $40,000/yr Processing: $35/ton x 920 tons = $32,200; could be reduced through OCC only dumpster servicing at potentially $0 cost Capital: 12 30-yd-roll-off containers (includes 2 extras) at $4,500 ea.; site improvements (fencing, signage, additional)	1998-2001
Expanded Drop-off Sites: existing drop-off sites in Alden, Mancelona and Bellaire would become permanent, 24-hour-per-day sites; additional site in Ellsworth/Banks Twp and/or Alba; more materials added Recovery Estimate: 975 tons/year	Servicing: $100 per pull x 450 pulls per year = $45,000/yr (assumes conservative 2 tons per pull) Processing: $35/ton x 975 tons = $34,125; could be reduced through OCC only dumpster servicing at potentially $0 cost Capital: Site improvements (fencing, signage)	2001-2008
"Super" Drop-offs (flagship stations): Elk Rapids and Central become permanent, flagship sites with some staffing, added materials such as construction and demolition (C&D) Recovery Estimate: 875 tons/year	Servicing: $100 per pull x 425 pulls per year = $42,500/yr (assumes conservative 2 tons per pull) Processing: $35/ton x 875 tons = $30,625; could be reduced through OCC only dumpster servicing at potentially $0 cost Capital: 8 roll-offs @$4,500 ea. Staffing/cleanup: $10-$30,000 per site	2003-2008
Subscription Curbside Recycling: residents in a more urban district would be urged to subscribe for curbside recycling Recovery Estimate: 80 tons per year (assumes 400 households participating)	$6/hh/month (paid by residents)	1998-2003
Contracted Curbside Recycling: residents in a designated curbside district would receive weekly curbside recycling under a coordinated contract bid Recovery Estimate: 675 tons per year (assumes 3,000 households participating)	$3.30/hh/month; blended with solid waste bill, water bill or paid by municipality	1998-2003

Yard Waste Recovery:

Program Description	Estimated Costs / Year	Timeline
Yard Waste Drop-off Sites: add yard waste collection bins at two or more recycling drop-off sites Recovery Estimate: 150 tons/year	Servicing: $3,000/yr	1998-2008
Fall leaf collection: larger municipalities (Elk Rapids, Bellaire, Central Lake, Mancelona) would conduct fall leaf collection Recovery Estimate: 350 tons/year	Servicing: $15,000/yr; difficult to quantify based on existing municipal equipment (loaders, dump trucks)	1998-2008
Alternative Seasonal Collection System: residents could purchase designated special paper yard waste bags ($1 to $2 ea) which would allow contractor or municipal crew to pick up yard debris weekly during the growing season; this option would require development of a low-technology compost site equipped with a front loader to turn piles and break up bags; a screener could be rented once a year to process/prepare finished compost	$1-$2/bag to cover collection costs	

Commercial Recycling:

Program Description	Estimated Costs / Year	Timeline
Commercial Corrugated Routes: existing OCC routes currently provided by the waste hauler would be expanded, largely through education efforts. Individual businesses would contract directly for this service, and assume that they would pay less for OCC pickup than trash pickup. Recovery Estimate: 850 tons/yr	$51,000, assuming a front or rear-packer services larger businesses in county with two routes per week	1998-2003
Other Commercial Recycling: through education and direct assistance, small to medium-sized business would be encouraged to used drop-offs, develop shared collection containers for direct pickup, or use reusable bag or other collection system to allow driver from OCC routes to also manually pick-up bags of mixed paper Recovery Estimate: 300 tons/yr	$18,000, including education, promotion	1998-2008
Expanded Commercial OCC/paper routes: development of a service district, with "bundled" contracted service would lure service provider to bid on coordinated route to service multiple businesses with curbcart, bins, bags and/or other system Recovery Estimate: 1500 tons/year	$78,000 includes three routes per week; includes amortization of containers/bins/bags	

Solid Waste Transfer:

Program Description	Estimated Costs / Year	Timeline
Existing waste transfer facilities:	not available	1998-2003
Added solid waste drop-offs	variable	1998-2008
Future waste transfer capabilities		

EVALUATION SUMMARY OF THE SELECTED SYSTEM:

The solid waste management system has been evaluated for anticipated positive and negative impacts on the public health, economics, environmental conditions, siting considerations, existing disposal areas, and energy consumption and production which would occur as a result of implementing this Selected System. In addition, the Selected System was evaluated to determine if it would be technically and economically feasible, whether the public would accept this Selected System, and the effectiveness of the educational and informational programs. Impacts to the resource recovery programs created by the solid waste collection system, local support groups, institutional arrangements, and the population in the County in addition to market availability for the collected materials and the transportation network were also considered. Impediments to implementing the solid waste management system are identified and proposed activities which will help overcome those problems are also addressed to assure successful programs. The Selected System was also evaluated as to how it relates to the Michigan Solid Waste Policy's goals. The following summarizes the findings of this evaluation and the basis for selecting this system:

ADVANTAGES/DISADVANTAGES OF THE SELECTED SYSTEM:

Antrim County has the benefit of a long-establish Waste Reduction and Recycling Committee, which was delegated authority to evaluate system alternatives, and make recommendations to the Solid Waste Planning Committee.

Serving as a foundation for the deliberations of the Waste Reduction and Recycling Committee was a survey conducted in late 1997 by telephone. This survey overwhelmingly indicated local support for increasing recycling in the County, with more than 74% of respondents saying they would like to see the County offer increased services. Surprisingly, 77% said they would pay $1 a month to support recycling and 62% said they would pay $2 a month.

With these survey results in mind, the Committee next determined a set of recovery goals for the planning period, and then evaluated programs which would be needed to achieve these goals.

Each solid waste management system has pros and cons relating to its implementation within the County. Following is an outline of the major advantages and disadvantages for this Selected System.

Advantages:

- Clean community and education/promotion create stronger interest in responsible practices
- Illegal dumping activity minimized
- Most small quantity unregulated hazardous wastes diverted from landfill disposal
- Recycling/composting starts to become the dominant method of waste management
- Organics management system is an effective alternative to landfilling
- Seasonal/Tourist population has option with recycling and solid waste drop-offs
- Recycling processing/marketing system has very strong foundation
- Less reliance on landfills for disposal especially with ramp up of commercial/C&D recycling
- Alternatives landfills used should costs rise or availability be limited

Disadvantages:

- System costs still can be improved while maintaining or increasing level of diversion

Overall Performance:

- Source reduction impact will be observed both residential and commercial
- Diversion through recycling/composting likely in the 30% +/- range
- Landfill capacity less critical to long term system health

Overall Cost Impact:

- System costs increase ($10.00 to $14.00 per capita per year as general estimate)
- Reduced overall solid waste collection costs begin to be realized
- Some offsetting savings in reduced waste transport/disposal ($30 - $50 per ton or $8 - $10 per capita/yr)

APPENDIX B: NON-SELECTED SYSTEMS

Before selecting the solid waste management system contained within this Plan update, the County developed and considered other alternative systems. The details of the non-selected systems are available for review in the County's repository. The following section provides a brief description of these non-selected systems and an explanation why they were not selected. Complete one evaluation summary for each non-selected alternative system.

SYSTEM COMPONENTS:

The following briefly describes the various components of the non-selected system.

Antrim County evaluated waste management components on a continuum that was defined by the following level of recovery and complexity of programs:

A: Basic Waste Collection and Disposal Program

B: Level 1 Basic Clean Community and Drop-Off Recycling Program

C: Level 2 Expanded Clean Community and Drop-Off Recycling Program

D: Level 3 Expanded Clean Community and Curbside Recycling Program

E: Level 4 Expanded Clean Community and Comprehensive Recycling Program

F: Level 5 Advanced Recovery Systems

Each major level included a relative service level in the following programs:

I: Clean Community Programs

Residential & Commercial Solid Waste Collection at Curb
Spring /Fall Cleanup Days
Illegal Dumping Enforcement
Adopt a "_____" program
Household Hazardous Waste Program
Agricultural and Small Quantity Hazardous Waste Programs

II: Recycling Incentive Programs

Education
Promotion
Pay as You Throw (PAYT)
Recycle More
Material Bans

III: Drop-off Residential Recycling Programs

Mobile Drop-offs - for Sorted Recyclables
Mobile Drop-offs - for Commingled Recyclables
Permanent Drop-offs for Sorted Recyclables
Permanent Drop-offs for Commingled Recyclables

IV: Curbside Residential Recycling Programs

Curbside Recycling - Sorted
Curbside Recycling - Commingled
Co-collection of Separated Recyclables and Solid Waste
Two or Three Stream "Wet/Dry" Collection
Co-collection of "Blue Bag" Recyclables and Solid Waste

V: Residential Yard Waste Composting Programs

Back Yard Composting Bin Distribution Programs
Mulching Mower Programs
Yard Waste Drop-off Stations
Curbside Yard Waste Collection
Fall Leaf Collection

VI: Commercial Recycling Programs

Waste Assessment Services
Drop-off Recycling Services - Sorted
Drop-off Recycling Services - Commingled
Commercial Recycling Collection - Sorted
Commercial Recycling Collection - Commingled

VII: Material Transfer and Processing Programs

Solid Waste Drop-off Sites
Solid Waste Drop-off and Recycling
Solid Waste Transfer Stations
Solid Waste Transfer Stations w/Recycling Drop-off and Processing Capabilities
Stand-Alone Recycling Processing Facilities (MRF)
Construction & Demolition Debris Processing Facility
Mixed Waste Recycling and Compost Processing Facility

VIII: Disposal Programs

Large Solid Waste Landfills in Region
Smaller Solid Waste Landfills Serving Counties
Transfer of Waste Out of Region
Municipal Solid Waste Incineration

Antrim County evaluated its current achievements and goals for improved future solid waste management against these benchmarks. The County chose as a goal of the Solid Waste Plan to move toward the C to D level.

Programs of the Selected System were selected to be attainable from the existing county conditions.

Several programs were deemed impractical as explained below:

SYSTEM COMPONENTS:

The following briefly describes the various components of the non-selected system.

RECYCLING INCENTIVES:

Material Bans

Antrim County felt that by increasing the level of service provided, 25% recovery rates could be achieved without banning materials from landfills although this alternative was considered as a possibility should other means fail.

COLLECTION PROCESSES:

Back Yard Composting Bin Distribution Programs
Mulching Mower Programs
Curbside Yard Waste Collection

These programs may be considered in a future planning period. Antrim County has selected to expand drop-off programs and incentives for private sector services first.

Mobile Drop-offs - for Sorted Recyclables

Fixed drop-off stations were selected as more available than mobile drop-off stations and would build on existing programs.

Co-collection of Separated Recyclables and Solid Waste
Two or Three Stream "Wet/Dry" Collection
Co-collection of "Blue Bag" Recyclables and Solid Waste
County-wide Curbside Collection of Recyclables

The above programs were deemed too costly to implement in the near future.

PROCESSING:

Solid Waste Transfer Stations w/Recycling Drop-off and Processing Capabilities
Stand-Alone Recycling Processing Facilities (MRF)
Construction & Demolition Debris Processing Facility
Mixed Waste Recycling and Compost Processing Facility

The county cannot support a full-scale processing facility based on existing waste volumes and resources, however, some limited processing capabilities are being considered.

DISPOSAL AREAS:

Large Solid Waste Landfills in Region
Smaller Solid Waste Landfills Serving Counties

Antrim County has adequate landfill capacity available through landfills in nearby counties

Municipal Solid Waste Incineration

Adequate landfill capacity is available. Incineration provides no obvious advantages at significant capital risk.

In selecting a waste management system, Antrim County separated the system management and financial considerations from the cost/benefit evaluation of individual programs. Once it was decided that Antrim County would target a particular level of waste diversion, that disposal needs could be met, and programs that could cost effectively meet the goals had been selected, the management and finance system needs were tabulated and assessed.

Antrim County chose to consider Public Act 137 funding, and to continue using user fees and as the primary means to finance future programs.

INSTITUTIONAL ARRANGEMENTS:

Antrim County has not recently operated a dedicated management structure for solid waste programs except as the Board of Commissioners deems necessary. This system will continue, with the establishment of an implementation committee designed to oversee implementation of the selected system.

While the Selected System does not specifically provide for other institutional arrangements, it does not prohibit future changes in the institutional arrangements. Examples of arrangements that have been considered but not specifically included are:

- Recyclables collection and processing contracts with neighboring counties
- Shared C&D processing facilities between counties
- Cooperative programs with individual municipalities within the County.

EVALUATION SUMMARY OF NON-SELECTED SYSTEM:

The non-selected system was evaluated to determine its potential of impacting human health, economics, environmental, transportation, siting and energy resources of the County. In addition, it was reviewed for technical feasibility, and whether it would have public support. The Solid Waste Planning Committee met monthly throughout 1998, with primary discussions focusing on aspects of selecting a solid waste system.

ADVANTAGES/DISADVANTAGES OF THE NON-SELECTED SYSTEM:

Each solid waste management system has pros and cons relating to its implementation within the County. Following is a summary of the major advantages and disadvantages for this non-selected system.

Since the Selected System is a combination of the systems evaluated, the Non-Selected System can only be discussed as the components not selected. Much of this is described on the preceding pages. Antrim County has selected components addressing all of the considered program areas.

ADVANTAGES:

1. Some of the rejected programs would have offered the collection and processing of more material types:

Mixed Waste Recycling and Compost Processing Facility

Two or Three Stream "Wet/Dry" Collection

2. Others would have offered residents more convenient collection:

Co-collection of Separated Recyclables and Solid Waste

Co-collection of 'Blue Bag' Recyclables and Solid Waste

Two or Three Stream 'Wet/Dry' Collection

3 Others would have feed the County from dependence on out of county landfills:

Smaller Solid Waste Landfills Serving Counties

Municipal Solid Waste Incineration

DISADVANTAGES:

1. High cost

Mixed Waste Recycling and Compost Processing Facility

Two or Three Stream "Wet/Dry" Collection

Co-collection of Separated Recyclables and Solid Waste

Co-collection of "Blue Bag" Recyclables and Solid Waste

Smaller Solid Waste Landfills Serving Counties

Municipal Solid Waste Incineration

2. Not good match to seasonal nature of population

Mixed Waste Recycling and Compost Processing Facility

Two or Three Stream "Wet/Dry" Collection

3. Not perceived as acceptable options to public

Smaller Solid Waste Landfills Serving Counties

Municipal Solid Waste Incineration

APPENDIX C: PUBLIC PARTICIPATION AND APPROVAL

The following summarizes the processes which were used in the development and local approval of the Plan, including a summary of public participation in those processes, documentation of each of the required approval steps, and a description of the appointment of the solid waste management planning committee along with the members of that committee

PUBLIC INVOLVEMENT PROCESS:

Following is a description of the process used, including dates of public meetings, copies of public notices, documentation of approval from solid waste planning committee, County board of commissioners, and municipalities.

Antrim County's Planning Department and the Solid Waste Planning Committee complied with all requirements for public participation and approval at all times and has filed all necessary documentation. Agendas were mailed to all committee members, and to the chief elected official of each city, township and village in the county ten days prior to each meeting, and to all persons/agencies requesting information on the solid waste planning process. All meetings were duly posted, and a public comment period was listed on each agenda.

The Plan for the public comment period was approved by a majority of the committee on February 24, 1999 and the Public Comment Period was initiated on March 10, 1999, and closed on June 10, 1999. The Public Hearing was held on May 26, 1999. The meeting was recorded, notes taken, and minutes were prepared and accepted by the Committee. The Public Hearing was announced in local newspapers as required. The Solid Waste Committee met on July 28, 1999 and approved the draft plan. The revised Plan was presented to the County Board of Commissioners on August 12, 1999, and approved by 9 - 0 vote. The Plan was released for municipal approval the week of September 1, 1999. Resolutions approving the Plan were adopted by 2/3's of the Local Units of Government and are attached. The Plan was submitted to the Michigan DEQ for final approval on June 1, 2000.

PUBLIC COMMENT PERIOD INPUT:

Copies of all public comments received are attached. Comments received did not require any changes in the Plan. Changes were made to respond to comments received from the DEQ.

County of Antrim

SOLID WASTE PLANNING COMMITTEE

ANTRIM COUNTY SOLID WASTE MANAGEMENT PLAN PUBLIC HEARING MINUTES

May 26, 1999
Board of Commissioners Room (201/204), Antrim County Building
Bellaire, MI 49615

Members present: Laurel Durkin, Bob Peterson, John Conway, and John Hummer
Staff present: Pete Garwood (Coordinator/Planner) and Eric Cline (Associate Planner)
Public present: Mike Dietrick (Dura Automotive), Denell Fleet (Alliance Sanitation), and Jerome Dobrzelewski (Warner Township)

1. **Call to Order**: The Antrim County Solid Waste Management Plan Public Hearing was called to order at 3:07 PM by Committee Chairperson Peterson

2. **Purpose of the Hearing**: Mr. Peterson stated that the purpose of this Public Hearing was to provide an opportunity for the general public to give input into the Antrim County Solid Waste Management Plan update.

3. **Review of the Solid Waste Management Plan**: Portions of the Solid Waste Management Plan were reviewed. Mr. Dobrzelewski stated that he could not ask many questions because he was seeing the plan for the first time. However, Mr. Dobrzelewski asked how the plan would be enforced after it went into effect. Mr. Cline, with support from Chairperson Peterson, reviewed the plan enforcement recommendations with Mr. Dobrzelewski. Mr. Dobrzelewski also asked several questions about recycling and tonnage diversion. Mr. Cline, along with several committee members, responded to Mr. Dobrzelewski's questions.

4. **Public Comment**: Chairperson Peterson asked if the members of the general public had any comments to make concerning the plan. Mr. Garwood stated that local units of government would have an opportunity to review, comment upon, and approve the plan. Mr. Dobrzelewski asked if the local units of government approved the plan by passing a Resolution of Support to which Mr. Garwood replied that was correct. Ms. Fleet introduced herself and stated that she was with Alliance Sanitation, a new company that will start operating in Bellaire in June. Ms. Fleet also stated that he was excited about the new operation, wanted to introduce herself, and was very interested in the proposed plan update.

5. **Adjournment**: Due to no other comments Committee Chairperson Peterson adjourned the Public Hearing at 3:14 PM.

Respectfully Submitted: Eric Cline, Eric Cline, Associate Planner

Resolution of Approval
Banks Township
Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that the Township of Banks hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

MOTION TO APPROVE THE RESOLUTION was made by Supervisor Daniel Wieland, and supported by Clerk Donna Heeres. YEAS: Wieland, Heeres, Treasurer Jacob Veenstra, Trustee Peter J. VanderArk, Trustee Gary Strange. NAYS: NONE. **RESOLUTION DECLARED ADOPTED.**

The above Resolution was adopted at the Regular Township Board Meeting held on Monday January 17, 2000

Donna L Heeres

Donna L. Heeres, Banks Township Clerk

CENTRAL LAKE TOWNSHIP

BOARD RESOLUTION NO. 99-10

TITLE: ANTRIM COUNTY SOLID WASTE MANAGEMENT PLAN UPDATE

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that the Central Lake Township Board hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

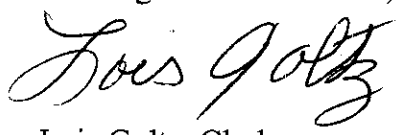
A MOTION TO ADOPT MADE BY Goltz SUPPORTED by Gadwau.

AYES; BEAN, GADWAU, GOLTZ, MURRAY AND SHOOKS

NAYS; NONE

ABSENT; NONE

I, Lois Goltz, duly elected Clerk of the Township of Central Lake do hereby certify that the above resolution was adopted by the Central Lake Township Board at a regular Meeting on December 15, 1999.



Lois Goltz, Clerk
Central Lake Township

RESOLUTION OF APPROVAL

16

THE ECHO TOWNSHIP BOARD

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that Echo Township Board unanimity approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

NOV.9,1999
Evelyn Hull-Clerk

Evelyn Hull

TOWNSHIP OF ELK RAPIDS
ANTRIM COUNTY
P.O BOX 365
ELK RAPIDS, MICHIGAN 49629
TELEPHONE (616) 264-9333 • FAX (616) 264-6676

DEC 2 8

Resolution 99-10

Resolution on the Antrim County solid waste management plan update

Whereas, Antrim County has been directed by the state of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to part 115, solid waste management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

Whereas, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal, including expanding resource recovery alternatives in the county, and

Whereas, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a solid waste plan, and distributed the draft plan to all municipalities during the ninety-day public comment period, and held a public hearing as required by law, and

Whereas, the solid waste management plan update of the county of Antrim was approved by the duly appointed solid waste planning committee by unanimous vote on April28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

Whereas, Approval by 67% of governing bodies within the county is required for plan approval by the Michigan Department of Environmental Quality, pursuant to the solid waste management act, now

Therefore, Be it resolved, that Elk Rapids Township hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

Dated 11-9-99

signed _____
William White

October 7, 1999

Peter Garwood, Antrim County Coordinator/Planner
Antrim County Building
P.O. Box 187
Bellaire, MI 49615

Dear Mr. Garwood:

Please be advised that the Forest Home Township Board resolved to support the Proposed Solid Waste Management Plan Update at their Regular Board Meeting held on Thursday, October 7, 1999. Please keep us apprised of changes and/or updates.

A copy of the Meeting Minutes is enclosed.

Regards,

Suzanne C. Mahan
Forest Home Township Clerk

FOREST HOME TOWNSHIP
REGULAR MEETING
October 7, 1999

Meeting called to order by Supervisor Smith at 7:06 p.m.

Officers present: T. Smith, T. Kent, S. Poel & S. Steiner

Discussion of the 1999/2000 Paving Plan with Fred Hunt from the Antrim County Road Commission.

Decision was made to hold a Special Meeting on Wednesday, October 20, 1999 at 7:00 P.M. Purpose: Discussion regarding a Proposed Lake Access Ordinance.

Motion by Poel to approve the Minutes of the September 2, 1999 meeting. Supported by Kent and carried.

Motion by Steiner to approve the expenditures as presented, check #1701 thru 1742 for a total of $11,993.50. Supported by Kent and carried.

Treasurer's Report – Balance of $213,960.53.

Motion by Steiner to support the Proposed Solid Waste Management Plan Update. Supported by Kent and carried.

Discussion regarding the purchase of a new copier. Board decided to seek further bids.

Supervisor Smith updated the Board regarding correspondence received.

Motion by Mahan to adopt the Site Plan Revisions. Supported by Steiner and carried.

Meeting adjourned at 9:00 P.M.

Suzanne C. Mahan
Clerk

DRAFT

RESOLUTION OF APPROVAL

<< Jordan Township >>

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that (Jordan Twp. Board) hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

Unanimous vote
Oct. 27 1999

Leona R. Stanek
Jordan Twp Clerk

KEARNEY TOWNSHIP
POST OFFICE BOX 51
BELLAIRE, MICHIGAN 49615

DEC - 8

Resolution of Approval

Kearney Township

Resolution on the Antrim County Solid Waste Management Plan Update

Whereas, Antrim County has been directed by State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

Whereas, An adopted Count Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

Whereas, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

Whereas, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

Whereas, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that Kearney Township hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

This resolution was adopted at the regular Township Board Meeting Dec, 6, 1999. Motion was made by Belanger and seconded by Niepoth. Roll call vote - Yes -Niepoth, Belanger, Johnson, Glander. No - 0. Carried.

Sally Petrie

Sally Petrie, Clerk

DEC 13 '99

TOWNSHIP OF MANCELONA

RESOLUTION APPROVING ANTRIM COUNTY WASTE MANAGEMENT PLAN UPDATE

A regular meeting of the Board of Mancelona Township was held in the Township Hall on the 17th day of November, 1999, at 7:00 p.m.

MEMBERS PRESENT: Sue Robinson, Charles Johnson, Gerald Patrick, Yousef Jabara, and Margaret Chapman

MEMBERS ABSENT: none

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999, by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW BE IT HEREBY RESOLVED THAT:

The Township of Mancelona hereby approved the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

Upon motion duly made and seconded and upon a roll-call vote, the resolution set forth above was adopted by the Township Board.

MEMBERS VOTING "YES": Sue Robinson, Charles Johnson, Gerald Patrick, Yousef Jabara, and Margaret Chapman.

MEMBERS VOTING "NO": none

The undersigned, duly qualified and acting as Clerk for the Township of Mancelona, hereby certifies that the foregoing is a true and complete copy of a resolution adopted by the Board at a regular meeting held on November 17, 1999, and that notice of the meeting was given to the public as required by law.

Margaret Chapman
Mancelona Township Clerk

The Regular Board meeting of the Mancelona Township Board, November 17, 1999. Held in the Township meeting room. Meeting called to order by Supervisor Gerald Patrick at 7:00 P.M. Roll call was taken. Present; Sue Robinson, Yousef Jabara, Gerald Patrick, Chuck Johnson, Margaret Chapman. Also Present: Kay Ringle, Mr. Leichtman, Eric Cline, Bubba Smith, Bobby L William's, Ed Sayre.

Motion by Jabara supported by Johnson to accept the minutes from the October 18, 1999 Regular meeting and the minutes from the November 8, 1999 Special meeting as presented. Motion passed with all members present voting yes

Fire report given by Ed Sayre, for the month of October there were 16 incidents: 10 fire and 6 rescue. Ed reported that Mancelona Village has agreed to drop all excess water charge to the Mancelona Fire Department.

Motion by Robinson supported by Jabara to pay current bills. Common account: $4,325.22 Water account: $2,000.23 Fire account: 3,612.27 Motion passes with all present voting yes.

Eric Cline gave the board a review of the Antrim County Proposed Solid Waste Management Plan Update. Motion by Jabara supported by Johnson to sign a Resolution of approval on the Antrim County Solid Waste Management Plan Update. Motion passed with a roll call vote: Yea: Chapman, Jabara, Johnson, Robinson and Patrick.

Kay Ringle manager of Lakes of the North asked the board about the paving of Manistee Heights and if Mancelona Fire Station 2 would respond to fires in Hayes Township. Fire Chief Sayre directed her to Hayes Township and Otsego Co. as we have mutal aid agreement in order now.

Motion by Chapman supported by Patrick to pass a resolution for the intermittently closing of M-88 for the White Pine Stampede Ski race held in February of 2000 and authorize the clerk to sign the resolution. Motion passed with all present voting yes.

The clerk was ask to send a note to each constable to attend the next Township Board meeting.

Motion by Jabara supported by Johnson to adopt a Resolution to vacate Old U.S.131 from Korr Road North to U S. 131 & Hwy. 66. located in the Township of Mancelona, County of Antrim. Motion passed with a roll call vote. Yea: Cha pman, Jabara, Johnson, Robinson and Patrick. No: None

Motion by Jabara supported by Johnson to contribute $2,000.00 to the creation of a Water Authority Board to be used for legal fees and technical assistance. Motion passed with a roll call vote. Yea: Jabara, Johnson, Patrick No: Chapman, Robinson

Motion by Jabara supported by Chapman to adjourn at 8:05 P.M.

Margaret Chapman

Margaret Chapman, Clerk

DRAFT

RESOLUTION OF APPROVAL

< STAR TWP.

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that (STAR TWP Board) hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

unanimous vote Oct 6, 1999

TORCH LAKE TOWNSHIP
P.O. Box 477
Eastport, MI 49627
(616) 599-2036
Fax (616) 599-2981

SUPERVISOR	KIM SCHMIDT	599-2313
CLERK	DORIS LEECH	599-2754
TREASURER	GEORGE PARKER	599-2931
TRUSTEE	JERRY HUBBELL	264-6074
TRUSTEE	REBECCA NORRIS	599-2894

Resolution 99-15

RESOLUTION OF APPROVAL
TORCH LAKE TOWNSHIP

17

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that Torch Lake Township Board hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

The foregoing resolution offered by Board Member Schmidt and supported by Board Member Parker.

Upon roll call vote, the following voted "Aye": Leech, Norris, Parker, Hubbell, Schmidt
"Nay": None

The Supervisor declared the resolution adopted.

Doris Leech
Township Clerk

CERTIFICATE

I, Doris Leech, the duly elected and acting Clerk of Torch Lake Township, hereby clarify that the foregoing resolution was adopted by the Township Board of said Township at the regular meeting of said Board held on November 8, 1999, at which meeting a quorum was present by a roll call vote of said members as hereinbefore set forth; that said resolution was to take immediate effect.

Doris Leech

Doris Leech, Clerk

At a regular meeting of the Warner Township board held at 7 p.m. on October 6, 1999, it was moved by Peggy Nowak, seconded by Ted Francis that the following resolution be adopted. Motion carried.

RESOLUTION OF APPROVAL

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that Warner Township hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

YES - Jerome Dobrzelewski, Mary Kucharek, Peggy Nowak, Ted Francis, Tom Dobrzelewski
NO - None
ABSENT - None

RESOLUTION DECLARED ADOPTED

Peggy Nowak
Warner Twp Clerk

BELLAIRE VILLAGE COUNCIL-OCTOBER 21, 1999

Meeting called to order at 7:00pm by President Mills.

ROLL CALL ATTENDANCE:
PRESENT - Officer Mills; Councilpersons Eby, Budas, Wendling, Allor, Drollinger
ABSENT - Officers Lovett, Odom; Councilman Balon
ALSO PRESENT - Pat McGow (Miller-Canfield), Eric Cline (An. County Coordinator/Planner Office) Terry Johnson, Colette Stanish, Dean Crandall, Dorothy Scarborough

Motion by Eby, supported by Budas, to approve minutes of previous meeting as presented.
Ayes - 6 Motion carried.

Pat McGow (Miller-Canfield) reviewed bids received for Sanitary Sewage Disposal System Revenue and Revenue Refunding Bonds, Series 1999.
Motion by Eby, supported by Allor, to adopt Awarding Resolution to approve and accept bid of Alden State Bank for the purchase of Village's $865,000 Sanitary Sewage Disposal System Revenue and Revenue Refunding Bonds, Series 1999.
ROLL CALL VOTE: Ayes - Mills, Eby, Budas, Wendling, Allor, Drollinger
Nays - None
Absent - Balon
Resolution adopted.

Motion by Eby, supported by Budas, designating Saturday, October 30, 1999 as Village Halloween night.
Ayes - 6 Motion carried.

Motion by Eby, supported by Allor, to forward letter of support to State Representative Ken Bradstreet supporting House Bills 4154 and 4155, referred to as "severance tax" package.
Ayes - 6 Motion carried.

Council reviewed proposed amendment to Ordinance 77, Section B, Bicycles, Scooters and Skateboards.
Motion by Eby, supported by Budas, authorizing Chief Johnson to review proposed amendment with Village Attorney.
Ayes - 6 Motion carried.

Eric Cline (An. County Coordinator/Planners Office) reviewed the An. County Solid Waste Management Plan Update.
Motion by Eby, supported by Allor, to adopt resolution that the Village of Bellaire hereby approves the An. County Solid Waste Management Plan Update as written for submittal to the Michig Dept. of Environmental Quality.
Ayes - 6 Motion carried.

810

Council reviewed Non-Action items:

a) Campground Pamphlet
b) Dam at Richardi
c) Nov. 4, 1999 Council meeting cancelled and rescheduled for Nov. 18, 1999.

Committee reports received.

Dean Crandall inquired reference Police Committee meetings. Eby to schedule meeting and advise Mr. Crandall of date and time.

Motion by Eby, supported by Wendling, to adjourn 8:12pm. Ayes - 6 Motion carried.

Dorothy Scarborough
Recording Secretary

Approved: _____

OCT 6

RESOLUTION 99-79
VILLAGE OF ELK RAPIDS

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved bythe Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that The Village of Elk Rapids hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

YAYS: 7 NAYS: 0 ABSENT: 0

Barbara J. Washkevich

I, BARBARA WASHKEVICH, VILLAGE CLERK, DO HEREBY CERTIFY THAT THE ABOVE RESOLUTION 99-79 WAS DULY ADOPTED AT THE REGULAR COUNCIL MEETING HELD ON OCTOBER 4, 1999.

12

RESOLUTION OF APPROVAL

<< Village of Ellsworth >>

Resolution on the Antrim County Solid Waste Management Plan Update

WHEREAS, Antrim County has been directed by the State of Michigan to prepare an update of the County Solid Waste Management Plan pursuant to Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and

WHEREAS, An adopted County Solid Waste Plan protects the ability of the County of Antrim to plan and provide for future solid waste disposal including expanding resource recovery alternatives in the County, and

WHEREAS, The Antrim County Board of Commissioners appointed a Solid Waste Management Planning Committee to draft a Solid Waste Plan, and distributed the Draft Plan to all municipalities during the ninety-day Public Comment Period, and held a Public Hearing as required by law, and

WHEREAS, The Solid Waste Management Plan Update of the County of Antrim was approved by the duly appointed Solid Waste Planning Committee by unanimous vote on April 28, 1999, and the same plan was approved by the Antrim County Board of Commissioners on August 9, 1999 by unanimous vote, and

WHEREAS, Approval by 67% of governing bodies within the County is required for Plan approval by the Michigan Department of Environmental Quality, pursuant to the Solid Waste Management Act,

NOW THEREFORE BE IT RESOLVED, that Village of Ellsworth hereby approves the Antrim County Solid Waste Management Plan Update as written for submittal to the Michigan Department of Environmental Quality.

Yes – 6
No – 0
Absent – 1

RESOLUTION ON THE SOLID WASTE MANAGEMENT PLAN FOR ANTRIM COUNTY DECLARED ADOPTED

VILLAGE OF ELLSWORTH

By: Hugh Campbell
Hugh Campbell, President

I, the undersigned, the Clerk of the Village of Ellsworth, Antrim County, Michigan, do hereby certify the foregoing is a true and complete copy of the certain proceedings taken by the Ellsworth Village Council of said municipality at its regular meeting held on Monday, November 8, 1999, relative to adoption of the resolution therein set forth; that said meeting was conducted and public notice of said meeting was given pursuant to and in fully compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act

Dated: 11-9-99

Helen Allen
Hellen Allen, Clerk

CUSTER TOWNSHIP BOARD MEETING
NOVEMBER 9, 1999

The meeting was called to order at 8:00 p.m. by Supervisor, R. Ricksgers.

Pledge of Allegiance

Members Present: R. Ricksgers, J. Allen, R. Elder, L, Swanstrom, & S. Homan.

Others Present: Herbert Moir, Harry Richards, John Richards, Allyn H. Wright, Brenda Ricksgers, Bud Hierlihy, Adam Gandolfi.

Motion by L. Swanstrom, seconded by J. Allen, to accept the October Meeting Minutes as printed. Motion Carried.

Motion by L. Swanstrom, seconded by R. Elder, to accept the October Disbursements as printed. Motion Carried.

Motion by S. Homan, seconded by J. Allen to accept the October Treasurer's Report as printed. Motion Carried.

Guest-Adam Gandolfi-Municipal Underwriters Representative- reviewed the township insurance policy.

Discussion on new rental agreement.

Motion by J. Allen, seconded by R. Elder, to accept the new rental agreement to start on January 1, 2000.

Motion by J. Allen, seconded by L. Swanstrom to refund Hall Deposit to Don Wright. Motion Carried.

Discussion on the Solid Waste Management Plan Update.

Motion by J. Allen, seconded by L. Swanstrom, not to accept the purposed solid waste management plan update. Motion Carried.

Discussions on new voting machines, on getting new exit light for the hall, on getting the furnace check for the winter, on the sewer and water authority board, and on water system.

December Meeting the board will vote on the Sewer and Water Authority Board Members.

Motion by J. Allen, seconded by R. Elder to adjourn. Motion Carried.

Meeting Adjourned at 9:25 p.m.

Sue Homan, Clerk

PLANNING COMMITTEE APPOINTMENT PROCEDURE:

Solid Waste Planning Committee members were nominated to and appointed by the Board of Commissioners to meet the requirements of Part 115 rules for representation. When members resigned, new members were sought and duly appointed

PLANNING COMMITTEE

Committee member names and the company, group, or governmental entity represented from throughout the County are listed below.

Four representatives of the solid waste management industry:

1. Brand Fleet, Northern Quality
2. Laurel Durkin, Waste Management
3.
4.

One representative from an industrial waste generator:

1. Mike Fitzgerald, Dura Automotive

Two representatives from environmental interest groups from organizations that are active within the County:

1. Jerry Aydlott, Friends of the Jordan
2. John Hummer, Friends of the Jordan

One representative from County government.

1. John Conway, County Board of Commissioners

One representative from township government:

1. Bill Gadwau, Central Lake Township

One representative from city government:

1. Joe Yuchasz, Village of Elk Rapids

One representative from the regional solid waste planning agency:

1. **Jill Barnard, representing Northwest Michigan Council of Governments**

Three representatives from the general public who reside within the County:

1 Julie Budas

2. Bob Peterson

3. Brand Gerlach

APPENDIX D: PLAN IMPLEMENTATION STRATEGY

The following discusses how the County intends to implement the plan and provides documentation of acceptance of responsibilities from all entities that will be performing a role in the Plan.

The County Board's adoption of the Plan is intended as a demonstration of the County's acceptance of responsibilities for implementing the Plan as follows:

This timetable is a guideline to implement components of the Plan's Enforceable Program. The Timeline gives a range of time in which the component will be implemented such as "1999-2000" or "On-going." Timelines may be adjusted later, if necessary.

Management Components	**Timeline**
1) Designate Solid Waste Plan Implementation Agency	1999
2) Designate Implementation Oversight Committee	1999
3) Develop/Adopt Implementation Action Plan	1999
4) Draft/Adopt Intergovernmental Agreements/Ordinance/Rules/Regs	1999
5) Preliminary Program Specifications for Planned Programs	1999
6) Establish Budgets for Planned Programs	1999
7) Finalize Funding Structure and Enforcement Mechanisms	1999
8) Contract for Recycling Processing Capacity	1999
9) Initiate all Outreach/Education Programs	1999
10) Procure all Other System Improvements	1999
11) Final Implementation of Funding Mechanisms	1999
12) Continued Evaluation of Need for Transfer Facility	2000-2008
13) Develop Transfer Facility if Needed	2000-2008
14) Preliminary Program Specifications for Planned Ph II Programs	2000-2001
15) Establish Budgets for Planned Phase II Programs	2000-2001
16) Finalize Any Upgrades to Funding Structure and Mechanisms	2000-2001
17) Initiate all Phase II outreach/education programs	2002-2008
18) Procure all other Phase II system improvements	2002-2008
19) Data Tracking to Assess Program Performance	Annual/Ongoing
20) Update Implementation Action Plan	Annual/Ongoing

ATTACHMENTS

The following attachments are included as part of the Plan.

ATTACHMENT A: Resolutions - *NOT APPLICABLE*

The following are resolutions from County Board of Commissioners approving municipality's request to be included in an adjacent County's Plan.

ATTACHMENT B: Listed Capacity

Documentation from landfills that the County has access to their listed capacity.

ATTACHMENT C: Maps

Maps showing locations of solid waste disposal facilities used by the County.

ATTACHMENT D: Inter-County Agreements

Copies of Inter-County agreements with other Counties (if any).

ATTACHMENT E: Detailed population data

Detailed population data in chart form

ATTACHMENT F: Special Conditions

Special conditions to import and export of solid waste in addition to those related to Inter-County Agreements as provided for in Attachment D.

ATTACHMENT G: Waste Reduction and Recycling Committee's Telephone Survey Results

Compilation of survey results from the 1997 survey of Antrim County residents.

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ATTACHMENT A

RESOLUTIONS

(NOT APPLICABLE)

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ATTACHMENT B

LISTED CAPACITY

Glen's Landfill

Montmorency/Oscoda Landfill

CES Waters Landfill

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JUN 20

GLEN'S SANITARY LANDFIL
A WASTE MANAGEMENT COMPANY

518 East Traverse Hwy
Maple City, MI 49664
(231) 228-5961
(231) 228-5991 Fax

Mr. Peter Garwood
Coordinator / Planner
Antrim County Building
P O Box 187
Bellaire, MI 49615

6/19/00

Dear Mr Garwood,

Per you're written request dated June 13, 2000 and the requirements of the DEQ County Solid Waste Management Plans "Plan Format", section III-28 "siting review procedures" and section D-3 "listed capacity Glen's Sanitary Landfill submits the following,

Under Glen's existing 133 acre DEQ approved expansion permit, and subsequent licensing program, we can supply your county with 10 years of airspace / disposal
As a reminder, in Leelanau Counties approved Solid Waste Plan dated November 27th 1998, Antrim County is listed as a "contingency" and has a reciprocal agreement on file with-in that plan

Please feel free to call me with any questions or additional information you may require

Sincerely,

Dave Barron
Site Manager

Cc: Trudy J Galla AICP, Leelanau County Planning Director
Steve Essling, Governmental Affairs WM
File

ROGER D FRYE, CHAIRMAN
DENNIS KAUFFMAN, VICE- CHAIRMAN
RAYMOND WEGMEYER, SEC /TREAS
RICHARD E HERMANSON
MICHAEL HUNT
TOM MULLANEY
SANDY CUNNINGHAM EXEC SECRETARY

MONTMORENCY OSCODA ALPENA Solid Waste Management AUTHORITY

P. O. Box 789, Atlanta, MI 49709

(517) 785-2066 Phone
(517) 785-4183 Fax

JUL - 3

June 29, 2000

Mr. Peter Garwood, Coordinator/Planner
Antrim County
Antrim County Building
P.O. Box 187
Bellaire, MI 49615

Dear Mr. Garwood:

The Montmorency-Oscoda-Alpena Solid Waste Management Authority Board is in receipt of your correspondence dated 6/13/00 requesting that we guarantee landfill disposal capacity waste generated in Antrim County over the next ten years.

The approved Solid Waste Management Plan, prepared jointly for the County's of Montmorency and Oscoda, and the Alpena County Plan, include flow Control for 100% of the waste generated in Montmorency, Oscoda and Alpena County's. Projected volumes available for disposal with flow control from Montmorency, Oscoda and Alpena County's is 145,000 cubic yards annually. Our Landfill has an estimated thirty-year life expectancy, securing air space for up to 3,500,000 cubic yards of waste.

Most recently, the Landfill Board approved a $2.00 per cubic yard increase on waste delivered from all non-Landfill Authority Member County's.

In addition, the Landfill Board has directed that all non-Landfill Authority Member County's be advised that we are not in a position to guarantee disposal capacity.

We will continue to accept refuse from non-Member County's, however, we reserve the right to limit the quantity of waste accepted.

If you require additional information, please contact this office.

Sincerely,

Roger D. Frye
Chairman

RDF/sc

ATTACHMENT C

MAPS

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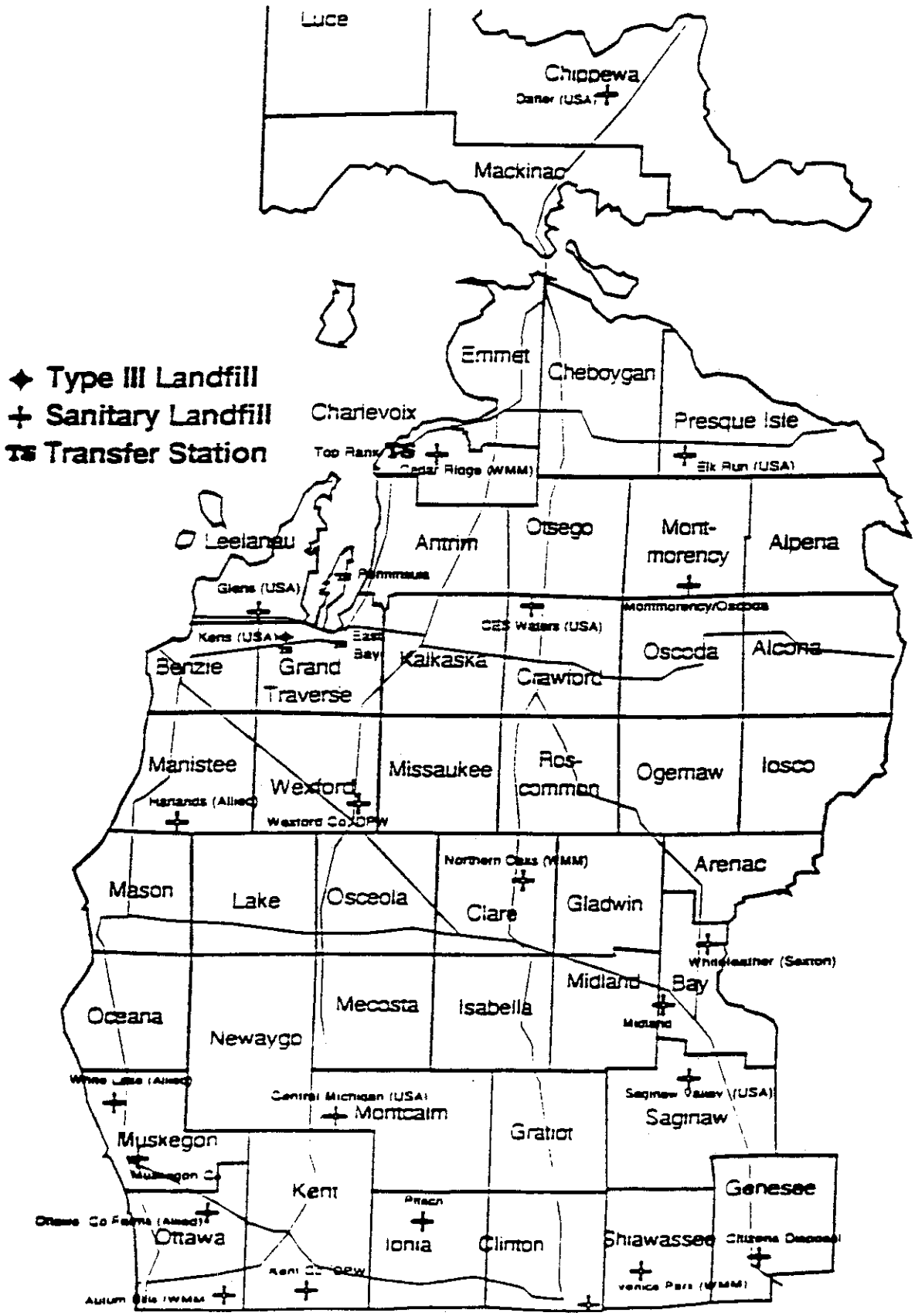
Landfills and Transfer Stations* Potentially Serving Antrim County

*=Type A Transfer Stations



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ATTACHMENT D

INTER-COUNTY AGREEMENTS

agreements to be added

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ATTACHMENT E

DETAILED POPULATION DATA

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Permanent Population of Antrim County

Municipality	1990 pop	90-95 change	95/90 ratio	annual growth	1998 lin	2003 lin	2008 lin	98 projected	03 projected	08 projected
Ellsworth village	418	49	1.1172	1.0179	482	526	575	477	505	531
Balance of Banks township	1095	149	1.1361	1.0206	1269	1428	1581	1276	1370	1461
Central Lake village	954	123	1.1289	1.0196	1114	1228	1353	1102	1178	1250
Balance of Central Lake township	965	132	1.1368	1.0207	1137	1260	1396	1125	1209	1289
Chestonia township	401	55	1.1372	1.0208	473	524	581	468	503	536
Custer township	630	86	1.1365	1.0207	742	822	911	734	789	841
Echo township	766	105	1.1371	1.0208	903	1001	1109	893	960	1024
Elk Rapids village	1626	210	1.1292	1.0196	1900	2093	2307	1879	2008	2131
Balance of Elk Rapids township	748	103	1.1377	1.0209	882	978	1085	873	938	1002
Ballair village (pt.)	483	60	1.1242	1.0189	561	616	677	555	591	625
Balance of Forest Home township	927	127	1.1370	1.0208	1093	1211	1342	1081	1162	1239
Helena township	837	115	1.1374	1.0208	987	1094	1213	977	1049	1120
Jordan township	583	80	1.1372	1.0208	687	762	844	680	731	780
Bellair village (pt.)	621	74	1.1192	1.0182	717	785	859	710	753	793
Balance of Kearney township	866	104	1.1201	1.0183	1001	1096	1201	991	1052	1109
Mancelona village	1370	168	1.1226	1.0187	1589	1743	1912	1572	1672	1766
Balance of Mancelona township	1803	245	1.1359	1.0206	2122	2350	2602	2100	2254	2404
Milton township	1468	201	1.1369	1.0207	1730	1917	2124	1712	1839	1962
Star township	575	79	1.1374	1.0208	678	752	833	671	721	770
Torch Lake township	762	105	1.1378	1.0209	899	997	1105	889	956	1021
Warner township	287	40	1.1394	1.0211	339	376	416	336	361	386
Antrim County Total	*18185*	*2410*	*1.1325*	*1.0201*	*21325*	*23559*	*26026*	***21100***	***22600***	***24040***
Michigan DMB Estimates					21100	22600	24040			

1998 Estimated Seasonal Population

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Seasonal Multiplier		1.11	1.12	1.13	1.11	1.16	1.37	1.38	1.39	1.18	1.17	1.15	1.14	1.22
Ellsworth village		529	534	539	529	553	653	658	663	562	558	548	543	581
Balance of Banks township		1416	1429	1441	1416	1480	1748	1760	1773	1505	1492	1467	1454	1556
Central Lake village		1224	1235	1246	1224	1279	1510	1521	1532	1301	1290	1268	1257	1345
Balance of Central Lake township		1249	1260	1271	1249	1305	1541	1553	1564	1328	1316	1294	1283	1373
Chestonia township		519	524	529	519	543	641	645	650	552	547	538	533	571
Custer township		815	822	830	815	852	1006	1013	1021	866	859	844	837	896
Echo township		992	1001	1009	992	1036	1224	1233	1242	1054	1045	1027	1018	1090
Elk Rapids village		2086	2105	2124	2086	2180	2575	2594	2612	2216	2199	2161	2143	2293
Balance of Elk Rapids township		969	978	986	969	1013	1196	1205	1213	1030	1021	1004	995	1065
Bellaire village (pt)		616	622	627	616	644	761	766	772	655	650	638	633	677
Balance of Forest Home township		1200	1211	1222	1200	1254	1481	1492	1503	1276	1265	1243	1232	1319
Helena township		1084	1094	1103	1084	1133	1336	1348	1357	1152	1143	1123	1113	1191
Jordan township		755	762	768	755	789	932	938	945	802	796	782	775	830
Bellaire village (pt)		788	795	802	788	823	972	979	988	837	830	816	809	866
Balance of Kearney township		1100	1110	1120	1100	1149	1357	1367	1377	1169	1159	1139	1129	1209
Mancelona village		1745	1760	1776	1745	1823	2153	2169	2185	1855	1839	1808	1792	1918
Balance of Mancelona township		2331	2352	2373	2331	2436	2877	2898	2918	2478	2457	2415	2394	2562
Milton township		1900	1917	1934	1900	1986	2345	2362	2379	2020	2003	1969	1951	2088
Star township		745	751	758	745	778	919	926	932	792	785	771	765	818
Torch Lake township		987	996	1005	987	1032	1218	1227	1236	1050	1041	1023	1014	1085
Warner township		372	376	379	372	389	460	463	466	396	393	386	383	409
Antrim County Total		23421	23632	23843	23421	24476	28907	29118	29329	24698	24487	24265	24054	25742

1998 Estimate Waste Generation, tons

	mult.*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total, tpy
Ellsworth village	2.0	16	15	16	16	17	20	20	21	17	17	16	17	*210*
Balance of Banks township	2.0	44	40	45	42	46	52	55	55	45	46	44	45	*559*
Central Lake village	2.0	38	35	39	37	40	45	47	48	39	40	38	39	*483*
Balance of Central Lake township	2.0	39	35	39	37	40	46	48	48	40	41	39	40	*493*
Chestonia township	2.0	16	15	16	16	17	19	20	20	17	17	16	17	*205*
Custer township	2.0	25	23	26	24	26	30	31	32	26	27	25	26	*322*
Echo township	2.0	31	28	31	30	32	37	38	38	32	32	31	32	*392*
Elk Rapids village	2.0	65	59	66	63	68	77	80	81	67	68	65	66	*824*
Balance of Elk Rapids township	2.0	30	27	31	29	31	36	37	38	31	32	30	31	*383*
Bellaire village (pt)	2.0	19	17	19	18	20	23	24	24	20	20	19	20	*243*
Balance of Forest Home township	2.0	37	34	38	36	39	44	46	47	38	39	37	38	*474*
Helena township	2.0	34	31	34	33	35	40	42	42	35	35	34	35	*426*
Jordan township	2.0	23	21	24	23	24	28	29	29	24	25	23	24	*298*
Bellaire village (pt)	2.0	24	22	25	24	26	29	30	31	25	26	24	25	*311*
Balance of Kearney township	2.0	34	31	35	33	36	41	42	43	35	36	34	35	*434*
Mancelona village	2.0	54	49	55	52	57	65	67	68	56	57	54	56	*689*
Balance of Mancelona township	2.0	72	66	74	70	76	86	90	90	74	76	72	74	*921*
Milton township	2.0	59	54	60	57	62	70	73	74	61	62	59	60	*751*
Star township	2.0	23	21	23	22	24	28	29	29	24	24	23	24	*294*
Torch Lake township	2.0	31	28	31	30	32	37	38	38	31	32	31	31	*390*
Warner township	2.0	12	11	12	11	12	14	14	14	12	12	12	12	*147*
Antrim County Total	2.0	*726*	*662*	*740*	*703*	*759*	*867*	*903*	*909*	*747*	*765*	*728*	*746*	*9254*

*Waste Gen. Multiplier is presently 2.0 pounds per person per day for rural areas, 2.6 ppppd for urban areas.

2003 Estimated Seasonal Population

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Ellsworth village	561	566	571	561	586	692	697	702	596	591	581	576	606
Balance of Banks township	1520	1534	1548	1520	1589	1876	1890	1904	1616	1603	1575	1561	1645
Central Lake village	1307	1319	1331	1307	1366	1614	1625	1637	1390	1378	1354	1343	1414
Balance of Central Lake township	1342	1354	1366	1342	1402	1656	1668	1680	1426	1414	1390	1378	1451
Chestonia township	558	563	568	558	583	689	694	699	593	588	578	573	604
Custer township	875	883	891	875	915	1080	1088	1096	931	923	907	899	947
Echo township	1065	1075	1085	1065	1113	1315	1325	1334	1133	1123	1104	1094	1153
Elk Rapids village	2229	2249	2269	2229	2329	2751	2771	2791	2370	2350	2309	2289	2411
Balance of Elk Rapids township	1042	1051	1060	1042	1089	1286	1295	1304	1107	1098	1079	1070	1127
Bellaire village (pt)	656	662	668	656	686	810	816	822	698	692	680	674	710
Balance of Forest Home township	1289	1301	1312	1289	1347	1591	1603	1614	1371	1359	1336	1324	1395
Helena township	1165	1175	1186	1165	1217	1438	1448	1459	1238	1228	1207	1196	1260
Jordan township	811	818	826	811	848	1001	1008	1016	862	855	840	833	878
Bellaire village (pt)	836	843	851	836	873	1031	1039	1047	888	881	866	858	904
Balance of Kearney township	1167	1178	1189	1167	1220	1441	1451	1462	1241	1231	1210	1199	1263
Mancelona village	1856	1872	1889	1856	1939	2290	2307	2324	1973	1956	1923	1906	2007
Balance of Mancelona township	2502	2525	2548	2502	2615	3089	3111	3134	2660	2638	2593	2570	2707
Milton township	2041	2060	2078	2041	2133	2520	2538	2556	2170	2152	2115	2097	2208
Star township	800	807	815	800	836	988	995	1002	851	844	829	822	866
Torch Lake township	1061	1071	1080	1061	1109	1310	1319	1329	1128	1119	1100	1090	1148
Warner township	401	405	408	401	419	495	498	502	426	423	415	412	434
Antrim County Total	*25086*	*25312*	*25538*	*25086*	*26216*	*30962*	*31188*	*31414*	*26668*	*26442*	*25990*	*25764*	*27139*

2003 Estimate Waste Generation, tons

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total, tpy
Ellsworth village	17	18	18	17	18	21	22	22	18	18	17	18	*221*
Balance of Banks township	47	43	48	46	49	56	59	59	46	50	47	48	*601*
Central Lake village	41	37	41	39	42	48	50	51	42	43	41	42	*516*
Balance of Central Lake township	42	38	42	40	43	50	52	52	43	44	42	43	*530*
Chestonia township	17	16	18	17	18	21	22	22	18	18	17	18	*220*
Custer township	27	25	28	26	28	32	34	34	28	29	27	28	*346*
Echo township	33	30	34	32	35	39	41	41	34	35	33	34	*421*
Elk Rapids village	69	63	70	67	72	83	86	87	71	73	69	71	*861*
Balance of Elk Rapids township	32	29	33	31	34	39	40	40	33	34	32	33	*412*
Bellaire village (pt)	20	19	21	20	21	24	25	25	21	21	20	21	*259*
Balance of Forest Home township	40	36	41	39	42	48	50	50	41	42	40	41	*509*
Helena township	36	33	37	35	38	43	45	45	37	38	36	37	*460*
Jordan township	25	23	26	24	26	30	31	31	26	27	25	26	*320*
Bellaire village (pt)	26	24	26	25	27	31	32	32	27	27	26	27	*330*
Balance of Kearney township	36	33	37	35	38	43	45	45	37	38	36	37	*461*
Mancelona village	58	52	59	56	60	69	72	72	59	61	58	59	*733*
Balance of Mancelona township	78	71	79	75	81	93	96	97	80	82	78	80	*969*
Milton township	63	58	64	61	66	76	79	79	65	67	63	65	*807*
Star township	25	23	25	24	26	30	31	31	26	26	25	25	*316*
Torch Lake township	33	30	33	32	34	39	41	41	34	35	33	34	*419*
Warner township	12	11	13	12	13	15	15	16	13	13	12	13	*158*
Antrim County Total	*778*	*709*	*792*	*753*	*813*	*929*	*967*	*974*	*800*	*820*	*780*	*799*	*9911*

*Waste Gen. Multiplier is presently 2.0 pounds per person per day for rural areas, 2.6 ppppd for urban areas.

2008 Estimated Seasonal Population

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Ellsworth village	590	595	600	590	616	728	733	739	627	622	611	606	638
Balance of Banks township	1621	1636	1650	1621	1694	2001	2016	2030	1723	1709	1680	1665	1754
Central Lake village	1387	1399	1412	1387	1449	1712	1724	1737	1474	1462	1437	1424	1500
Balance of Central Lake township	1431	1444	1457	1431	1496	1767	1779	1792	1522	1509	1483	1470	1548
Chestonia township	595	601	606	595	622	735	740	745	633	628	617	611	644
Custer township	934	942	951	934	976	1152	1161	1169	993	984	967	959	1010
Echo township	1137	1147	1157	1137	1188	1403	1414	1424	1209	1198	1178	1168	1230
Elk Rapids village	2365	2387	2408	2365	2472	2919	2941	2962	2514	2493	2451	2429	2559
Balance of Elk Rapids township	1112	1122	1132	1112	1162	1372	1382	1393	1182	1172	1152	1142	1203
Bellaire village (pt.)	694	700	706	694	725	856	863	869	738	731	719	713	751
Balance of Forest Home township	1376	1388	1400	1376	1438	1698	1710	1723	1462	1450	1425	1413	1488
Helena township	1243	1255	1266	1243	1299	1535	1546	1557	1322	1311	1288	1277	1345
Jordan township	866	873	881	866	905	1068	1076	1084	920	912	897	889	936
Bellaire village (pt.)	881	888	896	881	920	1087	1095	1103	936	928	912	904	953
Balance of Kearney township	1231	1242	1253	1231	1286	1519	1530	1541	1308	1297	1275	1264	1332
Mancelona village	1960	1978	1995	1960	2048	2419	2437	2454	2084	2066	2031	2013	2120
Balance of Mancelona township	2668	2692	2716	2668	2788	3293	3317	3341	2836	2812	2764	2740	2886
Milton township	2178	2198	2217	2178	2276	2688	2708	2728	2315	2296	2257	2237	2356
Star township	854	862	870	854	893	1054	1062	1070	908	900	885	877	924
Torch Lake township	1133	1143	1154	1133	1184	1399	1409	1419	1205	1194	1174	1164	1226
Warner township	428	432	436	428	448	529	533	537	455	452	444	440	464
Antrim County Total	26684	26925	27165	26684	27886	32935	33175	33416	28367	28127	27646	27406	28868
Antrim County Total	*26684*	*26925*	*27165*	*26684*	*27886*	*32935*	*33175*	*33416*	*28367*	*28127*	*27646*	*27406*	*28868*

2008 Estimate Waste Generation, tons

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total, tpy
Ellsworth village	18	17	19	18	19	22	23	23	19	19	18	19	233
Balance of Banks township	50	46	51	49	53	60	62	63	52	53	50	52	640
Central Lake village	43	39	44	42	45	51	53	54	44	45	43	44	548
Balance of Central Lake township	44	40	45	43	46	53	55	56	46	47	44	46	565
Chestonia township	18	17	19	18	19	22	23	23	19	19	19	19	235
Custer township	29	26	29	28	30	35	36	36	30	31	29	30	369
Echo township	35	32	36	34	37	42	44	44	36	37	35	36	449
Elk Rapids village	73	67	75	71	77	88	91	92	75	77	74	75	934
Balance of Elk Rapids township	34	31	35	33	36	41	43	43	35	36	35	35	439
Bellaire village (pt.)	22	20	22	21	22	26	27	27	22	23	22	22	274
Balance of Forest Home township	43	39	43	41	45	51	53	53	44	45	43	44	544
Helena township	39	35	39	37	40	46	48	48	40	41	39	40	491
Jordan township	27	24	27	26	28	32	33	34	28	28	27	28	342
Bellaire village (pt.)	27	25	28	26	29	33	34	34	28	29	27	28	346
Balance of Kearney township	38	35	39	37	40	46	47	48	39	40	38	39	486
Mancelona village	61	55	62	59	63	73	76	76	63	64	61	62	774
Balance of Mancelona township	83	75	84	80	86	99	103	104	85	87	83	85	1054
Milton township	68	62	69	65	71	81	84	85	69	71	68	69	861
Star township	26	24	27	26	28	32	33	33	27	28	27	27	337
Torch Lake township	35	32	36	34	37	42	44	44	36	37	35	36	448
Warner township	13	12	14	13	14	16	17	17	14	14	13	14	169
Antrim County Total	*827*	*754*	*842*	*801*	*864*	*988*	*1028*	*1036*	*851*	*872*	*829*	*850*	*10543*

*Waste Gen. Multiplier is presently 2.0 pounds per person per day for rural areas, 2.6 ppppd for urban areas.

Antrim County Residential Waste Projections Summary			
Municipality	1998	2003	2008
Ellsworth village	210	221	233
Balance of Banks township	559	601	640
Central Lake village	483	516	548
Balance of Central Lake township	493	530	565
Chestonia township	205	220	235
Custer township	322	346	369
Echo township	392	421	449
Elk Rapids village	824	881	934
Balance of Elk Rapids township	383	412	439
Bellaire village (pt.)	243	259	274
Balance of Forest Home township	474	509	544
Helena township	428	460	491
Jordan township	298	320	342
Bellaire village (pt.)	311	330	348
Balance of Kearney township	434	461	486
Mancelona village	689	733	774
Balance of Mancelona township	921	989	1054
Milton township	751	807	861
Star township	294	316	337
Torch Lake township	390	419	448
Warner township	147	158	169
Antrim County Total	***9254***	***9911***	***10543***
	tons/year	*tons/year*	*tons/year*

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ATTACHMENT F

SPECIAL CONDITIONS

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ATTACHMENT G

WASTE REDUCTION AND RECYCLING COMMITTEE'S TELEPHONE SURVEY RESULTS

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RECYCLING PHONE SURVEY RESULTS

Waste Reduction and Recycling Subcommittee

1. **Are you a resident of Antrim County?**
   167 survey responses out of a total of 431telephone calls made = 39% return rate

2. **Does your household currently participate in any recycling activities?**
   Yes – 51% No – 41% Sometimes – 7%
3. **Would you like to see the County of Antrim offer increased recycling services?**
   Yes – 74% No – 10% Not Sure – 16%

4. **Is there a recycling drop-off point available in your community?**
   Yes – 44% No – 40% Not Sure – 16%
5. **If a recycling drop-off point were located within 5 to 9 miles (one way) of your home, would you utilize this service?**
   Yes – 81% No – 10% Not Sure – 8%
6. **If a recycling drop-off point were located within 10 to 20 miles (one way) of your home would you utilize this service?**
   Yes – 35% No – 46% Not Sure – 17%
7. **If roadside pick-up of recyclables were available in your community would you use this service?**
   Yes – 80% No – 9% Not Sure – 10%

8. **Would you be willing to pay $1.00 a month to support recycling services?**
   Yes – 77% No – 12% Not Sure – 10%
9. **Would you be willing to pay $2.00 a month to support recycling services?**
   Yes – 62% No – 22% Not Sure – 16%
10. **Would you support a county wide .20 mills millage increase for the sole purpose of financing a countywide recycling program? (for a $60,000 house = to $ 50 cents a month, for a $100,000 house = to $ .85 cents per month)**
    Yes – 53% No – 31% Not Sure – 14%

11. **Are you a registered voter of Antrim County?**
    Yes – 82% No – 15% Not Sure – 2%

12. **Are you a full time or seasonal resident of Antrim County?**
    Full Time- 89% Seasonal – 10% Not Sure – 0%

13. **Do you reside within a Village in Antrim County?**
    Yes – 38% No – 60% Not Sure - <1%

14. **In what Township do you reside?**
BA - 9% CHE – 2% CL – 10% CU – 3% EC 2% ER – 16% FH –11% HEL – 1% JOR – 2% KE – 2%
MILT – 10% MAN – 13% STAR – 10% TCHL – 2% WA – 0% NotSure – 5%

ANTRIM COUNTY RECYCLING
PHONE SURVEY RESULTS
DECEMBER 1997

	QUESTION	Yes	No	Sometimes	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	NONE
1	Antrim Co. resident	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Yes	No	Not Sure														
2	Currently participate?	86	69	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Increased recycling?	124	16	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Drop-off available?	74	67	26	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5	Five to nine miles?	136	17	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Ten to twenty miles?	58	77	29	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7	Roadside pick-up?	134	15	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Pay $1.00/month?	130	20	17	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9	Pay $2.00/month?	103	36	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Support .20 mill incr.?	89	51	24	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11	Registered voter?	137	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		Full-Time	Seasonal	Not Sure														
12	Full-time or seasonal?	149	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
		Yes	No	Not Sure														
13	Within village?	64	100	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Banks	Chestonia	Central Lake	Custer	Echo	E.Rapids	Fr.Home	Helena	Jordan	Kearney	Milton	Mancy	Star	To. Lake	Warner	Not Sure	None
14	What township?	15	4	17	5	3	26	18	2	3	16	22	17	4	5	0	9	