

# **APPENDICES**

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## 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.

#### Detailed Features of Recycling and Composting Programs

The following table shows estimated waste composition and volumes by material type. 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 Oakland County.

	Percent of MSW Waste	1998 Tons	2003 Tons	2008 Tons
Newsprint (ONP)	6%	99,707	104,780	108,713
Mixed Office	7%	109,235	114,792	119,101
Old Corrugated Containers (OCC)	17%	275,469	289,483	300,349
Mixed Other Paper	12%	195,144	205,072	212,770
All Metals	6%	100,529	105,643	109,609
All Textiles	2%	40,409	42,464	44,058
All Glass	5%	84,760	89,072	92,415
All Plastic	8%	123,854	130,155	135,041
All Yard Waste	18%	301,915	317,275	329,184
Food Waste	11%	181,346	190,572	197,725
Wood Waste	3%	54,535	57,310	59,461
Misc. Bio-degradable	3%	46,979	49,369	51,222
Misc. Non Bio-degradable	2%	28,746	30,208	31,342
<b>Totals</b>	<b>100%</b>	<b>1,642,627</b>	<b>1,726,196</b>	<b>1,790,991</b>
Construction & Demolition	-	165,035	173,055	179,511
Industrial Special Wastes	-	143,668	131,966	124,342

#### Program Recovery Estimates (tons per year)

	1998	2003	2008
Drop-off system	19,929	24,401	28,255
Curbside recycling	38,100	56,937	84,766
Commercial recycling	90,819	144,255	217,504
Yard waste	146,879	153,722	157,825
Industrial MSW	14,350	17,928	23,845
Construction/Demolition	22,899	33,616	48,984
Industrial Special Waste Recovery	19,934	25,634	33,930
<b>Total Recovery</b>	<b>353,496</b>	<b>455,493</b>	<b>595,375</b>
<b>% of waste diverted*</b>	<b>18.12%</b>	<b>22.42%</b>	<b>28.42%</b>

*\*net after inclusion of process residues*

**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. Equipment and site selection is based on that intent and the desire for economical and reliable services.

**Existing Programs:**

**Drop-off recycling stations** - Equipment at drop-off sites located in Oakland vary by location and operator, which includes both municipal, authority and private operations. In general, municipalities that do not have curbside collection options have made arrangements for provision of some level of drop-off recycling services.

**Recycling Processing/Transfer** - Two major material recovery facilities operating in Oakland County have been sited by solid waste authorities. Private sector operators also process commercial and industrial recyclables, primarily paper and scrap metals.

**Composting** - No new equipment is required.

**Proposed Programs:**

**Drop-off recycling stations** - The County will assess under-served areas and recommend development of new sites in those regions. Equipment that is compatible with existing programs elsewhere in the County will be evaluated, including roll-off containers that can service rural areas 24-hours per day. Provision of actual service and final site and equipment selection will be undertaken by municipalities and private sector operators.

**Curbside/Commercial Collections** - Provision of service and final equipment selection will be undertaken by municipalities and private sector operators.

**Recycling Processing/Transfer** - Equipment selection will be made by private sector operators as the sites identified elsewhere in this plan.

**Composting** - The County will assess under-served areas and recommend development of new programs in those regions. Provision of actual service and final equipment selection will be undertaken by municipalities and private sector operators.

**Site Availability & Selection**

**Existing Programs:**

**Drop-offs** - Existing sites will continue to operate.

**Recycling Processing/Transfer** - The existing sites will remain operational.

**Composting** - Existing programs will continue to operate as they do now.

**Proposed Programs:**

**Drop-offs** - Existing sites will continue to operate. New sites would include underserved areas in the County. Several existing central sites will be evaluated for expansion as "super sites". Additional sites will be added by agreement between local entities and private operators.

**Recycling Processing/Transfer** - Future improvements will occur on existing site. Two new sites have been identified elsewhere in this Plan.

**Composting** - New sites would be evaluated to include underserved areas in the County. Additional sites will be added by agreement between local entities and private operators.

**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.

<b>Program Name</b>	<b>pH Range</b>	<b>Heat Range</b>	<b>Stability</b>
SOCRRA and other compost sites	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 with 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 and will be operated according to the recommendations of the guidebook: Best Management Practices for Composting (published by MDEQ 1996).

**COORDINATION 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 as well as Ordinances and Siting Requirements.

The Oakland County Solid Waste Division will have responsibility for program implementation as the designated implementation agency. The County Office of the Executive will oversee the Department. Fiduciary responsibility for the County solid waste management system is shared by numerous entities, including municipal and private sector service providers and waste generators. The County Solid Waste Division will work to track performance against planned milestones contained in both the Solid Waste Plan and in the Implementation Action Plan.

The County will facilitate expansions and improvements in a comprehensive solid waste management system. 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.

**Clean Community:**

<b>Program Description</b>	<b>Estimated Costs Per Year</b>	<b>Timeline</b>
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)	Ongoing
Household hazardous waste collection services: Collection arranged four times per year at a mobile site, with services provided by private vendor.	Variable; average estimated at \$20-\$40 per participant per use and hauler assumes site liability	Ongoing
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	Ongoing

**Recycling Incentives:**

<b>Program Description</b>	<b>Estimated Costs Per Year</b>	<b>Timeline</b>
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 general information campaigns; radio ads, newspaper ads, presentations and public displays	Target range of \$2-\$4 per household per year with costs shared by a range of public, private and County programs	Ongoing
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	Varies by program, with average \$1-\$1.50 per bag (paid by resident); other rates for curb cart service	Ongoing

**Residential Recycling:**

<b>Program Description</b>	<b>Estimated Costs Per Year</b>	<b>Timeline</b>
Expanded Drop-off Sites: existing drop-off sites would be upgraded to include a wider range of materials; satellite sites would be added where service currently lacking; all County residents and small businesses would have reasonable access; special events collection set up for "arts, eats and beats" and sporting events  Recovery Estimate: 10-15,000 tons/year	Servicing: estimated at \$75-\$100 per pull per roll-off container; variable costs for other collection systems;  Processing: \$25-45/ton (varies by program and material);  Capital: 30-yd-roll-off containers at \$4,500 ea.; site improvements (fencing, signage, additional); 105-gal carts @\$50/ea;	1998-2003
"Super" Drop-off (flagship station): One or more central sites becomes permanent, flagship site with some staffing, added materials such as textiles, batteries, construction and demolition (C&D)  Recovery Estimate: 10-15,000 tons/year	Servicing: \$100 per pull  Processing: \$30-45/ton  Capital: 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: 8,000 tons per year (year one)	\$4-5/hh/month	1998-2003
Contracted Curbside Recycling: all residents in county would receive weekly curbside recycling  Recovery Estimate: 20,000 tons/yr (1998) to 50,000 tpy (2008)	\$15-25/hh/year; varies by municipality and type of contract/service provider	Ongoing
Multi-family Recycling: all residents of multi-family housing units (more than 5 units per building) would receive on-site recycling services	Servicing Costs: \$60-100/ton (including collection, processing); variable depending on service provider and type of system	Ongoing

**Yard Waste Recovery:**

Program Description	Estimated Costs / Year	Timeline
Yard Waste Drop-off Sites: add yard waste collection bins at one or more recycling drop-off sites Recovery Estimate: 2000 tons/year	Servicing: \$10-\$30/ton	1998-2008
Backyard Composting: Composting bins and mulching mower blades would be made available at low cost to residents. Education would focus on alternatives to collecting organic wastes. Target all households in county	Estimated cost of \$1/hhid/per year	1998-2008
Seasonal Collection of Yard Waste: all residents in the County would have weekly pick-up of leaves, grass and brush by a contractor or municipal crew during the growing season	\$1-\$2/bag paid by resident to cover collection costs, or through municipal contract	1998-2008
Yard Waste Processing: development of compost processing site(s) as needed to process/prepare finished compost from underserved parts of the County and from landscapers, businesses and other yard waste generators	Range of \$20-25 per ton capital/operating, depending on equipment, size of site, technology	1998-2008

**Commercial Recycling:**

Program Description	Estimated Costs / Year	Timeline
Expanded Commercial OCC/paper routes/industrial recovery: development of a service district, with "bundled" contracted service would lure service provider to bid on coordinated route to service multiple businesses with curbside, bins, bags and/or other system; education effort to encourage other commercial/industrial recovery; Recovery Estimate: 5-10,000 tons/year	\$60-80/ton (collection and processing costs)	2000-2008
Construction and Demolition Recycling: includes drop-off opportunities for public and private waste generators	\$250,000-\$750,000 for capital; \$30-\$70/ton operating costs	2000-2008

**Solid Waste Transfer:**

Program Description	Estimated Costs / Year	Timeline
Addition of solid waste transfer capabilities (Type A) will be evaluated for future options	variable	1998-2008



## 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 AND DISADVANTAGES OF THE SELECTED SYSTEM:

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:

1. Increased waste reduction goals will reduce the amount of waste which needs to be transported to and disposed in landfills both inside and outside of the County.
2. Provision of new solid waste transfer options expands the range of disposal facilities available for Oakland County waste.
3. Greater emphasis on recycling and waste reduction will help meet the requirements for minimum basic programs that are expected to be imposed by other counties to which Oakland County waste is exported.
4. Clean community and education/promotion create stronger interest in responsible practices
5. Illegal dumping activity minimized
6. Some small quantity unregulated hazardous wastes diverted from landfill disposal
7. Recycling/composting starts to become the dominant method of waste management
8. Organics management system is an effective alternative to landfilling
9. Recycling processing/marketing system has very strong foundation
10. Less reliance on landfills for disposal especially with increase of commercial/C&D recycling
11. Reduced overall solid waste collection costs begin to be realized

#### DISADVANTAGES:

1. Small quantity unregulated hazardous wastes still not fully addressed.
2. Landfilling still dominant form of waste management
3. System costs may not yet be optimized despite increased recovery
4. System costs increase as new recovery programs added, and as waste is transferred to more distant disposal facilities.

## **APPENDIX B: ADDITIONAL INFORMATION REGARDING THE 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.

Oakland County evaluated waste management components on a continuum—from a base service level to very aggressive recovery— that were defined by level of recovery and complexity of implementation.

Oakland County evaluated its current achievements and goals for improved future solid waste management against these benchmarks.

### **SYSTEM COMPONENTS:**

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

Numerous management components and alternatives have been examined during Oakland County's continued study of solid waste management systems. As outlined in Attachment H (*Background Report: Oakland County Solid Waste Plan Data*) and as contained within detailed planning records, prior program directions were generally based upon proposed cooperative efforts by the County's municipalities to minimize the continued reliance upon landfills for the disposal of wastes. Individually, the municipalities were viewed for being too small to sustain independent approaches toward cost-effective solutions. Additionally, it was determined that with a common approach shared by all, public acceptance of specific program elements could be maximized.

Each of the historical studies included detailed analysis of several volume reduction alternatives and system components. These included such elements as incineration and waste-to-energy disposal utilizing such approaches as mass burn and refuse derived fuel systems; the use of other energy recovery technologies including pyrolysis systems, multiple hearth furnaces, fluidized bed combustion systems, suspension-fired waterwall and anaerobic digestion systems; coincineration of wastes with sanitary sewerage treatment sludges as well as several non-energy recovery volume reduction technologies such as baling, shredding, high density compaction, composting and chipping of the waste stream.

The alternative systems and system components were evaluated based upon technical feasibility, economic feasibility, access to sufficient land and facilities, the sufficiency of the transportation system, analysis of energy consumption and the potential for production of energy from the waste stream, environmental impacts, public health impacts, and upon the perceived public acceptability of the proposed alternative systems. Based upon these evaluations and subsequent rankings, specific programs were selected for implementation.

Although the details of each system selected for implementation as a result of the several studies were different, the basic approach for each remained essentially constant. Each study suggested that programs focusing upon incineration of the waste stream would be the most effective way to minimize the amount of required future landfill capacity. Each succeeding study

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placed more emphasis upon treatment of the waste stream prior to incineration. Ultimately, the proposed system included extensive volume reduction programs involving recycling and yard waste composting, included pollution prevention programs such as cleansing the stream by the removal of household hazardous wastes, and included the recovery of energy from the incineration process.

The proposals each included high standard, high volume, publicly sponsored handling, processing and disposal facilities. The success of these programs essentially depended upon the ability of the County to create a combination of a sufficient number of the County's municipalities (currently 61 cities, townships and villages exist) with a sufficiently large waste stream to justify the sale of bonds to finance the construction and operation of such a system. In the most recent implementation effort begun in the late 1980's, financing of the proposal utilized municipal control of the streets and highways as the basis for flow control arrangements wherein each municipality would direct the waste stream generated within its boundaries to system facilities as long as bonds remained payable. All costs of the system ranging from bond payments to ongoing operational costs would be recovered from system tipping fees. Essentially, the program would be funded by ongoing revenues.

Efforts to implement a countywide solid waste management system in Oakland County have not proven successful, principally because of a general lack of agreement among the County's 61 municipalities on a variety of issues. These have included such items as management authority and responsibility, economics, environmental concerns, and facility locations. Considerable public concern on environmental issues relating to air pollution from incineration facilities played a major role in defeating the massive implementation effort launched in 1988. This ultimately occurred even after the County's electorate approved the sale of up to 500 million dollar in bonds at the full faith and credit of the County in late 1991. Underlying public perceptions on the subject of waste incineration combined with dramatically low prices for the continued landfilling of wastes basically set the basic course for the future. U.S. Supreme Court decisions on flow control issues made the subject of financing of such solid waste management system facilities on the basis of long-term commitments of the waste stream rather doubtful.

In late 1993, after gross expenditures in excess of 15 million dollars, the Oakland County Board of Commissioners formally abandoned its attempts to assemble a sufficient number of municipalities together to warrant the implementation of the proposed system. Generally, the majority of the municipalities had chosen to continue with the existing level of solid waste services provided in their municipalities.

Although the several implementation efforts did not result in establishment of a county-wide management system, the extensive publicity given to the many planning efforts and well as the serious consideration given by the municipalities to the several specific proposals have produced many positive results. For example, the communities within the southeast and southwest portions of the County successfully established two solid waste management authorities. The Southeastern Oakland County Resource Recovery Authority (SOCRRA) was initially formed in 1951 prior to official records of countywide planning efforts but following extensive study and analysis by the municipalities. The Resource Recovery and Recycling Authority of Southwest Oakland County (RRRASOC) was formed in 1989. SOCRRA initially constructed and successfully operated incineration, transfer and landfill facilities. The incineration and basic landfill operations are no longer maintained although the landfill site is presently operated as a major yard waste composting facility. These two agencies currently join some 20 municipalities (having nearly 47% of the County's population within their jurisdictions) into substantial and continuing cooperative efforts. The principal focus of the offered programs

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are the residents of single family homes which represent approximately 79% of the authorities' total population. These programs include recycling, composting, household hazardous waste collection programs, recyclable material drop-off collection points, recyclable material recovery facilities, transfer station facilities, and more. Other communities have adopted similar approaches to achieve reductions in the waste stream and the private sector service providers have offered such programs to their subscription customers. Additionally, due to increased public awareness of environmental issues and because of intensified national and state waste regulations, the industrial and commercial waste generators have contributed greatly towards pollution prevention by a general cleansing of the waste stream generated. Michigan's adoption of legislation banning the disposal of yard wastes in landfills since 1995 has resulted in the successful composting of this resource and quickly produced a significant reduction of materials landfilled. In Oakland County, it is calculated that a reduction in the waste stream of nearly 7.5% occurred because of the yard waste program.

As a result of the 1990 Plan Update effort by Michigan's 83 counties, a considerable amount of additional landfill capacity was sited and in southeast Michigan, a highly competitive, landfill market developed. Today, landfill operating capacity far exceeding southeast Michigan's daily needs is offered, principally by private sector facility operators. This has resulted in continuous heavy competition for the available waste stream and in low disposal tip fees. Tip fees charged in 1999 are substantially less than those charged in 1990. As a result of capacity availability and low tip fees, considerable out-of-state wastes are imported into this market. In spite of the large volume of wastes being handled, at least one lower volume landfill facility has been shuttered to maximize operating economics for the parent company. Thus ongoing operational economics are a continuing major issue.

The present Plan Update effort reviewed and examined each of the approaches previously studied, the economics involved in the development of new systems, and further examined the existing facilities, capabilities, and successes being achieved by the private sector service providers. Generally, it has been concluded that the existing free market has the capability to provide service levels that are both cost-effective and environmentally sound and that the existing free market has sufficient disposal facility capacity available (landfill facilities that are existing, proposed and/or contemplated) to meet Oakland County's needs.

## **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.

Oakland County's Solid Waste Planning Department and the Solid Waste Planning Committee complied with all requirements for public participation and approval at all times, documented in the attached materials following this section. 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.

Throughout the time period of meetings of the Solid Waste Planning Committee, a mailing list of more than 235 people was maintained for distribution of meeting notices and other information. This included all municipal managers, regional planning agencies, adjacent counties and all other interested parties.

The Plan for the public comment period was approved by a majority of the committee in May of 1999 and the Public Comment Period was initiated on June 14, 1999, and closed on September 25, 1999. Notices were published in area newspapers (Daily Tribune, Detroit Free Press, Holly Herald, The Oakland Press, nine of the various Observer and Eccentric newspapers, and the Spinal Column). The Public Hearing was held on September 16 1999. A transcript was prepared and accepted by the Committee. Minutes have been attached at the end of this section. The Public Hearing was announced in local newspapers as required. The Solid Waste Committee met on October 21, 1999 and amended and approved the draft plan. The revised Plan was presented to the County Board of Commissioners on June 15, 2000, and approved by unanimous vote. The Plan will be released for municipal approval the week of August 1.

### **PUBLIC COMMENT PERIOD INPUT:**

Numerous comments were received during the Public Comment Period. A list of individuals and organizations that had made comments follows, along with a summary of the County's responses.

### **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.

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**PLANNING COMMITTEE**

Committee member names and the company, group, or governmental entity represented from throughout the County follow.

**Oakland County Solid Waste Planning Committee**

Four representatives of the solid waste management industry:

Mike Csapo, RRRASOC  
Robert Leininger, Waste Management  
Dick Padlo, PMDS  
Thomas Waffen, SOCRRA

One representative from an industrial waste generator:

vacant

Two representatives from environmental interest groups from organizations that are active within the County:

Timothy Carpenter, EMEAC  
Dawn Furlong, VOCAL

One representative from County government.

Sue Ann Douglas, Commissioner

One representative from township government:

Jill D. Bastian, Township Clerk

One representative from city government:

Nancy Bates, City Council Member

One representative from the regional solid waste planning agency:

Ardath Regan, AWQB Chairperson; SWPC Chair

Three representatives from the general public who reside within the County:

Loyola Koch, Clarkston  
Patrick Kresnak, Auburn Hills  
Mary Ann Ryan, Orion Township

Elected Official's Designees

William R. Patterson, Commissioner  
Thomas Biasell, Public Services Director  
Robert DePalma, Township Supervisor

# Oakland County Solid Waste Planning Committee

## 1999 Solid Waste Management Plan Update

### Attendance Record

Member Name	Category	#1 10-23-97	#2 11-20-97	#3 1-15-98	#4 2-19-98	#5 5-21-98	#6 7-16-98	#7 10-15-98	#8 11-19-98	#9 1-21-99	#10 4-22-99	#11 5-20-99	#12 10-7-99	#13 10-21-99	#14 5-4-2000	Attendance Summary
Bates, Nancy	Elected City Official	D	D	D	D	D	D	D	D	D	D	D	D	D	D	93.33%
Bastian, Jill	Elected Twp. Official	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100.00%
Carpenter, Timothy	Environmental	X	X	X	X	X	X	X	X	X	X	X	X	X	X	80.00%
Csepo, Mike	Solid Waste Industry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	93.33%
Douglas, Sue Ann	County Commissioner	P	P	P	P	P	P	P	P	P	P	P	P	P	P	93.33%
Furlong, Dawn	Environmental	X	X	X	X	X	X	X	X	X	X	X	X	X	X	66.67%
Koch, Loyola	General Public	X	X	X	X	X	X	X	X	X	X	X	X	X	X	73.33%
Kresnak, Patrick	General Public	X	X	X	X	X	X	X	X	X	X	X	X	X	X	66.67%
Leininger, Robert	Solid Waste Industry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	66.67%
Padlo, Dick	Solid Waste Industry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	80.00%
Regan, Ardath	SEMOG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	86.67%
Ryan, Mary Ann	General Public	X	X	X	X	X	X	X	X	X	X	X	X	X	X	80.00%
Warfen, Thomas	Solid Waste Industry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	80.00%
vacant	Industrial Generator	X	X	X	X	X	X	X	X	X	X	X	X	X	X	93.33%
Members Attending		11	10	10	8	9	10	9	13	13	9	12	13	12	12	10.73

### Elected Official's Designees

Member	Designee	Date
Bates	Blasell, Thomas	10-13-97
Bastian	DePalma, Robert	11-12-97
Douglas	Patterson, William	10-16-97 & 3-18-99

Total Members and Designees

11 10 10 8 10 12 10 10 14 13 13 11 13 15 14 14 12.79

### Attendance by the Public

Approximate number in audience

Average/Meeting  
12.57

Legend: X - indicates attendance  
P - indicates attendance by predecessor  
D - indicates representation by Designee

Notes: SWPC Members originally appointed to two year terms ending on October 11, 1999 by the Board of Commissioners on October 9, 1997  
Sue Ann Douglas was appointed by the Board on June 11, 1998 to replace Dennis Powers who had been appointed to the 52nd-1st Div. District Court.  
Dick Padlo was appointed to replace Yale Levin by the Board of Commissioners on July 16, 1998  
All SWPC Members were reappointed to two year terms ending on October 11, 2001 by the Board of Commissioners on September 9, 1999.

## PUBLIC INVOLVEMENT PROCESS - CHECKLIST

Public participation is a vital element in the preparation of a Plan which will be acceptable to the county and provide the best selection of a waste management system.

Completion of the following checklist indicates Oakland County's compliance with the Act/Rules.

- Yes No Opportunities for public participation were provided as required per act/rules.
- Yes No The DPA conducted a public participation program to encourage public and municipal participation and involvement in the development and implementation of the Plan.
- Yes No The DPA maintained a mailing list of all municipalities, affected public agencies, private sector, and all interested persons who requested information regarding the Plan.
- Yes No The DPA notified by letter, each chief elected official of each municipality and any other person so requesting within the county at least ten days before planning committee's public meeting.
- Yes No Public meetings had time for questions and comments from the general public.
- Yes No Public meetings were scheduled at convenient times for public.
- Yes No The DPA held public meetings with planning committee at least quarterly during Plan preparation.
- Yes No The DPA maintained at least one central repository where all documents related to the Plan could be inspected by the public.
- Yes No The DPA allowed a period of at least three months for review and comment on the proposed Plan following authorization by the planning committee for public review. A copy of the proposed Plan was sent to the Director, to each municipality, to adjacent counties and municipalities that may be affected by the Plan or which have requested the opportunity to review the Plan, and the designated regional solid waste management planning agency for that county.
- Yes No All of these comments were submitted with the Plan to the governmental unit that filed notice of intent.
- Yes No A notice was published at the time the Plan was submitted for review under Sec. 11535(d) as to the availability of the Plan for inspection or copying.
- Yes No The DPA held a public hearing on the proposed Plan during the public comment period.
- Yes No The DPA published notice in a paper with major circulation in the county not less than 30 days before such hearing, which included a location where the public could inspect copies of the Plan and the time and place of the public hearing.
- Yes No The DPA prepared a transcript, recording or other complete record of the public hearing proceedings, and this record could be copied or inspected by the general public upon request after the public hearing.
- Yes No If necessary, the DPA revised the Plan in response to public hearing comments and then submitted the Plan to the planning committee.
- Yes No A listing of the meeting locations and dates, along with a copy of the dated notice as published in the newspaper is included in Appendix C.
- Yes No Record of attendance at public meetings included in Appendix C
- Yes No Record of citizen concerns and questions included in Appendix C.



**NOTICE OF PUBLIC HEARING  
1999 SOLID WASTE MANAGEMENT PLAN UPDATE  
COUNTY OF OAKLAND**

**TO ALL ELECTORS AND TAXPAYERS  
OF THE COUNTY OF OAKLAND AND  
OTHER INTERESTED PARTIES**

**NOTICE IS HEREBY GIVEN** that pursuant to Section 11535 of Part 115 of Act 451 of the Public Acts of 1994, as amended, a Public Hearing will be held at 7:30 p.m. on September 16, 1999 in the County Commissioners' Auditorium at 1200 North Telegraph Road, Pontiac, Michigan, to receive public comment concerning the proposed 1999 Solid Waste Management Plan Update.

Copies of the proposed plan update documents were provided to the chief elected official in each city, village and township in Oakland County on or about June 18, 1999. Copies of the proposed plan update are also available for inspection in the first floor library of the County Courthouse's West Wing Extension (Bldg. #14 East) at 1200 North Telegraph, Pontiac, Michigan; at the County Clerk's Office, 1200 North Telegraph Road, Pontiac, Michigan; and at the Solid Waste Planning offices located on the second floor of the Public Works Building (Bldg. #95 West) at One Public Works Drive, off Watkins Lake Road west of Telegraph Road on the County Service Center properties in Waterford Township, adjacent to 1200 North Telegraph Road, Pontiac, Michigan. Copying, at cost, of the document and supporting documentation is available at the Solid Waste Planning offices. Full copies of the proposed plan update may be purchased at the Solid Waste Planning office upon remittance of \$3.25 plus postage if mailing is required.

The public comment period (for consideration by County staff and the Solid Waste Planning Committee) ends with receipt of verbal comments at the public hearing on September 16, 1999, with the receipt of written comments by the close of the business day on September 24, 1999, and with the receipt of mailed comments which were postmarked no later than September 25, 1999. After September 25, 1999, County staff and the Solid Waste Planning Committee will consider the comments made or received and adjust the proposed plan update as may be appropriate prior to making their final recommendations to the Board of Commissioners on or before October 25, 1999. The Board of Commissioners will consider the final recommendations on the plan update at public meetings during the month of November, 1999. Additional public comments on the final recommendations may be made directly to the Board of Commissioners. For further information, call 248-858-1352.

**L. BROOKS PATTERSON  
COUNTY EXECUTIVE**

**SEND WRITTEN COMMENTS TO:  
SOLID WASTE PLAN UPDATE  
ONE PUBLIC WORKS DRIVE  
WATERFORD, MICHIGAN 48328-1907**

**DATED: AUGUST 6, 1999  
PUBLISHED: AUGUST 12, 1999**

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## Oakland County Solid Waste Management Plan Update - 1999

### Written Comments Received In Response to the Draft Plan Update Dated June 14, 1999 and Postmarked no Later than September 25, 1999

Item Number	Date Received	Document Date	Source	Comment
1	August 6, 1999	July 30, 1999	Holly Disposal by Susan J. Sadler Dawda, Mann, Mulcahy & Sadler, P.L.C. Attachment from Conestoga-Rovers & Associates	
2	August 11, 1999	July 19, 1999	City of Pontiac by Walter Moore, Mayor	Postmarked August 10, 1999
3	September 3, 1999	September 2, 1999	Michigan Waste Industries Association by Jeffry L. Woolstrum Honigman, Miller Schwartz and Cohn	
4	September 15, 1999	September 3, 1999	City of Royal Oak by Dennis G. Cowan, Mayor Resolution attached	
5	September 16, 1999	September 16, 1999	City of Madison Heights by Gary R. McGillivray, Mayor	Hand delivered at hearing
6	September 16, 1999	September 13, 1999	Charter Township of Orion by Collette, M. Dywasuk, Supervisor	Hand delivered at hearing
7	September 24, 1999	September 24, 1999	Conestoga-Rovers & Associates Frederick (Rick) A. Mosher	
8	September 27, 1999	September 22, 1999	City of Pontiac by Walter Moore, Mayor	
9	September 27, 1999	September 23, 1999	Holly Disposal, Inc. William H. Leoni, Sr.	
10	September 27, 1999	September 23, 1999	SOCRRA Madison Heights Site Peter A. Letzmann	
11	September 27, 1999	September 24, 1999	East Central Michigan Planning & Development Regional Commission DPA for Sanilac County Douglas A. Bell, AICP	
12	September 27, 1999	September 25, 1999	Madison Heights Resident Jack Widger	
13	September 27, 1999	Undated	Birmingham Recycling Committee Mark Sayers, Chair	
14	September 28, 1999	September 24, 1999	Dawda, Mann, Mulcahy & Sadler, P.L.C. Susan J. Sadler	

09/30/99  
RJS, PE

Response to Public Questions and Concerns  
Public Comment Period  
Oakland County Solid Waste Management Plan Update - 1999

Oakland County's Solid Waste Planning Committee authorized the release of the draft 1999 Solid Waste Management Plan for public comment at its meeting of May 20, 1999. The draft was assembled and printed with a cover date of June 14, 1999. Copies of the document were transmitted to the County's 61 municipalities, the Michigan Department of Environmental Quality, all contiguous counties and other interested Michigan counties, the Southeast Michigan Council of Governments and to other interested parties along with a cover letter dated June 18, 1999. Three copies of the draft plan document were transmitted to each of the municipalities and they were requested to place a copy of the draft plan document within their library collection for public inspection. The cover letter indicated that a public hearing would be held on September 16, 1999 and that the comment period would extend through receipt of written comments postmarked no later than September 25, 1999.

Notices of document availability were published on or about June 12, 1999 in the Daily Tribune, the Detroit Free Press, the Holly Herald, the Oakland Press, the nine various Observer and Eccentric Newspaper editions that are distributed throughout Oakland County and in the Spinal Column. On or about August 12, 1999, the public hearing date was again announced in a series of formal notices in the same newspapers and one week prior to the public hearing, all parties originally notified of the public hearing period were again reminded by letter that the public hearing was scheduled.

On September 16, 1999, the public hearing (conducted by the Designated Planning Agency) was held in the Commissioners Auditorium at 1200 North Telegraph in the City of Pontiac. A majority of the Solid Waste Planning Committee and designees was in attendance although no formal meeting of the Committee was held. Twelve members of the public also attended the meeting and three chose to make public comment. In total, 27 persons were in attendance at the public hearing, 12 interested citizens, 12 SWPC members and designees and 3 staff. A transcript of the public hearing is appended to this document.

Fourteen sets of written comments on the draft Solid Waste Management Plan Update postmarked no later than September 25, 1999 were received from twelve parties on seven subjects and copies of these are also contained within this document. Each of the three subjects addressed at the public hearing were also covered by the written material.

Following is staff's response to the questions and concerns raised during the public comment period.

**Michigan Waste Industries Association (written comments dated September 2, 1999):** The Michigan Waste Industries Association (MWIA) issued a generic series of comments about the plan update process to all of Michigan's 83 counties in a letter dated September 2, 1999. The comments were not based upon a specific review of the Oakland County draft document. They requested that inasmuch as MDEQ can no longer issue conditional approvals of solid waste management plans, that plan provisions which were adverse to their written positions either be eliminated from the document or that written response to their concerns be placed in the Plan's appendix. They suggested that if this was not accomplished, the plan would not be approved or perhaps approval would be challenged. Following are Oakland County's written responses.

#### Permissible contents of county solid waste management Plans.

MWIA maintains that Part 115 of Act 451 of 1994 as amended must clearly authorize each provision included in the plan and those provisions incorporated by reference into the plan. If other provisions are included within the document, the MDEQ must deny approval of the plan. The Oakland County plan is properly drawn.

#### Disposal Fees.

MWIA maintains that a county may not require the payment or collection of fees as part of a plan. Based upon current Michigan Supreme Court rulings, Oakland County disagrees. However, such requirements are not contained within the Oakland County document.

#### Operating Criteria.

MWIA maintains that the plan may not contain operating criteria or regulate the day to day operations of a disposal area. Oakland County generally agrees with this position. However, there are numerous types of disposal areas and some may be designated with the recognition of purposefully clear prior understandings of operational limitations. The disposal area designation may well contain these voluntary limitations. Oakland County recognizes the many specific potential facility nuisances, which are explicitly authorized for regulation by local ordinance.

#### Mandated Recycling.

MWIA maintains that the plan documents may not mandate a quota on the volume of solid waste that must be recycled. Oakland County disagrees with MWIA although the document does not propose such mandated quotas.

#### Mandated Data Collection.

MWIA maintains that a plan may not require disposal area operators to collect and report data concerning the volume of waste that is handled. Oakland County disagrees with MWIA although the document does not propose such requirements.

#### Preservation of More than 10 Years of Capacity.

MWIA maintains that once a plan demonstrates that access to 10 years of disposal capacity exists, a county has no legitimate interest in preserving additional disposal capacity by restricting or prohibiting the importation of out-of-county waste. Oakland County disagrees. However, the draft plan update document does not provide restrictions upon the import or export of wastes that change over time.

#### Volume Restrictions.

MWIA maintains that a plan cannot impose volume restrictions upon a disposal area during any given time period. Oakland County believes that such restrictions are legitimate candidates for potential inclusion within voluntary host community agreements which could be included and enforceable within a plan.

#### Identification of Specific Disposal Areas.

MWIA maintains that restrictions within plan documents on the import or export of wastes can be imposed only at a county level, not at a facility level. The documents do not contain such restrictions.

#### Restrictions on Special Waste.

MWIA maintains that a plan may not restrict the importation of specific types of solid waste with the possible exception of municipal solid waste incinerator ash. Oakland County generally disagrees. However, the documents do not contain such restrictions.

#### Enforcement by Uncertified Health Department.

MWIA maintains that enforcement or inspection of solid waste operations or facilities by uncertified health departments may not be contained within solid waste management plans. Oakland County does not propose such enforcement efforts.

#### Transporter Licensing.

MWIA maintains that solid waste management plans may not impose a county-wide licensing requirement on solid waste transporting units. Based upon current Michigan Supreme Court rulings, Oakland County disagrees. However, such requirements are not contained within the Oakland County document.

#### Severability Clause.

MWIA maintains that solid waste management plans are not severable. Oakland County disagrees. To the extent that some portion of a plan is declared unlawful or invalid and county properly engages in the process to amend the plan to deal with the invalid provisions, all other elements of the approved document remain in effect.

**Holly Disposal, Inc. (Written comments from Susan Sadler of Dawda, Mann, Mulcahy & Sadler, P.L.C. dated July 30, 1999 and dated September 24, 1999; from William H. Leoni, Sr. for Holly Disposal dated September 23, 1999; and from Frederick A. Mosher of Conestoga-Rovers & Associates dated September 24, 1999 (which material was a redraft of an undated attachment to the 7/30/99 Sadler material) as well as testimony given at the September 16, 1999 public hearing by Susan Sadler):**

The material following first addresses the comments of the proposed facility owner and then the comments of the legal and engineering representatives .

1. The ten year planning period is measured from the actual date that the MDEQ Director approves the update documents. Care must be taken to demonstrate disposal capacity to some point beyond the potential approval date. Oakland County agrees.
2. The fourth paragraph on Page IV - 7 indicates that no facility proposals were received in that period from the 1994 plan amendments through the summer of 1998. This might lead to the impression that no proposals were considered for a new landfill during the Committee's deliberations. During the fall of 1998, five facility proposals were received and considered by the Solid Waste Planning Committee (SWPC). Three of the proposals were authorized for inclusion in the public comment draft and two were not (a Type II landfill proposal and a transfer station proposal).
3. A complaint was registered that the draft update should have reflected on the Type II landfill proposal as it was the only landfill proposal on the table. Additionally, a claim was made that the proposal would have sufficient in-county capacity for the entire planning period. Further, it was requested that the record include why the proposal was rejected and finally, even if the proposal had been rejected, an economic evaluation should have been made. The SWPC essentially found that the proposal failed to meet the minimum criteria for landfills contained within the interim siting mechanism as adopted in the 1994 plan amendments. Questions were raised about the capacity proposed and an economic review was not contemplated since the proposal was simply unacceptable. Minutes of the November 19, 1998 SWPC meeting offer additional detail.
4. Additional details of the rejected landfill proposal were offered for the record. It should be pointed out that even with new stipulations added to the original proposal, the proposal fails to meet or exceed the minimum criteria previously outlined.

The remaining comments deal with issues raised by the legal and engineering representatives of the Holly Disposal, Inc. proposal focusing principally upon the outline of concerns contained at the close of the verbal comments of Susan Sadler at the September 16, 1999 public hearing. This approach attempts to simplify the bundle of duplicated or redrafted submissions by these parties.

5. The update fails on several counts. First, the document does not identify that a landfill proposal was made to the Committee. This record and the minutes of the SWPC meetings adequately establish that a proposal was received, considered and rejected.

6. Second, the update fails to reference a proposal that would have reduced disposal costs. The proposal was unacceptable and any claimed savings are therefore questionable.
7. Third, the update must use accurate population growth rates. The update is based upon the SEMCOG Regional Development Forecast projections. All previous planning documents have used similar projections and such projections are widely accepted.
8. Fourth, the update must make calculations based on waste volumes and realistic recycling scenarios. Additionally, the calculations must consider imports from other waste generation points into disposal facilities located in Oakland County. The waste stream projections after current volume reduction efforts contained within the plan documents nicely match the observed waste stream reported by the operators of Michigan's landfills. Details of this match were described within the documents on Pages IV - 15 through IV - 17. The presently observed volume reduction levels of approximately 18% are used when examining disposal needs over the short term and the volume reduction goal of 30% is used in the best case analysis scenarios. All of the disposal capacity availability work contained in the plan documents is based upon imports into Oakland County disposal facilities at a rate of 25% of the available in-county capacity. Oakland County believes that the assumptions and material used is reasonable.
9. At the conclusion of the presentation of the four counts, it was suggested that an obligation exists for Oakland County to site a landfill within the plan document and that economic consequences of decisions must be made. No requirement exists where a solid waste management plan must site new landfills. Nearly half of all of Michigan's 83 counties do not host landfill facilities. Should sufficient disposal capacity not be available for all wastes generated within the planning area, new disposal capacity opportunities must be identified, whether these new opportunities exist within the county or without or in the alternative, a siting mechanism must be adopted. Recognizing that significant economic consequences will occur if Oakland County becomes an exporter of 100% of its generated waste stream, the plan document calls for a reexamination of the entire question should additional disposal opportunities not become available by the end of the year 2001. Oakland County also has an obligation not to site unnecessary additional landfill capacity within a region where excess disposal capacity presently exists. This might possibly occur should additional new landfill capacity be currently approved and then other expansion opportunities that are beyond the control of Oakland County are also approved in the near future.

The many documents of the Holly Disposal representatives contained other miscellaneous comments that are addressed in the following sections.

10. The commenters indicated that Oakland County admits that insufficient landfill capacity is available for the planning period. The quoted references on Page VI-15 of the draft concerned the conditions with the present approved plans, not the proposed future. With enhanced positions on the subject of inter-county flows of wastes by Oakland

County and numerous other counties, once the current series of plan updates are completed, Oakland County will have theoretical access to substantially more disposal opportunities than required for some extended period of time, well beyond the current planning period. The draft plan text will be altered so that readers do not come to the commenter's conclusion.

11. The commenters indicated that inter-county flow agreements will be needed. Inter-county flow agreements are not a required element or a prerequisite for the import or export of wastes. Imports and exports must only be properly recognized within the approved solid waste management plans of each county involved and the disposal facility operators must be willing to accept the waste stream.

12. The commenters indicated that the plan fails to state the cost of transporting wastes to out-of-county landfills. The document frequently indicates that disposal economics will be more expensive than is observed today. The economic issues relate not only to the design, construction and operation of transfer facilities but also to the distances involved in the transfer operations to the remote disposal locations. The plan goes on further to say that if expansion opportunities at existing in-county landfills are not consummated by the end of year 2001, that a plan amendment process be initiated to thoroughly examine other alternatives including but not limited to the approval of new landfill capacity within the County, the establishment of new transfer station sites, some combination of these two, and others. Quite simply, there is little reason today to go to great lengths to examine the issue of transfer costs. This will be accomplished if the amendment process is required.

13. The environmental engineer opined that dependence on transfer facilities and out-of-county landfills will in the short term double disposal costs and that within ten years, the County may experience four times the increase in disposal costs. Care has to be taken with such cost projections and these are deemed to be highly questionable projections. Today, where a single family homeowner is paying an average of \$150 per year for comprehensive solid waste services for a 2.75 person household, about 1.5 tons of wastes are disposed of at a cost of less than \$25 per ton, say a total of \$37.50 for landfill tip fees. These average tip fee costs exist within a highly competitive market at numerous landfills located within contiguous counties. Most of these facilities will remain available to Oakland County waste generators even should all Oakland landfills close. Even with a doubling of disposal costs to \$50 per ton because of long distance transfer operations, a homeowner's costs would increase by only 25%, not the huge amounts projected by the commentator.

14. The commenters indicated that the population values used for the future projections are questionable. Some of the comments related to typographic errors and thanks are offered. Otherwise, Oakland County chooses to use the latest SEMCOG Regional Development Forecast projections for population and employment for all SEMCOG governmental units. This approach allows Oakland County to carefully examine its solid waste environment and make comparisons to other SEMCOG areas based upon regionally agreed upon population and employment values. Additionally, population and



employment values are discussed within two operating frameworks and steps will be taken within the final document to insure that the reader is aware of the framework currently being referred to. The first framework is the County as a whole and the second is the planning area for the solid waste management plan which is the County less that portion of Northville lying within Oakland County. Northville is being planned for within the Wayne County effort with the approval of both Boards of Commissioners.

15. The commenters claim that the Update overestimates waste reduction through recycling. Act 451 provides that existing volume reduction levels must be used within some areas of the plan and that volume reduction goal levels may be used within others. Oakland County disagrees with the commentator assertions.

16. The commenters claim that the Update fails to account for loss of capacity from imports. Oakland County disagrees with this claim and invites inspection of the disposal capacity availability details contained within the draft document and in the reference documents where import volumes are clearly shown. The current average import levels of 25% of the entire waste stream handled at all landfill facilities is the basis for future analysis. To assist readers of the document, the analysis detail contained within Exhibits 31 and 32 and within the notes contained on Page VI - 22 will be referenced elsewhere by other exhibits.

17. The commenters claim that the Update overestimates landfill space within the County. Oakland County disagrees. Each year, estimates of remaining disposal capacity are revised based upon discussions with facility operators and based upon the reported usage of each facility during the previous period as tabulated within MDEQ's annual landfill report. However, details of Oakland County's latest estimates were only displayed within the 1999 Disposal Capacity Availability report described in Exhibit 7. The plan text will be expanded to show this information.

**Economic Consequences (testimony given at the September 16, 1999 public hearing by Paul Apap):** Mr. Apap, a citizen from the Adams Square subdivision in Bloomfield Hills and a member of the Dawda, Mann, Mulcahy & Sadler, P.L.C. firm which also represents the Holly Disposal interests in the previous item, was concerned that the cost of solid waste removal at his household could increase to upwards of \$300 per month if Oakland County begins exporting substantially all of its solid waste. Oakland County is also concerned about the economic consequences of future export scenarios. This concern led to the recommendation that by the end of year 2001, should insufficient additional landfill capacity become available to Oakland County waste generators, that a plan amendment process be initiated to examine other alternatives. The economic consequences of the other alternatives would be examined in detail at that time.

**City of Pontiac - FPT Site Request for Designation as a MRF and Transfer Station (two written comments from the City of Pontiac, Walter Moore, Mayor dated July 19, 1999 (this document was postmarked on August 10, 1999) and dated September 22, 1999):** The Mayor of Pontiac, Walter Moore, indicated that should agreement not be reached between the City of Pontiac and FPT representatives on a variety of issues after an additional meeting, the City of

Pontiac will stand by its previously stated recommendation against designation of the FPT facility in the Solid Waste Management Plan.

The subject of the FPT designation request is scheduled as the first item of Unfinished Business at the October 7, 1999 Solid Waste Planning Committee meeting. Representatives of FPT and the City of Pontiac will present their positions to the SWPC at that time.

**SOCRRA John R Site in Madison Heights (written comments from the City of Royal Oak, Mayor Dennis G. Cowan dated September 3, 1999, from the City of Madison Heights, Mayor Gary R. McGillivray dated September 16, 1999, from Peter A. Letzmann for SOCRRA dated September 23, 1999 and from Jack Widger, a resident of Madison Heights dated September 25, 1999 and public hearing testimony from Pete Connors, Deputy City Manager, City of Madison Heights):**

Royal Oak Mayor, Dennis G. Cowan, indicated that Royal Oak had passed resolutions on several different occasions favoring designation of the subject site as a transfer station only, not also as a MRF (Waste Processing) site. Various complaints were registered about the site ranging from poor maintenance, complaints of odor, unsightliness, and failure of the Authority to remove the old incinerator stacks from the site.

Madison Heights Mayor, Gary R. McGillivray requested that the facility should be designated as a transfer station only, not also as a MRF (Waste Processing) site. The Mayor further indicated lack of progress in meetings with SOCRRA representatives to resolve ongoing issues. The specific concerns were read into the public record at the public hearing by Deputy City Manager, Peter Connors.

SOCRRA representative, Peter A. Letzmann, reported on the SOCRRA site and upon the negotiations that have been ongoing with Madison Heights representatives over the past several months. It was requested that the SWPC recommend designation of the site as a transfer station and MRF (Waste Processing).

Resident Widger requested that potentially offensive MRF (Waste Processing) uses could have adverse effects on the peace, safety and health of the residents. The site should be designated for a transfer station only.

The subject of the SOCRRA John R site designation is scheduled as the second item of Unfinished Business at the October 7, 1999 Solid Waste Planning Committee meeting. Representatives of SOCRRA and Madison Heights will present their positions to the SWPC at that time.

In addition to Royal Oak's resolution on the site designation favoring Madison Heights position, nine of the remaining 11 SOCRRA municipalities have previously adopted resolutions of support for the dual designation of this site for both a Transfer Station and MRF (Waste Processing). Such resolutions were received from Berkley, Beverly Hills,

Birmingham, Clawson, Ferndale, Huntington Woods, Lathrup Village, Oak Park and Troy. This material has previously been transmitted to the SWPC members.

The existing site designation was granted by the 1994 Amendments to the 1990 Solid Waste Management Plan and was created especially for SOCRRA. The site was designated as a "disposal area" which could be used for any Act 451 disposal area facility except that the site could not be used for a sanitary landfill, an incinerator or as a waste-to-energy plant. This designation was acceptable to SOCRRA as it kept all options open for the continued use of the site which housed the Authority's incinerator which closed down operations in mid-1988 and which had been used in the intervening years as a transfer operation.

The SWPC and Board of Commissioners will address the issue of whether or not the existing site designation as a "disposal area" should or can be changed to some other designation to meet the solid waste management objectives of the Plan. The proposal to change the "disposal area" designation to both a MRF (Waste Processing) and a Transfer Station designation is acceptable to the Authority but not to the host community. The dual designation would best advance the overall objective of the Plan but is not essential to its successful implementation

**Charter Township of Orion (written comments from the Charter Township of Orion by Supervisor Collette M. Dywasuk dated September 16, 1999):** The Township Supervisor, Collette M. Dywasuk, took the opportunity to remind all parties that the Eagle Valley landfill may not be expanded without the permission of the Orion Township Board of Trustees. Additionally, it was indicated that any references to a future expansion of Eagle Valley in the solid waste plan would be premature. The Supervisor also complimented the SWPC in denying a MRF (Waste Processing) designation as a proposed end use for the Oakland Heights landfill on Brown Road in Auburn Hills since a MRF (Waste Processing) would have created a negative traffic impact on M-24.

The 1991 tri-party consent judgement involving the County, the Township and the site owner, which requires the approval of the Township Board prior to any future expansion of the Eagle Valley landfill beyond certain limits, is clearly identified in the draft plan update as controlling future disposal capacity. The mere existence of this possibility however is causing most participants in the solid waste planning process to be very cautious when other facilities or activities are being considered which could be dramatically impacted should Eagle Valley ultimately be expanded, and is therefore appropriately included in the Plan.

The Oakland Heights site designation request was for a Transfer Station. This summer, the Oakland Heights owners, Allied Waste Industries, acquired and merged with BFI. Thus, Allied now owns the former BFI facility on Highwood in the City of Pontiac which presently contains both MRF and Transfer Station designations. Whether Allied proceeds with construction of a transfer station at the Highwood site to meet corporate needs with the ultimate closure of the Oakland Heights landfill, or continues to pursue the

designation of another well located site for a transfer station remains to be seen. In terms of traffic impacts, the siting of a transfer station at the closed landfill would ultimately have less traffic impact than the landfill since usage of the facility by other firms is anticipated to have been at a lower level with the transfer station than with the current landfill operation.

**Miscellaneous Comments (written comments from Mark Sayers, Chair of the Birmingham Recycling Committee as received in the morning mail on September 27, 1999):** Mr. Sayers commented on draft document indicating that the material was comprehensive and detailed. Editing services were offered and a request was made for a short user-friendly executive summary that could ultimately be of value. He disagreed with the statement in the document that "...few wish to even be involved in a healthy discussion of solid waste issues..." and requested to be kept informed on the plan update.

Mr. Sayers' comments are appreciated and his name and address as well as those of all other persons making comments (who are not already included) will be added to the SWPC meeting mailing list.

**Sanilac County Designated Planning Agency (written comments from the East Central Michigan Planning & Development Regional Commission as the DPA for Sanilac County by Douglas A. Bell dated September 24, 1999):** Mr. Bell indicated that the Tri-City RDF in Sanilac County is available for use for the disposal of Oakland County wastes. The Sanilac plan stipulates that the maximum volume of solid waste that may be accepted at Tri-City from all sources is 1,092,000 gateyards per year. Caution will have to be taken in the final plan documents which are reformatted to the MDEQ "standard format" to insure that import-export are properly authorized.

June 15, 2000

MISCELLANEOUS RESOLUTION # **00160**

BY: PLANNING AND BUILDING COMMITTEE, CHARLES E. PALMER, CHAIRPERSON  
RE: SOLID WASTE PLANNING COMMITTEE'S RESPONSE TO THE BOARD OF  
COMMISSIONERS' OBJECTIONS TO THE RECOMMENDED SOLID WASTE  
MANAGEMENT PLAN 1999 UPDATE

TO THE OAKLAND COUNTY BOARD OF COMMISSIONERS:

Ladies and Gentlemen:

WHEREAS, the Oakland County Solid Waste Planning Committee (SWPC) has met with the Oakland County Designated Planning Agency (DPA) on 14 occasions since the fall of 1997 to review Oakland County's future solid waste management alternatives; and

WHEREAS, the Committee authorized the release of a draft solid waste management plan update document for public comment and this material, dated June 14, 1999, was widely distributed on that date, with written public comments received through September 25, 1999, and a public hearing was held on September 16, 1999 and members of the public spoke of their questions and concerns on the draft plan update; and

WHEREAS, after consideration of all written and oral comments received, the Oakland County Solid Waste Management Committee has recommended to the Oakland County Board of Commissioners that the Solid Waste Management Plan 1999 Update dated October 21, 1999, be approved; and

WHEREAS, your Planning and Building Committee, and the Board of Commissioners has received and reviewed the recommended Update, discussed its purpose, contents, and ramifications with the Designated Planning Agency staff, considered public input at four meetings; stated certain objections to the Update and sought the additional counsel and recommendations of the Solid Waste Planning Committee; and

WHEREAS, the Solid Waste Planning Committee and Designated Planning Agency has supported a modification of the Recommended Update to include Ferrous Processing and Trading as a waste transfer/processing facility, and your Planning and Building Committee has concurred.

NOW THEREFORE BE IT RESOLVED that the Oakland County Board of Commissioners hereby approves the 1999 Solid Waste Management Plan Update as recommended by the Solid Waste Planning Committee on October 21, 1999, as revised on May 4, 2000, per the attached letter from the Chair of the Oakland County Solid Waste Planning Committee, to include FPT as a waste transfer/processing facility.

BE IT FURTHER RESOLVED that the Update shall be submitted first to Oakland County's 61 municipalities for their approval and after receiving 67% affirmative responses (41 minimum), the Update shall be submitted to the Michigan Department of Environmental Quality for the Director's final approval.

Chairperson, on behalf of the Planning and Building Committee, I move the adoption of the foregoing resolution.

PLANNING & BUILDING COMMITTEE



**Planning & Building Committee Vote:**

Ayes: Amos, Suarez, Dingeldej, Colasanti, Melton

Nays: Palmer, Jensen

Absent: Schmid, Sever, Gregory

Motion carried.

May 4, 2000

Mr. Chuck Palmer, Chair  
Planning & Building Committee  
Oakland County Board of Commissioners

Dear Mr. Palmer,

On behalf of the Solid Waste Planning Committee, I am writing today to advise you of the Committee's response to Board Chairman McCulloch's letter of April 28<sup>th</sup>, 2000, wherein he notified us of the Board's Objections to the Recommended 1999 Plan Update.

The Solid Waste Planning Committee met this evening and reconsidered the facility designations for FPT and SOCRRA.

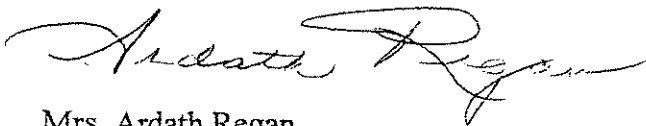
We learned from counsel of FPT and the City of Pontiac that an agreement had been reached resolving nuisance issues regarding the existing scrap operation and establishing a host community framework for solid waste facilities. Given the recognized desirability of additional solid waste transfer/processing capability and this agreement in principle, the Committee recommends the designation of FPT as described in the Board's Objections.

With regards to the SOCRRA facility in Madison Heights, we noted the Board's efforts to limit undesirable activity, provide flexibility for the development of a more desirable facility, and require a specific plan of action before Update compliance can be verified. We appreciate your attempts at resolving this difficult situation.

The Committee also received additional comments from representatives of SOCRRA and Madison Heights. We were disappointed that they did not contribute to a greater or new understanding of the situation, neither did they indicate any change in position or provide hope that a mutually agreeable solution could be reached.

The Committee wrestled with this designation prior to making its recommendation and has not received any compelling new information. Therefore, the Committee respectfully declines to reconsider its recommendation in this matter.

Sincerely,



Mrs. Ardath Regan  
Chair, Oakland County Solid Waste Planning Committee

Moved by Palmer supported by Douglas the resolution be adopted.

Moved by Palmer supported by Garfield the resolution be substituted with the following resolution:

MISCELLANEOUS RESOLUTION

BY: Planning and Building Committee, Charles E. Palmer, Chairperson  
IN RE: SOLID WASTE PLANNING COMMITTEE'S RESPONSE TO THE BOARD OF COMMISSIONERS' OBJECTIONS TO THE RECOMMENDED SOLID WASTE MANAGEMENT PLAN 1999 UPDATE

To the Oakland County Board of Commissioners  
Chairperson, Ladies and Gentlemen:

WHEREAS the Oakland County Solid Waste Planning Committee (SWPC) has met with the Oakland County Designated Planning Agency (DPA) on 14 occasions since the fall of 1997 to review Oakland County's future solid waste management alternatives; and

WHEREAS the Committee authorized the release of a draft solid waste management plan update document for public comment and this material, dated June 14, 1999, was widely distributed on that date, with written public comments received through September 25, 1999, and a public hearing was held on September 16, 1999 and members of the public spoke of their questions and concerns on the draft plan update; and

WHEREAS after consideration of all written and oral comments received, the Oakland County Solid Waste Management Committee has recommended to the Oakland County Board of Commissioners that the Solid Waste Management Plan 1999 Update dated October 21, 1999, be approved; and

WHEREAS your Planning and Building Committee, and the Board of Commissioners has received and reviewed the recommended Update, discussed its purpose, contents, and ramifications with the Designated Planning Agency staff, considered public input at four meetings; stated certain objections to the Update and sought the additional counsel and recommendations of the Solid Waste Planning Committee; and

WHEREAS the Solid Waste Planning Committee and Designated Planning Agency has supported a modification of the Recommended Update to include Ferrous Processing and Trading as a waste transfer/processing facility, and your Planning and Building Committee has concurred; and

WHEREAS the Designated Planning Agency has supported a modification of the Recommended Update to include SOCCRA's Madison Heights facility as a waste processing facility.

NOW THEREFORE BE IT RESOLVED that the Oakland County Board of Commissioners hereby approves the 1999 Solid Waste Management Plan Update as recommended by the Solid Waste Planning Committee on October 21, 1999, as revised on May 4, 2000, per the attached letter from the Chair of the Oakland County Solid Waste Planning Committee, to include FPT as a waste transfer/processing facility.

BE IT FURTHER RESOLVED that the Oakland County Board of Commissioners hereby approves the designation of the SOCCRA Facility at 29740 John R, Madison Heights, Sec. 12 of Royal Oak Township, as a Waste Transfer/Processing Facility, as recommended by the Designated Planning Agency.

BE IT FURTHER RESOLVED that the Update shall be submitted first to Oakland County's 61 municipalities for their approval and after receiving 67% affirmative responses (41 minimum), the Update shall be submitted to the Michigan Department of Environmental Quality for the Director's final approval.

Chairperson, on behalf of the Planning and Building Committee, I move the adoption of the foregoing resolution.

PLANNING AND BUILDING COMMITTEE

Discussion followed.

Garfield withdrew his support for substituting the resolution; Buckley supported the substitute resolution.

Discussion followed. Validity of substituting the resolution and the extent to which a substitute resolution can be amended were clarified.

The Chairperson stated a "YES" vote would put the Substitute Resolution before the Board; a "NO" vote would not.

Discussion followed.

Vote on substituting the resolution:

AYES: Palmer, Amos, Appel, Buckley, Coleman, Garfield, Gregory, Jensen, Law. (9)

NAYS: Obrecht, Schmid, Sever, Suarez, Taub, Causey-Mitchell, Colasanti, Dingeldey, Douglas, Galloway, McCulloch, McPherson, Melton, Millard, Moffitt. (15)

A sufficient majority not having voted therefor, the motion to substitute the resolution failed.

Moved by Melton supported by McPherson the resolution be amended as follows:

- Delete the fifth WHEREAS paragraph;
- Delete wording in the NOW THEREFORE BE IT RESOLVED paragraph, so it reads as follows:

NOW THEREFORE BE IT RESOLVED that the Oakland County Board of Commissioners hereby approves the 1999 Solid Waste Management Plan Update as recommended by the Solid Waste Planning Committee on October 21, 1999, ~~as revised on May 4, 2000, per the attached letter from the Chair of the Oakland County Solid Waste Planning Committee, to include FPT as a waste transfer/processing facility.~~

Discussion followed.

The Chairperson stated a "YES" vote would exclude FPT; a "NO" vote would not.

Vote on Melton's amendment:

AYES: Sever, Suarez, Melton. (3)

NAYS: Palmer, Schmid, Taub, Amos, Appel, Buckley, Causey-Mitchell, Colasanti, Coleman, Dingeldey, Douglas, Galloway, Garfield, Gregory, Jensen, Law, McCulloch, McPherson, Millard, Moffitt, Obrecht. (21)

A sufficient majority not having voted therefor, Melton's amendment failed.

Moved by Palmer supported by Appel the resolution be amended by adding the following BE IT FURTHER RESOLVED paragraph:

BE IT FURTHER RESOLVED that the Oakland County Board of Commissioners hereby approves the designation of the SOCCRA Facility at 29740 John R Road, Madison Heights, Sec. 12 of Royal Oak Township, as a Waste Transfer/Processing Facility, as recommended by the Designated Planning Agency.

Discussion followed.

Vote on Palmer's amendment:

AYES: Amos, Appel, Buckley, Colasanti, Coleman, Dingeldey, Garfield, Gregory, Jensen, Law, Palmer. (11)

NAYS: Schmid, Sever, Suarez, Taub, Causey-Mitchell, Douglas, Galloway, McCulloch, McPherson, Melton, Millard, Moffitt, Obrecht. (13)

A sufficient majority not having voted therefor, Palmer's amendment failed.



Moved by Palmer supported by Douglas the resolution be amended by adding the following as the first BE IT FURTHER RESOLVED paragraph:

BE IT FURTHER RESOLVED that the Solid Waste Manager is hereby directed and authorized to edit and modify the appropriate sections of the 1999 Solid Waste Management Plan Update as Recommended by the Solid Waste Planning Committee on October 21, 1999, and as approved by the Board of Commissioners on June 15, 2000, to accurately reflect all the changes to the Update approved herein.

A sufficient majority having voted therefor, Palmer's amendment carried.

Vote on resolution, as amended:

AYES: Sever, Suarez, Taub, Amos, Appel, Buckley, Causey-Mitchell, Colasanti, Coleman, Dingeldey, Douglas, Galloway, Garfield, Gregory, Jensen, Law, McCulloch, McPherson, Melton, Millard, Moffitt, Obrecht, Palmer, Schmid. (24)

NAYS: None. (0)

A sufficient majority having voted therefor, the resolution, as amended, was adopted.

I HEREBY APPROVE THE FOREGOING RESOLUTION	
<i>L Brooke Patterson</i>	6/20/00
L. Brooke Patterson, County Executive	Date

STATE OF MICHIGAN)  
COUNTY OF OAKLAND)

I, G. William Caddell, Clerk of the County of Oakland, do hereby certify that the foregoing resolution is a true and accurate copy of a resolution adopted by the Oakland County Board of Commissioners on June 15, 2000 with the original record thereof now remaining in my office.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of the County of Oakland at Pontiac, Michigan this 15th day of June, 2000.

*G. William Caddell*  
G. William Caddell, County Clerk

## 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) Develop/Adopt Implementation Action Plan	2000
2) Assist Local Units in Organizational Development	2000-2001
3) Preliminary Program Specifications for Planned Programs	2000-2001
4) Establish Budgets for Planned Programs	2000-2001
5) Finalize Plans for Organizational System Development by Locals	2000-2001
6) Develop Additional Recycling Processing Capacity	2000-2001
7) Initiate all Outreach/Education Programs	2000-2001
8) Procure all Other System Improvements	2000-2003
9) Evaluation of Need for Transfer, Processing and MRF Capacity	2001-2002
10) Develop Transfer, Processing and MRF Capacity if Needed	2002-2006
11) Evaluate Incentive Programs, as needed	2002-2006
12) Develop Program Specifications for Further Program Expansion	2001-2003
13) Establish Budgets for Further Program Expansion	2005-2006
14) Finalize Any Upgrades to Funding Structure and Mechanisms	2005-2006
15) Initiate Further Expansion of Outreach/Education Programs	2005-2006
16) Implement all Further Program Expansion System Improvements	2006-2008
17) Data Tracking to Assess Program Performance	Annual/Ongoing
18) Update Implementation Action Plan	Annual/Ongoing

## ATTACHMENTS

# ATTACHMENTS

The following attachments are included as part of the Plan.

**ATTACHMENT A: Resolutions** from County Board of Commissioners designating the Northville will not be included in this Solid Waste Plan; also, Resolution from Wayne County indicating the inclusion of Northville in its Solid Waste Plan.

**ATTACHMENT B: Listed Capacity**

Letters from Area landfills demonstrating capacity available to Oakland County

**ATTACHMENT C: Maps**

Map showing locations of solid waste disposal facilities used by the County; map showing Designated Facilities in Oakland County (current and new Plan designations)

**ATTACHMENT D: Inter-County Agreements**

*Not applicable*

**ATTACHMENT E: Detailed population data**

Detailed population data in chart form.

**ATTACHMENT F: Waste Generation Data**

Detailed waste generation data and calculations

**ATTACHMENT G: Special Conditions**

Information on Import/Export limitations and conditions.

**ATTACHMENT H: Final Report of the Oakland County Solid Waste Planning Committee**

## ATTACHMENT A

### RESOLUTIONS

- Letters from the City of Northville
- Resolution by the Oakland County Board of Commissioners
- Resolution by the Wayne County Board of Commissioners

Roger J. Smith, P.E., Manager

September 10, 1997

Gary L. Word, Manager  
City of Northville  
215 West Main Street  
Northville, Michigan 48167

Re: Act 451 Solid Waste Management Plan Update  
Oakland County

Dear Mr. Word:

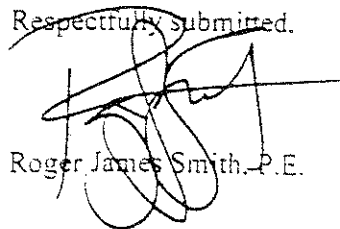
The Michigan Department of Environmental Quality has requested that each county update its solid waste management plan. Oakland County has therefore started the process. Historically, Northville has been incorporated within the Wayne County solid waste planning process and we are assuming that this association will continue.

Section 11536 of Act 451 of 1994 as amended provides that such an arrangement shall be approved by a resolution of the County boards of commissioners of the counties involved. In order that proper records may be kept on this issue, we proposed that the following process be initiated.

1. Northville should request of both Oakland and Wayne counties that the community continue to be included within the Wayne County solid waste management plan.
2. Each Board of Commissioners would adopt a resolution approving of such an arrangement, forwarding a copy to Northville and the other county.
3. The two Board resolutions and Northville's request then become published records in Appendix E of each county's Plan Update as required by the Michigan Department of Environmental Quality standard plan format which was issued to the solid waste planning agencies this past week.

Thanks much for your assistance on this matter and upon receipt of Northville's request, we will immediately process the appropriate Board resolution for approval.

Respectfully submitted,

  
Roger James Smith, P.E.

Attachment

cc: Robert Fredericks, Interim Director, Wayne County Land Resources Management Division



215 W. Main Street • Northville, Michigan 48167-1599  
Phone: (810) 349-1300 • FAX: (810) 349-9244

November 17, 1997

Mr. Roger James Smith, PE  
Public Works Building  
1 Public Works Drive  
Waterford, MI 48328-1907

Re: Act 451 Solid Waste Management Plan Update

Dear Mr. Smith,

The City of Northville is aware that the Michigan Department of Environmental Quality has requested that each County update its solid waste management plan. Northville, which is located in both Oakland County and Wayne County, has in the past been placed within the Wayne County solid waste planning process. The City is comfortable with this arrangement, and respectfully requests that it remain with Wayne County and be excluded from the Oakland County planning process.

Should you have any questions concerning this matter, please feel free to contact me.

Sincerely,

  
James P. Gallogly  
Public Works Director

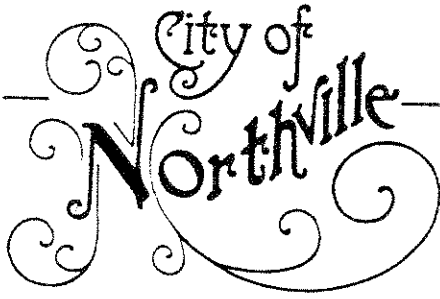
cc: Gary Word, City Manager  
Robert Fredericks, Director Wayne County Land Resources Management Division

**RECEIVED**

NOV 19 1997

OAKLAND COUNTY  
FACILITIES MANAGEMENT

136



215 W. Main Street • Northville, Michigan 48167-1599  
Phone: (810) 349-1300 • FAX: (810) 349-9244

20 NOV 97 9

-W.C. LOC-

November 17, 1997

Mr. Robert Fredericks, Interim Director  
Wayne County Land Resources Management Division  
415 Clifford Street  
Detroit, MI 48226

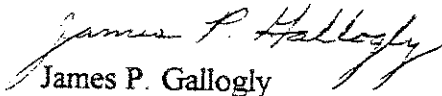
Re: Act 451 Solid Waste Management Plan Update

Dear Mr. Fredericks:

The City of Northville is aware that the Michigan Department of Environmental Quality has requested that each County update its solid waste management plan. As you begin this process for Wayne County, Northville respectfully requests that it be included in the Wayne County solid waste management plan. Northville, as you know is located in both Oakland County and Wayne County. Historically, the City has been incorporated within the Wayne County solid waste planning process, and we would like this association to continue.

Should you have any questions concerning this matter, please feel free to contact me.

Sincerely,

  
James P. Gallogly  
Public Works Director

cc: Gary Word, City Manager  
Roger Smith, Manager Oakland County Solid Waste Management Division

November 20, 1997

Mr. Charles Palmer, Chairperson  
Planning and Building Committee  
Oakland County Board of Commissioners  
Pontiac, Michigan

Re: Solid Waste Management Plan Update  
City of Northville

Dear Mr. Palmer:

Section 11536 of Act 451 of 1994 as amended provides that a municipality located in two (2) counties may request that it be included within one of the adjacent county's solid waste management plan. Before that may occur, the request shall be approved by a resolution of the Board of Commissioners of each county involved.

Northville has, by mutual consent of all parties involved, historically been included within the Wayne County solid waste management plan. This office approached both the City and Wayne County with a recommendation that the previous arrangements be continued. Both agencies concur. A copy of the original communication from this office and Northville's formal request are attached.

It is recommended that the attached suggested resolution be adopted in support of the request. The resolution will become a formal part of the new Solid Waste Management Plan Update documents as required by the Michigan Department of Environmental Quality.

Respectfully submitted,



Roger James Smith, P.E.

Attachments



Suggested Resolution

December 2, 1997

Miscellaneous Resolution #97

BY: Planning & Building Committee, Charles E. Palmer, Chairperson

IN RE: Delineation of Oakland County Solid Waste Planning Boundaries

To the Oakland County Board of Commissioners

Chairperson, Ladies and Gentlemen:

WHEREAS the City of Northville sits astride the Oakland County / Wayne County border, and

WHEREAS the City of Northville has requested that it be included within the Wayne County Solid Waste Management Plan and excluded from the Oakland County Solid Waste Management Plan, and

WHEREAS Act 451 of 1994 as amended provides that such an arrangement shall be approved by a resolution of the Board of Commissioners of each of the involved counties, and

WHEREAS the City of Northville has previously been included within the Wayne County Solid Waste Management Plan and such an arrangement is eminently practical.

NOW THEREFORE BE IT RESOLVED THAT the Oakland County Board of Commissioners does herewith approve of Northville's request that it be excluded from the Oakland County Solid Waste Management Plan, and

FURTHER BE IT RESOLVED THAT copies of this resolution be provided to the City of Northville and to the Wayne County Board of Commissioners, and

BE IT FINALLY RESOLVED THAT the Oakland County Solid Waste Planning Committee and the Oakland County Act 451 Designated Planning Agent be advised of this action and requested to exclude the City of Northville from the current planning efforts.

PLANNING AND BUILDING COMMITTEE

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December 11, 1997

Miscellaneous Resolution #97289

BY: Planning & Building Committee, Charles E. Palmer, Chairperson

IN RE: **Delineation of Oakland County Solid Waste Planning Boundaries**

To the Oakland County Board of Commissioners

Chairperson, Ladies and Gentlemen:

WHEREAS the City of Northville sits astride the Oakland County / Wayne County border, and

WHEREAS the City of Northville has requested that it be included within the Wayne County Solid Waste Management Plan and excluded from the Oakland County Solid Waste Management Plan, and

WHEREAS Act 451 of 1994 as amended provides that such an arrangement shall be approved by a resolution of the Board of Commissioners of each of the involved counties, and

WHEREAS the City of Northville has previously been included within the Wayne County Solid Waste Management Plan and such an arrangement is eminently practical.

NOW THEREFORE BE IT RESOLVED THAT the Oakland County Board of Commissioners does herewith approve of Northville's request that it be excluded from the Oakland County Solid Waste Management Plan, and

FURTHER BE IT RESOLVED THAT copies of this resolution be provided to the City of Northville and to the Wayne County Board of Commissioners, and

BE IT FINALLY RESOLVED THAT the Oakland County Solid Waste Planning Committee and the Oakland County Act 451 Designated Planning Agent be advised of this action and requested to exclude the City of Northville from the current planning efforts.

PLANNING AND BUILDING COMMITTEE




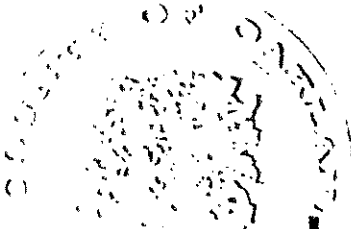
Moved by Palmer supported by Schmid the resolution be adopted.

AYES: Garfield, Holbert, Huntoon, Jacobs, Johnson, Kingzett, Law, McCulloch, McPherson, Millard, Moffitt, Obrecht, Palmer, Powers, Schmid, Taub, Wolf, Amos, Coleman, Dingledey, Douglas, Fracassi. (22)

NAYS: None. (0)

A sufficient majority having voted therefor, the resolution was adopted.


I HEREBY APPROVE THE FOREGOING RESOLUTION	
	12/14/97
L. Brooks Patterson, County Executive	Date

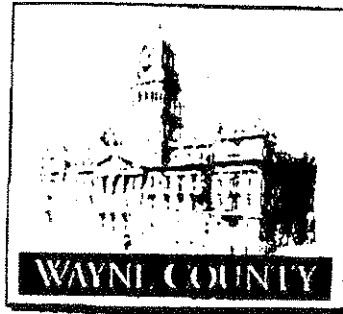


STATE OF MICHIGAN)  
COUNTY OF OAKLAND)

I, Lynn D. Allen, Clerk of the County of Oakland, do hereby certify that the foregoing resolution is a true and accurate copy of a resolution adopted by the Oakland County Board of Commissioners on December 11, 1997 with the original record thereof now remaining in my office.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of the County of Oakland at Pontiac, Michigan this 11th day of December 1997.

  
 \_\_\_\_\_  
 Lynn D. Allen, County Clerk



*Edward H. McNamara*  
County Executive

January 27, 1998

Honorable Ricardo Solomon  
Chairman, Wayne County Commission  
450 Wayne County Building  
Detroit, Michigan 48226

RE: ADOPTION OF A RESOLUTION BY THE WAYNE COUNTY COMMISSION  
DELINEATING WAYNE COUNTY SOLID WASTE PLANNING BOUNDARIES,  
AND THE CITY OF NORTHVILLE'S REQUEST TO BE INCLUDED IN  
THE WAYNE COUNTY SOLID WASTE MANAGEMENT PLAN OF 1998.  
(REF: 98-70-008)

Dear Chairman Solomon:

The County Executive's Office, and the Office of the Corporation Counsel have reviewed and approved the attached request from the Department of Environment for approval of the above-referenced project.

The City of Northville sits astride the Wayne County/Oakland County border. The City of Northville has requested that it be included within the Wayne County Solid Waste Management Plan and excluded from the Oakland County Solid Waste Management Plan.

Act 451 of 1994 as amended provides that such an arrangement shall be approved by a Resolution of the Board of Commissioners of each of the involved counties.

The City of Northville has previously been included within the Wayne County Solid Waste Management Plan and such an arrangement is eminently practical.

Therefore, it is requested that the Wayne County Commission adopt the appropriate Resolution providing for the following action:

DEPARTMENT OF ENVIRONMENT  
415 CLIFFORD, DETROIT, MICHIGAN 48226 • 313-224-3620

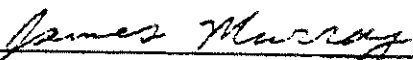
Honorable Ricardo Solomon  
January 27, 1998  
Page 2

THEREFORE BE IT RESOLVED, THAT the Wayne County Board of Commissioners does herewith approve of Northville's request that it be included in The Wayne County Solid Waste Management Plan, and

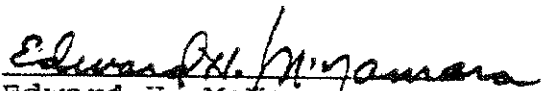
FURTHER BE IT RESOLVED, THAT copies of this Resolution be provided to the City of Northville and to the Oakland County Board of Commissioners, and

BE IT FINALLY RESOLVED, THAT the Wayne County Solid Waste Planning Committee and the Wayne County Act 451 Designated Planning Agent be advised of this action and requested to include the City of Northville in the current planning efforts.

APPROVED:

  
James Murray, Director  
Department of Environment

APPROVED FOR SUBMISSION  
TO THE COMMISSION:

  
Edward H. McNamara  
Wayne County Executive

EHM:GDC:d1

Attachment

## RESOLUTION

No. 98-107

By Commissioner Blackwell

RESOLVED, by the Wayne County Commission this 19th day of February, 1998 that approval be, and is hereby, granted authorizing the delineation of Wayne County Solid Waste Planning boundaries and the inclusion of the City of Northville into the Wayne County Solid Waste Management Plan of 1998, as recommended by the Chief Executive Officer.

(98-70-008)

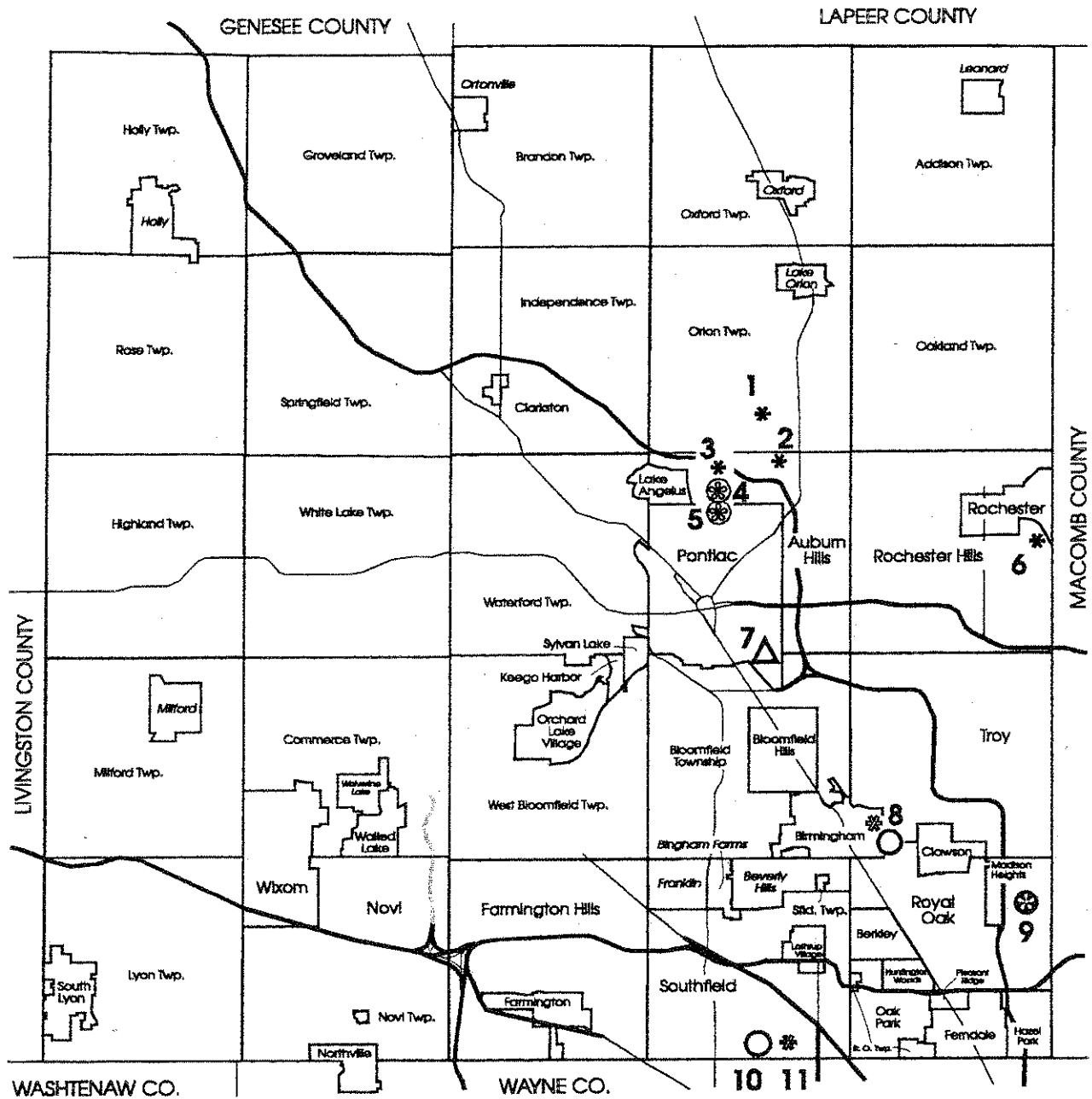
**ATTACHMENT B**  
**LISTED CAPACITY**

# ATTACHMENT C

## MAPS



# Oakland County's Designated Act 451 Solid Waste Facilities - December, 1997



## Legend

- \* Type II Landfill
- △ Waste-to-Energy Plant
- ⊗ Act 641 Disposal Area
- ⊛ Material Recovery Facility
- ⊙ MRF and Transfer Station
- Transfer Station

RJS PE, 12-30-97

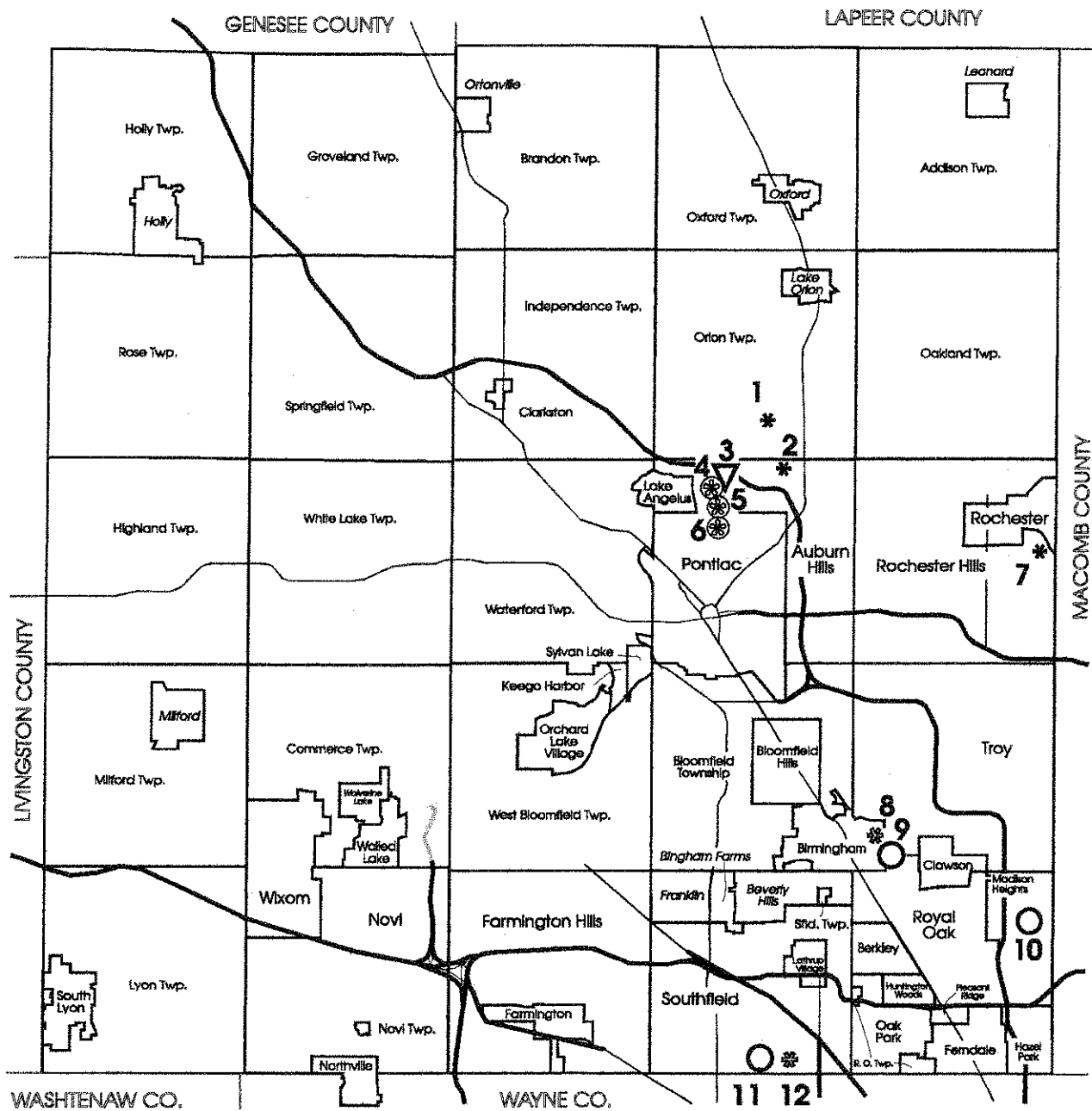
197

**Oakland County's Designated Act 451  
Solid Waste Disposal Facilities - June 15, 2000**

**Basic Designation Type**

<u>Map I.D.</u>	<u>and Facility Name</u>	<u>Address</u>	<u>Municipality</u>	<u>Comment</u>
<b><u>Type II Landfills</u></b>				
3	Collier Road Landfill	575 Collier Road	Pontiac	Existing
1	Eagle Valley Recycling and Disposal Facility	600 West Silverbell Road	Orion Township	Existing
2	Oakland Heights Development	2350 Brown Road	Auburn Hills	Existing
7	SOCRRA	741 Avon Road	Rochester Hills	Existing
<b><u>Waste Processing Facilities</u></b>				
5	Allied Waste Industries	1591 Highwood	Pontiac	Existing
12	RRRASOC	20000 West 8 Mile Road	Southfield	Existing
8	SOCRRA	995 Coolidge Highway	Troy	Existing
6	Waste Management	1525 West Highwood	Pontiac	Existing
3	Collier Road	575 Collier Road	Pontiac	New designation
4	FPT Pontiac Division	500 Collier Road	Pontiac	New designation
<b><u>Transfer Stations</u></b>				
11	Allied Waste Industries	21430 West 8 Mile Road	Southfield	Existing
5	Allied Waste Industries	1591 Highwood	Pontiac	Existing
9	SOCRRA	991 Coolidge Highway	Troy	Existing
6	Waste Management	1525 West Highwood	Pontiac	Existing
3	Collier Road	575 Collier Road	Pontiac	New designation
4	FPT Pontiac Division	500 Collier Road	Pontiac	New designation
10	SOCRRA	29470 John R Road	Madison Heights	Revised -existing "Disposal Area" designation changed to Transfer Station.

# Oakland County's Designated Act 451 Solid Waste Facilities - June 15, 2000



## Legend

- \* Type II Landfill
- ⊗ Processing Facility
- Transfer Station
- ⊗ Processing & Transfer Station
- ▽ Type II Landfill, Processing Facility & Transfer Station

Oakland County's Designated Act 451 Solid Waste Disposal Facilities  
November, 2013

<u>Designation Type/Name</u>	<u>Address</u>	<u>Municipality</u>	<u>Comment</u>
<b><u>Type II Landfills</u></b>			
Collier Road Landfill	575 Collier Road	Pontiac	Existing
Eagle Valley Recycling & Disposal Facility	600 W. Silverbell	Orion Township	Existing
Oakland Heights Dev.	2350 Brown Road	Auburn Hills	Existing
SOCRRA	741 Avon Road	Rochester Hills	Existing
<b><u>Waste Processing Facilities</u></b>			
Allied Waste Industries	1591 Highwood	Pontiac	Existing
RRRASOC	20000 W. Eight Mile Rd.	Southfield	Existing
SOCRRA	995 Coolidge Highway	Troy	Existing
Waste Management	1525 West Highwood	Pontiac	Existing
Collier Road	575 Collier Road	Pontiac	New (in 2000)
FPT Pontiac	500 Collier Road	Pontiac	New (in 2000)
BP – Pontiac	900 Baldwin Road	Pontiac	New
<b><u>Transfer Stations</u></b>			
Allied Waste Industries	21430 W. Eight Mile Rd.	Southfield	Existing
Allied Waste Industries	1591 Highwood	Pontiac	Existing
SOCRRA	991 Coolidge Highway	Troy	Existing
Waste Management	1525 West Highwood	Pontiac	Existing
Collier Road	575 Collier Road	Pontiac	New (in 2000)
FPT Pontiac Division	500 Collier Road	Pontiac	New (in 2000)
SOCRRA	29740 John R Road	Madison Heights	Revised existing "Disposal Area" Designation changed To transfer station (2000)
BP – Pontiac	900 Baldwin Road	Pontiac	New



Economic Development & Community Affairs

L. Brooks Patterson, County Executive  
 Executive Office Building  
 2100 Pontiac Lake Road, Bldg. 41W  
 Waterford, MI 48328-0412  
 248.858.0720  
[www.advantageoakland.com](http://www.advantageoakland.com)



## Oakland County Solid Waste Plan Designated Facilities

### Legend



- Municipal Boundary
- Landfill (Type II)
- Transfer Station/Waste Processing Facility

Type II landfills, or municipal landfills can accept virtually any non-hazardous solid waste for disposal.

Transfer stations are facilities where municipal solid waste is unloaded from collection vehicles and briefly held while it is reloaded onto larger long-distance transport vehicles for shipment to landfills or other treatment or disposal facilities.



Map created: October 9, 2013



Solid Waste Database  
Oakland County, Michigan

April, 1999

0 5 10 Miles 25

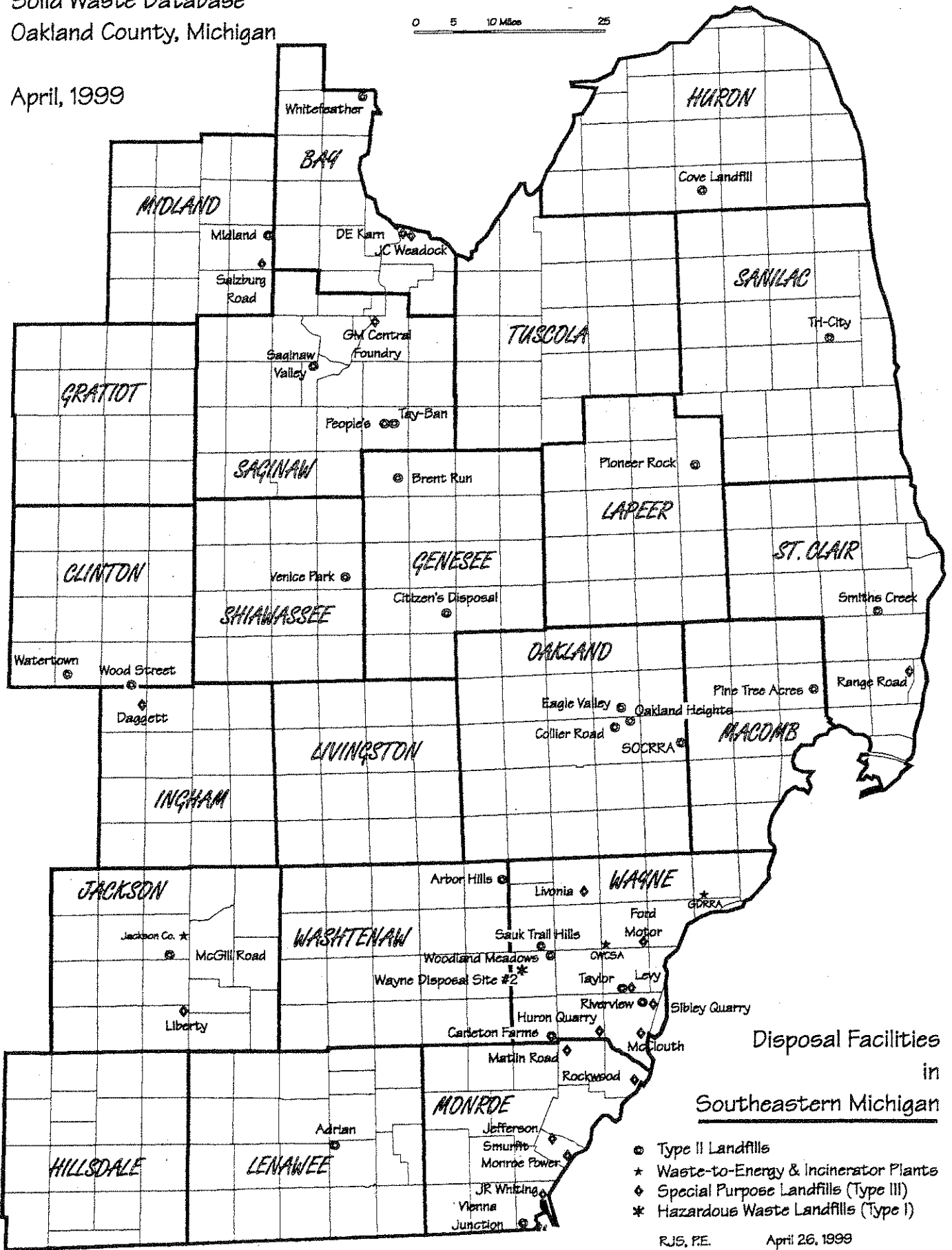


Exhibit 8

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**ATTACHMENT D**  
**INTER-COUNTY AGREEMENTS**  
***(NOT APPLICABLE)***

**ATTACHMENT E**  
**DETAILED POPULATION DATA**



**SEMCOG's 2020 Regional Development Forecast**

Oakland County Solid Waste Planning  
 rdf\_loc.wk4  
 10/13/99  
 09:44

Recommended Forecast - February 8, 1996

**Population**

	1990	1995	2000	2005	2010	2015	2020	Change, 1995 to 2020	% Change 1995 to 2020
SEMCOG	4,590,465	4,735,738	4,804,389	4,877,433	4,962,603	5,067,093	5,162,405	426,667	9.01%
Livingston	115,645	135,558	154,061	170,853	187,725	204,875	219,674	84,116	62.05%
Macomb	717,400	754,494	775,875	802,349	832,477	860,899	884,222	129,728	17.19%
Monroe	133,600	141,449	146,701	150,732	154,867	160,160	164,788	23,339	16.50%
Oakland	1,083,592	1,150,872	1,192,164	1,232,182	1,272,192	1,318,997	1,359,846	208,974	18.16%
St. Clair	145,607	158,921	167,478	175,050	182,766	191,525	199,160	40,239	25.32%
Washtenaw	282,934	300,489	313,130	325,599	340,274	357,443	373,362	72,873	24.25%
Wayne	2,111,687	2,093,955	2,054,980	2,020,668	1,992,302	1,973,194	1,961,353	(132,602)	-6.33%
Wayne (pt)	1,083,708	1,101,664	1,102,957	1,104,716	1,107,957	1,114,546	1,124,059	22,395	2.03%
Detroit	1,027,979	992,291	952,023	915,952	884,345	858,648	837,294	(154,997)	-15.62%

**Total Employment by Place of Work**

	1990	1995	2000	2005	2010	2015	2020	Change, 1995 to 2020	% Change 1995 to 2020
SEMCOG	2,350,238	2,477,024	2,615,187	2,724,994	2,776,724	2,775,235	2,773,688	296,664	11.98%
Livingston	39,296	46,700	55,139	63,355	69,376	70,887	71,925	25,225	54.01%
Macomb	333,723	361,350	386,158	403,706	410,574	409,647	407,633	46,283	12.81%
Monroe	50,364	55,541	60,702	64,574	66,501	66,807	67,155	11,614	20.91%
Oakland	681,037	745,309	806,126	856,189	883,393	885,258	887,826	142,517	19.12%
St. Clair	55,730	60,556	64,654	69,393	72,462	73,476	74,398	13,842	22.86%
Washtenaw	213,895	228,331	242,770	252,759	258,184	258,962	260,270	31,939	13.99%
Wayne	976,193	979,237	999,638	1,015,018	1,016,234	1,010,198	1,004,481	25,244	2.58%
Wayne (pt)	563,703	595,521	630,759	657,675	668,028	668,453	667,129	71,608	12.02%
Detroit	412,490	383,716	368,879	357,343	348,206	341,745	337,352	(46,364)	-12.08%

**Manufacturing Employment by Place of Work**

	1990	1995	2000	2005	2010	2015	2020	Change, 1995 to 2020	% Change 1995 to 2020
SEMCOG	486,644	482,591	468,709	467,057	461,633	439,602	415,321	(67,270)	-13.94%
Livingston	8,186	8,670	9,099	9,742	10,183	9,752	9,232	562	6.48%
Macomb	102,751	105,066	102,550	99,809	97,383	92,102	86,266	(18,800)	-17.89%
Monroe	9,430	10,685	10,866	11,016	10,919	10,397	9,799	(886)	-8.29%
Oakland	116,987	119,339	116,201	120,613	122,512	117,948	113,296	(6,043)	-5.06%
St. Clair	10,565	11,044	11,270	11,502	11,449	10,864	10,226	(818)	-7.41%
Washtenaw	37,363	33,737	31,697	32,232	32,177	30,727	28,982	(4,755)	-14.09%
Wayne	201,362	194,050	187,026	182,143	177,010	167,812	157,520	(36,530)	-18.83%
Wayne (pt)	137,991	138,349	136,431	133,910	130,630	123,791	116,119	(22,230)	-16.07%
Detroit	63,371	55,701	50,595	48,233	46,380	44,021	41,401	(14,300)	-25.67%

Notes: Employment measures number of jobs, both full-time and part-time - not the number of employed persons or the number of FTEs (Full Time Equivalents).

Construction jobs and military are not included in RDF employment. Previous RDFs included construction jobs. However, the large majority of construction jobs are mobile, moving from job-site to job-site. Perhaps only 10% hold stationary positions at the offices or shops of construction companies. Having no specific way to differentiate between the two for future transportation planning purposes, a decision was made by SEMCOG at the policy level to not include either in the 2020 RDF projections.

Manufacturing employment measures the number of jobs within the SIC Code manufacturing categories. It is not a measurement of the number of "factory workers" nor does it relate to land use. In many instances, all such employment may be pure office type work in the headquarters of "manufacturing" companies. In others, it may represent employment within research facilities or in a factory environment only.

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SEMCOG's 2020 Regional Development Forecast  
Recommended Forecast - February 8, 1998

Oakland County, Michigan

Table with columns: Municipality, #, 1990, 1995, 2000, 2005, 2010, 2015, 2020, 1990, 1995, 1998, 2000, 2005, 2010, 2015, 2020, 1990, 1995, 2003, 2005, 2010, 2015, 2020, 1988. Rows include municipalities like Addison Township, Auburn Hills, Berkley, Beverly Hills, Blythdale, Bloomfield Hills, Bloomfield Township, Brighton Township, Canton, Clarkston, Commerce Township, Farmington, Farmington Hills, Ferndale, Franklin, Groveland Township, Hazel Park, Highland Township, Holly, Holy Township, Huntington Woods, Independence Township, Keego Harbor, Lake Argus, Lake Orion, Lake Orion (95 Boundaries), Lathrop Village, Leonard, Lyon Township (95 Boundaries), Madison Heights, Milford, Milford Township, Northville, Northville (part), Novi, Novi Township, Oak Park, Oakland Township, Orchard Lake, Otten Township, Orionville, Oxford, Oxford Township, Pleasant Ridge, Pontiac, Rochester, Rochester Hills, Rose Township, Royal Oak Township, Royal Oak (95 Boundaries), Southfield, Southfield Township, Springfield Township, Springfield Township, Troy, Troy, Waterford, Waterford Township, West Bloomfield Township, White Lake Township, Whom, Wolverine Lake, County Totals, Less Northville, Planning Values.

Exhibit 12

SEMCOG's 2020 Regional Development Forecast

Recommended Forecast - February 8, 1998

Municipality	Commercial Employment by Place of Work										Employment per Capita					
	1990	1995	2000	2005	2010	2015	2020	1998	1990	1995	2000	2005	2010	2015	2020	1998
Adison Township	575	779	1,189	1,628	2,175	2,363	2,453	1,025	0.123	0.148	0.204	0.260	0.291	0.303	0.309	1.882
Auburn Hills	16,849	20,609	24,375	27,065	30,864	31,914	22,829	22,829	1,300	1,715	1,984	2,084	2,171	2,172	2,172	1,863
Berkley	4,734	5,757	6,217	6,687	6,960	5,665	6,033	6,033	0.300	0.352	0.380	0.413	0.415	0.402	0.393	0.369
Beverly Hills	2,322	2,608	2,687	2,745	2,867	5,618	2,865	2,865	0.228	0.262	0.273	0.284	0.284	0.273	0.266	0.269
Bingham Farms	8,554	7,669	8,056	8,442	8,648	8,593	7,961	7,961	8,951	8,000	8,857	9,627	10,049	9,894	9,549	8,563
Bloomfield Hills	19,278	19,670	20,197	19,858	19,693	19,513	19,990	19,990	1,009	1,034	1,063	1,055	1,063	1,040	1,027	1,051
Bloomfield Township	9,988	11,860	13,864	15,024	16,270	16,871	12,942	12,942	2,365	2,747	3,073	3,308	3,417	3,435	3,447	2,945
Blondin Township	14,383	17,582	21,316	23,994	25,921	27,709	19,826	19,826	0.353	0.421	0.452	0.480	0.458	0.468	0.458	0.484
Clarkston	2,807	3,086	3,144	3,357	3,429	3,393	3,211	3,211	0.100	0.121	0.134	0.148	0.157	0.161	0.164	0.139
Clawson	5,079	5,189	5,272	5,433	5,528	5,503	5,239	5,239	0.417	0.438	0.458	0.482	0.498	0.483	0.492	0.449
Commerce Township	5,281	6,337	7,745	8,038	9,972	11,204	7,162	7,162	0.292	0.278	0.282	0.278	0.282	0.282	0.282	0.292
Farmington Hills	49,207	54,057	58,312	60,744	60,725	60,725	58,610	58,610	0.842	0.777	0.802	0.818	0.809	0.809	0.792	0.812
Franklin	8,21	858	1,035	1,030	1,074	1,061	1,004	1,004	0.356	0.367	0.367	0.367	0.367	0.367	0.367	0.358
Grovefield Township	417	579	633	709	784	789	784	784	0.223	0.230	0.230	0.230	0.230	0.230	0.230	0.230
Hazel Park	3,991	3,866	4,188	4,282	4,265	4,221	4,048	4,048	0.207	0.245	0.257	0.278	0.289	0.285	0.285	0.252
Highland Township	3,306	4,283	4,888	5,602	6,273	6,738	7,140	6,924	0.605	0.605	0.605	0.605	0.605	0.605	0.605	0.514
Holy Township	232	301	531	774	1,174	1,222	1,174	1,174	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
Huntington Woods	1,482	1,738	1,879	2,011	2,022	1,894	1,823	1,823	0.241	0.241	0.241	0.241	0.241	0.241	0.241	0.208
Independence Township	3,965	5,171	6,592	7,965	8,765	9,174	6,024	6,024	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.473
Lake Orion	1,052	1,281	1,365	1,473	1,541	1,562	1,331	1,331	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.188
Lathrup Village	26	57	66	50	50	50	62	62	0.436	0.436	0.436	0.436	0.436	0.436	0.436	0.592
Leonard	1,104	1,363	1,968	2,508	3,079	3,295	2,266	2,266	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.259
Lynn Township (95 Boundaries)	28	19	21	30	38	46	57	57	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269
Madison Heights	30	18,930	20,728	22,065	22,495	22,123	21,529	21,529	0.651	0.651	0.651	0.651	0.651	0.651	0.651	0.651
Milford	32	3,369	4,288	4,966	5,335	5,617	4,483	4,483	0.371	0.371	0.371	0.371	0.371	0.371	0.371	0.371
Northville (part)	33	1,425	1,875	2,377	3,106	3,583	2,096	2,096	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511
Novi	18,439	21,614	25,079	28,433	30,694	33,010	23,893	23,893	0.670	0.670	0.670	0.670	0.670	0.670	0.670	0.589
Oak Park	10,843	10,215	10,088	10,061	9,666	9,206	10,139	10,139	0.416	0.416	0.416	0.416	0.416	0.416	0.416	0.374
Oakland Township	638	927	1,268	1,658	2,238	2,489	1,442	1,442	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.168
Ochland Lake	862	960	1,051	1,138	1,267	1,015	1,015	1,015	0.480	0.452	0.470	0.501	0.506	0.491	0.485	0.464
Orion Township	2,653	2,825	3,752	4,833	5,774	6,692	3,367	3,367	0.283	0.312	0.315	0.324	0.324	0.324	0.324	0.314
Oxford	326	437	486	539	590	645	466	466	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.456
Pleasant Ridge	1,094	1,212	1,786	2,368	2,841	3,153	2,096	2,096	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.224
Plymouth	37,837	39,330	40,702	41,274	41,186	40,612	40,163	40,163	0.791	0.791	0.791	0.791	0.791	0.791	0.791	0.809
Rochester	10,576	12,536	15,089	16,890	18,374	19,286	20,137	20,350	0.302	0.302	0.302	0.302	0.302	0.302	0.302	0.250
Rochester Hills	14,863	18,133	21,628	24,603	26,857	28,340	26,624	26,624	0.941	0.941	0.941	0.941	0.941	0.941	0.941	0.858
Royal Oak	31,949	32,461	33,324	34,737	35,315	35,312	32,978	32,978	0.532	0.541	0.559	0.559	0.559	0.559	0.559	0.519
Royal Oak Township	2,436	2,473	2,513	2,519	2,478	2,393	2,050	2,050	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.244
South Lyon (95 Boundaries)	99,613	103,921	107,797	107,916	108,212	102,684	100,007	102,684	1.435	1.435	1.435	1.435	1.435	1.435	1.435	1.513
Southern Township	1,361	2,038	2,703	3,024	3,431	3,431	1,768	1,768	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.155
Springfield Township	1,055	1,044	1,089	1,209	1,271	1,283	1,291	1,291	0.571	0.571	0.571	0.571	0.571	0.571	0.571	0.594
Sylvan Lake	82,288	84,803	106,290	112,121	114,565	114,191	101,695	101,695	1.434	1.473	1.473	1.511	1.504	1.504	1.504	1.503
Troy	4,084	4,809	5,620	6,378	6,915	7,442	5,296	5,296	1.026	1.026	1.026	1.026	1.026	1.026	1.026	0.426
Walled Lake	21,534	25,563	29,572	33,189	35,568	36,770	28,024	28,024	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.250
Waterford Township	57	13,205	15,173	17,353	19,118	20,201	18,481	18,481	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.140
West Bloomfield Township	58	4,132	4,875	5,524	6,146	6,856	3,780	3,780	0.787	0.787	0.787	0.787	0.787	0.787	0.787	0.630
White Lake Township	2,253	3,227	4,496	5,322	5,944	6,424	3,970	3,970	0.075	0.089	0.089	0.104	0.113	0.123	0.138	0.098
Winom	355	416	476	529	573	611	644	644	0.628	0.648	0.676	0.695	0.694	0.694	0.694	0.665
Wolverine Lake	625,970	689,925	735,576	760,981	767,310	774,530	664,343	664,343	0.628	0.648	0.676	0.695	0.694	0.694	0.694	0.665
County Totals	(751)	(791)	(846)	(922)	(976)	(1,024)	(824)	(824)	0.264	0.268	0.288	0.321	0.348	0.369	0.386	0.280
Less Northville	563,299	625,179	689,079	734,654	769,502	776,286	663,519	663,519	0.630	0.649	0.677	0.696	0.696	0.696	0.696	0.665
Planning Values																

Exhibit 13

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**Solid Waste Database  
Oakland County, Michigan**

**Land Area**

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Community	Total Land Area OCPD Rev. 9-90 Sq. Miles	Less Land Dedicated to Specific Purposes (OCPD and OCDSWM)				Net Usable Land Area Sq. Miles
		Recreation	Tran/Util/Comm	Roads		
				Water/Wetlands		
				Acres	Acres	
Addison Township	35.70	1,090	155	824	700	31.37
Auburn Hills	16.63	211	143	1,022	41	14.42
Berkley	2.59	3	0	507	0	1.79
Beverly Hills	4.02	87	4	499	5	3.09
Bingham Farms	1.22	0	0	93	1	1.07
Birmingham	4.88	200	45	779	17	3.25
Bloomfield Hills	5.00	260	33	394	52	3.85
Bloomfield Township	25.99	816	48	2,731	900	18.97
Brandon Township	34.91	1,186	103	1,053	622	30.28
Clarkston	0.50	39	0	63	42	0.28
Clawson	2.22	37	0	358	0	1.60
Commerce Township	28.10	3,637	125	1,291	1,341	18.11
Farmington	2.62	68	3	415	4	1.86
Farmington Hills	33.34	1,500	37	3,248	84	25.73
Ferdale	3.87	72	51	720	0	2.55
Franklin	2.63	10	0	249	6	2.22
Groveland Township	36.10	6,686	221	990	520	22.95
Hazel Park	2.81	45	0	586	2	1.82
Highland Township	36.28	4,858	10	1,213	1,454	24.51
Holly	3.03	60	8	208	154	2.36
Holly Township	33.49	3,260	153	874	1,297	24.77
Huntington Woods	1.46	206	0	267	2	0.72
Independence Townshi	36.10	2,095	201	1,726	843	28.50
Keego Harbor	0.57	13	0	100	45	0.32
Lake Angelus	1.64	179	0	18	440	0.64
Lake Orion	1.31	3	0	119	354	0.57
Lathrup Village	1.49	2	0	297	0	1.02
Leonard	0.91	3	0	39	2	0.84
Lyon Township	31.51	770	251	1,108	538	27.34
Madison Heights	7.05	207	40	967	0	5.15
Milford	2.52	118	1	189	73	1.93
Milford Township	35.17	4,418	40	781	1,442	24.73
Northville (part)	1.02	22	1	124	1	0.79
Novi	31.25	337	138	1,526	667	27.08
Novi Township	0.11			10		0.09
Oak Park	5.02	67	1	805	0	3.66
Oakland Township	36.67	2,942	244	1,099	356	29.42
Orchard Lake	4.06	213	0	194	1,096	1.71
Orion Township	34.64	4,526	504	1,444	1,681	21.90
Ortonville	1.00	7	0	79	0	0.87
Oxford	1.47	43	1	151	138	0.95
Oxford Township	33.87	740	110	953	1,075	29.37
Pleasant Ridge	0.57	7	4	135	0	0.34
Pontiac	20.09	470	425	2,302	200	14.78
Rochester	3.82	65	11	314	41	3.15
Rochester Hills	32.97	1,475	101	2,720	86	26.12
Rose Township	36.24	803	133	936	1,036	31.70
Royal Oak	11.78	591	94	2,114	6	7.40
Royal Oak Township	0.69	9	0	103	0	0.52
South Lyon	3.04	15	39	175	5	2.67
Southfield	27.83	650	210	2,920	26	21.88
Southfield Township	0.19			7		0.18
Springfield Township	36.78	2,732	129	1,160	982	28.96
Sylvan Lake	0.83	9	9	80	207	0.35
Troy	33.53	1,021	219	3,268	92	26.34
Walled Lake	2.39	20	12	205	155	1.78
Waterford Township	35.19	1,516	630	2,679	2,890	23.14
West Bloomfield Towns	31.24	1,311	161	2,164	2,961	20.93
White Lake Township	37.17	5,302	164	1,409	2,263	22.89
Wixom	9.44	223	425	408	81	7.66
Wolverine Lake	1.69	48	0	167	270	0.93
<b>County Totals</b>	<b>910.25</b>	<b>57,303</b>	<b>5,437</b>	<b>53,378</b>	<b>27,296</b>	<b>686.17</b>
Less Northville	(1.02)	(22)	(1)	(124)	(1)	(0.79)
<b>Planning Values</b>	<b>909.23</b>	<b>57,281</b>	<b>5,436</b>	<b>53,254</b>	<b>27,295</b>	<b>685.38</b>

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Solid Waste Database  
Oakland County, Michigan

SEMCOG's Dwelling Unit Study as of July 1, 1995

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Total Units by Type							Occupied Units by Type						
#	Community	Single Family	Two Family	Multi-Family (3 or more)	Mobile Home Units	MSL Units	Total DUs	Single Family	Two Family	Multi-Family (3 or more)	Mobile Home Units	MSL Units	Total DUs
1	Addison Twp	1,626	20	18	277	13	1,954	1,516	19	17	284	11	1,827
2	Auburn Hills	3,100	75	4,070	886	51	8,182	3,000	70	3,502	833	48	7,453
3	Berkley	6,147	126	466	3	27	6,789	6,082	106	449	3	27	6,868
4	Beverly Hills	3,858	0	301	1	11	4,171	3,796	0	283	1	11	4,090
5	Bingham Farms	270	2	184	0	2	458	243	2	175	0	2	423
6	Birmingham	7,063	250	2,605	3	40	9,981	6,818	228	2,231	3	36	9,315
7	Bloomfield Hills	1,208	20	436	1	28	1,693	1,149	19	374	1	24	1,587
8	Bloomfield Twp	13,800	19	3,358	4	75	17,256	13,391	14	2,967	4	68	16,444
9	Brandon Twp	3,189	19	34	917	15	4,174	3,038	19	27	903	14	4,001
10	Clarkston	312	22	118	0	6	456	300	21	112	0	6	440
11	Clawson	4,387	81	1,217	0	24	5,709	4,346	75	1,175	0	23	5,818
12	Commerce Twp	8,139	206	174	1,001	34	9,554	7,848	197	153	856	30	9,084
13	Farmington	2,748	11	2,172	1	27	4,959	2,717	10	1,988	1	27	4,743
14	Farmington Hills	19,227	102	13,198	549	183	33,259	18,830	97	11,842	521	178	31,267
15	Ferdale	8,253	756	1,132	4	62	10,207	8,027	705	1,088	4	60	9,893
16	Franklin	1,015	0	10	0	2	1,027	983	0	9	0	2	994
17	Groveland Twp	1,470	11	49	288	8	1,802	1,448	11	46	251	5	1,762
18	Hazel Park	6,412	361	1,017	6	75	7,871	6,192	321	776	6	71	7,366
19	Highland Twp	5,103	51	297	1,377	20	6,848	4,867	47	217	1,321	17	6,469
20	Holly	1,311	98	433	413	28	2,283	1,284	85	390	398	20	2,178
21	Holly Twp	1,203	18	25	30	12	1,288	1,129	17	23	25	10	1,204
22	Huntington Woods	2,406	0	6	0	2	2,414	2,379	0	4	0	2	2,385
23	Independence Twp	8,092	81	1,398	612	27	10,210	7,933	77	1,188	578	24	9,799
24	Keego Harbor	833	30	363	94	10	1,330	789	29	320	89	7	1,234
25	Lake Angelus	142	0	0	0	0	142	126	0	0	0	0	126
26	Lake Orion	895	96	343	2	40	1,376	826	88	321	2	25	1,263
27	Lathrup Village	1,528	3	90	0	8	1,629	1,501	3	79	0	8	1,591
28	Leonard	131	6	0	4	0	141	130	6	0	4	0	140
29	Lyon Twp	2,401	38	221	816	14	3,490	2,338	26	181	792	14	3,351
30	Madison Heights	9,412	59	3,324	486	89	13,370	9,276	57	3,129	476	87	13,026
31	Milford	1,832	93	703	2	27	2,657	1,580	79	650	2	23	2,335
32	Milford Twp	2,159	5	15	622	6	2,807	2,079	4	9	577	5	2,674
33	Northville (pt)	970	1	338	0	10	1,319	951	1	322	0	10	1,284
34	Novi	8,196	43	7,286	1,860	107	17,492	8,034	35	6,424	1,803	106	16,402
35	Novi Twp												
36	Oak Park	9,282	102	1,882	8	88	11,360	9,027	102	1,701	6	88	10,925
37	Oakland Twp	3,116	5	7	372	14	3,514	3,034	4	6	358	4	3,406
38	Orchard Lake Village	773	1	5	0	4	783	713	1	4	0	1	719
39	Orion Twp	7,305	55	1,228	424	45	9,057	7,069	51	1,141	410	35	8,706
40	Ortonville	399	42	123	0	8	572	385	37	112	0	8	543
41	Oxford	820	93	360	1	22	1,296	805	87	346	1	17	1,256
42	Oxford Twp	2,634	30	290	641	11	3,606	2,570	25	274	825	8	3,502
43	Pleasant Ridge	1,042	25	10	2	6	1,085	1,027	24	9	2	5	1,067
44	Pontiac	15,781	1,524	8,408	352	408	26,473	15,132	1,379	7,465	347	392	24,715
45	Rochester	1,851	160	1,833	1	39	3,884	1,787	148	1,694	0	27	3,657
46	Rochester Hills	16,562	60	7,317	1,359	125	25,423	16,206	59	6,562	1,298	121	24,246
47	Rose Twp	1,905	34	17	132	10	2,098	1,713	28	13	126	7	1,888
48	Royal Oak	20,954	792	8,354	8	184	29,372	19,835	735	7,882	8	157	28,616
49	Royal Oak Twp	685	20	1,975	1	31	2,612	536	20	1,852	1	31	2,439
50	South Lyon	1,333	122	1,755	144	33	3,387	1,306	117	1,633	143	23	3,222
51	Southfield	18,493	70	17,937	709	247	35,456	16,125	66	15,463	670	228	32,552
52	Southfield Twp												
53	Springfield Twp	3,272	30	348	730	14	4,394	3,124	28	309	703	11	4,175
54	Sylvan Lake	806	10	56	2	2	876	789	8	53	2	2	854
55	Troy	21,429	70	7,597	283	118	29,497	21,020	67	7,001	275	115	28,477
56	Walled Lake	1,287	74	1,518	144	40	3,063	1,262	72	1,463	141	38	2,976
57	Waterford	20,713	224	6,863	180	159	28,139	20,270	205	6,321	181	153	27,110
58	West Bloomfield	16,121	219	5,716	3	131	22,190	15,584	209	5,091	2	126	21,012
59	White Lake Twp	7,622	64	430	1,669	34	9,819	7,222	60	386	1,576	21	9,266
60	Wixom	1,808	18	3,626	7	17	5,476	1,776	14	3,253	7	12	5,083
61	Wolverine Lake	1,585	12	158	0	2	1,757	1,553	12	138	0	2	1,705
Oakland County		313,216	6,559	123,212	17,407	2,853	483,247	304,815	6,027	110,445	16,581	2,633	440,501
Less Northville		(970)	(1)	(338)	0	(10)	(1,319)	(951)	(1)	(322)	0	(10)	(1,284)
Planning Values		312,246	6,558	122,874	17,407	2,843	481,928	303,864	6,026	110,123	16,581	2,623	439,217
RRRASOC		53,493	478	47,713	4,230	688	106,582	52,388	437	42,047	4,078	626	99,578
SOCRRA		101,858	2,645	29,976	803	745	136,027	99,862	2,443	27,859	785	721	131,466
Pontiac		15,781	1,524	8,408	352	408	26,473	15,132	1,379	7,465	347	392	24,715
Remainder		141,114	1,911	36,777	12,022	1,022	192,846	138,482	1,767	32,952	11,371	884	183,460
Planning Values		312,246	6,558	122,874	17,407	2,843	481,928	303,864	6,026	110,123	16,581	2,623	439,217
Livingston County		40,262	823	4,739	3,299	349	49,572	37,500	854	4,271	3,119	278	46,023
Macomb County		201,739	3,424	75,549	13,892	2,301	296,705	198,505	3,174	88,753	13,013	2,184	285,630
Monroe County		39,285	1,893	6,288	4,604	456	52,518	38,126	1,747	5,871	4,304	402	50,450
Oakland County		313,216	6,559	123,212	17,407	2,853	483,247	304,815	6,027	110,445	16,581	2,633	440,501
St. Clair County		45,958	2,712	7,759	5,436	598	62,483	42,765	2,448	6,806	5,035	453	57,507
Washtenaw County		63,275	4,045	47,177	4,870	987	120,454	61,039	3,786	42,796	4,694	908	113,223
Wayne County		548,961	59,206	198,645	14,231	10,597	831,640	530,745	53,172	173,115	13,551	9,804	780,387
SEMCOG Totals		1,252,676	78,762	463,379	63,639	18,143	1,876,599	1,213,497	71,208	412,056	60,299	16,862	1,775,722

The County's waste stream is also handled at a variety of other non-licensed facilities such as recycling drop-off centers, small transfer operations and pure source separated MRFs, none of which require Act 451 designation. Although no inventory is kept of such facilities, the Report of Municipally Sponsored Solid Waste Programs - January 1, 1996 contained in the Appendix includes a listing of some drop-off facilities.

Numerous closed landfills, dump sites, and incineration plant sites exist in Oakland County. Some remain as reminders of past poor practices. More than 65 landfill and dump sites (used since World War II) exist as shown in the exhibits and anecdotes frequently are brought up by the old timers that reveal the potential for adding other sites to the list. These are shown in Exhibits 27 and 28. The monitoring of the closed facilities is handled by the Michigan Department of Environmental Quality. Funding for proper closure of sites where environmental problems have occurred is difficult and litigation has resulted in numerous instances. Generally, current program levels and efforts at the state level are accepted by the public as adequate.

#### **Inter-County Flows of Act 451 Wastes:**

Michigan's Act 451 provides that wastes may be disposed of at Act 451 facilities in other counties if the export and import of the wastes are explicitly authorized in the approved solid waste management plans of the counties involved. Oakland County currently authorizes the export of wastes to all Michigan counties and to other states and countries. Imports into Oakland County are also authorized from a select list of generally contiguous counties. Additionally, the Oakland County Board of Commissioners has, since adoption of the 1994 plan amendments which established the inter-county flow authorizations, adopted a broader free market, no inter-county flow restriction stance which points the way for a release of current import restrictions.

#### **The Future Waste Stream:**

The future waste stream can be projected based upon the population and employment data provided through SEMCOG's most recent Regional Development Forecast and upon the basic waste generation assumptions previously shown in Exhibit 14. Additionally, the projections must be based upon various volume reduction scenarios. First, it is assumed that currently observed volume reduction efforts will not be improved upon as a worst case scenario. Details of this projection are shown on Exhibit 29.

First, broad brush impressions can quickly be gained from these future projections using the waste stream data prior to calculating the impact of volume reduction efforts. Once again examining the county from a geographic perspective, the 61 municipalities were combined together into groups approximating the original 25 townships. The top ten townships from the 1998 sample remain the same in 2020 with minor realignments in their order. As shown, Pontiac township moves to the third position in terms of overall waste generation per net usable square mile from fourth position in 1998 while it remained number one in terms of ISW generation. Additionally, Avon township moves to the sixth position from number seven and Novi township moves to ninth from tenth. The Year 2020 rankings are shown in the table following.

<u>Approximate Township</u>	<u>Overall Waste Density Factor - 2020</u>	<u>Industrial Special Wastes Density Factor - 2020</u>
1. Royal Oak (1)	33.1	1.1 - 3 (3)
2. Troy (2)	23.4	1.2 - 2 (2)
3. Pontiac (4)	22.7	3.9 - 1 (1)
4. Southfield (3)	19.3	0.5 - 7 (6)
5. Farmington (5)	16.3	0.7 - 5 (4)
6. Avon (7)	13.9	0.9 - 4 (5)
7. Bloomfield (6)	13.7	0.3 - 9 (10)
8. Waterford (8)	12.7	0.2 - 12 (12)
9. Novi (10)	10.8	0.5 - 6 (7)
10. West Bloomfield (9)	10.7	0.1 - 16 (16)

The overall waste generation rates of the three topmost 1998 units, Royal Oak, Troy and Southfield townships, declined slightly from the 1998 levels while all other areas increased. In terms of ISW generation, only Pontiac township increased in generation rates, six units dropped in waste generation while three units remained flat. Some caution has to be used when examining the ISW generations rates since it is based on the broad category of manufacturing employment and not upon specific manufacturing and/or industrial facilities.

Secondly, it may be assumed that the Plan's volume reduction goals are successfully achieved as a best case scenario. In the latter instance, the volume reduction scenarios shown in the table following are assumed to occur by the year 2010.

<u>Waste Stream Category</u>	<u>Year 1998</u>	<u>Year 2010</u>
Residential Yard Wastes	16.70%	16.70%
Residential Recycling	7.65%	15.00%
Commercial Yard Wastes	2.00%	2.00%
Commercial Recycling	13.00%	30.00%
Industrial Recycling	15.00%	32.00%
CDD Recycling	15.00%	32.50%
ISW Recycling	15.00%	32.50%
Net Totals After Residues	18.12%	30.49%

Exhibit 30 shows details of this best case volume reduction scenario. Although the total amount of waste generated prior to volume reduction efforts continues to increase since both population and employment are projected to smoothly increase over the next two decades, with achievement of the VR goals, the amount of wastes destined for disposal will decline by about 6.6% through 2010. Beyond that point in time, unless additional volume reduction achievement levels are

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**ATTACHMENT F**

**Waste Generation Data**

## Waste Generation and Disposal Assumptions

### 1992 Waste Generation and Disposal Assumptions

Waste Stream Component	# per Day	Backyards per Ton	Gateyards per Ton	Pounds per Gtyd.
Municipal Solid Waste		1.5	(@ 2 gtyds/backyd and 3 gtyds/ton)	3
Residential	3.77		per capita	
Commercial	5.75		per employees of all other classes	
Industrial	5.83		per manufacturing employee	
Total - Composite				866.7
Construction & Demolition Debris		1	(@ 2 gtyds/backyd and 2gtyds/ton)	2
Total	9.7		per capita - See Modifier discussion below.	
Industrial Special Waste		1.1423	(@ 1 gtyd/backyd, both at 1750#)	1.1423
Total	9.83		rounded value per manufacturing employee based on 1990 analysis shown to the right. Also see Manufacturing employment modifier at right.	

Process Residues	Percent	
Compost	1.70%	(same as Municipal Solid Waste above)
Recycle	5.00%	2.80% 31% YW Grass Clipping Factor (same as Municipal Solid Waste above)
CDD	7.50%	(same as CDD wastes above)
ISW	7.50%	(same as ISW wastes above)
Incinerator Ash	26.50%	1 (weight based on wet ash)

### Construction and Demolition Debris Modifier

This has previously been presented as a flat # per capita value.

However, when viewed from the standpoint of growth, wouldn't employment (or the contribution of the places where people work and the infrastructure needed to support them) also play a major role? Especially since the rate of growth in employment can be substantially different than that of the population?

	1970	1990	2020
Population	909,500	1,080,225	1,358,879
Change		1.19	1.49
Employment	332,190	580,181	886,675
Change		2.05	2.67

Assumptions to spread CDD generation to both population and employment.

Using Michigan in 1990 as the base for average employment per capita, and assuming that each employee has the following % of CDD generation as compared to each resident, the following generation rate per unit (population + adjusted employment) occurs:

100% Relative impact	
0.46289 # per unit per day	
0.463 (rounded)	

### Construction & Demolition Debris Modifier

Year	Modifier	#/cap
1970	0.903	0.8321
1975	0.939	0.8573
1980	0.992	0.8948
1985	1.053	0.7388
1990	1.078	0.7545
1995	1.091	0.7634
2000	1.109	0.7768
2005	1.122	0.7852
2010	1.121	0.7849
2015	1.106	0.7741
2020	1.094	0.7656

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This modifier is used as a multiplier against flat #/capita/day values.

### Calculating Industrial Special Waste Generation Rates

Michigan - 1990 - Using U of Ms REM Projections dated 8/94

Population	9,314,200	
Total Employment	4,771,182	0.512 per capita
Manufacturing Employment	955,437	0.103 per capita

Generation Factors from "Assumptions" - # per unit per day

MSW - Residential	3.77
MSW - Commercial	5.75
MSW - Industrial	8.88
CDD	9.7

New Assumptions in re: ISW - Industrial Special Waste

CDD + ISW as a % of statewide MSW - 1990	25.00%
--	--------

1990 Calculations - in tons per day

MSW - Residential	17,557.27
MSW - Commercial	10,970.21
MSW - Industrial	3,291.48
Total MSW	31,818.96

CDD = 3,259.97

CDD + ISW = 7,954.74

ISW = 4,694.77

Total Act 451 Part 115 = 39,773.70

Calculated ISW Generation Factor - # per Man. Emp per Day

9.8275
9.83 Rounded

### "Manufacturing" Employment Modifier

Although Oakland County has a considerable number of employees in the "Manufacturing" SIC Code categories, an unusual percentage of these employees are in headquarters or regional office facilities as compared to factories. An example is the recent relocation of the Chrysler headquarters operations to the Auburn Hills site.

Year	1970	1990	2000	2010	2020
Say....	100.00%	89.08%	85.88%	85.08%	80.08%

Note: These values vary depending upon which County or combination thereof is being analyzed.

### Manufacturing Employment Modifier

Year	Modifier	Rounded
1970	1.050	1.00
1975	0.950	0.95
1980	0.894	0.89
1985	0.833	0.83
1990	0.800	0.80
1995	0.725	0.73
2000	0.650	0.65
2005	0.600	0.60
2010	0.550	0.55
2015	0.525	0.53
2020	0.500	0.50

This modifier is used to adjust Manufacturing employment values used in Commercial MSW, Industrial MSW and ISW generation values formulas.

Oakland County (w/o Northville)

Oakland County Solid Waste Planning

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04/30/98

**Examining Residential Generation Rates Prior to Recovery (Source Reduction & Reuse, Composting, and Recycling).**

Item	Factors	% Y. W. of Total	Adjust Factor *	Pop	Pop Adjusted	Generation #/day	Waste #/day	Yard Waste #/day	Gen/Capita #/Capita/day	Gen/Capita #/Capita/day wo Y. W.	Check
1998 Population	1,172,276										
Percent Multiple Population **	21.15%										
MF Urban		90.15%	0.9	223,537	201,183	658,606	645,434	13,172	2,9463	2,8874	0.9
MF Rural		9.85%	0.9	24,423	21,981	70,518	70,518	0	2,8874	2,8874	0.9
Percent Single Family Pop.	78.85%										
SF Urban		80.43%	1.0	743,439	743,439	3,079,527	2,385,093	694,433	4,1423	3,2082	
SF Rural		19.57%	1.0	180,877	180,877	610,829	580,288	30,541	3,3770	3,2082	
	100.00%	100.00%		1,172,276	1,147,480	4,419,481	3,681,334	738,147	3,7700	3,1403	
					# per Capita	3,770		0.630			
					% Yard Wastes			16.70%			

Base Single Family Generation Rate wo Yard Wastes = 3,2082

Overall Generation Rate = 3,770000

4,419,481

\* Operating on the assumption that because of limited storage, difficulty in getting wastes to disposal point, etc., the multi-family person is more frugal than the single family person in generating wastes - i.e. a more careful purchaser, etc.

\*\* Population in housing units with 3 or more dwelling units and including DUs in the "Other" category.

**Summary**

If Rural is defined as a municipality having a total population density of less than the following amount per net usable square mile....

1,500 persons / sq. mile

All in # / capita / day

	wo YW
and if overall residential generation rate is	3,77000
Single Family Urban gen rate is	3,20819
Single Family Rural gen rate is	3,20819
Multiple Family Urban gen rate is	2,94630
Multiple Family Rural gen rate is	2,88737

Note: This sheet displays why the use of a single per capita generation value is inappropriate for use on a statewide basis. Great care has to be taken to customize the generation per capita values to individual counties and the characteristics thereof. Major characteristics involve percent multiple housing, percent urban and rural single family housing and the percent of yard wastes generated by each category of housing.

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Solid Waste Database  
Oakland County, Michigan

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Projected 1998 Act 451 Solid Waste Stream (in tons per day) - Adjusted for Dwelling Unit Types and Density

# Municipality	Municipal Solid Waste Component					Total MSW	CDD	ISW	Total 451	Total Residential % Change
	Single Family Residential	Multi-family Residential	sub-total Residential	Commercial	Industrial					
1 Addison Township	8.74	0.87	9.61	2.97	0.07	12.65	2.23	0.09	14.97	-11.78%
2 Auburn Hills	26.54	11.88	38.42	81.01	38.38	157.80	8.06	54.75	220.61	-2.39%
3 Berkley	32.80	1.56	34.37	17.53	0.48	52.37	6.52	0.68	59.58	7.87%
4 Beverly Hills	20.01	0.89	20.90	7.73	0.24	28.87	3.96	0.34	33.18	7.99%
5 Bingham Farms	1.32	0.48	1.80	22.98	0.88	25.46	0.37	0.97	26.80	-0.88%
6 Birmingham	32.95	6.29	39.24	58.60	2.88	100.72	7.78	4.10	112.60	3.15%
7 Bloomfield Hills	6.10	1.29	7.39	37.52	0.78	45.68	1.74	1.11	48.53	-13.01%
8 Bloomfield Township	76.59	8.66	85.25	57.84	2.13	145.21	16.53	3.03	164.78	5.51%
9 Brandon Township	18.70	2.55	21.25	4.44	0.38	26.07	4.95	0.54	31.56	-12.22%
10 Clarkston	1.47	0.38	1.84	9.17	0.53	11.54	0.37	0.75	12.67	1.44%
11 Clawson	22.90	3.37	26.26	15.74	1.76	43.76	5.14	2.51	51.41	4.43%
12 Commerce Township	53.71	3.04	56.76	21.50	2.20	80.46	10.80	3.14	94.40	7.52%
13 Farmington	13.31	5.52	18.84	22.28	1.07	42.19	3.93	1.53	47.65	-1.82%
14 Farmington Hills	116.29	33.97	150.26	169.81	18.22	338.29	30.55	26.00	394.84	0.63%
15 Ferndale	46.40	3.70	50.10	24.21	4.09	78.40	9.61	5.84	93.85	6.67%
16 Franklin	4.30	0.05	4.35	2.91	0.05	7.31	1.00	0.08	8.39	-10.61%
17 Groveland Township	8.74	0.82	9.56	2.28	0.01	11.85	2.22	0.01	14.08	-11.72%
18 Hazel Park	36.62	3.06	39.68	12.23	1.55	53.46	7.62	2.21	63.29	6.53%
19 Highland Township	28.51	4.13	32.64	13.66	0.79	47.09	7.62	1.13	55.84	-12.31%
20 Holy	8.97	2.33	11.29	7.39	1.80	20.28	2.28	2.29	24.85	1.39%
21 Holy Township	6.07	0.27	6.33	1.41	0.37	8.11	1.46	0.53	10.09	-11.07%
22 Huntington Woods	13.27	0.04	13.31	5.33	0.22	18.86	2.48	0.32	21.67	9.73%
23 Independence Township	46.36	4.81	51.17	17.65	0.87	69.69	11.88	1.24	82.80	-11.84%
24 Keego Harbor	4.40	1.16	5.56	3.87	0.11	9.53	1.12	0.15	10.80	1.30%
25 Lake Angelus	0.57	0.00	0.57	0.18	0.00	0.76	0.13	0.01	0.90	-10.43%
26 Lake Orion	4.59	1.20	5.79	4.76	0.11	10.65	1.17	0.15	11.97	1.33%
27 Lathrup Village	8.35	0.32	8.67	8.04	0.36	17.07	1.64	0.52	19.23	6.23%
28 Leonard	0.65	0.01	0.66	0.15	0.18	0.99	0.15	0.26	1.40	-10.67%
29 Lyon Township	14.33	2.66	16.99	6.34	3.51	26.84	3.98	5.01	35.84	-12.75%
30 Madison Heights	48.72	10.58	59.29	67.73	15.30	142.32	11.84	21.83	175.99	2.45%
31 Milford	10.73	2.02	12.74	13.47	1.50	27.71	2.53	2.14	32.38	3.22%
32 Milford Township	13.08	1.55	14.64	7.64	4.15	26.43	3.41	5.93	35.78	-12.02%
33 Northville (part)	5.61	0.98	6.59	2.48	0.28	9.35	1.30	0.40	11.05	3.62%
34 Novi	63.00	22.77	85.76	71.58	8.92	166.26	17.70	12.72	196.68	-0.82%
35 Novi Township										
36 Oak Park	56.08	5.70	61.78	30.45	3.40	95.63	11.94	4.85	112.41	5.90%
37 Oakland Township	17.58	0.98	18.56	3.43	0.37	22.36	4.28	0.53	27.16	-11.23%
38 Orchard Lake	3.96	0.02	3.98	2.99	0.19	7.17	0.91	0.28	8.36	-10.53%
39 Orion Township	41.05	4.42	45.48	12.71	7.71	65.89	10.56	11.00	87.46	-11.89%
40 Ortonville	2.77	0.41	3.18	1.38	0.10	4.66	0.62	0.14	5.42	4.44%
41 Oxford	5.32	1.14	6.47	3.76	0.76	10.98	1.29	1.08	13.36	2.50%
42 Oxford Township	15.47	2.38	17.85	5.49	2.62	25.96	4.17	3.74	33.87	-12.42%
43 Pleasant Ridge	5.60	0.10	5.70	1.57	0.26	7.54	1.07	0.38	8.98	9.07%
44 Pontiac	104.86	25.91	130.77	129.11	35.42	295.30	26.31	50.54	372.14	1.68%
45 Rochester	10.09	4.76	14.85	42.88	5.91	63.65	3.13	8.43	75.21	-2.79%
46 Rochester Hills	110.38	22.05	132.43	64.17	14.37	210.97	26.33	20.50	257.80	2.91%
47 Rose Township	9.98	0.45	10.43	0.89	0.07	11.50	2.40	0.11	14.00	-11.09%
48 Royal Oak	102.42	22.65	125.07	97.36	6.58	229.01	25.00	9.38	263.39	2.34%
49 Royal Oak Township	3.34	5.23	8.57	7.34	0.43	16.35	1.99	0.62	18.95	-11.96%
50 South Lyon	13.52	4.32	18.44	6.30	0.74	25.47	3.81	1.05	30.33	-0.87%
51 Southfield	91.63	44.95	136.57	311.88	16.21	464.47	28.83	23.13	516.43	-3.08%
52 Southfield Township										
53 Springfield Township	20.15	2.72	22.87	5.42	0.87	29.15	5.33	1.23	35.72	-12.20%
54 Sylvan Lake	3.71	0.17	3.88	3.13	0.09	7.11	0.74	0.13	7.97	7.93%
55 Troy	138.75	20.45	159.20	310.41	46.92	516.53	31.20	66.94	614.67	4.42%
56 Walled Lake	7.38	4.69	12.07	16.95	4.56	33.59	2.60	6.50	42.69	-5.11%
57 Waterford Township	117.26	18.96	136.22	82.03	3.75	222.01	26.80	5.36	254.17	3.99%
58 West Bloomfield Township	100.30	14.98	115.28	47.87	1.26	164.41	22.80	1.79	188.81	4.36%
59 White Lake Township	41.05	5.26	46.31	10.99	0.31	57.62	10.79	0.45	68.85	-12.13%
60 Wixom	14.23	8.58	22.81	15.09	9.49	47.40	4.90	13.55	65.84	-4.66%
61 Wolverine Lake	9.02	0.39	9.41	1.30	0.00	10.71	1.78	0.00	12.49	8.07%
62 County Totals	1,850.59	365.50	2,216.09	2,017.20	276.17	4,509.46	453.45	394.01	5,356.92	0.00%
Less Northville	(5.41)	(0.94)	(6.36)	(2.48)	(0.28)	(9.12)	(1.30)	(0.40)	(10.82)	0.00%
Planning Values	1,845.18	364.56	2,209.74	2,014.72	275.89	4,500.35	452.15	393.61	5,346.11	0.00%

The Total Residential % Change column shows the differences obtained by examining residential generators in terms of single family or multi-family dwelling units and the density of the developments.

It must be noted that the waste stream shown is prior to any volume reduction effort and programs.

Solid Waste Database  
Oakland County, Michigan

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10/13/98

Projected 1998 Act 451 Solid Waste Stream (in tons per day) - Adjusted for Dwelling Unit Types and Density

#	Single Family Residential		Municipal Solid Waste Component		Total MSW	CDD	ISW	Total 451	Total Net Usable Square Miles	Density Factors per Net Usable Sq. Mile	
	Residential	Multi-Family Residential	Residential	Commercial/Industrial						MSW	ISW
1 Addison	9.39	0.88	10.27	3.12	13.64	2.38	0.36	16.37	32.21	0.42	0.01
2 Avon	120.47	26.81	147.28	107.06	274.62	28.48	28.94	333.01	28.27	8.38	0.99
3 Bloomfield	115.64	16.24	131.88	153.98	291.82	26.05	8.25	325.91	26.07	11.19	0.32
4 Brandon	21.47	2.86	24.43	5.82	30.72	5.58	0.68	38.98	31.14	0.89	0.02
5 Commerce	70.11	8.12	78.24	39.76	124.75	15.19	9.65	148.59	20.82	5.89	0.46
6 Farmington	129.60	38.50	169.10	192.09	360.49	34.48	27.53	442.50	27.59	13.78	1.00
7 Groveland	8.74	0.82	9.56	2.28	11.85	2.22	0.01	14.08	22.85	0.52	0.00
8 Highland	28.51	4.13	32.64	13.68	47.09	7.82	1.13	55.84	24.51	1.82	0.05
9 Holly	15.03	2.59	17.62	8.79	26.39	3.74	2.81	34.94	27.12	1.05	0.10
10 Independence	47.83	5.18	53.01	28.82	81.23	12.25	1.98	95.47	28.77	2.82	0.07
11 Lyon	27.85	7.58	35.43	12.84	52.31	7.79	6.08	66.16	30.02	1.74	0.20
12 Milford	23.81	3.57	27.38	21.10	58.14	6.83	8.07	68.14	26.68	2.03	0.30
13 Novi	82.84	32.33	115.16	89.14	223.00	23.90	26.67	273.57	35.83	6.28	0.75
14 Oakland	17.58	0.88	18.58	3.43	22.36	4.28	0.53	27.16	28.42	0.76	0.02
15 Onon	45.84	5.82	51.27	17.48	78.55	11.73	11.15	89.43	22.46	3.41	0.50
16 Oxford	20.79	3.53	24.32	8.25	38.85	5.46	4.82	47.23	30.32	1.22	0.18
17 Pontiac	131.97	37.79	169.76	210.29	453.85	34.49	105.29	593.64	28.84	15.21	3.53
18 Rose	9.88	0.45	10.43	0.99	11.50	2.40	0.11	14.00	31.70	0.38	0.00
19 Royal Oak	345.26	52.82	397.86	263.74	663.84	78.07	48.10	818.11	23.95	28.98	1.93
20 Southfield	125.81	48.89	172.31	353.33	543.19	35.80	25.04	604.02	28.46	18.44	0.85
21 Springfield	20.15	2.72	22.87	5.42	28.15	5.33	1.23	33.72	28.88	1.01	0.04
22 Troy	181.85	23.82	185.48	328.15	560.28	38.34	89.45	668.08	27.94	20.05	2.49
23 Waterford	117.28	18.86	136.22	82.03	222.01	26.80	5.36	254.17	23.14	9.80	0.23
24 West Bloomfield	112.37	18.34	128.71	57.86	188.22	25.37	2.35	215.94	23.32	8.07	0.10
25 White Lake	41.05	5.28	46.31	10.98	57.82	10.78	0.45	68.85	22.86	2.52	0.02
County Totals	1,850.59	365.50	2,216.09	2,017.20	4,508.48	453.45	384.01	5,358.92	688.17	6.57	0.57

Municipalities which set aside two townships were distributed as below...

Municipality	Residential	Commercial/Industrial	Total MSW	CDD	ISW	Total 451	Total Net Usable Square Miles	Density Factors per Net Usable Sq. Mile
Birmingham to Bloomfield Twp.								
Clawson to Troy Twp.								
Holly to Holly Twp.								
Lake Angelus to Pontiac Twp.								
Pontiac to Pontiac Twp.								
Royal Oak to Royal Oak Twp.								
Sylvan Lake to West Bloomfield Twp.								
Wixom to Novi Twp.								

Oakland's Solid Waste Authorities	Single Family Multi-Family sub-total		Municipal Solid Waste Component		Total MSW	CDD	ISW	Total 451	Total Net Usable Square Miles	Density Factors per Net Usable Sq. Mile	
	Residential	Commercial/Industrial	Residential	Commercial/Industrial						MSW	ISW
RRASOC	333.89	128.08	461.75	820.03	62.73	98.31	89.49	1,330.31	93.23	12.28	0.98
SOCRRA	518.17	68.13	584.30	589.18	88.74	113.88	98.08	1,454.28	51.89	23.94	1.89
Total Authorities	849.88	196.20	1,046.05	1,209.21	131.47	210.27	187.57	2,784.57	145.13	16.45	1.29
% of County Totals	45.92%	53.68%	47.20%	59.95%	47.60%	46.37%	47.80%	51.98%			

RRASOC Municipalities	SOCRRA Municipalities
Farmington	Berkley
Farmington Hills	Beverly Hills
Lyon Township	Birmingham
Novi	Clawson
Southfield	Femdale
South Lyon	Hazel Park
Wixom	Huntington Woods
Walled Lake	Lathrup Village
	Madison Heights *
	Oak Park
	Pleasant Ridge
	Royal Oak
	Royal Oak Township *
	Troy

\* Prior to late 1997

**ATTACHMENT G**  
**SPECIAL CONDITIONS**

10/1

## ATTACHMENTS

### Import and Export Authorizations

Oakland County authorizes the export of wastes generated within the County to existing and future disposal facilities located in each of the other 82 Michigan counties and to existing and future disposal facilities located elsewhere. **No limitation is placed upon the amount of wastes that may be exported.**

Oakland County waste generators and service providers operating within Oakland County must understand that although this export authorization is broadly given, as Michigan law is currently written, the right to export to facilities located in a given Michigan county is subject to any limitations that may be imposed by the facility's host county's solid waste management plan and then finally subject to additional limitations that may be imposed by the facility operator. Caution must be exercised to ensure that anticipated exports are in fact permissible.

Oakland County authorizes the import of wastes generated within each of the other 82 Michigan counties to existing and future disposal facilities located in Oakland County subject to the following. **Limitations on the amount of wastes that may be imported into Oakland County from a given county will be equal to the limitations imposed by that county's solid waste management plan upon exports from Oakland County or upon a lower value if specified by the exporting other county.** Additional limitations may be imposed by the operators of existing and future Oakland County disposal facilities.