

City of Detroit Future Solid Waste Plan

Task Force Report



January 2007

Detroit City Council Recycling/Environmental Task Force

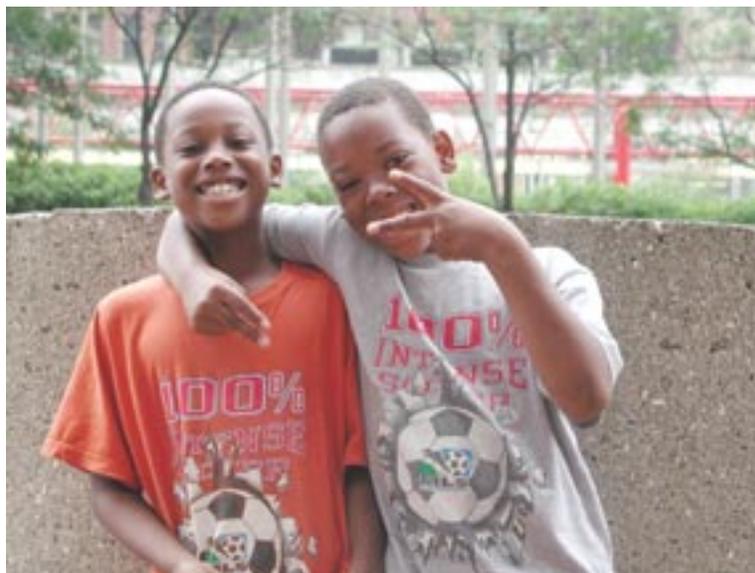
Preparing now for Detroit's future

It is the responsibility of a municipality to provide for an environmentally just and reliable solid waste management system for citizens that is protective of public health, in the most economical method possible.

The solid waste system should incorporate the Principles of Environmental Justice, protecting the disadvantaged neighborhoods and people of color near the incinerator from the proliferation of odors, pollution and health problems associated with burning trash.

Now, prior to the completion of the debt payments for GDRRA, is the time to prepare for major changes to Detroit's solid waste policy and management. Decisions for the future must be made.

Detroit should take this opportunity to reduce the cost of waste disposal, to create additional jobs, to improve the quality of life and reputation of the city by ceasing to burn trash and by developing a city-wide program of recycling and materials recovery.



Contents

Summary.....	1
Task force recommendations	1
Why Detroit needs to terminate incinerator use	2
Advantages of the plan	4
Advancing the plan	4

Appendices

Principles of environmental justice	5
Michigan Solid Waste Policy for 2006.....	6
SOCRRRA budget	7
Resources for economic development through processing and marketing of recyclables	8
Hospitalization from asthma	8
RRS qualifications summary.....	9
Resources for public education	9
Detroit ordinances to amend	10

Summary

Characteristics of Detroit's future solid waste plan

A good solid waste plan for Detroit is one that:

- Is cost effective and generates revenue through reclamation of resources;
- Gives priority to health and quality-of-life benefits for citizens of Detroit;
- Is environmentally just, i.e. ensures that no environmental burdens are more heavily placed on poorer neighborhoods and people of color;
- Recovers resources for re-use, such as recycling, composting, re-use centers, and reclamation projects, and reduces the amount of waste that requires disposal;
- Is comprehensive in managing all forms of solid waste – bulk items, recyclables, organic material, and trash – on a regular basis;
- Complies with all relevant environmental regulations; and
- Is aligned with the newly revised Michigan Solid Waste Policy for 2006.

Task force recommendations

The Task Force recommends that the City of Detroit terminate use of the incinerator in 2009, at the end of Detroit's debt obligation for Greater Detroit Resource Recovery Authority (GDRRA).

The Task Force recommends that the City of Detroit implement in 2009 a solid waste management plan characterized by:

- Cost effectiveness;
- Job creation; and
- Creation of business opportunities in the city.

This will incorporate:

- A focus on cost reduction;
- Incentives to recycle and to reduce trash;
- City-wide curbside recycling with goals for participation rates;
- The processing and composting of organics using recognized best practices;
- An active public education campaign; and
- Compacting, transporting, and landfill disposal of trash not recycled or recovered for other use.

Why Detroit needs to terminate use of the incinerator

The primary reasons that the Task Force recommends that use of the incinerator be terminated are cost and health considerations.

Cost — Why should Detroiters pay \$150+ per ton of trash incinerated?

Incineration is very costly compared to other methods of solid waste management. Detroit pays over \$150/ton for incineration of trash. Other communities using the incinerator pay much lower fees. Currently the City of Detroit underwrites all incinerator expenses and is responsible for all cost overruns.

Continuing to operate the incinerator would require substantial and expensive repairs and upgrades that would likely require new debt in the form of bonds. Any future option should *minimize* debt burden to the city.

- Detroit spends over \$150/ton on incinerating waste.
- GDRRA has accumulated a deficit of approximately \$22M in the past few years, in spite of annual city payments of \$76 to \$82M and inputs of additional state distributive aid tax refunds to help meet bond obligations and operating costs. Accumulated debts add to the tipping fees each year.
- The cost of incineration is not equitable. Detroiters pay much more in tipping fees than other communities which use the incinerator. In 2006-07, Detroit is paying over \$150/ton for garbage incinerated while outside customers pay an average of \$20.50/ton in tipping fees.

The Southeast Oakland County Resource Recovery Authority (SOCRRA) manages residential trash disposal for 12 member cities. It began recycling and composting waste after shutting down a solid waste incinerator in Madison Heights in 1989.

The average cost to SOCRRA member communities is \$39.71/ton. The cost per ton reflects revenue captured through sale of compost and recyclable materials.

Jobs — Business opportunities and job creation

Economic development opportunities for the processing and marketing of recyclables and reusable materials are numerous:

- Incinerator or landfill creates about 1 job for every 10,000 tons of material per year.
- Materials recovery facility creates about 10 jobs for every 10,000 tons of material per year.
- Recycling-based manufacturing creates about 25 jobs for every 10,000 tons of material per year.
- Misc. durable goods reuse creates about 62 jobs for every 10,000 tons of material per year.

Estimated net job increases

With a 30% recycling rate and a Materials Recovery Facility (MRF), Detroit would lose about 50 jobs at the incinerator but have an increase of 123 jobs in the city for operations associated with the MRF and the potential for an additional 307 jobs in recycling-based manufacturing in the city. Reuse of 30% of the bulk waste would create an additional 223 jobs.

30% recycling rate and a MRF: Total net job increase of $123+307+223-50 = 603$ jobs

With a 50% recycling rate and a MRF, Detroit would lose about 50 jobs at the incinerator but have an increase of 205 jobs in the city for operations associated with the MRF and the potential for an additional 512 jobs in recycling-based manufacturing in the city. Reuse of 50% of the bulk waste would create an additional 372 jobs.

50% recycling rate and a MRF : Total net job increase of $205+512+372-50 = 1,039$ jobs

Source: Institute for Local Self-Reliance Waste to Wealth program: www.ilsr.org/recycling/.

Health — Air quality, the incinerator and at-risk communities

The Detroit incinerator is permitted to release 3.6 million pounds of regulated toxins per year. More than 50,000 pounds of these legal pollutants are classified as hazardous, including lead, mercury, cadmium, chromium and hydrogen chloride.

Other regulated pollutants include:

- Particles of particulate matter that damage the lungs and respiratory system;
- Dioxin, a highly carcinogenic compound created by burning chlorinated plastics that is linked to cancer, diabetes, endometriosis, and low sperm counts; and
- Acid gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds that are harmful to the lungs and cardiovascular system and contribute to acid rain and ozone.

When malfunctions and equipment breakdowns occur, emissions and toxic discharges can be far greater than the regulated limits as emissions bypass pollution controls.

The effects of combined toxic emissions add to the cumulative toxic burden in the surrounding community, which is impacted by emissions from numerous stationary and mobile sources. The high level of cumulative air pollution near the incinerator helps define this area as an environmental justice community.

Asthma

Detroit has one of the highest asthma rates in the country — 3 times the national average — and ranks third in asthma-related deaths. Detroit leads the nation for asthma death rate among African Americans. The rate of hospitalizations from asthma in the zip codes surrounding the incinerator is 47-90 per 10,000 people. (See Appendix 5.)

Cancer and low birth weights

A five year study of toxicity, race and poverty in Michigan published in 1998 by Elaine M. Hockman and Charles M. Morris, Wayne State University, found that increased risk of cancer and the incidence of low birth weights among newborns were associated with the presence of pollution sources, particularly incinerators. Hockman and Morris concluded:

“Race matters in that the pollution source with which a minority status is most closely associated, the presence of incinerators, is also the pollution source most closely associated with detrimental health in terms of both cancer rates of new reported cancers and in terms of higher rates of low birth weights. . . .Siting in terms of race remains not just an economic issue, but a public health and civil rights issues as well.” (p.175)

Source: Elaine M. Hockman and Charles M. Morris, “Progress towards Environmental Justice: A Five-year Perspective of Toxicity, Race and Poverty in Michigan, 1990-1995,” *Journal of Environmental Planning and Management*, 41(2), 1998, pp. 157-176.

Energy — Waste-to-energy incinerators are a poor option for producing energy

- Energy produced from burning waste is not a renewable resource and exacerbates climate change. When materials are burned, more fossil fuel energy is used to replace the products that are created by high-energy activity, including mining, manufacturing, harvesting and transporting materials and products around the world.
- Waste-to-energy incinerators are also failures in producing steam and electricity on a cost effective basis in Michigan and throughout the US. The \$127M budgeted for the Detroit waste incinerator in 2006-07 will produce only \$43M in gross energy sales. The City of Detroit will contribute \$90M of the \$127M cost of operating the plant.
- Energy rates for steam purchased from the incinerator do not reflect the true energy market. Currently DTE Energy buys its steam at \$13/mlb from the incinerator but retails incinerator steam at \$6/mlb to users serviced by Detroit Thermal, a subsidized energy rate for Detroit Thermal customers that will end in 2008.

Energy efficiency and conservation are effective and reduce the need for steam and power. Energy efficiency saves cities and businesses money and creates new investment opportunities. Innovative programs to reduce energy use boost the local economy: e.g., home energy rating job training programs; weatherization programs; home efficiency programs assist residents in reducing utility bills which are a major factor in homelessness.

Advantages of the proposed solid waste management plan

A solid waste program that emphasizes waste reduction and materials recovery will result in:

- Decreased city expenditures for waste collection and disposal;
- Lower toxic emissions and thus improved public health;
- Reducing Detroit's contribution to global warming (because it takes less energy to use recovered materials than raw materials, the emission of greenhouse gasses is reduced);
- Lowering mercury emissions (all Michigan lakes have fish advisories due to mercury pollution); and
- Improving air quality for environmental justice communities.

Advancing the proposed plan

1. Expertise is required in order to develop the details for this plan, everything from financial feasibility to logistical challenges of implementation.

The Task Force recommends contracting with Resource Recycling Systems: Consultants and Engineers in Resource Management for a full assessment of transitioning collection and disposal systems. (See Appendix 6.)

2. The City Council will need to review and revise the ordinances controlling solid waste collection and disposal, e.g., the Flow Control Ordinance.
3. Future planning must include alternatives for steam customers in midtown Detroit.

4. Education is essential to the success of a transition.

An intense program of public messaging will be required to educate citizens about waste materials: Repeated messaging such as *Trash is Costly*; *Don't trash Detroit*; *Reduce, Reuse, Recycle*; and *Stop, Don't Waste*, using all methods available to the City Council and City Administration: Public Service Announcements, public signage, sides of City buses, etc.

Appendix 1: Principles of Environmental Justice

Delegates to the First National People of Color Environmental Leadership Summit held on October 24-27, 1991, in Washington DC, drafted and adopted 17 principles of Environmental Justice. Since then, The Principles have served as a defining document for the growing grassroots movement for environmental justice.

PREAMBLE

WE, THE PEOPLE OF COLOR, gathered together at this multinational People of Color Environmental Leadership Summit, to begin to build a national and international movement of all peoples of color to fight the destruction and taking of our lands and communities, do hereby re-establish our spiritual interdependence to the sacredness of our Mother Earth; to respect and celebrate each of our cultures, languages and beliefs about the natural world and our roles in healing ourselves; to insure environmental justice; to promote economic alternatives which would contribute to the development of environmentally safe livelihoods; and, to secure our political, economic and cultural liberation that has been denied for over 500 years of colonization and oppression, resulting in the poisoning of our communities and land and the genocide of our peoples, do affirm and adopt these Principles of Environmental Justice:

1. **Environmental Justice** affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
2. **Environmental Justice** demands that public policy be based on mutual respect and justice for all peoples, free from any form of discrimination or bias.
3. **Environmental Justice** mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things.
4. **Environmental Justice** calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threaten the fundamental right to clean air, land, water, and food.
5. **Environmental Justice** affirms the fundamental right to political, economic, cultural and environmental self-determination of all peoples.
6. **Environmental Justice** demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
7. **Environmental Justice** demands the right to participate as equal partners at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation.
8. **Environmental Justice** affirms the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
9. **Environmental Justice** protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
10. **Environmental Justice** considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention on Genocide.
11. **Environmental Justice** must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
12. **Environmental Justice** affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources.

13. **Environmental Justice** calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
14. **Environmental Justice** opposes the destructive operations of multi-national corporations.
15. **Environmental Justice** opposes military occupation, repression and exploitation of lands, peoples and cultures, and other life forms.
16. **Environmental Justice** calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.

17. **Environmental Justice** requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and re-prioritize our lifestyles to insure the health of the natural world for present and future generations.

The Proceedings to the First National People of Color Environmental Leadership Summit are available from the United Church of Christ Commission for Racial Justice, 475 Riverside Dr. Suite 1950, New York, NY 10115.

Appendix 2: Excerpts from the July 11, 2006 Draft Michigan Solid Waste Policy 2006

Under development by the Michigan Department of Environmental Quality (MDEQ)

Michigan's updated solid waste policy for 2006 presents a fundamentally different approach to making solid waste management decisions. It promotes the bold perspective of viewing solid waste as a resource in a global economy, and, rather than prescribing our choices, challenges us to make decisions based on the three principles of sustainability:

- Economic vitality
- Ecological integrity
- Improved quality of life

Guiding principles

Michigan's preference is first to avoid waste generation, then through reuse and recycling, to utilize generated waste for beneficial purposes and, finally, to properly dispose of what remains.

Decreasing waste generation and increasing waste utilization

To reduce waste generation, Michigan should:

1. Provide incentives for and remove barriers to pollution prevention practices that reduce waste generation.

2. Collaborate in regional and national efforts to encourage product design to produce less waste.
3. Provide information to citizens, businesses, governments, and other organizations on why and how to reduce waste generation.

To encourage more waste utilization Michigan should:

1. Utilize 50 percent of its waste stream by 2015.
2. Identify and remedy regulatory barriers to waste utilization.
3. Ensure all Michigan citizens have convenient access to residential recycling programs by 2012.
4. Support the development of markets for recycled materials.
5. Provide information and technical assistance to citizens, businesses, governments, and other organizations on why and how to utilize waste.
6. Support the beneficial reuse of utility, commercial, and industrial by-products.

Appendix 3: Southeast Oakland County Resource Recovery Authority (SOCRRA), 2006-2007 Budget

Background

The Southeast Oakland County Resource Recovery Authority (SOCRRA) manages residential trash disposal for 12 member cities and also accepts some trash from non-members, including some commercial haulers. It operates two transfer facilities that receive solid waste from member cities, a Material Recovery Facility (MRF) that receives, sorts and markets recyclable goods delivered and left at the MRF, and a compost facility for yard waste, wood chips, etc.

Member fees and credits

The 12 member communities and non-members pay set fees for waste sent to SOCRRA facilities. Non-member fees are higher than those charged member communities, and each member community receives credits for recyclable materials delivered, which reduces total disposal costs over the year. The more credits earned, the less a community pays the Authority for its services.

Revenue Sources 2006–2007

Tipping Fees

Municipal Solid Waste & Bulky Waste	\$5,586,000
Compost Material	1,144,134
Subtotal	6,730,134

Sale of Recyclables

Gross Sale	\$1,633,900
Less City Credits	(465,900)
Net Sale of Recyclables	1,168,000

Other Income

Includes compost sales (\$36,000); special household collection fees (\$101, 316); no grants	\$285,772
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Total Revenues **\$8,183,906**

Expenditures 2006–2007

Madison Heights Facility	\$1,893,500
Transfer Station Operation	3,061,800
Material Recovery Facility	918,400
Landfill-Compost Operation	363,800
Administration & General	1,448,335

Total Expenditures **\$7,685,835**

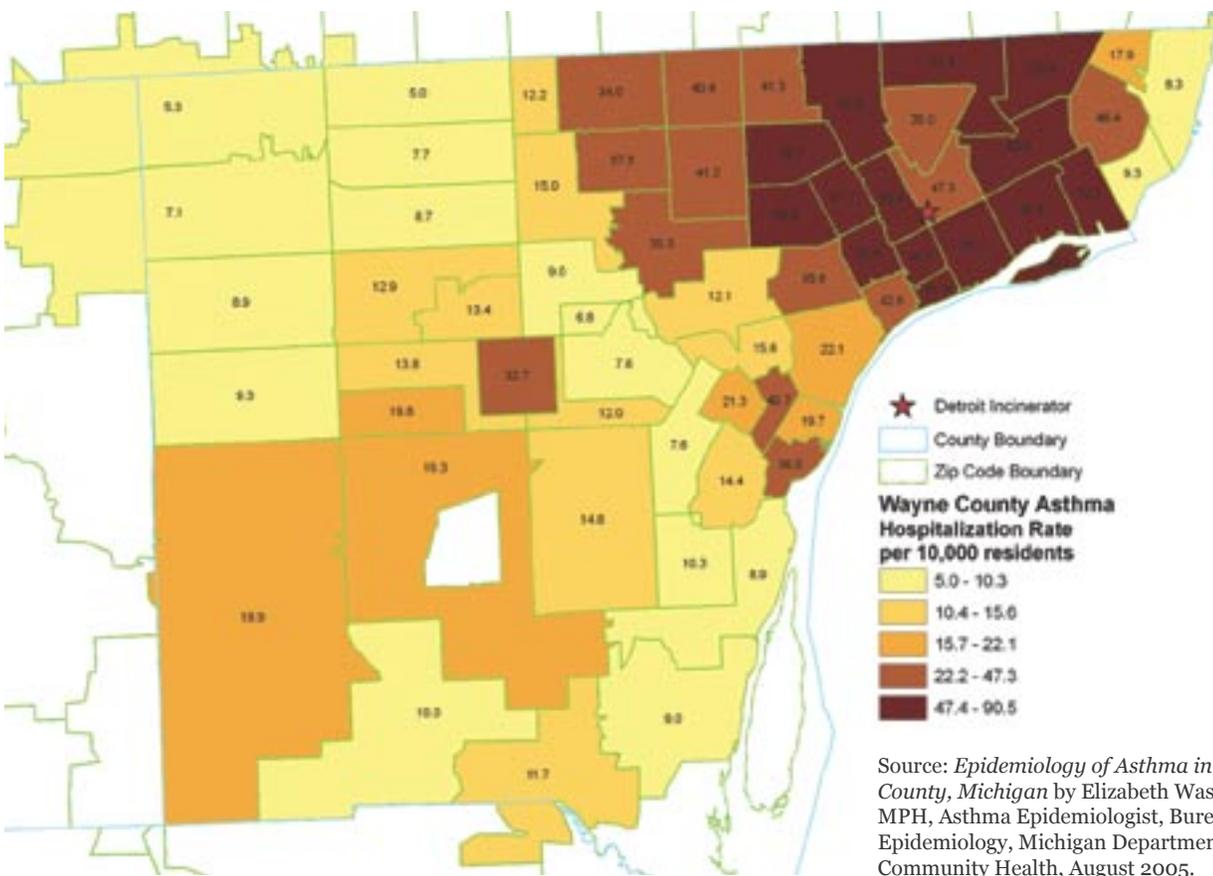
Summary

TOTAL TONS 2006-2007	193,539
TOTAL EXPENDITURES	\$7,635,835
AVERAGE COST PER TON	\$39.71

Appendix 4: Resources for economic development through the processing and marketing of recyclables

- Detroit Entrepreneurial Institute Small Business Took Kit helping residents start local businesses; See: <http://www.deibus.org>
- West Michigan Sustainable Business Forum for resources for sustainable businesses; See: <http://www.wmsbf.org/index2.html>
- Waste Reduction Awards Program (WRAP), sponsored by a committee of local waste reduction professionals. The mission of WRAP is to publicly acknowledge residents, businesses, government agencies, educational institutions and non-profit organizations in Ingham, Eaton and Clinton Counties that have exemplary waste reduction and recycling practices and encourage others in the community to increase their efforts to reduce, reuse and recycle. See: waste@clinton-county.org
- Waste to Wealth: Recycling Means Business: See: www.ilsr.org/recycling/recyclingmeansbusiness.html
- Aisha Home Development Corporation and Rimson Development Corporation. See: rimson.development@yahoo.com
- Recycle Here!'s contract with GDRRA for collecting recyclables.

Appendix 5: Hospitalization from asthma



Appendix 6: Resource Recycling Systems, Inc. qualifications summary

For more information, visit www.recycle.com.

Resource Recycling Systems, Inc. is a Michigan corporation organized in 1986 with offices located at 417 Longshore Drive, Ann Arbor, Michigan, 48105 and offices within the Henry Ford Hospital campus in Detroit, Michigan.

RRS is a consulting and engineering firm whose sole area of focus is solid waste and recycling engineering and consulting for public and non-profit local, regional, state and national programs. RRS has provided supporting engineering and consulting services to many leading recycling and waste management programs across the US. Company founder, James Frey, is an expert in Michigan's solid waste management system, having assisted the State Department of Natural Resources in training for the first County based solid waste planning process in the late 80's and actively participating in development of many of Michigan's most innovative and cost effective comprehensive solid waste management programs.

RRS's traditional practice areas of Solid Waste Systems Planning and Development, Solid Waste/Recycling Operations Management Consulting, and Solid Waste/Recycling Facilities Engineering and Management span the breadth of the City of Detroit's service requirements.

Appendix 7: Resources for public education

- Black Family Development education on issues of Environmental Justice
- The Department of Environmental Quality recently partnered with Detroit Public Schools to train more than 90 middle school teachers on portions of a new environmental curriculum known as the Michigan Environmental Education Curriculum Support (MEECS) program. Training was provided on three of the five MEECS units including Ecosystems & Biodiversity, Air Quality, and Energy Resources. MEECS materials have been delivered through workshops at no cost to educators through funding from the Clean Michigan Initiative.
- Humane Society and environmental organizations have offered to provide programming to schools, recreation centers, in neighborhoods, and to people of all ages, to focus on living humanely, including: the connection between environment and behavior, what non-violence is, the roots of violent behavior.
- Institute for Local Self Reliance, www.ilsr.org/recycling/.
- Sierra Club.
- Community recycling efforts.
- Recycle Ann Arbor, www.recycleannarbor.org.
- Communities In Schools provides resources to 90 Detroit and Metro Detroit schools.

See acknowledgements on page 10.

A solid waste program that emphasizes waste reduction and materials recovery will result in decreased city expenditures for waste collection and disposal and lower toxic emissions and thus improved public health.

Appendix 8: Detroit ordinances that need amending to allow for recycling and solid waste recovery options

“The City further covenants to maintain in effect the ordinance set forth in Exhibit A, to the extent permitted by law, until the Bonds have been paid in full or defeased in accordance with the Ordinance.”

Sec. 22-2-71. Contract

The city shall enter into a service contract (the “disposal contract”) with the Greater Detroit Resource Recovery Authority or its successor (the “authority”) for the disposal of municipal refuse. The disposal contract shall provide, among other things, that all municipal refuse collected by the department of public works or by any contractor of the department of public works shall be delivered to the authority and that the city will pay for such services. (Ord. No. 29-93, § 1, 12-1-93)

Sec. 22-2-72. Rates

In the event the city fails to pay all or any portion of the tipping fee to the authority for disposal of municipal refuse under the disposal contract, the authority is authorized to charge and collect from the residents of the city rates and charges for disposal of municipal refuse based upon rates established by the authority pursuant to state law. Such rates and

charges shall be a lien on the premises for which the services have been provided. Amounts delinquent for three (3) months or more shall be certified annually to the board of assessors to be entered upon the next tax roll against the premises to which the services have been rendered. Such lien shall be enforced by the city or by the authority in the manner prescribed in the City Charter or by other applicable law for the enforcement of tax liens. The treasurer for the account of and on behalf of the authority is authorized to collect any rates and charges imposed by the authority. (Ord. No. 29-93, § 1, 12-1-93)

Sec. 22-2-73. Manner of disposal

After the acceptance date, as defined in the disposal contract, it shall be unlawful for any person who is authorized by this chapter to collect and transport domestic refuse, to dispose of such domestic refuse other than by delivering or causing the delivery of such domestic refuse to the authority at locations specified by the authority. Domestic refuse which is not otherwise properly collected and disposed of shall not be collected and disposed of by any person other than by delivering such domestic refuse to the authority at locations specified by the authority. (Ord. No. 29-93, § 1, 12-1-93)

Acknowledgements

This report reflects contributions from representatives of:

- Sierra Club of Southeast Michigan: Anna Holden, mqk@umd.umich.edu
- Environmental Justice Office, Sierra Club SE MI: Rhonda Anderson, rhonda.anderson@sierraclub.org
- Southwest Detroit Environmental Vision: Lisa Goldstein, lisa_swdev@flash.net
- Rosedale Recycles: Margaret Weber, weber@igc.org
- Michigan Environmental Council: Roshani Deraniyagale-Dantas, roshanimec@voyager.net
- Ecology Center: Brad van Guilder, bradv@ecocenter.org
- Recycle Detroit: Sarah Kubik, sarah@recycledetroit.com
- Michigan Humane Society: Kimberly Korona, kkorona@michiganhumane.org
- Communities in Schools: Jennifer Ragland, jc3rg123@aol.com
- Rimson Development Corporation: James Clark, rimson.development@yahoo.com