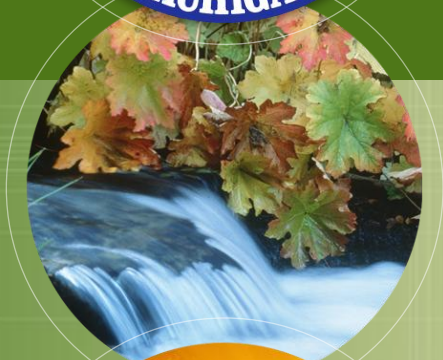




Kent County Department of Public Works

Solid Waste Management Plan Amendment



Introduction

Reason for Amendment



The Department of Public Works has a paramount interest in assuring waste is managed in a sustainable manner that is protective of human health and the environment.



Introduction

Reason for Amendment



The Department of Public Works believes the solid waste management system can be improved in three significant ways:

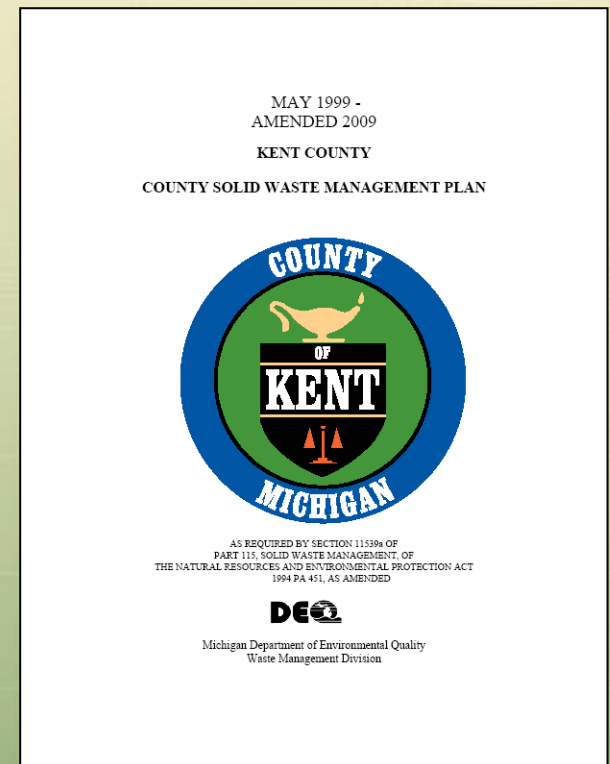
1. Providing enhanced solid waste management services to county residents and businesses, e.g., expanding household hazardous waste, recycling programs and advanced technologies
2. Improving system financial equity, addressing issues of legacy costs for closed landfills and funding for countywide programs
3. Improving environmental aspects and overall efficiency of the solid waste management system by expanding solid waste transfer capacity and other process technologies

Introduction



Amendments to the Solid Waste Management Plan must take into account:

- Solid waste management infrastructure
- Equitable funding of the solid waste system
- Changes must bring about benefits for the system users



Solid Waste Management Plan



- Michigan Law Public Act 451 of 1994 requires all counties to develop solid waste plans identifying how solid waste will be managed
- The Board of Public Works serves as the County's designated solid waste planning agency
- Michigan's Solid Waste Policy calls for "utilizing 50 percent of Michigan's municipal solid waste (MSW) by 2015"

Solid Waste Management Plan



The Solid Waste Management Plan describes Kent County's integrated solid waste recycling and waste disposal system, as recommended by the U.S. Environmental Protection Agency.

Solid Waste Management Plan Policy Statement



“The Kent County Solid Waste Management Plan works toward the goal of utilizing 50 percent of the municipal solid waste generated in Kent County by 2015, as defined by the Michigan Solid Waste Policy 2007. Kent County Department of Public Works will strive to make continuous improvements toward this goal by establishing and implementing systems that take into consideration the economic vitality, ecological integrity and social equity of the management of MSW. All systems established and managed within these principles will foster the ultimate goal of a sustainable Solid Waste Management Plan.”

Solid Waste Management Plan

Current Goals

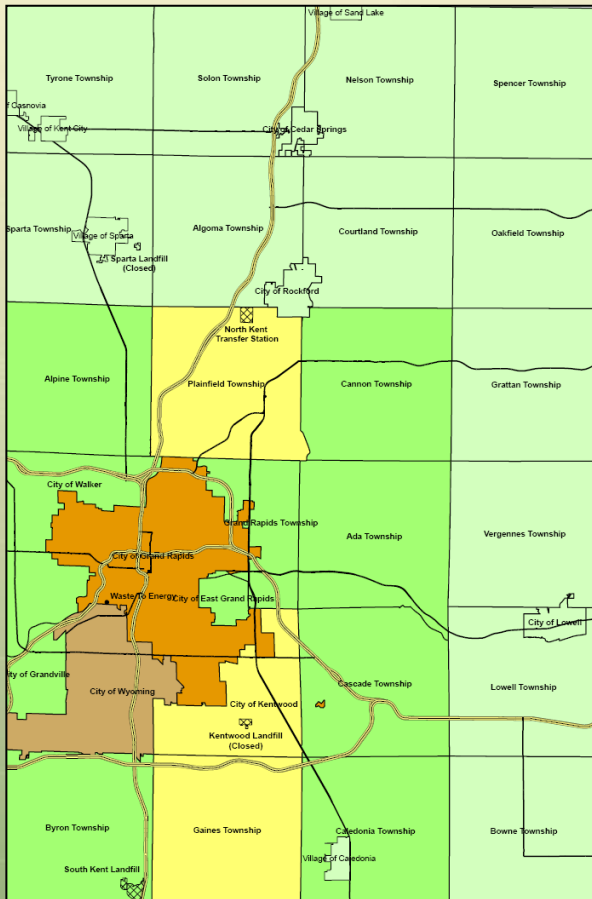


- **Goal 1:** Maintain an integrated and sustainable solid waste management system centered on the protection of public health and the environment
- **Goal 2:** Develop, maintain and expand public education programs and marketing and public relations materials which showcase, support and explain the solid waste and resource recovery services to increase participation in all programs by 5 percent per year
- **Goal 3:** Provide Kent County residents convenient, state-of-the-art technologies and cost-effective access to residential recycling programs
- **Goal 4:** Provide more opportunities to remove hazardous materials from the waste stream

Roles in Waste Management



Three separate, important groups are involved in managing Kent County's solid waste



- Kent County Department of Public Works
- Cities and other local governments
- Private solid waste management firms

Roles in Waste Management Department of Public Works



Programs that serve all Kent County

- Education & outreach programs
- Recycling & disposal facilities
 - Waste-to-Energy Facility, North Kent Transfer Station, South Kent Landfill, Kent County Recycling & Education Facility
- Legacy obligations (e.g. closed landfill maintenance costs)
- Operates as an “Enterprise Fund” where revenues of the system fund the services provided



Roles in Waste Management Cities and Other Jurisdictions



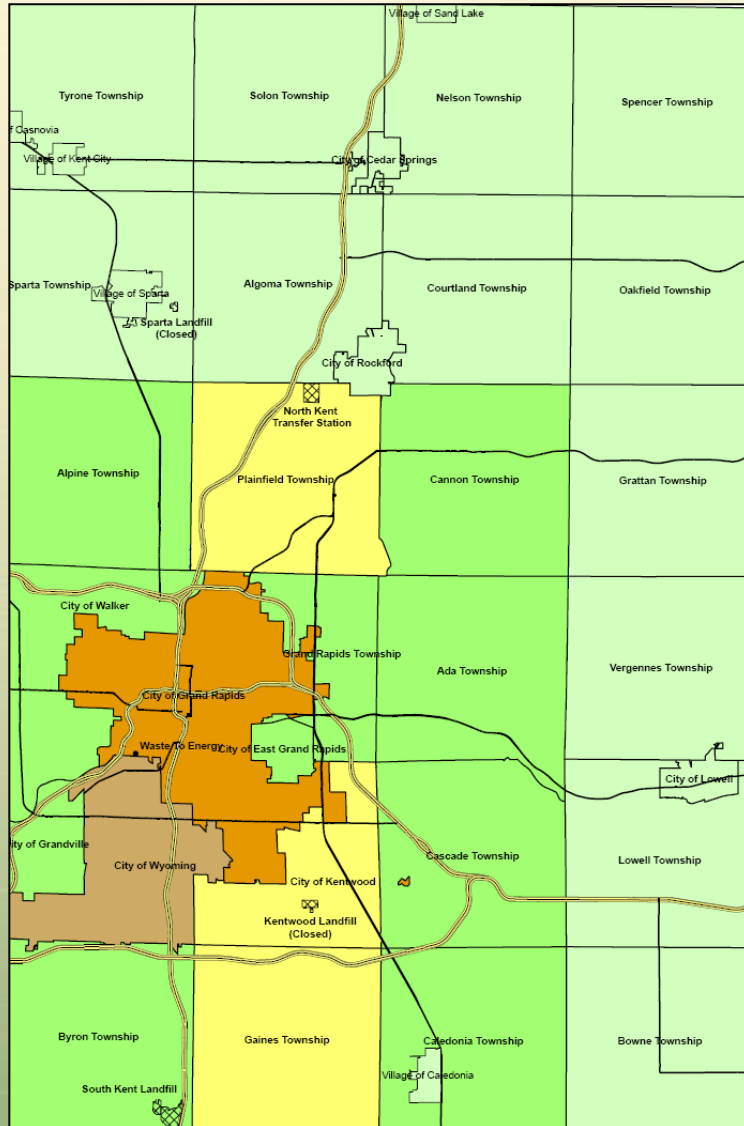
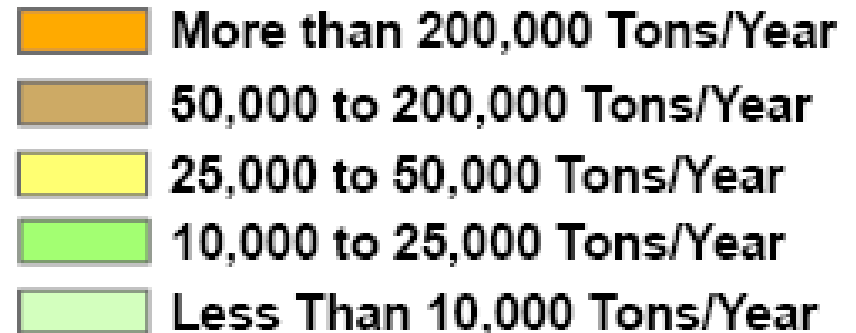
- Responsible for controlling solid waste & recycling collection and enforcement
- Six cities have collection agreements to deliver combustible waste to the WTE
Grand Rapids, Wyoming, Kentwood, Walker, Grandville & East Grand Rapids
- Most collection provided by private waste firms (City of Grand Rapids is an exception)

Where Does Waste Come From in Kent County?



In State FY 2009, 749,400 tons of waste from Kent County were disposed in area landfills and the WTE

Approximate Waste Generation Based On 2009 Population

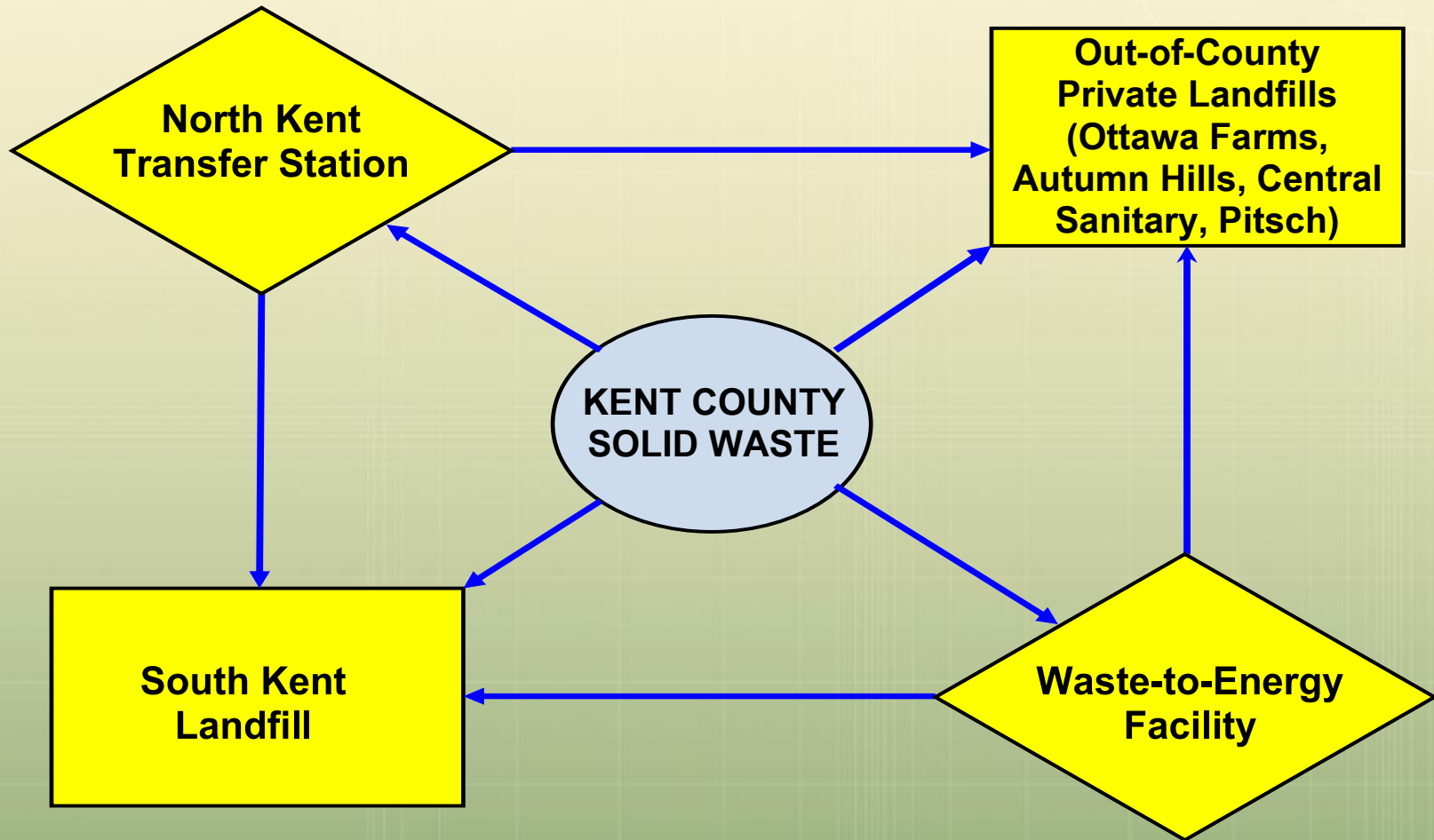


Roles in Waste Management Private Firms

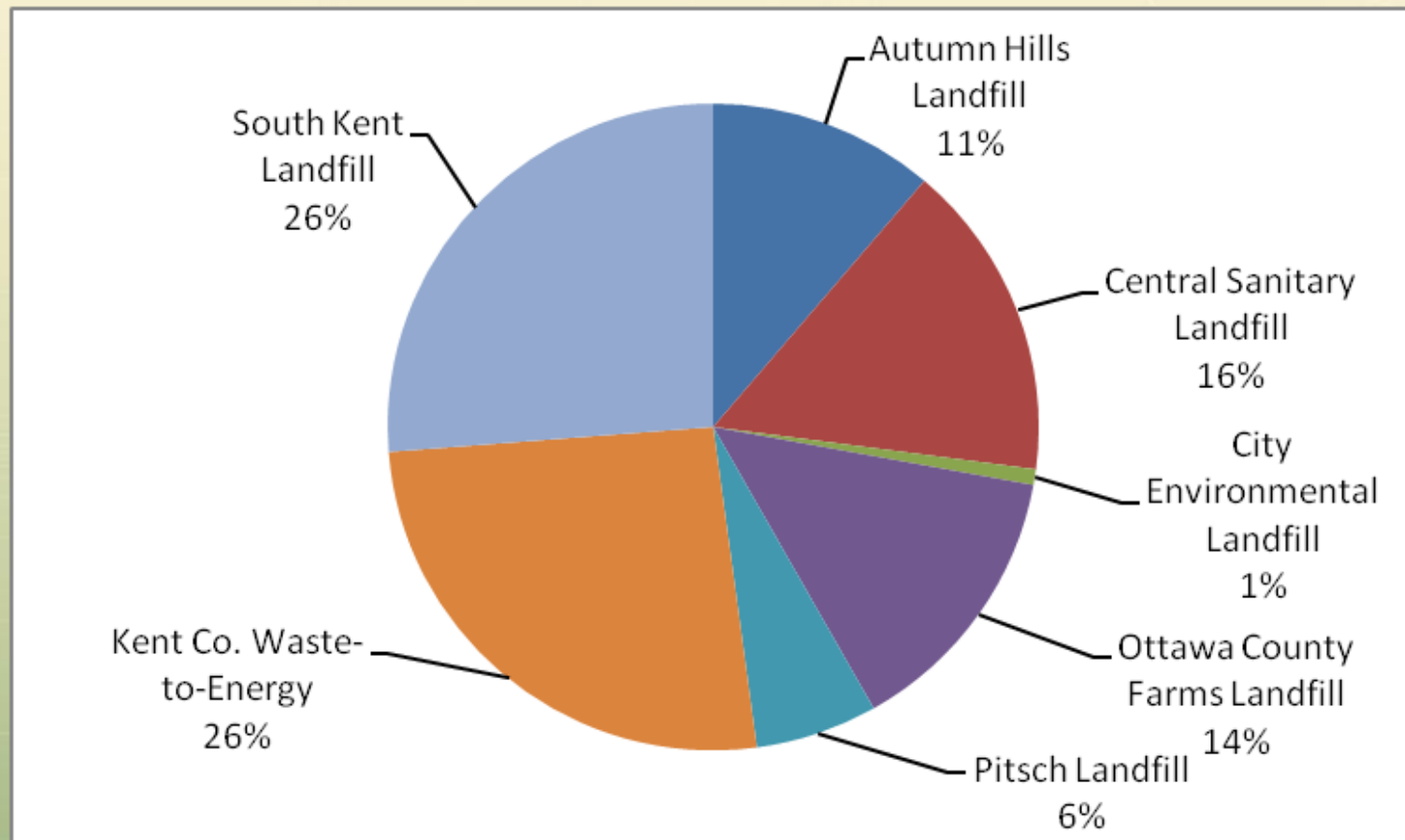


- Private firms conduct most waste collection in the county
- Some own their own landfills
 - Waste hauled directly to private landfills does not contribute to the Enterprise Fund and the programs it supports (including closed landfill maintenance, HHW collection, etc.)
- County has agreements with certain private firms to dispose of waste managed through the North Kent Transfer Station and Waste-to-Energy Facility
- About 48 percent of waste collected in Kent County was disposed at a private, out-of-county landfill in 2009

Where Kent County Waste Goes



Final Waste Disposal



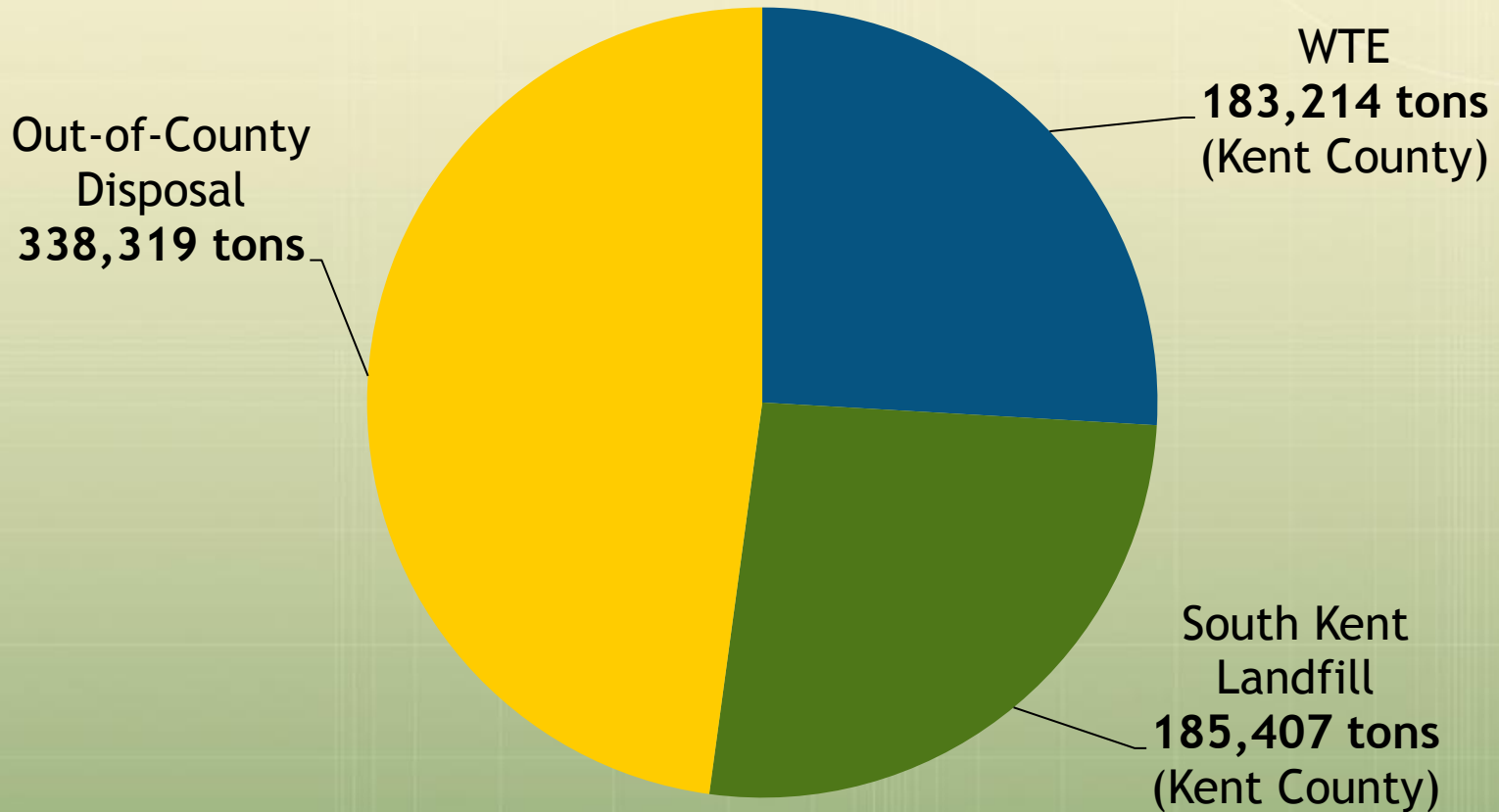
Source: 2009 "Report of Solid Waste Landfilled in Michigan, Department of Natural Resources and Environment" and Kent County reports.

Final Waste Disposal



2009 Kent County Waste Generation

706,940 Tons Distributed in Area Facilities



Kent County Solid Waste Management Services



The DPW Enterprise Fund pays for all solid waste programs and facilities

- Public service programs - household hazardous waste collection, unwanted pharmaceuticals collection
- Recycling programs
- Solid waste management disposal facilities
- Legacy obligations - closed landfills

Household Hazardous Waste



1,673,341 pounds of hazardous waste collected from residents since 1985.



4 permanent buildings
On-site special collections



Unwanted Pharmaceutical Take Back



Program prevents release of pharmaceuticals into the environment

Program in cooperation with Kentwood, Wyoming and North Kent Sewer Authority

More than 47 participating pharmacies and 29 law enforcement drop boxes across four counties

WTE provides secure, complete destruction

www.wmtakebackmeds.org

Recycling

- Recycling drop-off
 - City of Kentwood Public Works Facility
 - Kent County Recycling & Education Center
 - North Kent Transfer Station



Recycling & Education Center



- State-of-the-art single stream MRF
- Sort 18 tons of recyclables per hour
- Houses classroom and meeting areas



North Kent Transfer Station



In 2010, accepted 62,130 tons of waste that was shipped to Central Sanitary Landfill and South Kent Landfill for disposal.

Transfer stations improve the efficiency of solid waste collection and reduce environmental impacts by allowing waste to be hauled long distances in large trucks.



Waste-to-Energy Facility

Produces electricity from waste, displacing the need for fossil fuels

Conveniently located

Processed 188,539 tons of waste into electricity in 2010

Additionally, transferred 40,101 tons of waste and rejects to County and out-of-county landfills

Reduces material sent to a landfill 92 percent by volume and 77 percent by weight



The WTE is a certified generating facility under the Michigan Renewable Energy Credits Program (PA 295 of 2008).



South Kent Landfill



Secure final resting place for waste

- Leachate collection system
- Groundwater monitoring

Capacity to at least 2029 with expansion area available

In 2010, 194,000 tons of waste and 41,700 tons of ash disposed



Landfill Gas-to-Energy



Landfill gas produced by waste degradation is about 50% methane

At full capacity supplies electricity for 2,700 homes

Destroys greenhouse gases by removing 90,000 tons of carbon equivalents per year



Closed Landfill Legacy Obligations



Closed Sparta Landfill

County provides long-term maintenance for closed landfills including groundwater and gas monitoring

Landfills will need to be monitored and maintained long into the future

Landfill	2010 Budget	20 Year Liability Estimate ^[1]	30 Year Liability Estimate ⁽¹⁾
Sparta	\$140,000	\$4,014,708	\$6,660,558
North Kent	\$234,000	\$6,710,298	\$11,132,647
Kentwood	\$437,700	\$12,551,698	\$20,823,759
Total Liability	\$811,700	\$23,276,704	\$38,616,964

[1] Assumes 3 percent inflation rate.

Closed Landfill Legacy Obligations



Closed North Kent Landfill

County provides long-term maintenance for closed landfills including groundwater and gas monitoring

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Closed Landfill Legacy Obligations



Closed Kentwood Landfill

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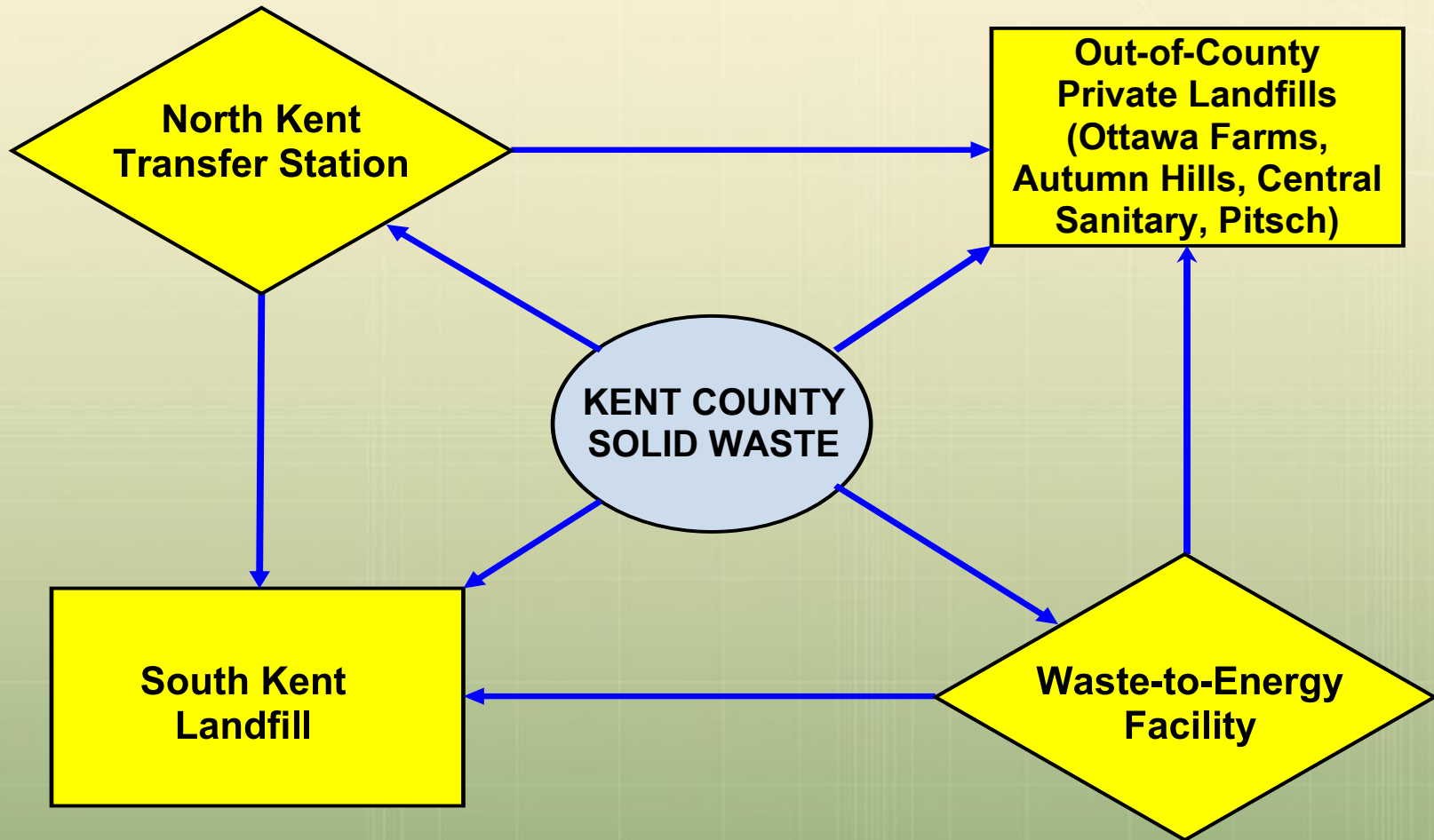
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System Improvements



- To maintain and improve the solid waste management program as desired, a new waste disposal pattern and new waste management infrastructure will be needed
- New disposal pattern directs all waste first to a County-owned management facility
- New facilities
 - Modifications to North Kent Transfer Station to enhance waste management and recycling capability
 - Development and construction of a new transfer station

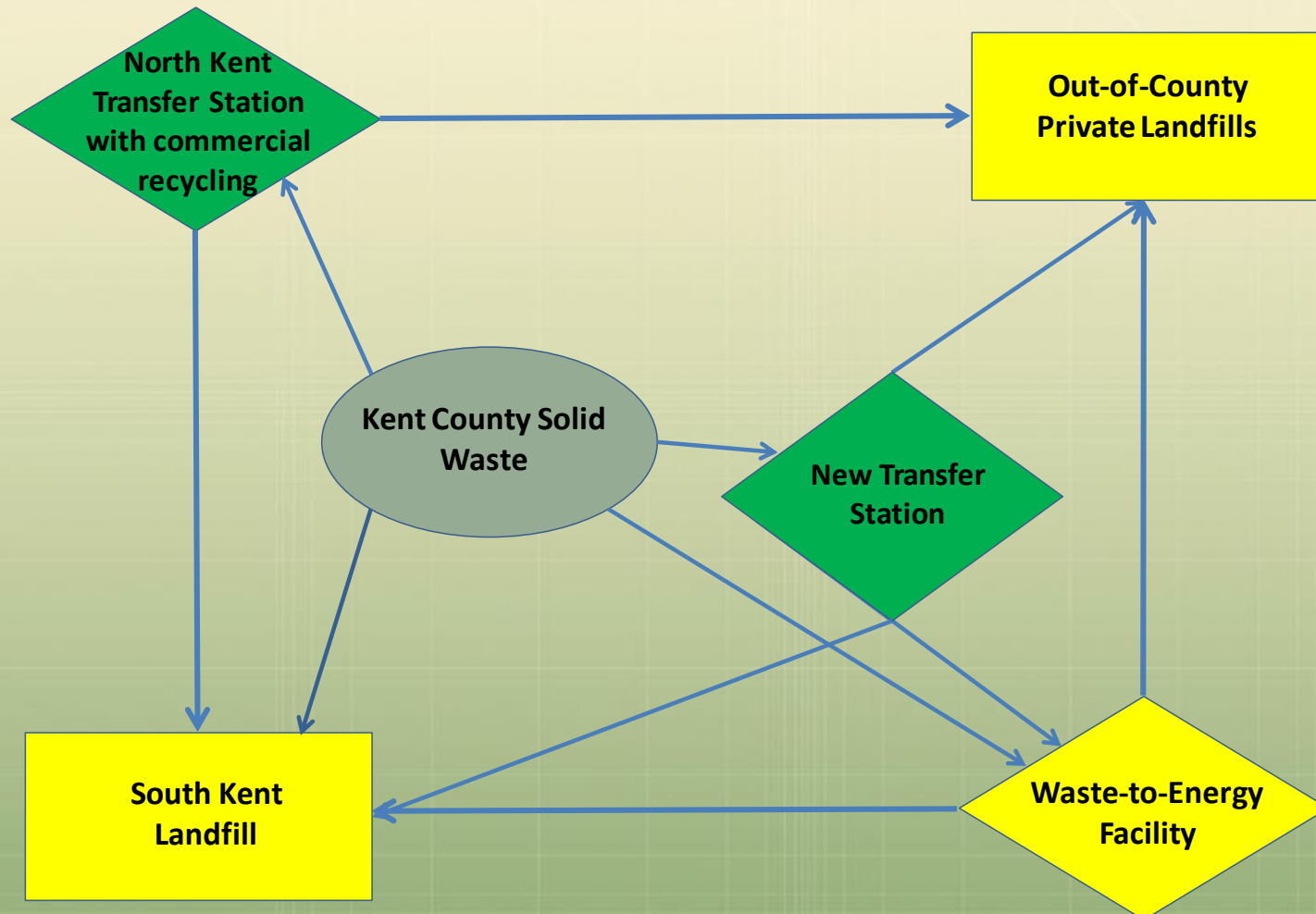
Where Kent County Waste Goes



Proposed Disposal Pattern



All waste initially directed to a County-owned facility.



Infrastructure Improvements Potential Commercial Recycling Center



- Special processing line to target loads rich in recyclables like cardboard, wood and metal
- Will increase waste diversion
- Can be located at North Kent Transfer Station or a new transfer station

Proposed System



A managed solid waste system will

- Ensure that all solid waste is disposed in a manner that protects public health and the environment
- Provide more recycling and waste diversion opportunities by allowing recycling infrastructure to be expanded
- Provide financial assurance for post-closure care of landfills in a way that protects public health and the environment, as required by law

Proposed System



A managed solid waste flow system will

- Establish an equitable approach to financing that requires all those that benefit from the availability of recycling and solid waste services to contribute to their costs
- Improve environmental aspects and overall efficiency of the solid waste management system by expanding solid waste transfer capacity
- Provide an opportunity to improve services by expanding citizen programs like recycling, battery collection and pharmaceutical waste collection

Proposed System



Improve opportunities for recycling

- Assure funding and waste flow for a commercial recycling center
- Allow update of agreements and ordinances to encourage recycling



Proposed System



Provide financial assurance for post-closure care of closed landfills to assure protection of public health and the environment, as required by law



Sparta Landfill
Superfund Site

- A managed solid waste flow system will assure revenues from solid waste disposal will be available to support required monitoring and maintenance of old solid waste sites

Proposed System



Improve system financial equity

- Since all waste is directed to County-owned facilities, all generators will financially support the Enterprise Fund
- Enterprise Fund will continue to pay for closed landfill monitoring and maintenance
- Enterprise Fund will continue to support HHW collection, unwanted pharmaceuticals collection and other resource recovery programs

Proposed System



Improve system financial equity

- Managed solid waste flow will allow creation of a uniform system cost that can be passed to customers through standard prices
- Allows system costs to be equitably applied to customers

Proposed System



Improve environmental aspects and efficiency

- Waste currently hauled directly out-of-county will be routed through conveniently located transfer stations and WTE



- Transfer facilities allow smaller loads to be consolidated into transfer trailers for efficient transport

Solid Waste Plan Amendment



Goals & Objectives

- **Goal 1:** Maintain an integrated and sustainable solid waste management system centered on the protection of public health and the environment
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Solid Waste Plan Amendment



Authorizes the County to accept institutional waste for disposal at the Waste-to-Energy Facility.

Solid Waste Plan Amendment



As part of the integrated solid waste management program, the County may adopt and enforce a county solid waste management ordinance as an “enforceable mechanism”, as defined and authorized by State law.