

# Department of Public Works

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## Mission

*The Kent County Board and Department of Public Works acquires, improves, enlarges, operates, and maintains sewage disposal systems, and refuse systems to promote and protect the health and welfare of its residents and the environment.*

## Overview

The Department of Public Works acting through the Board of Public Works is an enterprise fund established by the Board of Commissioners to provide solid waste management services. The Department is divided into two divisions: Administration and Solid Waste Operations. The Solid Waste division has four components: Recycling and Resource Recovery, Waste-to-Energy, Landfill and Transfer Station, and Closed Landfill Remediation and Environmental Compliance.



*Kent County Recycling and Education Center*

## Significant Accomplishments

- Adopted a strategy to rally Kent County residents and businesses to reduce the 602,083 tons of waste going to area landfills in 2015 by 20% by 2020 (to 481,670 tons) and by 90% by 2030 (to 60,210 tons). With this initiative, the “20x’20/90x’30 Vision”, DPW intends to bring focus, private-public investment and the necessary infrastructure to West Michigan to achieve diversion goals.
- Launched the ‘Imagine Trash’ campaign to bring Kent County closer to a circular economy model and received Board of Public Works approval to issue a Resource Recovery Business Park master plan request for proposal and develop strategies to attract public/private investment in infrastructure and implement sustainable materials management strategies.
- Completed the concept of design study for Recycling & Education Center property for the suitability of a SafeHome Service Center for SafeChem - household hazardous waste, small quantity generator business waste, electronics recycling and community reuse programming.

## Strategic Goals

- Create a 20 x ’20 and 90 x ’30 sustainable materials management master plan to achieve a 20 percent landfill reduction for Kent County discards by 2020 and a 90 percent reduction by 2030 including a sustainable business park master plan. (Stable Revenues, Efficient Use of Resources, Proactive and Innovative Government, High Quality of Life)
- Develop strategic partnerships to attract investment in sustainable materials management collection and processing infrastructure. (Efficient Use of Resources, Proactive and Innovative Government, High Quality of Life)
- Fully implement the service fee/commodity revenue model to sustain Recycling & Education Center operations. (Proactive and Innovative Government)
- Develop Waste to Energy mixed-waste sortation line recommendation for ferrous, non-ferrous, plastics and OCC recycling to increase recovery and lower HHV at the plant. (Efficient Use of Resources, Proactive and Innovative Government)
- Pilot a multifamily residential recycling program with property managers to improve supplement DPW drop off sites and establish route density that sustains private sector waste hauler service. (Efficient Use of Resources, Proactive and Innovative Government, High Quality of Life)
- Complete demographic study and identify barriers to residential curbside recycling to develop education/marketing resources that encourage participation and right recycling. (Citizen Participation, High Quality of Life)
- Issue request for proposal and select consultant to develop master plan including market analysis, feasibility study and land use recommendations to support a resource park to support market development and private/public sector investment in sustainable materials management infrastructure. (Proactive and Innovative Government, High Quality of Life)

## Significant Accomplishments Continued

- Deployed new Paradigm CompuWeigh software in the finance department and at four facilities.
- Through the West Michigan Sustainable Business Forum, Imagine Trash Partner Program, offered a package of technical resources for small and medium sized organizations in the West Michigan region to improve their recycling efforts and potentially establish zero waste to landfill.
- Nominated for the 2016 West Michigan Sustainable Business of the Year Award, annually presented by West Michigan Sustainable Business Forum to honor local organizations that best model triple-bottom line sustainability.
- Represented the Michigan Association of Counties on the MDEQ Solid Waste and Sustainability Advisory Panel.
- Partnered with a manufacturer-supported recycling processor to accept cathode ray tube (CRT) electronic devices at no charge for ten weeks during the summer of 2016 where DPW facilities accepted nearly 1.1 million pounds of CRT devices.
- Conducted 216 tours (a 15.5% increase over 2015) for 5082 individuals (a 4.9% increase from 2015) at the Recycling & Education Center and the South Kent Landfill.
- Produced 20.2 MW of renewable electrical generation at the Waste to Energy and South Kent Landfill Gas to Energy facilities producing enough electricity for 15,000 homes.
- Launched the SafeSharps program in collaboration with Kent County Health Department to ensure safe, confidential and environmentally sound disposal of needles and other medical sharps from residential use. Containers are distributed and collected through the Kent County Health Department clinic sites with 955 sharps containers distributed in 2016.
- Provided special Waste burns including secure and witnessed destruction of illicit drugs, evidence, confidential documents, medical records and take back pharmaceuticals; 298,120 pounds of these materials were destroyed, received from 78 local, State and Federal government and law enforcement agencies; a substantial increase from 2015 with 208,140 pounds.

**DEPARTMENT: PUBLIC WORKS**

**Department Mission Statement:**

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**Service Area: Material Recovery Facility (MRF) and Household Hazardous Waste(HHW)**

**Service Area Mission Statement:**

*Provide Kent County residents and waste hauling businesses processing and outlets for recovered recyclable materials and household hazardous waste.*

**Goals**

- Accept increased curbside recycling volumes at the Recycling and Education Center and process 40,000 tons.
- Expand participation in the Household Hazardous Waste (HHW) program through a comprehensive educational and advertising outreach program and open hours.
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**Objectives**

- Process and sell at 90% of incoming recycle tonnage - MRF
- Increase the number of households served by 10% - HHW
- Increase the pounds of Household Hazardous Waste material by 5% - HHW

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outcomes</b>				
Percent of tons sold/tons processed (MRF)	84.00%	<91.00%/ 79.54%	85.00%/ 77.30%	75.56%
Percent increase in number of households served (HHW)	13.60%	5.00%/ 8.03%	10.00%/ 16.11%	10.00%
Percent increase in the pounds of Household Hazardous Waste material collected (HHW)	25.90%	5.00%/ 2.29%	5.00%/ -37.07%	5.00%
Tip Floor Availability (MRF)	NA	NA	NA	98.00%
Process Availability (MRF)	NA	NA	NA	95.00%

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Efficiencies</b>				
Net cost per ton processed (MRF)	103.68	100.00/ 108.65	94.49/ 115.24	86.70
Cost per pound collected (HHW) (less than goal is good)	1.67	1.50/ 1.90	1.66/ 1.31	1.25
Cost per pound disposed (HHW) (less than goal is good)	0.44	0.45/ 0.50	0.58/ 0.98	0.43

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outputs</b>				
Tons processed (MRF)	31,900	35,000/ 33,396	40,000/ 34,821	40,000
Tons marketed (MRF)	26,860	35,000/ 26,563	34,000/ 26,916	32,000
Tons landfilled (MRF)	4,495	3,500/ 5,326	5,856/ 6,832	8,000
Number of households served/year (HHW)	3,638	3,500/ 3,930	4,400/ 4,563	5,020
Pounds of material collected (HHW)	237,425	215,000/ 242,866	260,000/ 152,842	180,000

**Service Area: South Kent Landfill (SKL) & North Kent Transfer Station (NKT)**

**Service Area Mission Statement:**

*Provide municipal solid waste landfill, ash monofill disposal and solid waste transfer services to serve primarily Kent County residents and businesses.*

**Goals**

- Operate disposal and transfer facilities in compliance with license and permits
- Ensure availability of long-term disposal services for Kent County residents with stable and competitive rates

**Objectives**

- Process 100% of incoming waste within budget and MDEQ guidelines
- Achieve a minimum of 80% compaction ratio

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outcomes</b>				
Process 100% of incoming waste	100.00%	100.00%/100.00%	100.00%/100.00%	100.00%
Compaction Ratio (tons/CM)-SKL	79.00%	85.00%/81.00%	85.00%/82.00%	84.00%

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Efficiencies</b>				
Cost per ton for processing - SKL	18.81	20.00/18.00	20.00/18.95	20.00
Cost per ton for processing - NKTS	21.51	25.00/21.38	27.00/21.33	25.00

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outputs</b>				
Tons of solid waste processed-SKL	286,271	230,000/289,410	259,000/312,256	300,000
Tons ash residue landfilled-SKL	41,942	43,000/41,104	42,500/41,847	42,500
Tons of solid waste processed-NKTS	82,325	65,000/83,898	82,000/92,397	90,000

**Service Area: Waste To Energy Facility (WTE)**

**Service Area Mission Statement:**

*Provide environmentally effective, reliable and secure solid waste disposal and transfer services to residents and businesses in the six cities as part of the County solid waste management plan.*

**Goals**

- Accept all solid waste delivered and process solid waste for disposal, energy recovery or transfer in a cost effective and environmentally responsible manner
- Maintain the Waste-to-Energy Facility Clean Corporate Citizen certification

**Objectives**

- Achieve contractual electrical production requirement of at least 103,000 MWH annually
- Intercept and transfer unacceptable waste in incoming loads through Supplemental Transfer
- To intercept tires in the waste stream through the Tire Recovery program
- Achieve facility water use ratio of 0.3, or lower, of billing units per ton of waste processed
- Achieve facility sewer use ratio of 0.25, or lower, of billing units per ton of waste processed
- Achieve in house electric consumption ratio of 20%, or lower, of MWH of electricity sold
- Maintain a Higher Heating Value (HHV) below 5600 BTU's

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outcomes</b>				
Electricity sold (Mwh) WTE	100,848	96,000/ 100,234	101,000/ 100,944	101,000
Tons of waste rejected	3,758	5,500/ 4,633	4,000/ 6,291	6,000
HHV of waste (measurement to be lower than goal)	5,433	5,600/ 5,524	5,500/ 5,478	5,500
Water billing units consumed per ton of waste processed	0.27	0.25/ 0.22	0.25/ 0.32	0.25
Sewer billing units consumed per ton of waste processed	0.20	0.25/ 0.28	0.25/ 0.28	0.28
In house electrical consumption ratio to Mwh of electricity sold	19.90%	20.00%/ 19.79%	20.00%/ 19.56%	20.00%

<b>Indicators</b>	<b>2014 Actual</b>	<b>2015 Expected/ Actual</b>	<b>2016 Expected/ Actual</b>	<b>2017 Expected/ Actual</b>
<b>Outputs</b>				
Water billing units consumed	48,374	40,000/ 40,051	40,000/ 53,772	40,000
Sewer billing units consumed	35,751	42,500/ 49,826	45,000/ 48,650	50,000
Tons Received	247,415	222,500/ 250,234	250,000/ 258,991	250,000
Tons of solid waste processed	182,482	187,000/ 178,434	185,000/ 182,470	185,000
Tons transferred	60,679	35,000/ 65,962	65,000/ 69,467	65,000
Mwh of electricity consumed	20,024	20,000/ 19,836	20,000/ 19,744	20,000
Long Tons of ferrous metal recovered	3,154	3,500/ 3,090	3,000/ 3,617	3,500
Ferrous metal as % of tons processed	1.73%	2.00%/ 1.73%	2.00%/ 1.98%	2.00%