



**Advancing a More
Circular Economy
and the Reinvention of the
Waste-to-Energy Industry
through
Sustainable Business Park Development**

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Waste Conversion Technology Conference & Trade Show
 June 3, 2019



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Gershman, Brickner & Bratton, Inc.
Solid Waste Management Consulting

- 38+ years national consultant
- Focused exclusively on solid waste issues
- Works in partnership with clients to develop innovative, cost-effective approaches that achieve measurable results
- Thinks outside of the box
- Tells it like it is – independent objective advisor
- Significant consulting resources
- Client success stories



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Types of Clients

Public Sector


- Cities
- Counties
- Solid Waste Management Authorities

Private Sector

- Distribution
- Manufacturing
- Hospitality
- Food and beverage
- Educational institutions
- Healthcare facilities
- Department of correction
- Spectator Arenas
- Transportation

Law Firms

- Expert witness assignments




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GBB's Wide Range of Relevant Expertise

Focused exclusively on solid waste issues, GBB offers a depth of experience that sets us apart from other consultants and not available from brokerage firms. Some key GBB areas of expertise include:


Solid Waste Master Plans	Recycling / Diversion Plans	Waste Conversion Technologies
Waste Stream Analysis	Feasibility Studies	Stakeholder Outreach
Materials Recovery Facilities	Organics	



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The Circular Economy:

A ZERO WASTE EVOLUTION



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Current Model: The Linear Economy



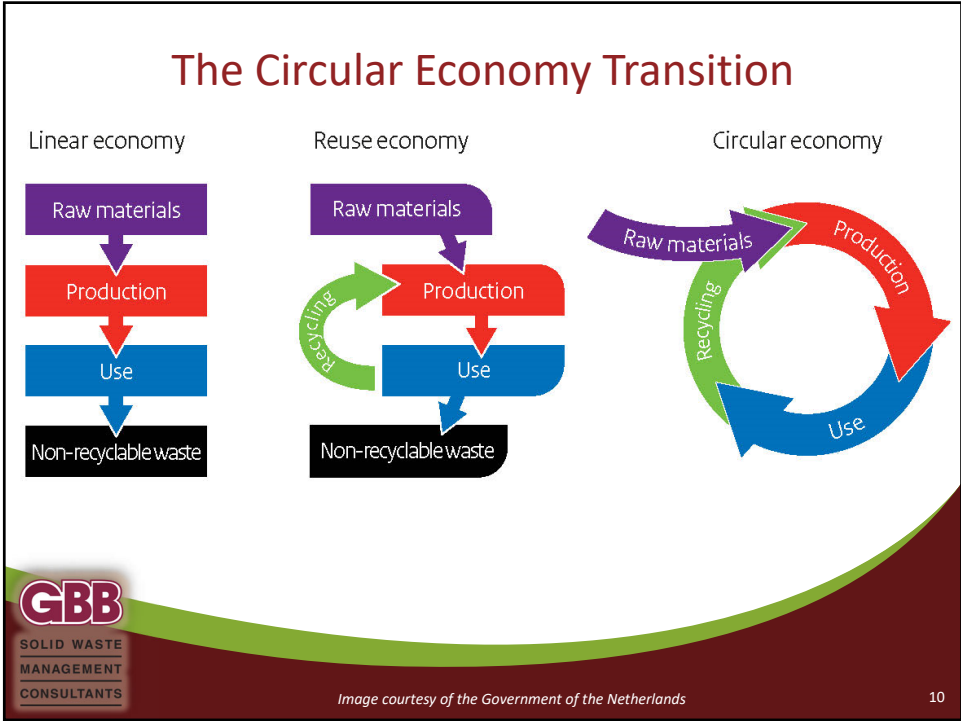
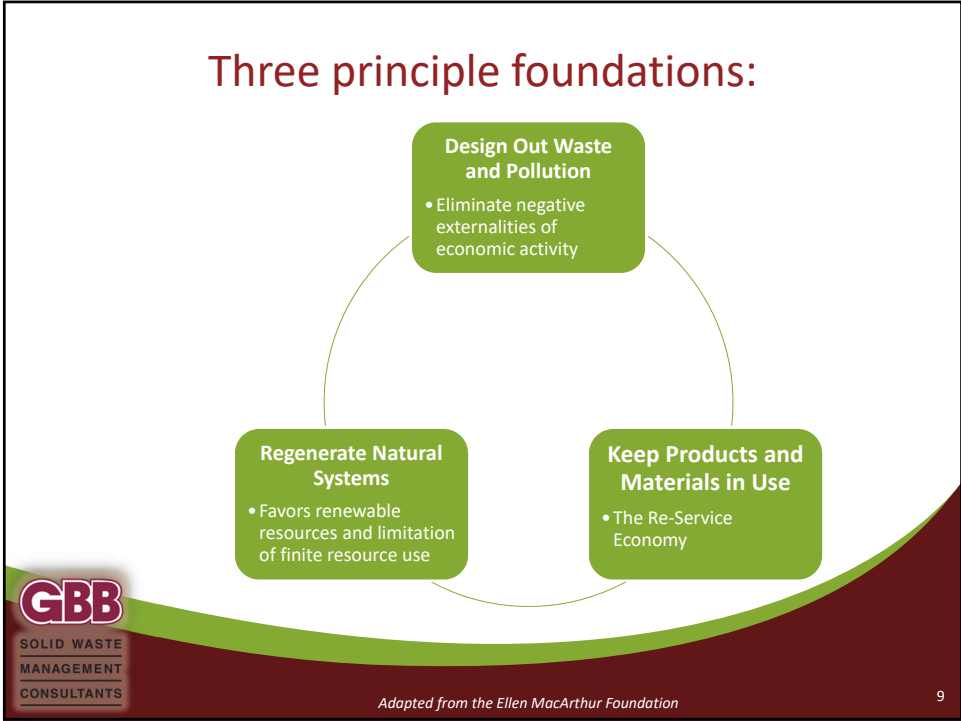



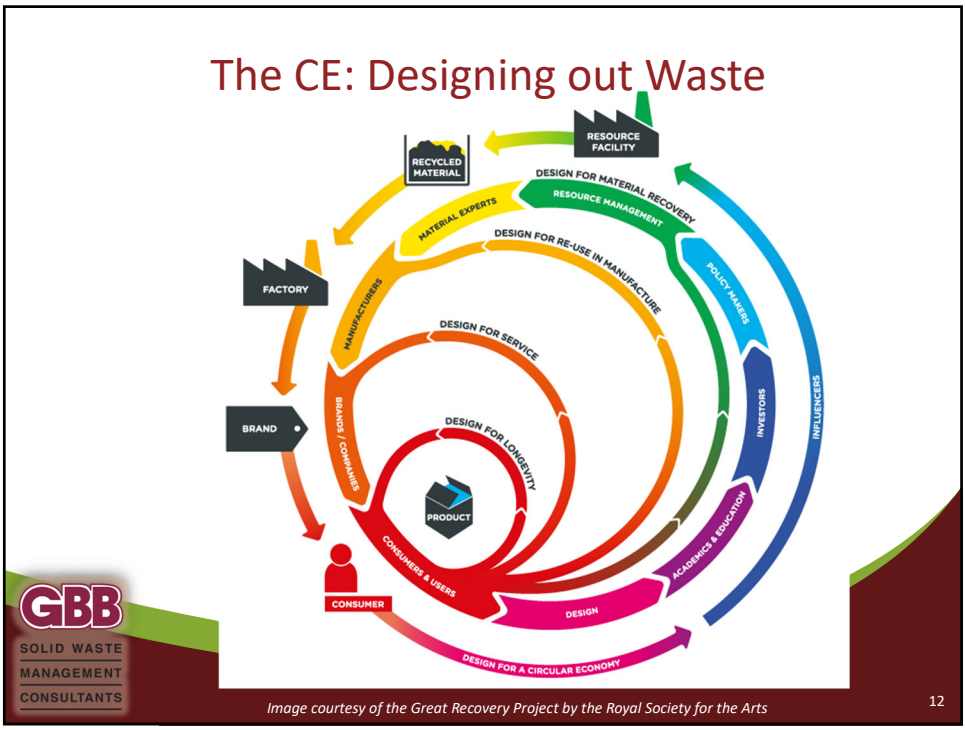
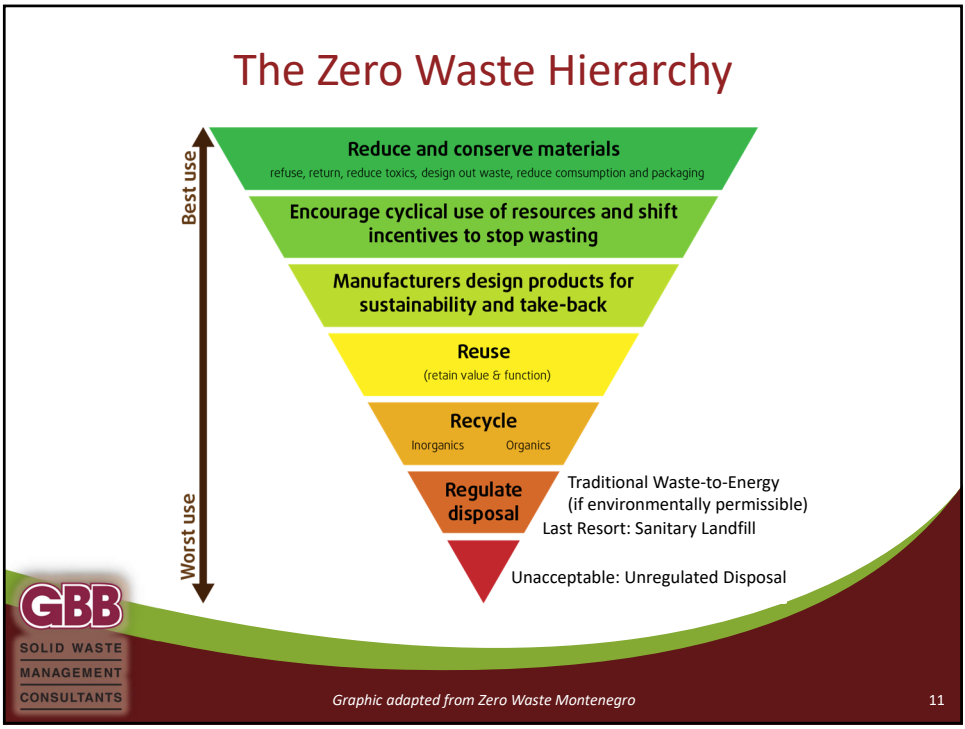
Image courtesy of the European Commission

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- ### A Circular Economy:
- Is a systemic shift from our current linear model that builds long-term resilience
 - Restores and rebuilds economic, environmental and social systems
 - Aims to decouple material and resource consumption from economic growth
 - Seeks to keep resources within a flow of reuse, regeneration, and recycling
- GBB**
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- Adapted from the Ellen MacArthur Foundation*
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The big idea of the circular economy:

Waste = **“Food”**
(for the production cycle)

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The Circular Economy:


THE ENVIRONMENTAL & ECONOMIC BENEFITS

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What's the big deal?

Environmental Benefits	Economic Benefits
<ul style="list-style-type: none"> Preserves resources Minimizes waste Curbs greenhouse gas emissions Increases resilience to climate change and resource scarcity 	<ul style="list-style-type: none"> Creates jobs Adds economic value Better connects materials processors with manufacturers Increases local economic resilience


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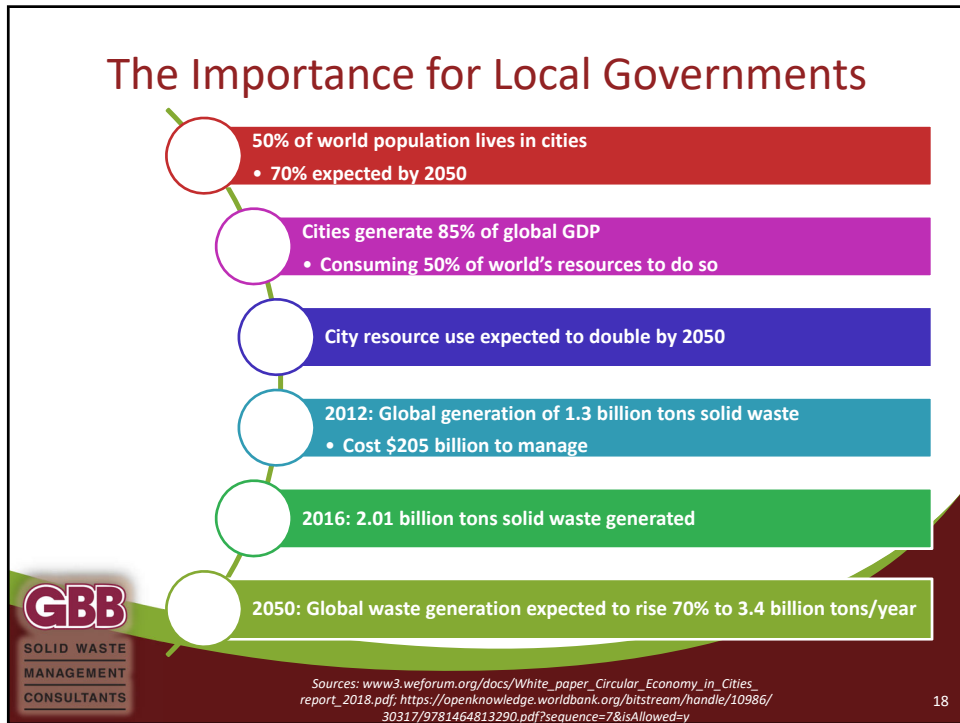
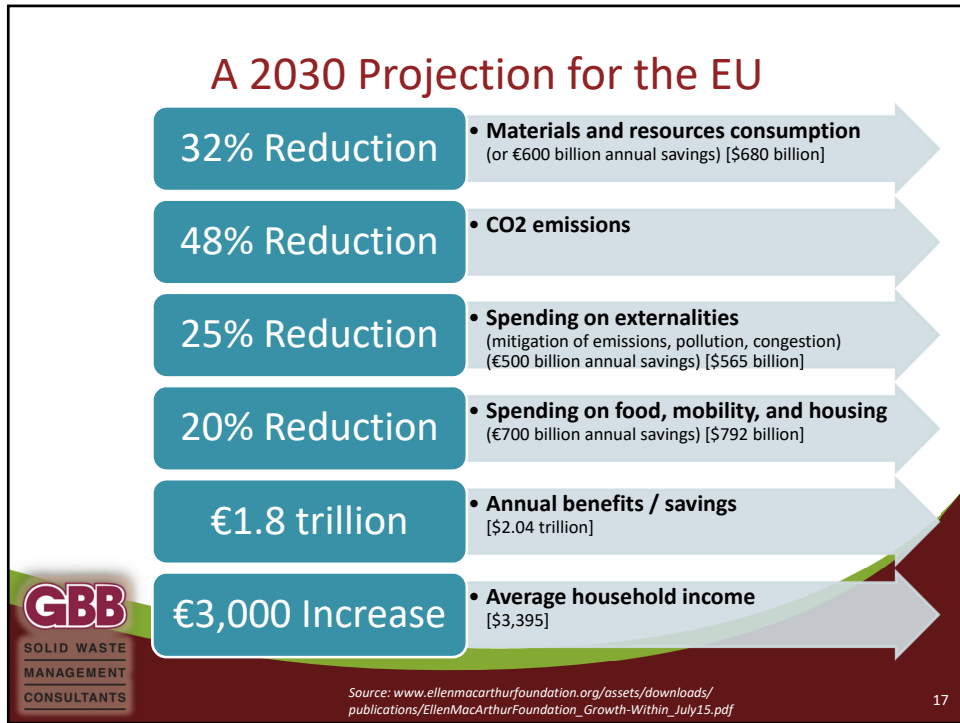
A 2030 Projection for the U.S.

2008 Baseline (34% waste diversion):	Current Trajectory (41% waste diversion by 2030):	Green Economy (75% waste diversion by 2030):
<ul style="list-style-type: none"> 861,000 jobs 501 million tons GHG emissions annually 	<ul style="list-style-type: none"> 1.23 mil jobs 572 million tons GHG emissions annually Increase of 71 million tons over 2008 levels, or nearly 15% more 	<ul style="list-style-type: none"> 2.35 mil jobs 405 million tons GHG emissions annually Decrease of 96 million tons over 2008 levels, or nearly 20% less



Source: www.nrdc.org/sites/default/files/glo_11111401a_0.pdf


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The Circular Economy:

EXAMPLES IN PRACTICE

Kent County Sustainable Business Park (Michigan)
Prince William County Eco-Park (Virginia)



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Kent County, MI Sustainable Business Park

WHAT WE DO NOW

KENT COUNTY
DEPARTMENT OF PUBLIC WORKS
PROCESSES OVER
525,000 TONS
= **1 BILLION LBS**
OF WASTE EACH YEAR



WHAT WE COULD BE DOING

OUR GOAL: REDUCE LANDFILL WASTE
20% by 2020 | 90% by 2030

250-ACRE SUSTAINABLE BUSINESS PARK



Potential Public, Private and Nonprofit Partners of the Proposed Sustainable Business Park

MANUFACTURERS

AGRICULTURE

EDUCATION & RESEARCH

RECREATION & HEALTH

STARTUPS & ENTREPRENEURS



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Kent County: ReImagine Trash

2020
20%

REIMAGINETRASH.ORG

2030
90%

2020 2030



Image courtesy of Kent County

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ReImagine Trash
Sustainable Business Park introductory video



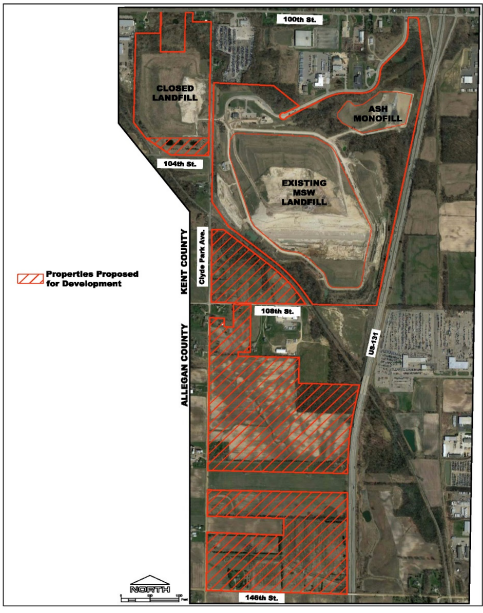
Video courtesy of Kent County, MI

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Current Site Plan

Instead of using these 200 acres for future landfill, County developing Sustainable Business Park that:

- Lays the **critical infrastructure** to support a regional circular economy
- Leverages **private sector development**
- **Attracts business** to localize the entire recycling or conversion process
- Preserves **open space**
- Expands **research**
- Generates and uses **renewable energy**
- Begins to **close the loop** in West Michigan



Kent County SBP Master Plan



Stakeholder Meetings

Held November 2017 in Grand Rapids

Participants included:

- Business/economic development
- Haulers
- Regional Manufacturers
- Municipal Officials
- Environmental Groups

Maintain engagement throughout process



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Facility Tours

Team of County representatives visited several advanced waste processing facilities

San Jose, California in March 2018

- California leader in implementation of policies, programs and technologies that promote recovery and recycling of discarded materials and diversion of waste away from disposal in landfills.

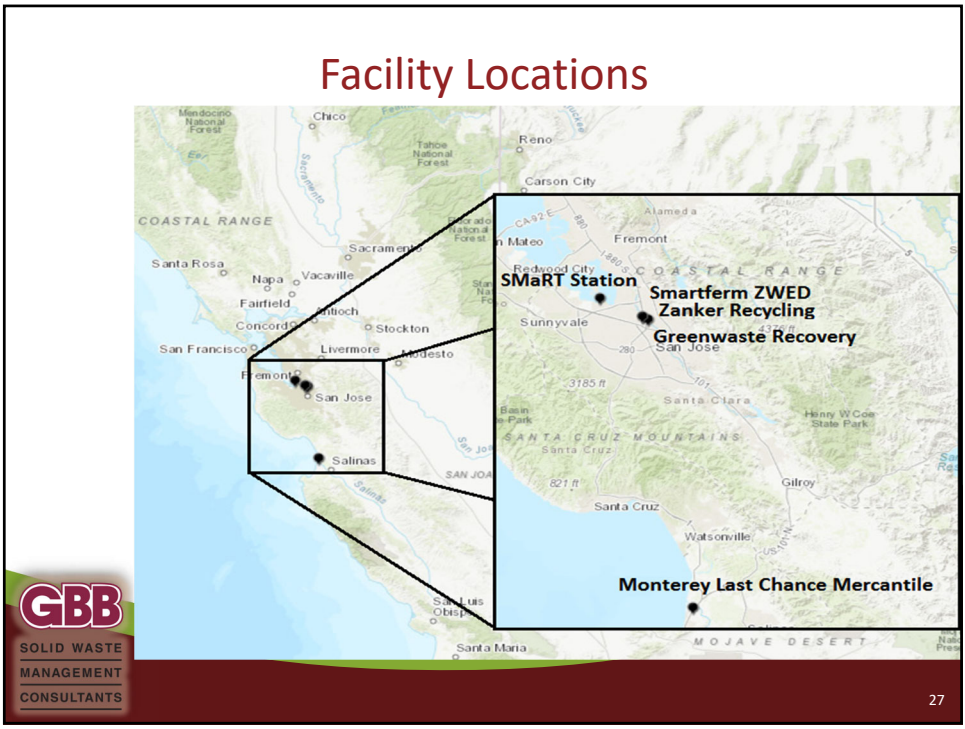
Over a two-and-half day period, the County team visited six material processing facilities

Facilities included publicly and privately-owned systems processing:

- Residential and commercial single stream recyclables
- Mixed MSW
- Yard waste
- Source separated organics
- Construction and demolition waste
- Product reuse center



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Request for Information

Purpose to identify

- Active technology/equipment suppliers
- Project developers
- Technology developers
- Endmarket users

Interested in developing a project and advancing DPW's economic and environmental goals

- Design
- Build
- Finance
- Own
- Operate

Sought information and qualifications from companies who present innovative

- Waste processing technologies
- Waste conversion technologies
- Other beneficial technologies

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Desired Offerings Matrix

Technology Status	Large scale	Medium scale	Small scale
Commercially-Proven	X	X	X
Commercially-Demonstrated	X	X	X
Pilot			X



GRAND RAPIDS NEWS

23 respond to Kent County's call for 'sustainable' garbage proposals

Posted Apr 30, 12:30 PM

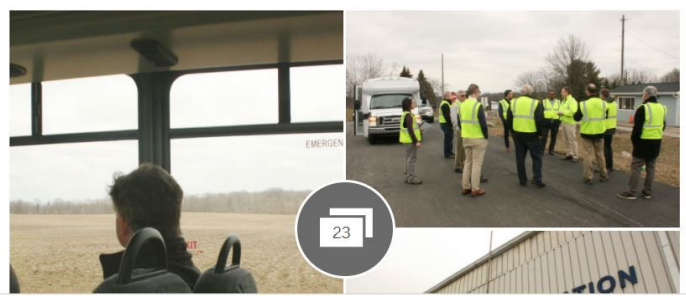


Image courtesy of MLive

Kent County: ReImagine Trash

What we throw away in West Michigan:

Material	Percentage
Organic	35%
Paper	21%
Inorganic	15%
Plastic	14%
Other	10%
Metal	4%
Glass	2%

What the trash we throw away is worth:

Material	Value
PLASTIC	\$20,270,206
METAL	\$15,057,855
PAPER	\$11,702,116
TEXTILES	\$3,156,177
MI DEPOSIT	\$1,841,995

Image courtesy of Kent County

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PRINCE WILLIAM COUNTY ECO-PARK

INTEGRATING GREEN ENERGY, STEM EDUCATION, RESEARCH & ECONOMIC OPPORTUNITY

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**PRINCE WILLIAM COUNTY
ECO-PARK**

INTEGRATING GREEN ENERGY, STEM EDUCATION, RESEARCH & ECONOMIC OPPORTUNITY

**The Buzz: Eco Park Complex
introductory video**

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Video courtesy of Prince William County, VA

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Prince William County Eco-Park

- Explored renewable energy technologies available for use on landfill
- Technical and economic feasibility study
- Developed implementation options
- Solar / wind project procurement
- Waste conversion project procurement
- Procurement of organic waste processing facility

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New state-of-the-art organics waste processing facility:
 Thomas Smith, Prince William County Solid Waste Division Chief,
 at the groundbreaking ceremony in December 2018.

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**RECOMMENDATIONS FOR
 INCENTIVIZING A LOCAL
 CIRCULAR ECONOMY**

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- Develop a plan
- Engage all stakeholders
- Educate
- Perform a waste characterization study
- Streamline existing regulations & standards
- Identify & incentivize the waste hierarchy

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- Practice sustainable (and local) purchasing
- Regulate private sector production and consumption
- Create and leverage partnerships
- Invest in infrastructure and technology
- Use funding creatively
- Pilot new programs

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Summary Circular Economy To Do List

Public-Sector Entities	Technology Developers
<ul style="list-style-type: none"> Name vision and rally others for paradigm shift Secure points of influence (facilities or waste flows) Know waste stream Evaluate appropriate technology for community Find site Financial Incentives 	<ul style="list-style-type: none"> Find partner communities ready for paradigm shift Know the biggest problem Seek joint proposals with manufacturing/end user partner to solve problem(s)



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Thank you!

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THE ATLANTIC CITY EXPERIENCE

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