

# Recovery Park: The Power of Collaboration

The Kent County, MI Project

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GBB (Gershman, Brickner & Bratton, Inc.)

MRN & SWANA Mid-Atlantic Annual Conference

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# WHAT IS A RECOVERY PARK?

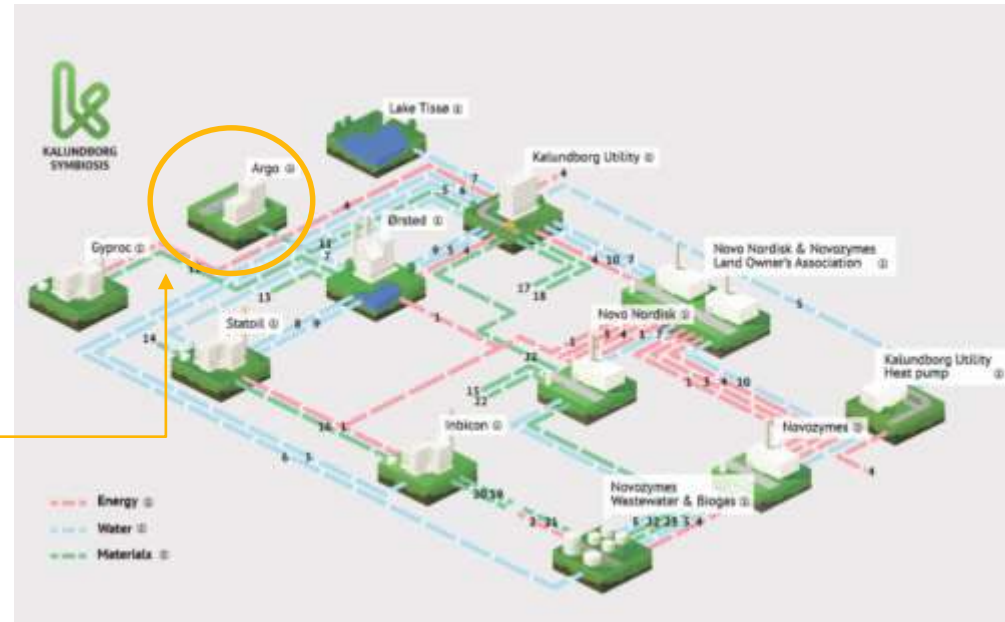
- **Recovery Parks, known by several names:**
  - **Sustainable Business Parks,**
  - **Eco-Industrial Parks; or**
  - **EcoParks**
  - **In academic circles: Industrial Symbiosis or Industrial Ecosystem**
- **Field: Industrial Ecology - Fairly new: early 1990s**
  - **Applies concepts of symbiosis in nature to industry in order to entropy energy, maximize efficiency, and gain economic edge**
  - **Companies in proximity to each other collaborate to use each other's by-products as inputs and share resources when possible.**



# EARLY EXAMPLE

- **Kalundborg Eco-Industrial Park**

- **Kalundborg, Denmark**
  - **First known Industrial Symbiosis**
- **First companies: 1959**
  - **Refinery, powerplant, pharmaceutical plant**
  - **"a cooperation between different industries by which the presence of each...increases the viability of the others, and by which the demands of society for resource savings and environmental protection are considered"<sup>2</sup>**



- **ARGO** handles waste for companies in the Kalundborg Symbiosis as well as companies and households in nine municipalities on Zealand. ARGO is a stakeholder owned waste management company. The waste is divided into fractions and recycled and reused as much as possible. The remainder is used for electricity and heat production<sup>2</sup>

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<sup>1</sup> <https://web.archive.org/web/20080210080326/http://www.earthportal.org/?p=364>

<sup>2</sup> <http://www.symbiosis.dk/en/>



**SO THE CONCEPT IS NOT NEW . .**

*It's Just Hard to Make Happen*

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# Key Success and Limiting Factors<sup>1</sup>

- The creation of symbiotic relationship,
- Information sharing and awareness,
- Financial benefits,
- Organizational structure, and
- Legal and regulatory framework

1 Sakr, D & Baas, Leenard & El-Haggar, S & Huisinigh, Donald. (2011). Critical success and limiting factors for eco-industrial parks: Global trends and Egyptian context. Journal of Cleaner Production - J CLEAN PROD. 19. 1158-1169.10.1016/j.jclepro.2011.01.001.

# The Times They Are a Changing....



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# National Sword Forces Change



Opinion / Viewpoints

## Worldwide crisis in recycling markets hits Broward | Opinion

One east coast airport recyclables rejected at MRF.

As of May 7, 2018, 22 Oregon DEQ concurrences for disposal of 10,000 tons of source separated recyclables.



# Impacts of China's Policies On U.S. Recyclables Market

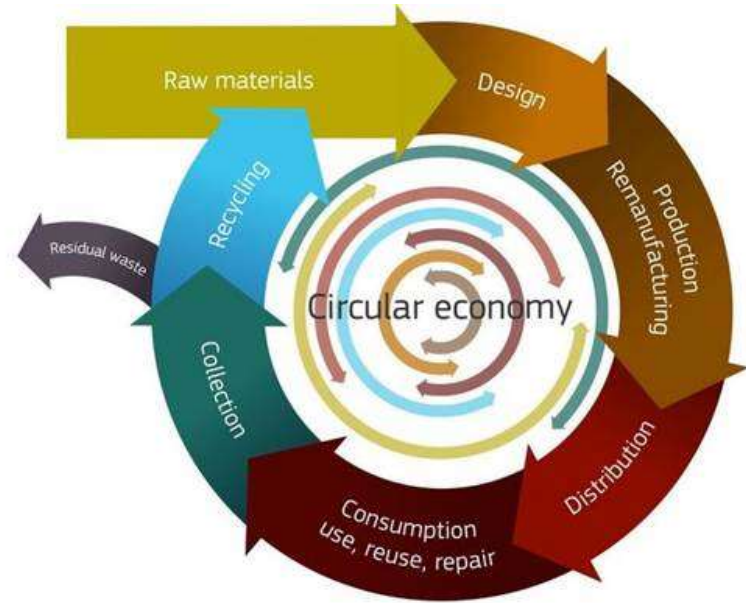




# Recycling Markets



# The Vision: A Circular Economy



**Vs**

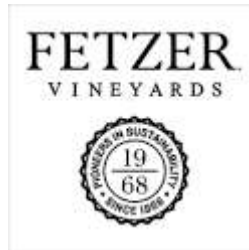
Linear economy



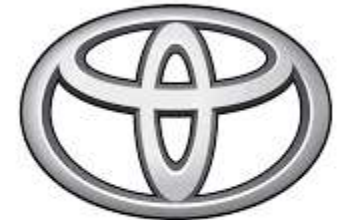
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# Corporations Committing to Zero Waste to Landfill



Procter & Gamble



TOYOTA



SUBARU



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# Why a Resource Park?

- Increase options for diversion
  - Keep resources at home
  - Create an alternative to exporting recyclables  
Avoid issues of the National Sword in China
- Support Local Businesses that want to go Zero Waste to Landfill
- Build environmental industry
  - Employment
  - Green jobs
  - Redevelopment



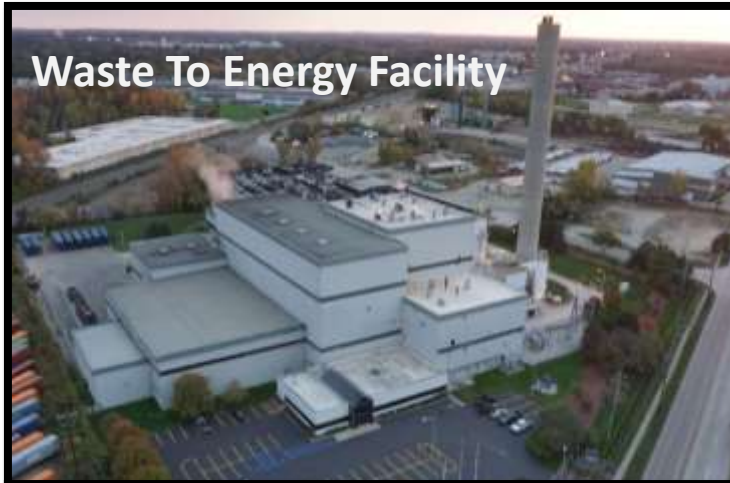
# A Tale of Two Counties



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# Kent County Today: An Integrated Solid Waste Management System including:



- + Transfer Station
- + SafeChem Centers
- + Recycling Drop-Off Stations

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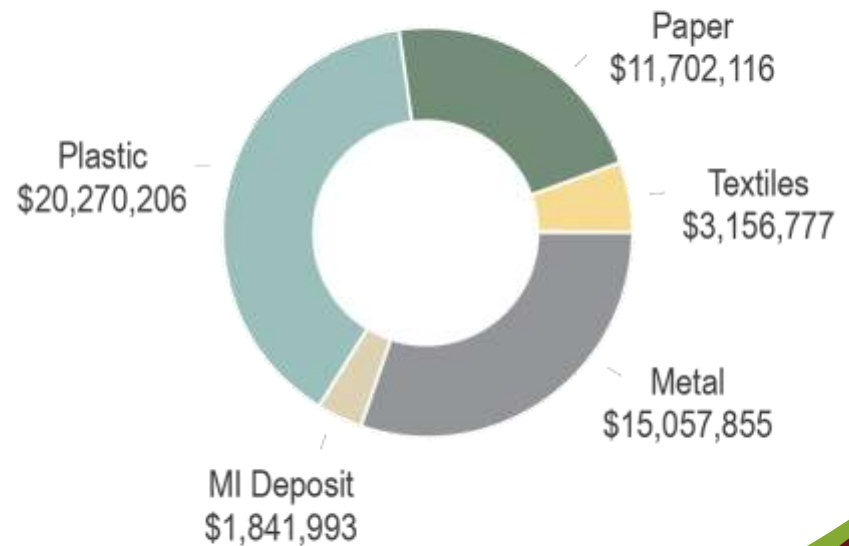
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# Landfill Characterization Study



Total Value of W. Michigan MSW  
Material Disposed (\$)



Source: West Michigan Sustainable Business Forum  
2016 Michigan MSW Valuation Study. [wmsbf.org/msw](http://wmsbf.org/msw)



KENT COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

# The Vision: A Paradigm Shift



# 2020

[REIMAGINETRASH.ORG](http://REIMAGINETRASH.ORG)

# 2030


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# Kent County System Review

- GBB engaged to review County waste management system and to make recommendations for change
- Surveyed existing infrastructure
- Conducted stakeholder meetings with local industry



**Review of Opportunities for Zero Waste to Landfills for Industries**


Prepared for:



Kent County, MI  
Department of Public Works

Prepared by:

**Gershman, Brickner & Bratton, Inc.**



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**August 27, 2015**



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# The Future:



200 acres for future landfill, will become a 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

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# The Planning Partners:



Waste Quantity & Characterization Study  
Market Analysis  
Technology Evaluation



Infrastructure & Zoning  
Site Plans



Stakeholder Engagement  
Communications

BYRUM & FISK  
ADVOCACY COMMUNICATIONS



Funding Sources & Mechanisms



# GBB Zero Waste to Landfill Study

## Purpose

- Identify opportunities for the County DPW to work with industries to increase Zero Waste to Landfill (ZWLF) options in the region
- GBB and SRG hired to investigate



## Scope





- Communicate with major regional industries interested in ZWLF
- Determine feedstock available for processing/conversion
- Evaluate approaches and technologies

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# GBB Zero Waste to Landfill Study (*cont'd*)

## Methodology

- Collect data about the regional manufacturing marketplace
- Conduct meetings with four manufacturers
  -  GRLABEL
  -  HAWORTH
  -  HermanMiller
  -  Trendway >
- Do independent research
- Develop three generalized project concepts
- Analyze information

# GBB Zero Waste to Landfill Study (*cont'd*)

## Conclusions

- Industry has high interest in ZWLF
- Significant fuel supply
- Reusable MDF supply possibly
- County has land for SBP
- *The Right Place* wants to help



## Recommendations

- Develop MOU with *The Right Place* to advance ZWLF projects with manufacturers
- Involve other strategic partners, like the Design Group
- County participate as long as industries do
- Develop conceptual site plan for South Kent Landfill SBP
- County expand offerings to provide recycling technical assistance to commercial waste generators



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# KENT COUNTY SUSTAINABLE BUSINESS PARK MASTER PLAN

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# Kent County SBP Master Plan

- GBB Team will identify the type of technologies and tenants that could inhabit the SBP to be the missing link between the waste stream and the final consumer.
- Develop a Master Plan for the design and construction of public infrastructure to support the businesses locating into the SBP.
- Research and describe potential funding sources for both the SBP infrastructure improvements and the potential SBP tenants.
- Evaluate how the waste management services provided by the SBP tenants might interact with Kent County's existing waste management infrastructure





# Kent County SBP Master Plan

- Stakeholder Meetings and Facility Tours
- Existing Condition Analysis (Local A&E on team)
- Waste Stream and Market Analysis
- Funding Sources
- Technology Overview & Analysis
- Put out RFI and Evaluate Results of the RFI
- Conceptual Site Development Plan
- Conclusions & Recommendations



# Stakeholder Meetings

- Held November 14-16, 2017 in Grand Rapids
- Participants included:
  - Business/economic development
  - Haulers
  - Regional Manufacturers
  - Municipal Officials
  - Environmental Groups
- Maintain engagement throughout process

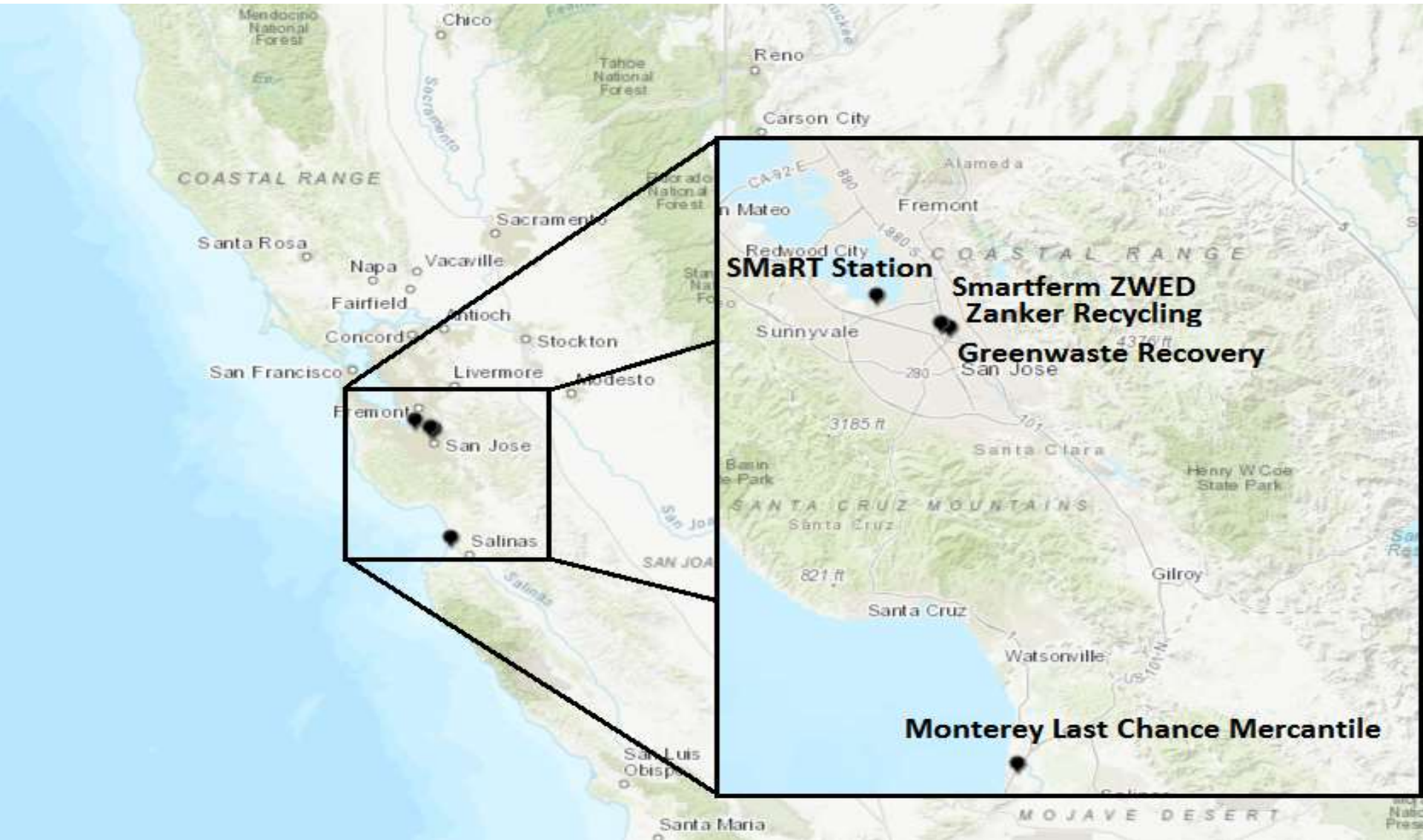


# Facility Tours

- Team of County representatives visited several advanced waste processing facilities
- San Jose, California during the week of March 19, 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 (C&D) and
  - a product reuse center.



# Facility Locations



# Request for Information Issued

- Purpose to identify
  - Active technology/equipment suppliers
  - Project developers
  - Technology developers
  - Endmarket users



# Request for Information Issued

- Interested in developing a project and advancing DPW's economic and environmental goals
  - Design
  - Build
  - Finance
  - Own
  - Operate
- Seeking information and qualifications from companies who present innovative
  - Waste processing technologies
  - Waste conversion technologies
  - Other beneficial technologies



# Request for Information Issued

- Respondents will be expected to
  - Provide solutions to significantly reduce the tonnage of material that require landfill disposal
  - stimulate demand for recycled commodities
- Respondents can present
  - large-scale (greater than 250 ton per day in capacity)
  - medium-scale (between 50 and 250 tons per day in capacity)
  - and small-scale (less than 50 tons per day in capacity)



# Request for Information Issued

- Technology status will be categorized as
  - Commercially-Proven (i.e. commercially viable technology with operating reference facility or facilities);
  - Commercially-Demonstrated (i.e. proven technology without a Commercially-Proven reference facility or facilities)
  - Pilot (i.e. start-up/emerging technology with a functioning prototype prepared for deployment on a trial basis).





# Desired Offerings Matrix

<b>Technology Status</b>	<b>Large scale</b>	<b>Medium scale</b>	<b>Small scale</b>
Commercially-Proven	X	X	X
Commercially-Demonstrated	X	X	X
Pilot			X

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

Posted Apr 30, 12:30 PM



# Master Plan Tasks to be completed

- Evaluate RFI responses;
- Conceptual site development;
- Research funding sources;
- Evaluate how SBP tenants might interact with existing waste management infrastructure.

[www.reimaginetrash.org](http://www.reimaginetrash.org)

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# THANK YOU !

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