Recovery Park: The Power of Collaboration

The Kent County, MI Project

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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.**

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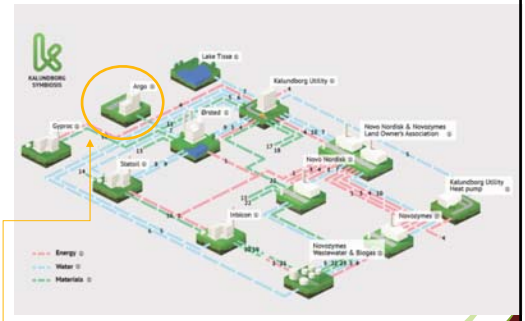
EARLY EXAMPLE

- 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" [2]



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[2]

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[1] https://web.archive.org/web/20080210080326/http://www.earthportal.org/?p=364
[2] http://www.symbiosis.dk/en/

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SO THE CONCEPT IS NOT NEW . .

It's Just Hard to Make Happen

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Key Success and Limiting Factors[1]

- 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 & Huisingh, 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.

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The Times They Are a Changing….

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National Sword Forces Change


SunSentinel

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.

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

Pressure on U.S markets to increase quality

Downward Pressure on Recyclables Prices

Southeast Asian markets will grow (i.e. Malaysia, Vietnam, Bangladesh, India)

Oversupply of domestic recyclables markets

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Recycling Markets

- Need to break the reliance on exports
- Build local markets

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The Vision: A Circular Economy

Vs

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Corporations Committing to Zero Waste to Landfill

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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

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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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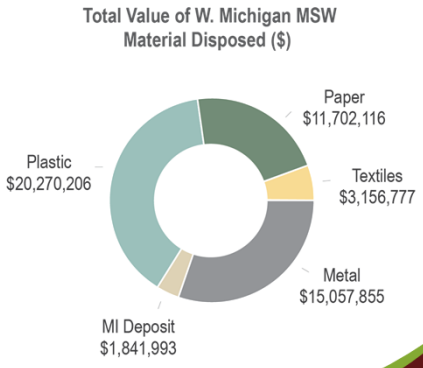
Landfill Characterization Study



Source: West Michigan Sustainable Business Forum 2016 Michigan MSW Valuation Study. wmsbf.org/msw

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KENT COUNTY DEPARTMENT OF PUBLIC WORKS

The Vision:

A Paradigm Shift

2020 20%

REIMAGINETRASH.ORG

2030 90%

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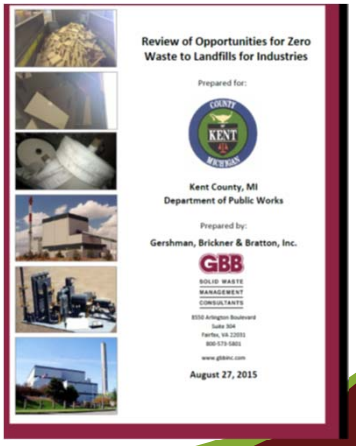
Kent County System Review

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



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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:

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Waste Quantity & Characterization Study
Market Analysis
Technology Evaluation

frch
Infrastructure & Zoning
Site Plans

BYRUM & FISK ADVOCACY COMMUNICATIONS
Stakeholder Engagement
Communications

pfm
Funding Sources & Mechanisms

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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

srg SUSTAINABLE RESEARCH GROUP

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

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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 THE RIGHT PLACE

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 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

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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

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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

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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.

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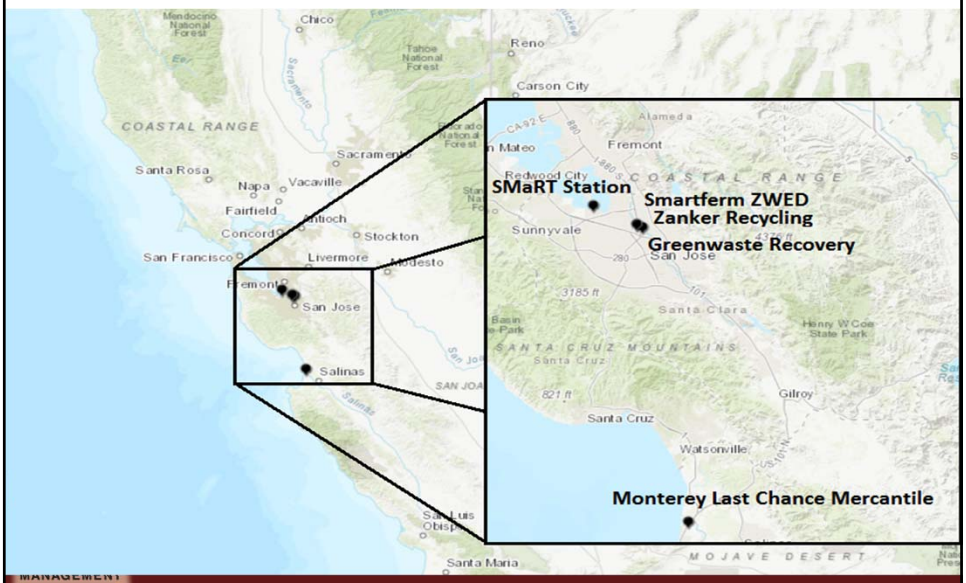
Facility Locations



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Request for Information Issued

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

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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

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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)

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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).

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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

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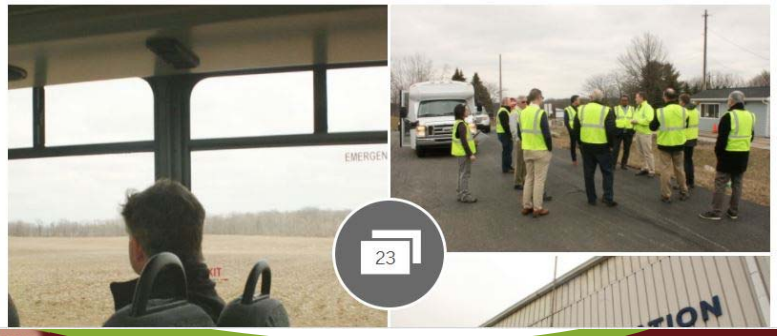
GRAND RAPIDS NEWS

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

Posted Apr 30, 12:30 PM



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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

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THANK YOU !

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