



City of Battle Creek – DPW

Midwest Food Recovery Summit

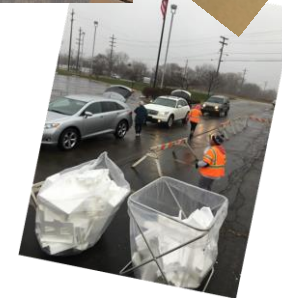
Carl Fedders, PE
City Engineer/Assistant DPW Director

City of Battle Creek – Department of Public Works

- **Why is the city interested in Food Waste Recovery?**
 - Biosolids disposal from activated sludge plant.
 - Contract residential solid waste contract
 - Energy

City of Battle Creek – Solid Waste

- April 2015 – 96 gallon cart specifically for recycling introduced.
- Increase of 46% (431 tons)
- Several special collection.
 - Electronics
 - Styrofoam
 - Yard Waste Composting
 - Tires
 - Batteries
 - CFL bulbs
 - Household Hazardous Waste



City of Battle Creek – Solid Waste

- Missed opportunity....
Food Waste



© 2015 Waste Management, Inc. The Recycle Often, Recycle Right™ recycling education program was developed based upon national best practices. Please consult your local municipality for their acceptable materials and additional details of local programs, which may differ slightly.



City of Battle Creek – Activated Sludge Wastewater treatment plant

- Design Capacity is 27 mgd
- Currently operating at 9 mgd
- Significant loading from food processors and paper industry
- Influent Biological oxygen demand BOD is approximately 650 mg/L
- 7,500 Dry tons a year of Biosolids

City of Battle Creek – Activated Sludge Wastewater treatment plant



City of Battle Creek – Biosolids

- Masterplan efforts
 - 1970, 1990, 2007 and 2017
- 1993 to November 2016 biosolids were land applied 8 months of year and incinerated 4 months of the year.
- Air emission standards and the age of the incineration equipment has forced the City to rethink its operation develop a more **COST EFFECTIVE AND SUSTAINABLE SOLUTION.**



City of Battle Creek – Biosolids

- **What have we done so far?**
 - Pilot tested a drying system which claimed it could take dewatered sludge of 20% to 70%. Failed April 2015.



City of Battle Creek – Biosolids

- **What have we done so far? Cont.**

- Built a sludge cake loading facility so that we can bridge the gap between incinerator retirement and new solution can be developed.



City of Battle Creek – Biosolids

- **Why do we want to pursue a better solution (environmental, financial and social)?**
 - Operational challenges
 - Landfill operational hours
 - Landfill operational requirements
 - Potential regulations to land application program



City of Battle Creek – Biosolids

- **Why do we want to pursue a better solution (environmental, financial and social)? Cont.**
 - Cost
 - Energy (\$1.5M ~ 8%)
 - Trucking/landfill cost (\$750k ~ 4%)
 - Land application cost (\$350k ~ 2%)
 - Current operation is just not sustainable



City of Battle Creek – Priority Based Budgeting

○ **Basic Program Attributes**

- Mandated
- Reliance on city to provide program
- Cost recovery
- Portion of community served
- Change in demand

○ **Community Results**

- Reliable Transportation network
- Economic vitality
- Environmental Stewardship
- Safety
- Recreation, culture and leisure
- Reliable infrastructure
- Vibrant Neighborhoods
- Well planned growth

City of Battle Creek – Biosolids

- **What have we done?**
 - Started a new biosolids master plan taking a very hard look at Aerobic Digestion, Anaerobic Digestion and pelletizing that meet our **triple bottom line approach**.
 - Partnering with other municipalities to develop a **regional approach** to the shared problem.
 - Investigating the potential of **food waste** stream to help benefit these potential solutions.