

Genesee County Material Recovery Facility Feasibility Study

Xizhi Chen – Hanqing Hong – Zhangjingyan Liu – Gregory Porretto – Guangruo Zuo
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ABSTRACT

The purpose of this research is to determine the feasibility of establishing and operating a Material Recovery Facility (MRF) in Genesee County, MI. A clean, single-stream MRF takes in mixed recyclables, then separates and processes them for end use distribution. We will explain residential recycling as well as what are the existing socioeconomic conditions in Genesee County. Our investigation includes site criteria and case studies of different MRF's in Michigan and what parameters would be needed to successfully maintain a MRF operation.



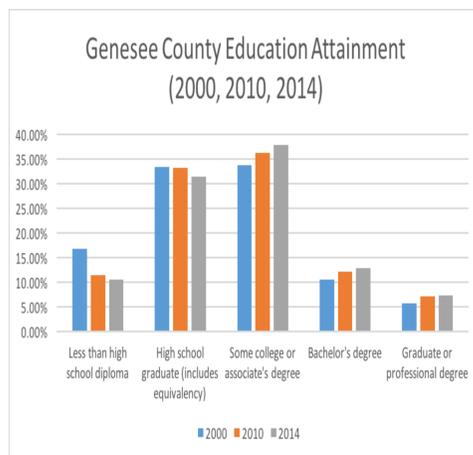
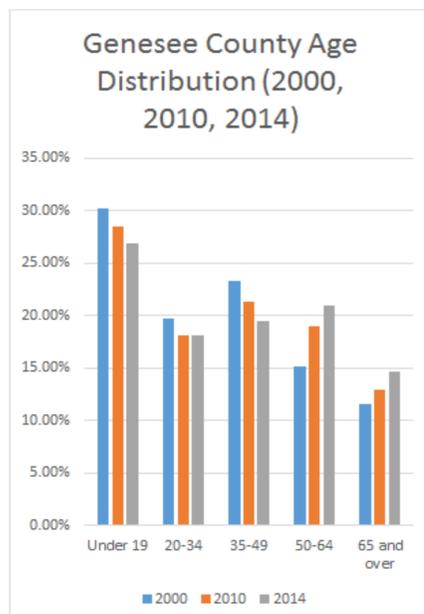
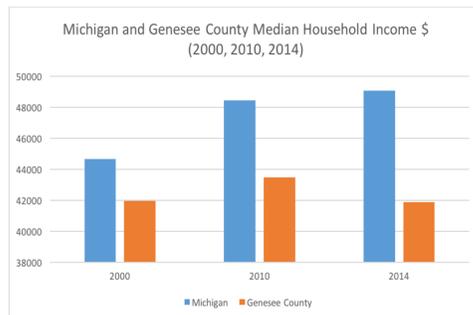
Source: Recycle Right

METHODOLOGY

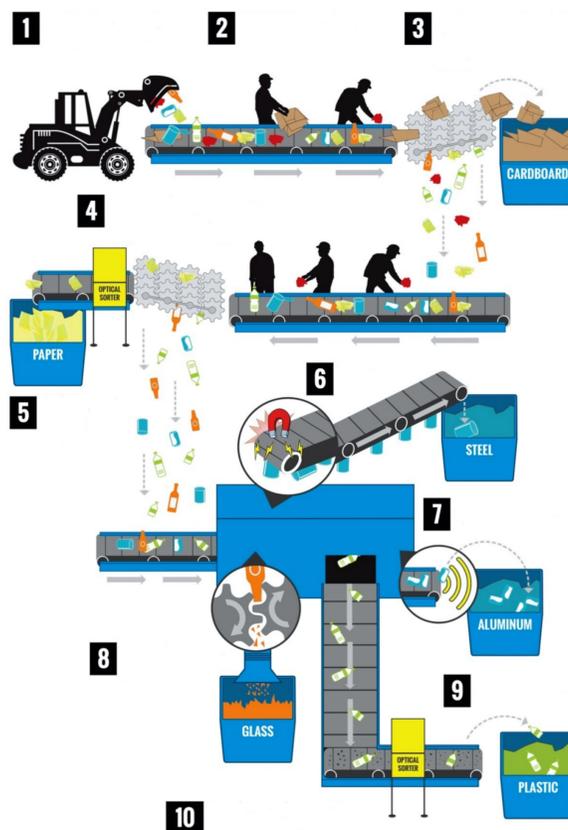
- Recycling Research
- Literature Review
- Socioeconomic Profile
- Current Situation
- Case Studies
- Location Site Criteria

DEMOGRAPHICS

Population	2000	2010	2014
Michigan	9,938,444	9,952,687	9,889,024
Genesee County	436,141	433,054	418,654



MRF OPERATION



Source: Advanced Disposal

1. Unload Materials
2. Manual Sorting
3. Cardboard Separation
4. Optical Separation
5. Contaminants Removed
6. Magnetic Separation
7. Aluminum Separation
8. Glass Processing
9. Plastic Separation
10. Materials Baled

CASE STUDIES

MRF	Michigan State University	ReCommunity (Huron Charter Township)	ReCommunity (City of Ann Arbor)
Year Established	2009	2006	1995
Facility Size (sqft)	18,000	54,000	35,000
Building Cost (\$13.3 Million (Recycling Center & Surplus Store))		\$11 Million	\$10 Million
Equipment Cost	N/A	\$9 Million	\$4 Million
Operation	Clean, Single Stream	Clean, Single Stream	Clean, Single Stream
Owner/Operator	Public	Private	Public
Population Served 2014	50,543	1,790,078	351,454
Households Served 2014	15,176	817,106	148,106
Service Area Radius	5 Miles	10 Miles	>22 Miles
Volume Intake tons/year (2013)	800	80,300	14,250
Employment	10 line/40 total	17 line/70 total	65 total
Zoning	University District	Heavy Industrial	Public Land District

RECOMMENDATIONS

Facility

- Clean, single stream
- Medium-sized MRF
- Public-private partnership
- 35,000 sq ft
- 40-70 employees

Site Location

- #### Characteristics
- Accessibility to roads and highways
 - Heavy-industrial or local public use zoning
 - Proximity to communities that produce large material volumes

Cost

- Building Cost: \$10 million
- Equipment Cost: \$4-\$10 million

Business Model

- Merchant model
- Acquire materials from private waste haulers

Material Market

- Paper, glass, aluminum, plastic, steel, and cardboard

Demand

- Depends on current market
- Demand for recyclables is enhanced through government mandated demands

Education Strategy

- Programs that combine educational and promotional activities
- Encourage different age groups, income classes, and education levels to be involved



Source: Advanced Disposal