

WASTE BENCHMARKING IN CHICAGO METRO REGION

Eve Pytel, Director of Strategic Priorities





**SUSTAINABLE
ENVIRONMENT.**

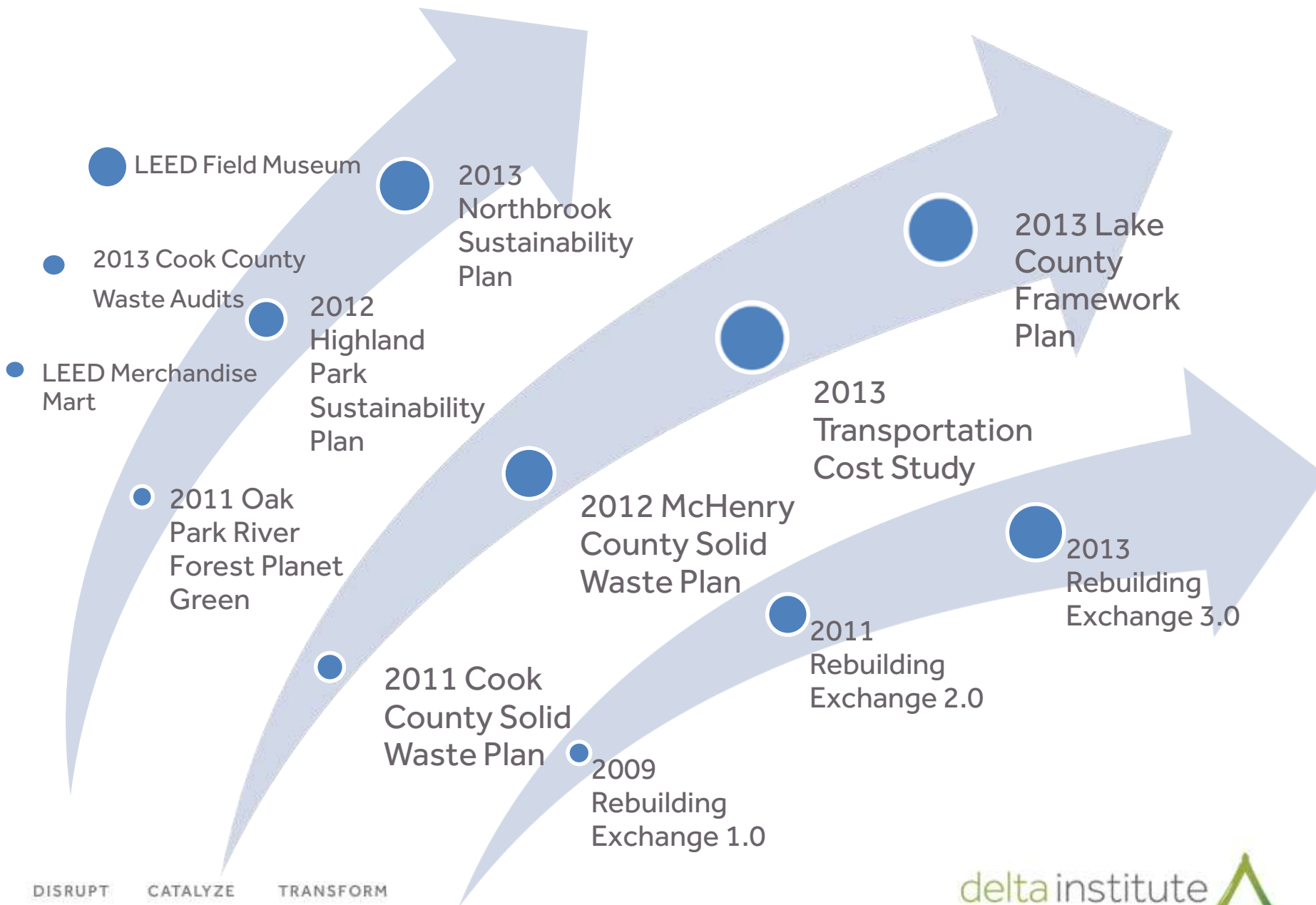
**SUSTAINABLE
ECONOMY.**

ABOUT DELTA INSTITUTE

Founded in 1998 to work at nexus of environmental sustainability & economic development.

What we do:

- Develop innovative programs & market-drive solutions
- Build sustainable markets
- Convene diverse stakeholders
- Inform better policy



DISRUPT CATALYZE TRANSFORM

PROJECT GOALS

1. Determine economic and environmental costs of current WMP
2. Calculate future (2040) economic and environmental costs of various WMP
 - Status Quo
 - 40% Recycling
 - 60% Waste Diversion



METHODS

1. Data and Literature Review

2. Surveying

3. Modeling



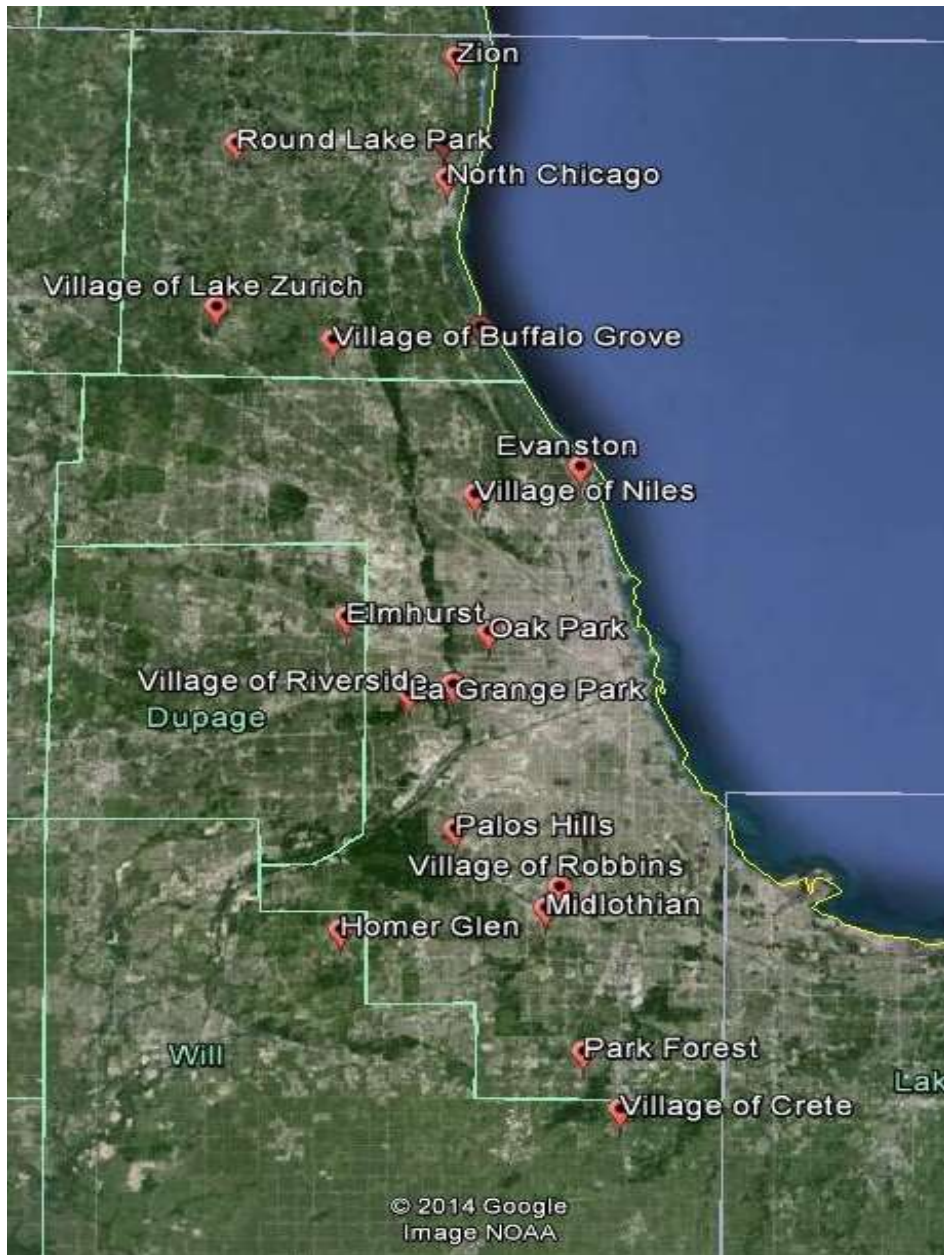
SURVEYING

20 Municipalities in the Chicago metro region

- 4 out of the 7 counties
- Focus on Cook County
- Additional interviews with Blue Island, Riverdale and Dolton

Questions:

- Quantitative
- Qualitative



SURVEY RESULTS: INFORMATION

- **Survey**
 - 20 communities used newsletters
 - 13 used websites and 5 used social media
 - 1 used call system and 1 used a contractor
- **Interviews with waste haulers and additional communities**
 - Information and education is critical
 - Contamination is a problem

SURVEY RESULTS: TYPICALLY PROVIDED SERVICES

Typical Services	Participation
Waste Hauling	20
Provide Bins	10
Basic Recycling (Curbside, Drop Center)	19, 1
Yard Waste	7
Electronics	4
Municipality Hauled	1
Waste Hauler Hauled	19
Interested in adding Textiles	2

OTHER RESPONSES

- Communities with aggressive recycling programs either have sustainability plans or have adopted goals of relevant joint action agency.
- Where recycling programs are successful, they are a major source of pride.
- Some communities that did not have recycling felt their residents were not capable of recycling.
- Waste haulers want to be partners.

MODELING



NC STATE UNIVERSITY



Municipal Solid Waste DECISION SUPPORT TOOL



Welcome

About This Tool

One of the greatest environmental challenges is the cost-effective and environmentally sound management of waste. The municipal solid waste decision-support tool aids solid waste planners in evaluating the cost and life cycle environmental aspects of integrated municipal solid waste management strategies. This tool enables users to simulate existing MSW management practices and conduct scenario analyses of new strategies based on cost and environmental objectives. For more information, go to <https://mswdst.ri.org>.

Create New Scenario

Load Existing Scenario

Exit Tool

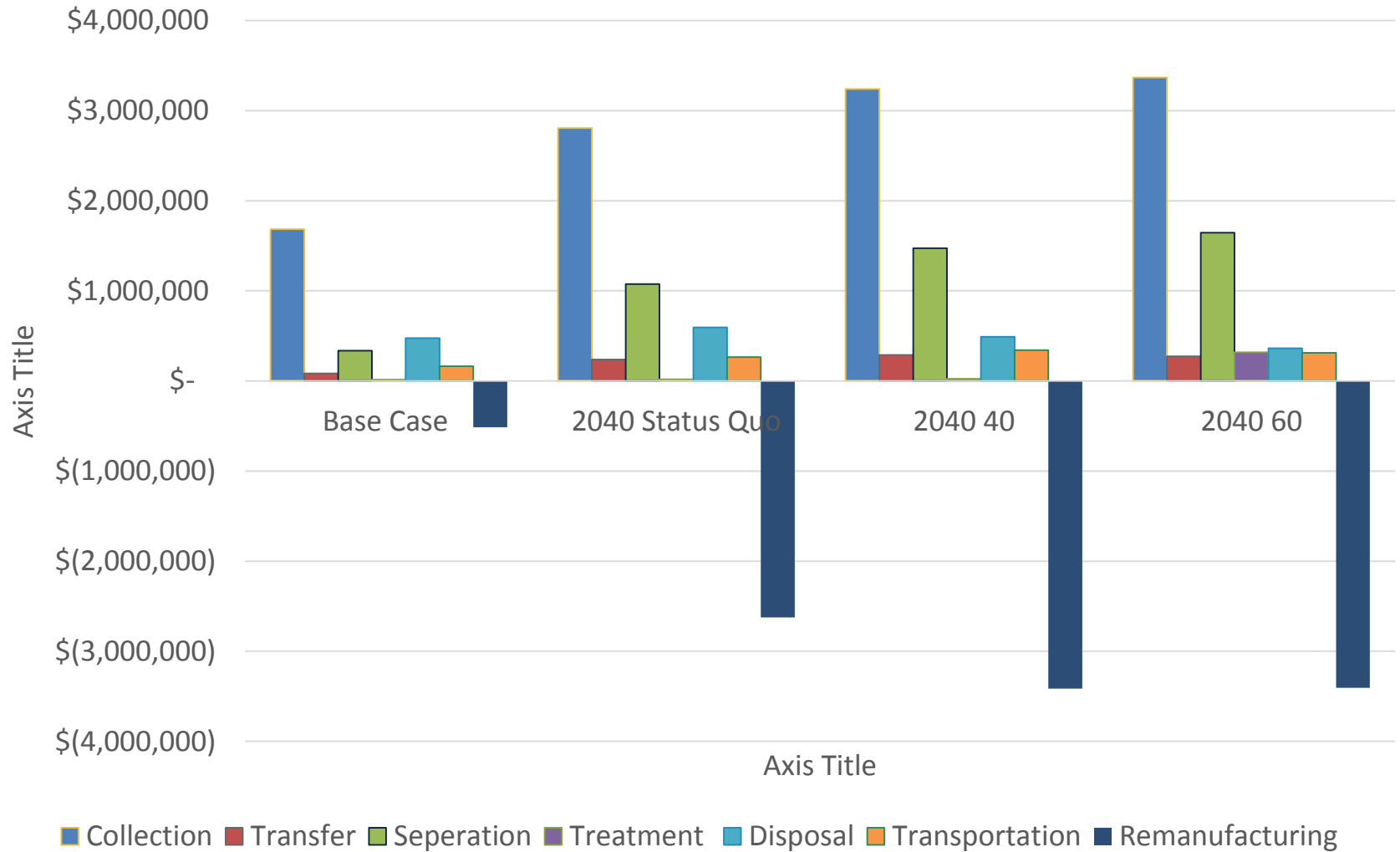
CONSTANT VARIABLES

- Waste Generation Rate
- HH density
- Waste stream composition
- Energy
 - Regional grid
 - Grid composition
- Distance to TS, LF, MRF
- Landfill gas management type

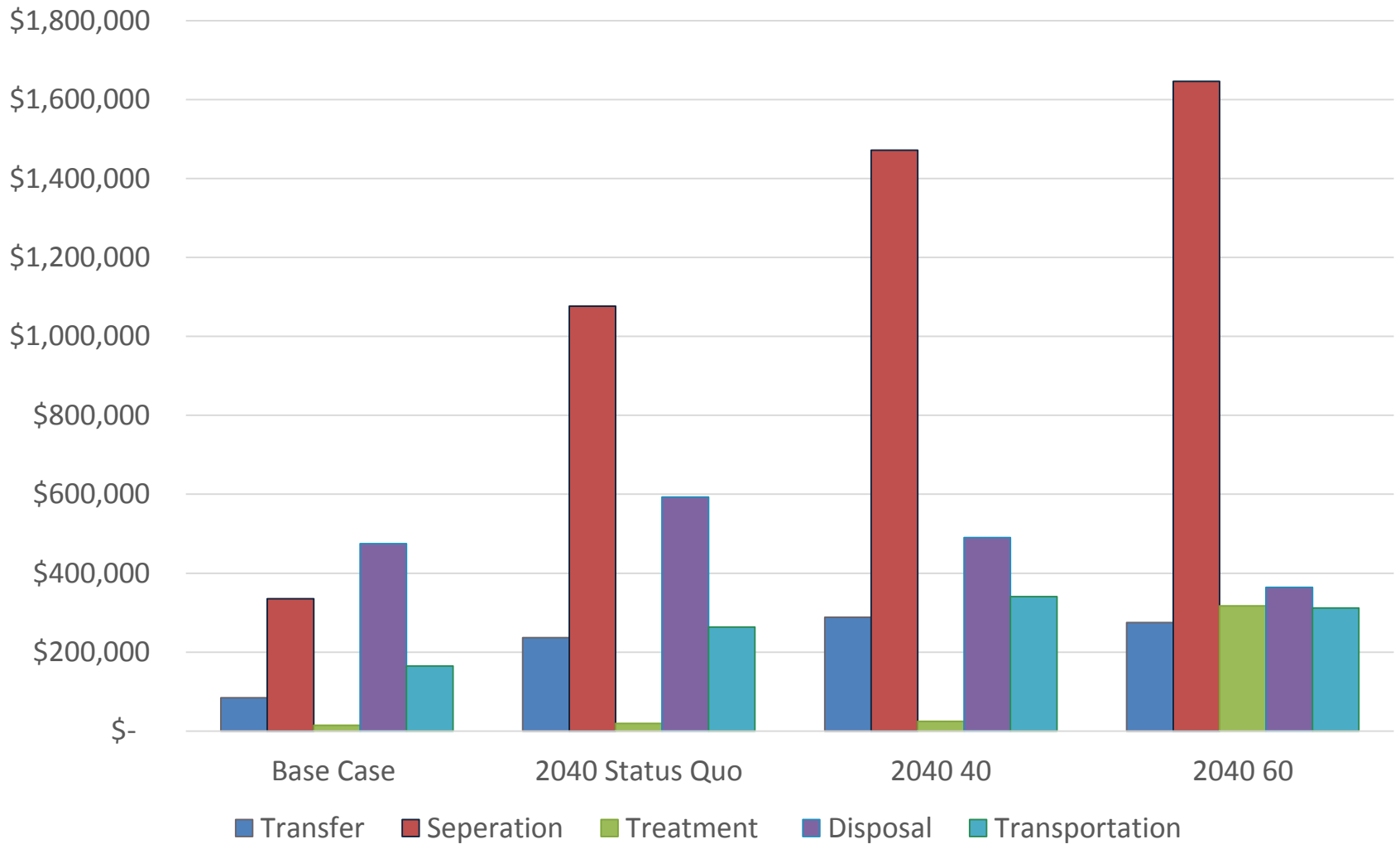
MANIPULATED VARIABLES

- Population
- Value of recyclable commodities
- Energy Costs
- Diversion Rates
 - Recycling
 - Compost
 - YW compost
 - MSW compost

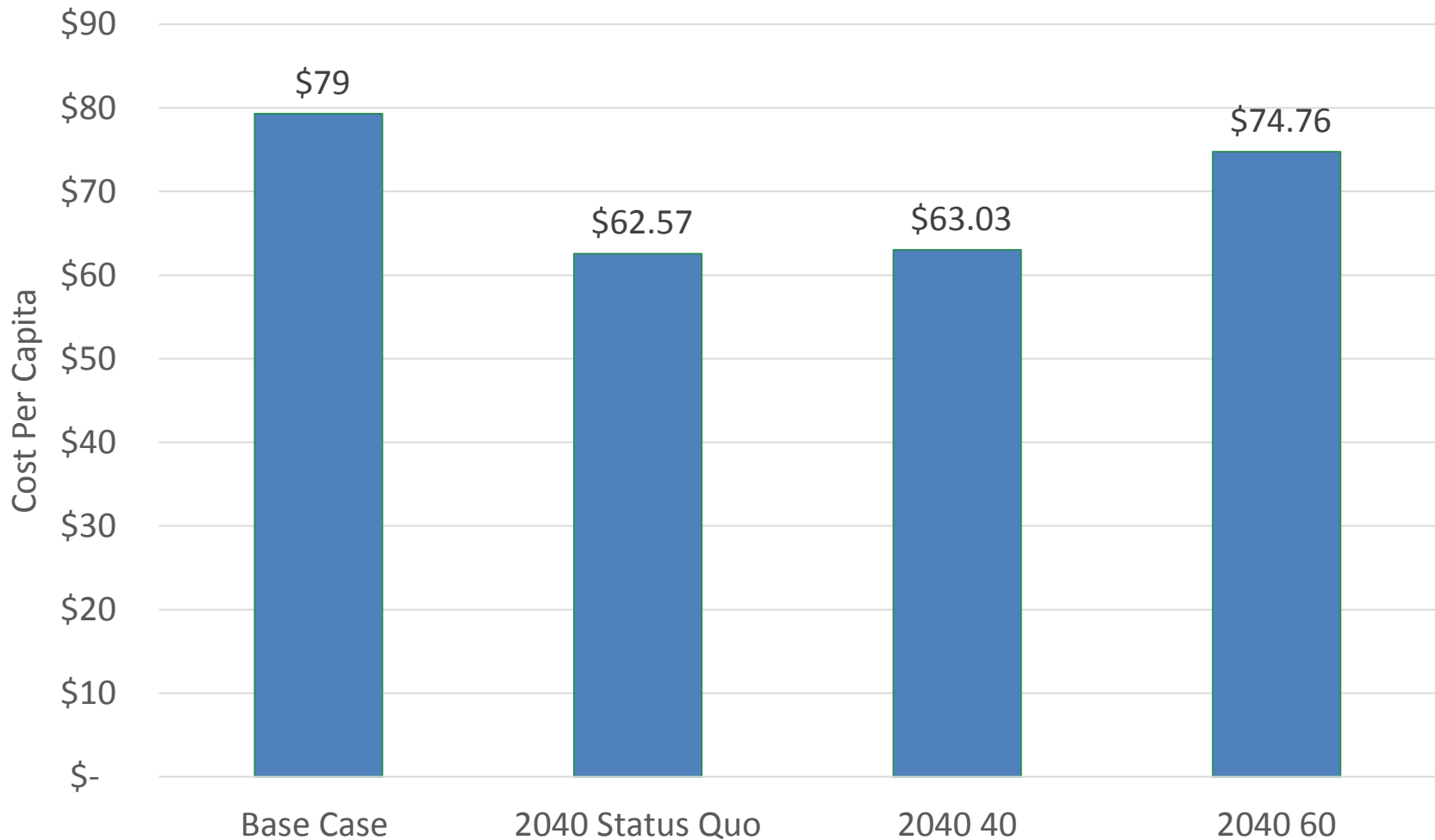
Average Total Costs of All Waste Management Components for 20 Municipalities in the Chicago Metro Area



Average Cost of Select Waste Management Components for 20 Municipalities in the Chicago Metro Region

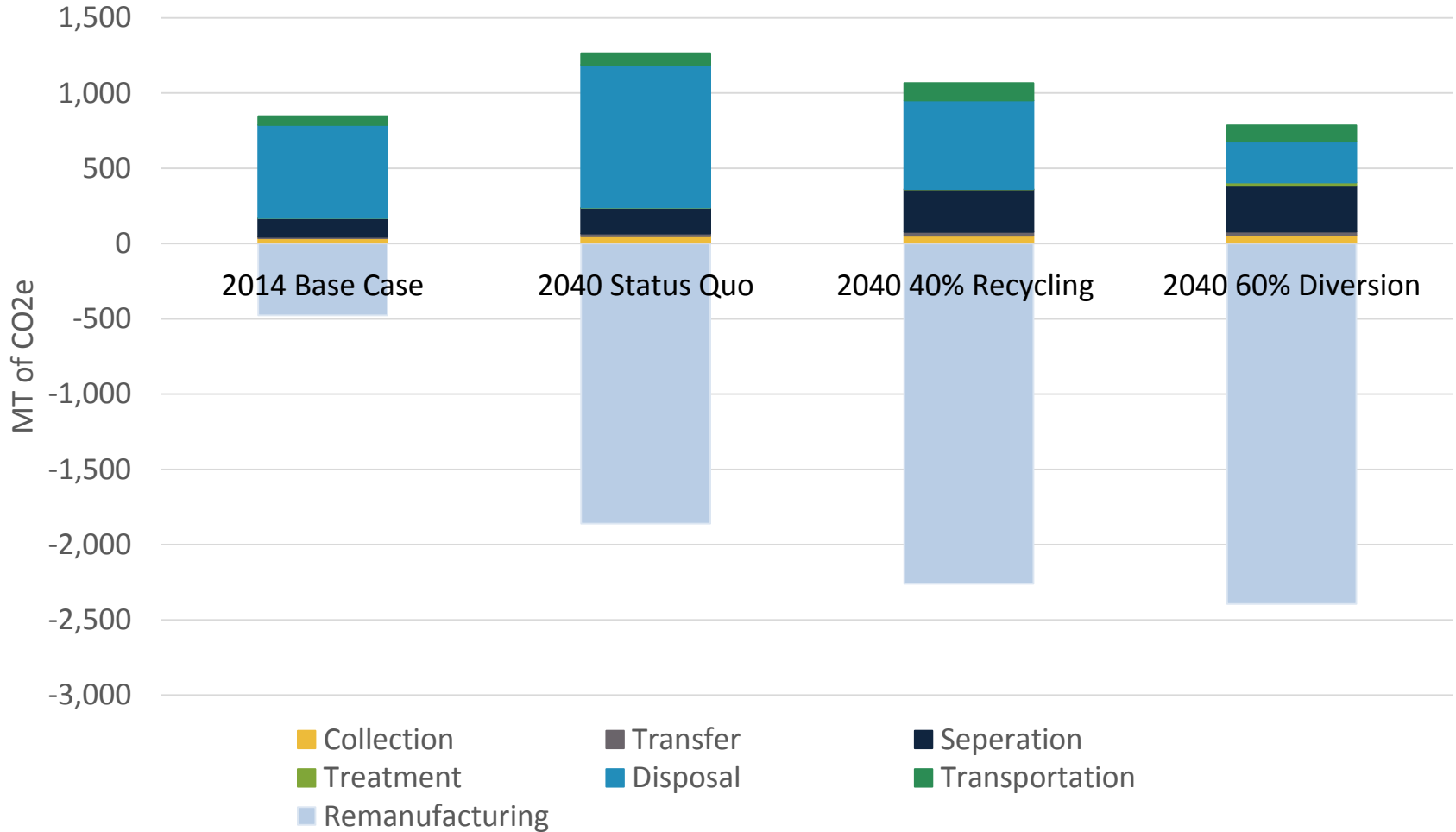


Total Cost Per Capita of all Waste Management Components for Each Scenario Modeled

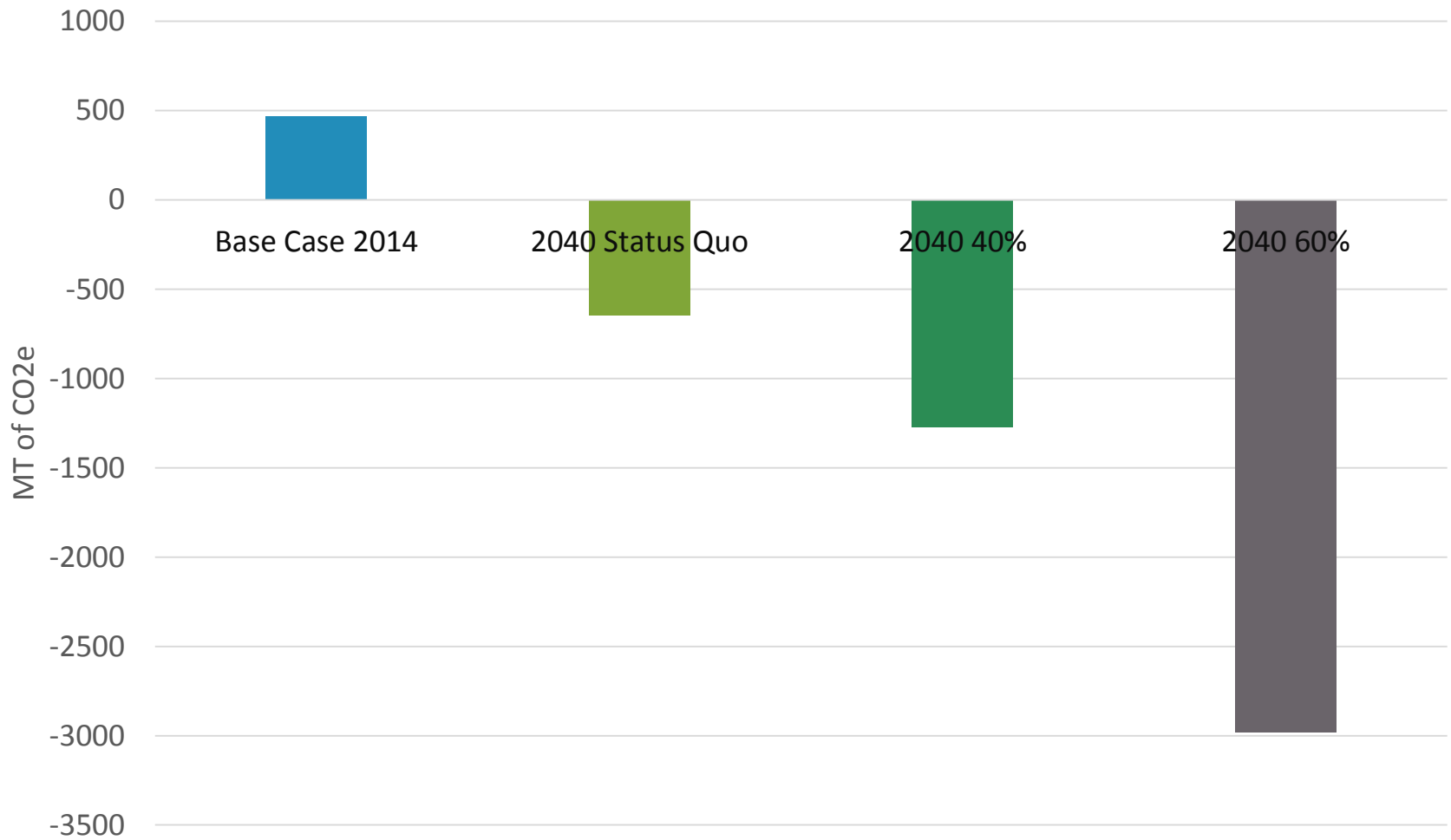


Typical cost of waste handling ranges from 7%-12% of the municipal budget.

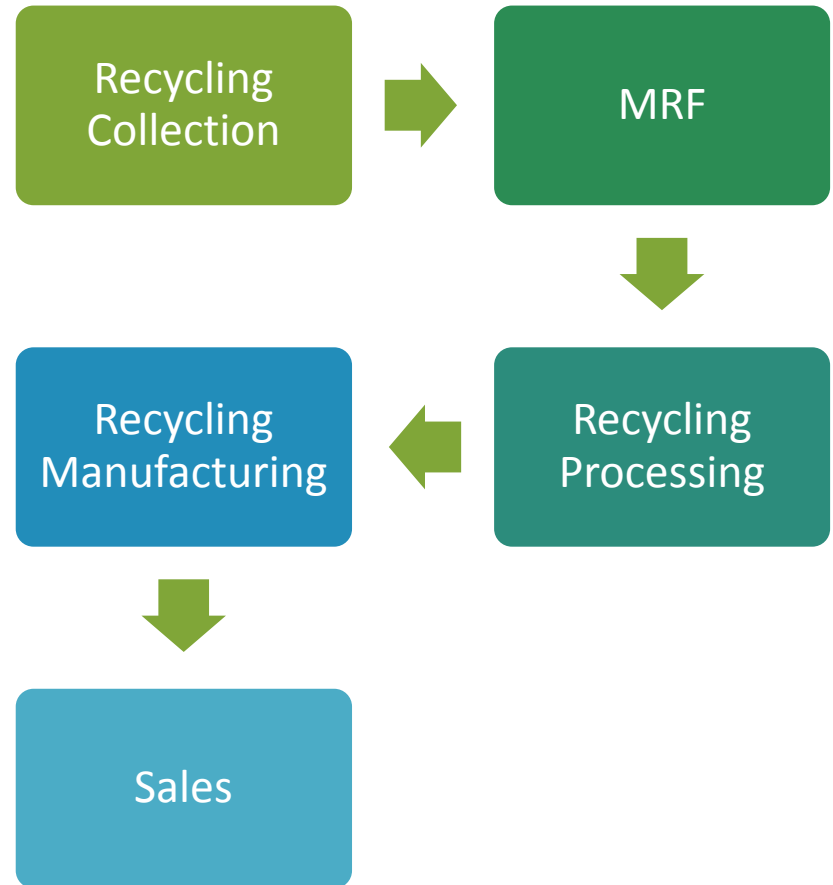
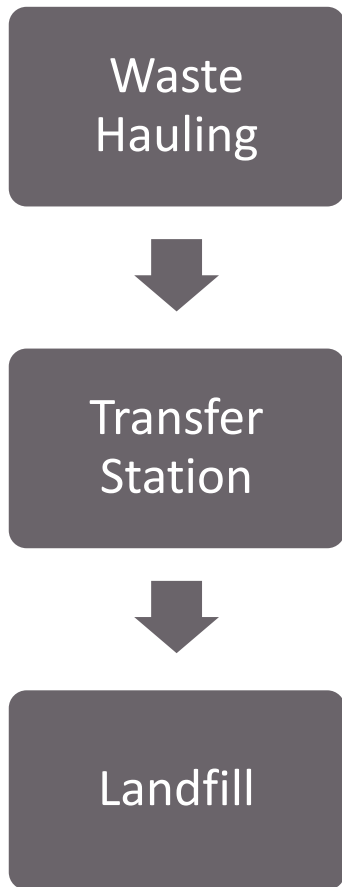
Average CO2e Emissions Generated for all Waste Management Components for 20 Municipalities in the Chicago Metro Region



Average Net CO₂e Emissions Generated from all Waste Management Components for 20 Municipalities in the Chicago Metro Region



WASTE-BASED JOBS

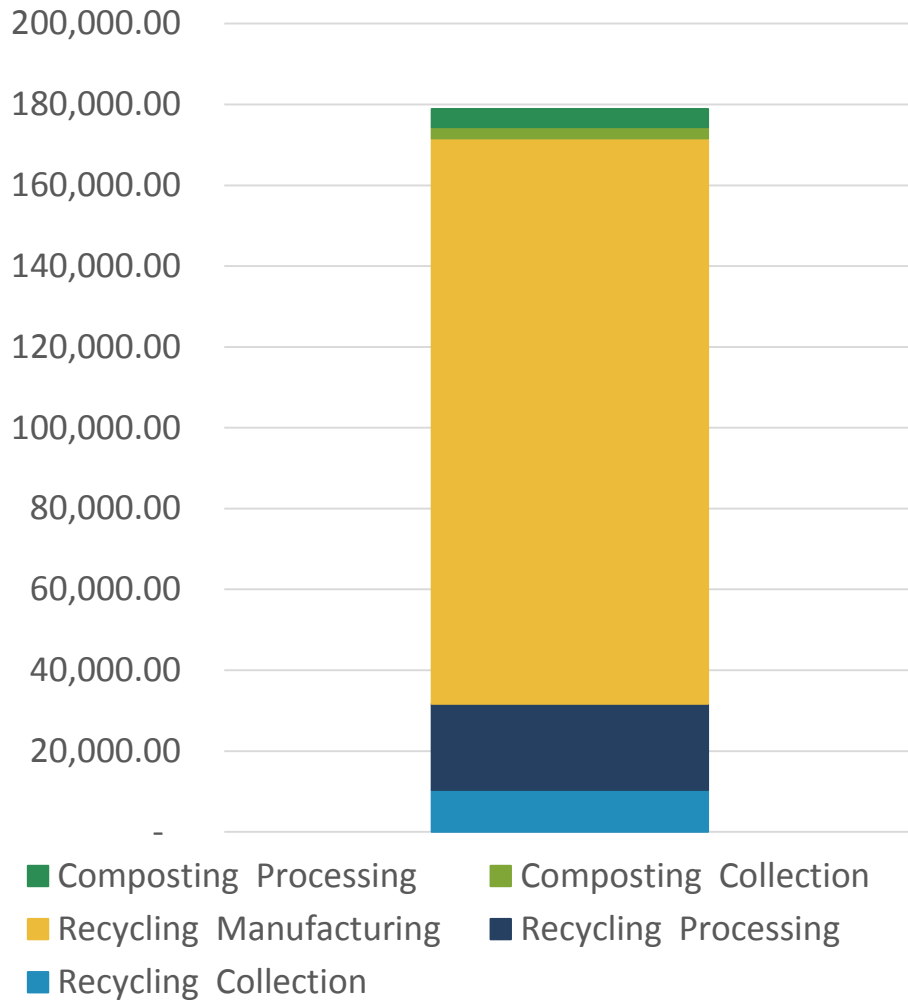


TONS DIVERTED = JOBS

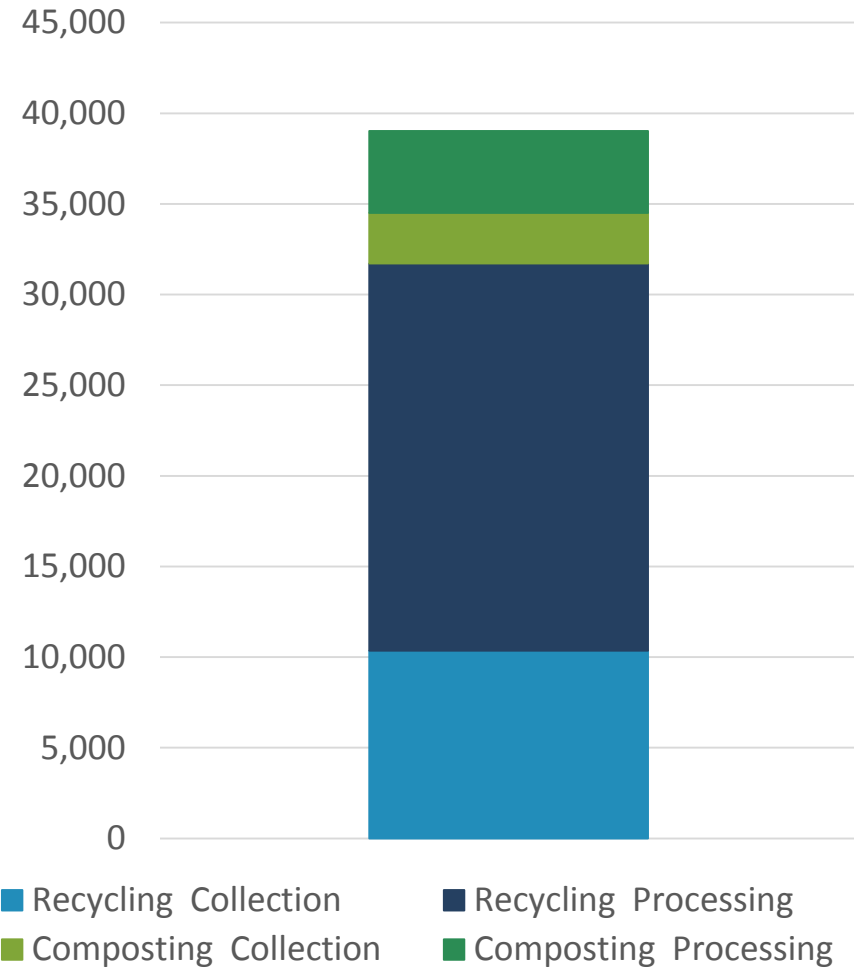
	Discarded	Diverted		
	<i>Total Waste Collection, Landfill, and Incineration</i>	<i>Collection</i>	<i>Processing</i>	<i>Manufacturing (remanufacturing)</i>
Materials	<i>Jobs Created/1,000 Tons</i>			
Recyclable				
Paper & Paperboard	0.00076	0.00123	0.002	0.00416
Plastic	0.00076	0.00123	0.002	0.0103
Metal				
Ferrous	0.00076	0.00123	0.002	0.00412
Aluminum	0.00076	0.00123	0.002	0.01763
Other Nonferrous	0.00076	0.00123	0.002	0.01763
Glass	0.00076	0.00123	0.002	0.00785
Compostable				
Food Scraps	0.00076	0.00123	0.002	n/a
Yard Trimmings	0.00076	0.00123	0.002	n/a

Table 1: Direct Job Multiplier Table. Source: The Untapped Jobs Potential of Indiana's Recycling Industry, Bowne Center for Public Affairs.

All Potential Jobs Created Through 60% Waste Diversion in 2040



Potential Regional Jobs Created Through 60% Waste Diversion in 2040



OPPORTUNITIES TO DO BETTER

Better
Data

Procurement
Education
Infrastructure
Coordination

Environmental
Quality

Economic
Development

CONTACT US



Eve Pytel

Director of Strategic Priorities

epytel@delta-institute.org

Ph 312.651.4338

Delta Institute Headquarters

35 E Wacker Drive

Suite 1200

Chicago, IL 60601

Ph 312 554 0900

Delta Institute Michigan

230 N. Washington Square

STE 200

Lansing, MI 48933

Ph 517 482 8810

THANK YOU