



**CASCADe**  
 cart solutions  
 a cascade engineering company



# KNOW WHAT YOU T.H.R.O.W™

The City of Grand Rapids, Michigan

## PROJECT HIGHLIGHTS

- ROI: 5 years
- Estimated Savings: \$1.27 M/Year
- Recycling Tonnage: 67% Increase
- Recycling Participation: 37% Increase
- Refuse Tonnage: 13% Decrease
- Routing Efficiencies: 40% Increase

Monthly Refuse and Recycling Tonnage  
 Available Online at [grcity.us](http://grcity.us)  
 (City of Grand Rapids, MI 2013)

“... when residential waste is actually isolated and measured on a per capita basis, **PAYT communities generate about 49 percent less waste** than those leaving the cost of trash in the tax base or in a fixed fee.”

Get SMART with Pay-As-You-Throw  
 (U.S. Environmental Protection Agency, 2010)

In their Sustainability Plan, the City of Grand Rapids, Michigan defines green as the triple bottom line, recognizing the interdependence of the natural environment, economic system, and social structure. The City is committed to sustainability as a means of improving the quality of life for residents through the development of a strong local economy, achievement of social equity, and promotion of the preservation of the natural environment. As part of this commitment, the City has placed a focus on transforming its solid waste collections to: reduce costs through efficient operations, provide citizens with equitable collection service and fees, and improve environmental performance through increased incinerator and landfill diversion rates.

## CHALLENGE

The City of Grand Rapids wanted to transform its solid waste collection process and associated fees to an innovative, fully integrated, cart based system which utilizes an incentive, volume-based pricing model to reduce costs and increase waste diversion. The transformation included transitioning from bag and tag refuse service with manual collection to a fully automated system.





## SOLUTION

Cascade Cart Solutions worked in collaboration with AMCS Group and the City of Grand Rapids to develop a revolutionary pay-for-service program, T.H.R.O.W™, utilizing refuse and recycling carts equipped with radio frequency identification (RFID) Xtreme Tags® and collection vehicles outfitted with CapturIT® onboard reader systems. With the Tip-based Household Reduction Of Waste (T.H.R.O.W) program, refuse bags and tags, and recycling bins were replaced with Cascade SmartCarts® and semi-automated collection vehicles were replaced with fully automated vehicles to automate collection. SmartCarts are linked to each residents' address using their integrated RFID tags, allowing for refuse and recycling data collection and the transfer of operational data to the back office using the onboard CapturIT systems. Volume-based refuse collection fees were associated with each cart size, and residents were given the choice to select a 35, 64, 0r 96 gallon refuse cart. Recycling is free in the city and residents are charged for refuse on a per-tip basis, only when their cart is presented at the curb, providing a disincentive for garbage production through increased recycling. Larger recycling containers, single stream collection, and a custom-built recycling rewards program, called mygrcitypoints, incentivizes recycling participation, resulting in increased recycling rates and tonnages. Now the city's residents are encouraged to "Know What You T.H.R.O.W." to control their fees and help the environment.



The entire system enables customer self-management, allowing residents to prepay their refuse bill online, over the phone, or in person, while offering greater cost control through the ability to select cart size, recycle more and present their refuse cart less often.



## BENEFITS

- **Cost Savings.** Approximately \$1 million in savings annually from the reduction of printing and distribution of refuse bags and tags
- **Waste Diversion.** Cascade SmartCarts® and CapturIT® systems provided the platform for the recycling incentive and pay-for-service programs resulting in a 67% increase in recycling tonnage, a 13% decrease in refuse tonnage and approximately \$160,000 in disposal savings annually
- **Improved Efficiency.** Real time route management and live truck tracking optimizes collection routes
- **Simplified Billing.** Residents maintain their own account reducing customer service requirements to manage billing and collections, saving \$20,000 annually
- **Multiple Payment Methods.** Payments are accepted via website, IVR (automated phone), and in person at the cash office reducing customer service and billing requirements
- **Eliminate Bad Debt.** CapturIT systems read the RFID tags on carts and provide trucks with the option to not tip carts which have a negative account balance
- **Accurate Customer Database.** RFID tags and CapturIT truck systems provide an ongoing, accurate customer database

### COLLECTION HISTORY OF A TYPICAL RESIDENT – 1844 MAIN STREET

Collection Date	Vehicle	Waste Type	Cart Size	Lift Cost
11/13/2013	MI-49503-6507	Non-hazardous recyclable materials	64	N/A
11/13/2013	MI-49503-6507	Non-recyclable solid waste	32	\$2.00
11/6/2013	MI-49503-6507	Non-recyclable solid waste	32	\$2.00
10/30/2013	MI-49503-6507	Non-hazardous recyclable materials	64	N/A
10/30/2013	MI-49503-6507	Non-recyclable solid waste	32	\$2.00
10/16/2013	MI-49503-6507	Non-hazardous recyclable materials	64	N/A
10/16/2013	MI-49503-6507	Non-recyclable solid waste	32	\$2.00
10/2/2013	MI-49503-6507	Non-hazardous recyclable materials	64	N/A
10/2/2013	MI-49503-6507	Non-recyclable solid waste	32	\$2.00

Refuse is collected weekly; fees are based on cart size and are charged only when the cart is emptied. Bi-weekly recycling collection is free to residents.



**CASCADE**

**cart solutions**

a cascade engineering company

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As a leading solution provider in the municipal solid waste industry, Cascade Cart Solutions provides a comprehensive suite of products, technology, and services for solid waste, recycling and organics collection. Cascade is dedicated to producing robust, quality products that stand the test of time, having manufactured over 20 million residential roll-out carts for curbside collection programs throughout North America since 1989. Our history of developing long term partnerships with customers, while also focusing on the greater good of the community and environment is illustrated by our innovative programs such as The Pink Cart™, currently raising awareness for breast cancer in communities across the nation.

Cascade Cart Solutions is part of the Cascade Engineering, Inc. companies, a group of Michigan-based manufacturing operations. As one of the largest certified "B Corporations" in the world, Cascade is defined by our culture of using the power of business to positively impact our society and the environment.

**Certified**



**Corporation**

[bcorporation.net](http://bcorporation.net)