

DTE ENERGY AND GOODWILL'S GREEN WORKS PARTNERSHIP



Win-Win for the Community, Environment and Economic Success

**Patty Ireland, DTE Energy
John Ash, Goodwill Green Works**

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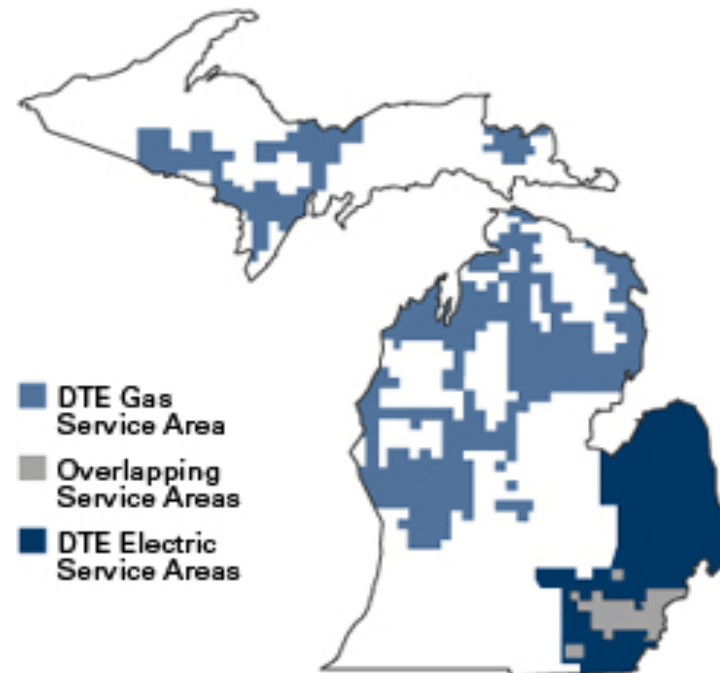
A sustainable recycling and job training model that provides mutually beneficial outcomes for the Detroit community, DTE Energy, and the environment.



DTE ENERGY

- We serve with our energy, the lifeblood of communities and the engine of progress

Our Service Area



1.2 million gas customers and 2.2 million electricity customers throughout Michigan .

DTE ENERGY AND GOODWILL'S GREEN WORKS PARTNERSHIP

Since 1942, DTE Energy and Goodwill Industries of Greater Detroit have worked together to sell, donate, or recycle retired assets (e.g. used transformers, office furniture) and materials.

In January, 2010 this affiliation produced a new partnership, Goodwill's Green Works, a non-profit subsidiary formed to fund vital job training, education and placement programs for those facing employment challenges in Metro Detroit **through asset recovery and recycling services.**



DTE ENERGY RECYCLING 2014

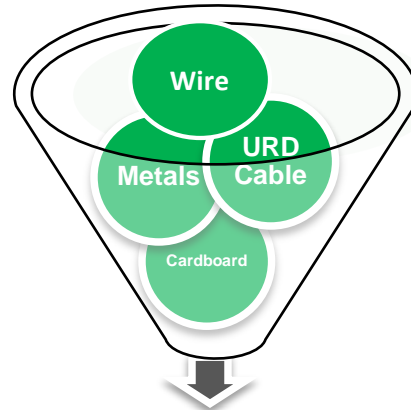
(UNITS IN TONS UNLESS OTHERWISE NOTED)

Paper	345
Cardboard	346
Plastic	8
Bulbs	16
Batteries	101
Computers / Electronics	65
Appliances (Customer Appliances)	2,806
Ferrous Metal	7,513
Non-Ferrous Metal	3,223
Wood	407
Used Oil-Energy Recovery (Gallons)	346,506
Used Oil-Recycled (Gallons)	72,774



DTE's "ONE STOP BOX" PROCESS

- All Wire including on Wood Reels
- Metal
- Cardboard
- Plastics
- All other recyclables
- URD Cable



Bins at Contractor Yards

Transported by DTE Material Transport from DTE site to WSC or processing center for separation (Hand Sorted) by commodity.



Roll-off content prior to separation.



Containers at Service Centers



Baled Cardboard

Baled Wire



Steel



Baled Plastic



ASSET RECOVERY

Trailer Returns

- Oil Filled Equipment
- Stock returns
- Machinery / Tools
- Cross Arms
- Empty Wood Reels
- Reusable plastic tubs
- Computer / Electronic Equipment



Computers / Electronics



Empty Wood Reels



Empty Tubs



Cross Arms



Tools and Equipment



Oil Filled Equipment

Pad mounts

Pole mounts

Bushings





SOLAR POWERED TRASH COLLECTORS SERVING OUR NEIGHBORHOOD

- DTE Energy is piloting **smart, solar-powered trash compactor and recycling units** in Detroit's downtown area.
- The compactors **eliminate trash overflow**, which helps beautify the neighborhood and keeps pests away.
- When the unit needs to be emptied, the **smart system sends a signal via its CLEAN management software**.
- The system **dramatically reduces collection costs**





CREATIVE REUSE AND RECYCLING

- Bricks: an emissions stack refurbishment resulted in a waste stream of 1.5 million pounds of bricks; rather than simply landfilling them, **the bricks were reused in the plant's infrastructure.**
- Rubber Belting: two power plants replaced more than 220,000 lbs. of used rubber belting. **We researched the market and found a company who could reuse this material rather than landfill it.**
- Oil Gas Pipe: DTE's Natural Gas Transmission group installed new piping to improve reliability and faced the decision of what to do with the old piping: bury in place or remove. **We chose to more expensive and time consuming option to remove and recycle the 2.7 million pounds of metal piping.**

GREEN WORKS OVERVIEW

GOODWILL'S GREEN WORKS

Mission

- Training Metro Detroit residents with **employment challenges** and growing recycling activities to create more job opportunities.

Purpose

- Providing **real life experiences** for Metro Detroit residents in a professional environment.

Results

- **Creating jobs** and generating revenue for the fight against regional unemployment and poverty, while achieving “green” results.

GOODWILL'S GREEN WORKS

- Offers **cost-saving, labor-intensive asset recovery and industrial recycling services** to DTE Energy and has recently expanded its services to other companies.
- Has a **94,000 square foot facility** located at 6421 Lynch Road, Detroit, Mi.
- Employs ~seventy **(70) permanent employees**
- Maintains ~thirty **(30) trainee positions** primarily for Michigan Department of Corrections Transitional Work Experience positions.

DTE ENERGY AND GOODWILL'S GREEN WORKS PARTNERSHIP

Green Works Capabilities

- Recycling **management services**
 - Knowledge and network in the **commodity markets**
 - Scrap Material **Audit** capabilities
 - Cradle to grave **documentation**
- Clean room processing **environmentally sensitive materials**
- An “**e-commerce**” **web site: materialplus.com** to resell and/or repurpose usable materials and products

GOODWILL'S GREEN WORKS OVER 70 YEARS LATER

Green Works' Facility: 94,000 sq. ft.



GOODWILL'S GREEN WORKS

DTE Trailers Transporting Material for “Asset Recovery”



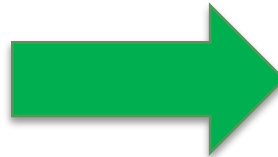
GOODWILL'S GREEN WORKS

DTE Containers of Material for Asset Recovery



GOODWILL'S GREEN WORKS

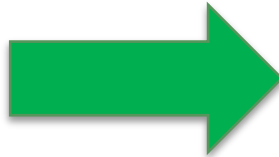
DTE “One Stop” Roll-off Containers brought in for Recycling



GOODWILL'S GREEN WORKS

“ONE STOP” SORTING PROCESS

Rough Sort



Divided Into Parts/Products/Materials



GOODWILL'S GREEN WORKS

Transformer Deconstruction Process



GOODWILL'S GREEN WORKS

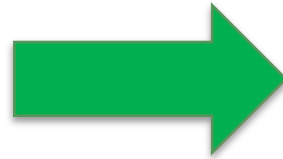
Transformer Recycling: Core Deconstruction



GOODWILL'S GREEN WORKS

Transformer Core Shredding

From this



To this



GOODWILL'S GREEN WORKS

Wire Chopper Process



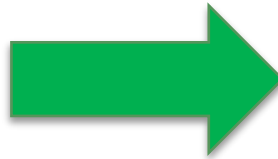
GOODWILL'S GREEN WORKS

“Wire Chopper Process” Separates Aluminum from Insulation

From this



To this



GOODWILL'S GREEN WORKS

Underground Cable Processing Room



GOODWILL'S GREEN WORKS

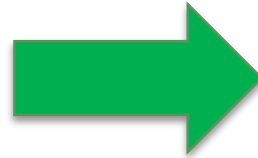
UNDERGROUND CABLE PROCESSING



GOODWILL'S GREEN WORKS

Underground Cable Processing

From this



Copper



To this



GOODWILL'S GREEN WORKS

OIL FILTER RECYCLING CENTER



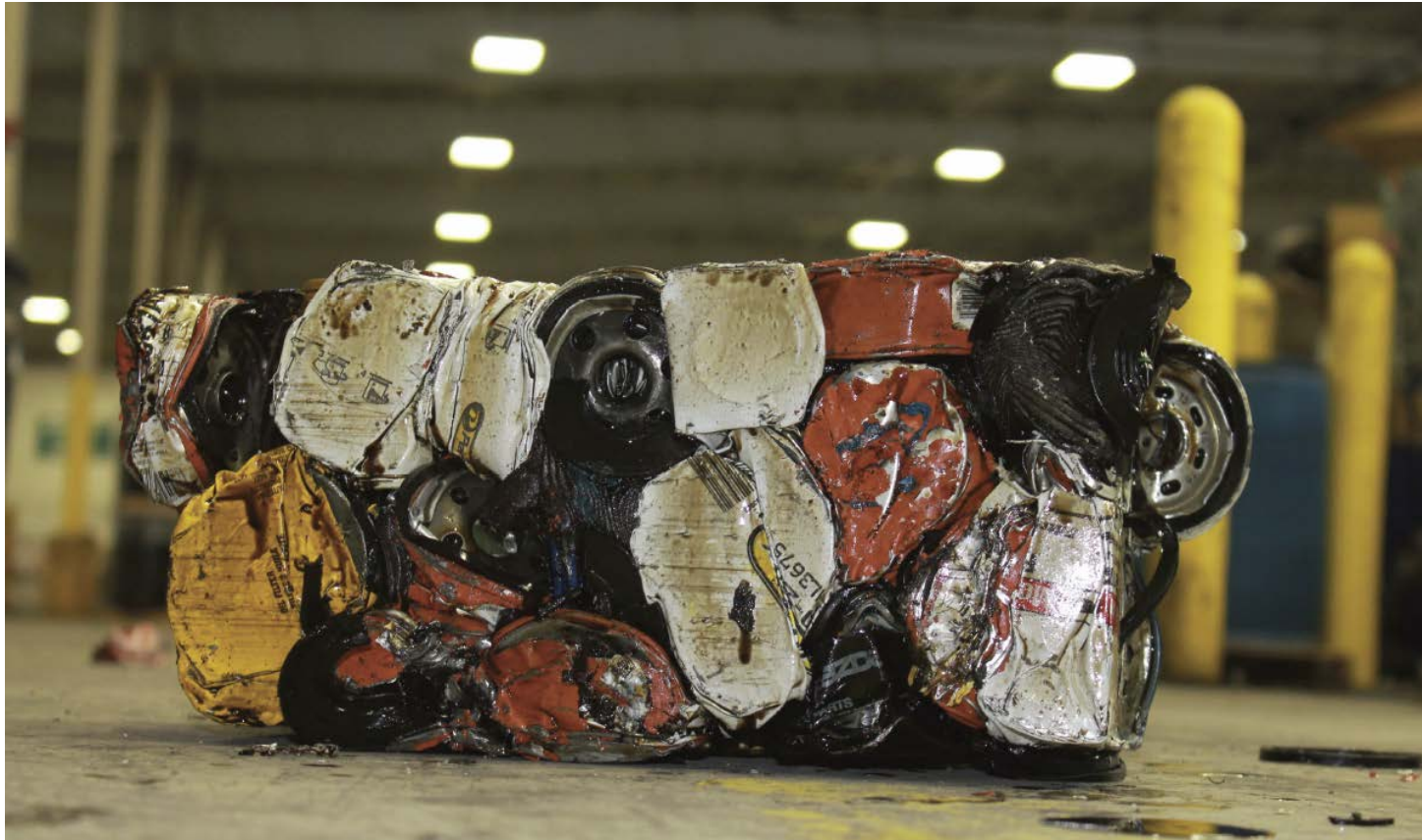
GOODWILL'S GREEN WORKS

OIL FILTER RECYCLING CENTER



Goodwill's Green Works

Oil Filter Recycling Center



TYPICAL STEEL BRIQUETTE

Goodwill's Green Works

Oil Filter Recycling Center



TRUCK DUMP HOPPER AND DRAIN PROCESS

MATERIAL RECOVERED AND RECYCLED FROM OIL FILTER RECYCLING FEBRUARY 2014 – DECEMBER 31, 2015

Steel from Oil Filters	8,708,242 Lbs.
Recovered Used Oil	280,650 Gal.
Scrap Steel	333,426 Lbs.

GOODWILL'S GREEN WORKS WELDING TRAINING CENTER



GOODWILL'S GREEN WORKS WELDING TRAINING CENTER



MAGNIFICENT SEVEN



All the above students had welding jobs before they finished their Welding Training Class

Michigan Governor Tour Goodwill Industries of Greater Detroit



Michigan Governor
Rick Snyder and Keith Bennett
“Flip the Script” Training Program Director
May 18, 2015
Goodwill Industries of Greater Detroit

GOODWILL'S GREEN WORKS ACHIEVEMENTS AND RECOGNITION AWARDS

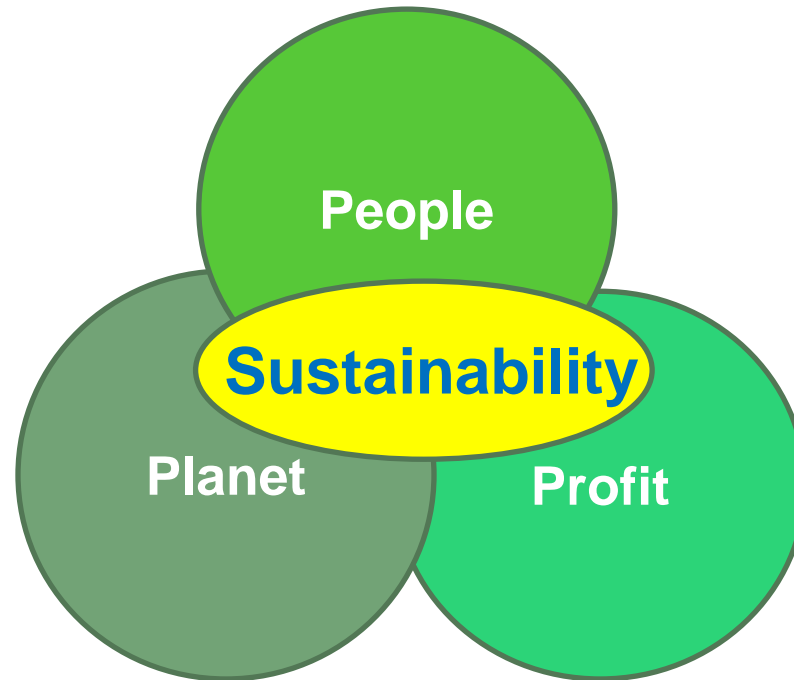
2015 Achievements:

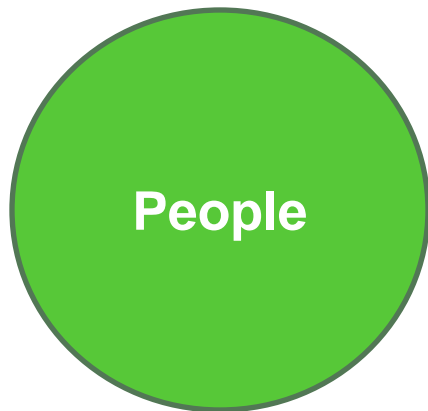
- Green Works assisted the Michigan Department of Corrections with training and job placement for over **(100)** Detroit residents either on probation or paroled.
- Green Works recycled over **(18)** Million pounds of material

Awards and Recognitions:

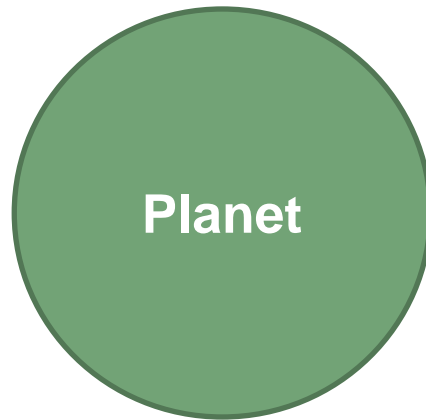
- **Michigan Economic Bright Spot Award** winner, Corp! Magazine, 2010.
- **Michigan Green Leader**, Detroit Free Press, 2011.
- **2014 Environmental Achievement Award** winner for Used Oil Filter Recycling Operation, Environmental Management Association (EMA) of Michigan, 2014.

DTE ENERGY AND GOODWILL'S GREEN WORKS PARTNERSHIP





- Goodwill 's Green Works assisted over **(150)** Detroit citizens with Transitional Work Experience assignments: 90% of these were provided job placement services, **10% offered permanent positions with GW**
- Work experience participants are less likely to return to the correction system. **(Recidivism rate approximately 10%, less than the state average rate of 29%)**
- Green Works is now working with the State of Michigan, the City of Detroit, and Wayne County to pilot a program providing Transitional Work Experience assignment's as an alternative to imprisonment for young males, ages 16-25.



- DTE Energy partnership with GW resulted in over **(18) million pounds of material diverted from landfills.**
- Less than **20% of all material sent to GW for processing is sent to a landfill or incinerated.**
- Unknown or potentially hazardous materials i.e. spray cans, unmarked containers, unmarked material etc. are documented, stored, labeled and returned to DTE for appropriate processing.



- The proceeds from the **sale of the DTE recovered/retired assets are divided monthly between the partners.**
- **GGW** uses its proceeds to pay for **wages, equipment maintenance, and overhead** to accomplish **its mission** of assisting Detroit Metro residents with employment challenges to prepare for and find jobs.
- The economic activity generated for GGW **sustains over (100) employees/trainees and their families.**

Sustainability

