



# Organics Diversion

Connecticut Coalition For  
Sustainable Materials Management



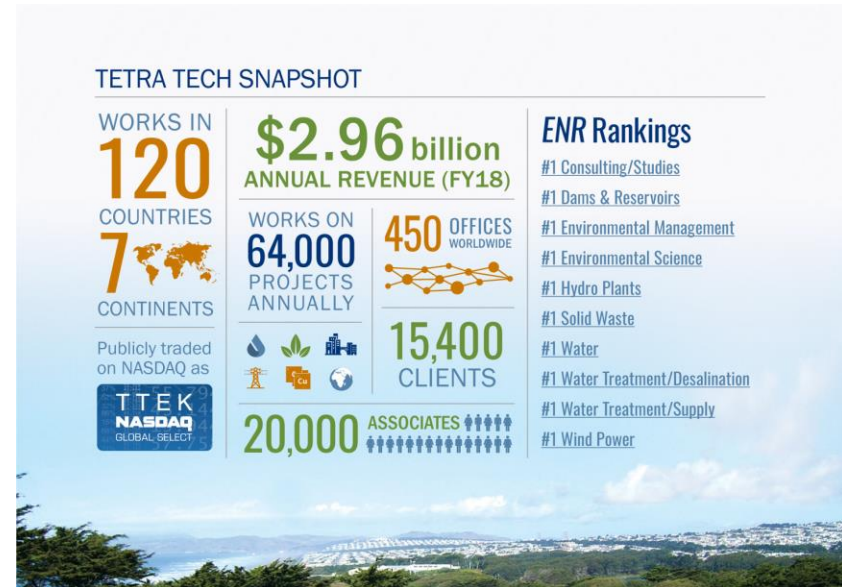
**Food Scraps/Organics Collection & Diversion Working Group  
Kick-off Meeting**

Debra Darby,  
Manager Organics Sustainability Solutions  
October 9, 2020

complex world | CLEAR SOLUTIONS™

# About Tetra Tech

- [Tetra Tech](#) is the nation’s leading consulting and engineering firm focused on solid waste/recycling, organics, and resource management. We bring a deep bench of knowledge, experience, and commitment to our clients’ success.
- Tetra Tech’s global resources and experiences enable us to deliver the best in class solutions and positive benefit to every local project that we manage.
- Our organization is uniquely positioned to provide guidance to our clients by leveraging our extensive experience to develop effective, customized resource management planning to support waste management strategies moving forward.



**LEADERSHIP:** In 2020 Engineering News-Record (ENR) ranked Tetra Tech the number one firm in the United States for solid waste, environmental, and water services. Tetra Tech has been ranked #1 in Solid Waste for eight consecutive years, and in Water for the 18th year in a row. Tetra Tech is also ranked in the top 5 Design Firms of ENR’s Top 500 Design Firms list for 2020.

# Solid Waste Management Planning

## Industry Knowledge:

Solid waste professionals with 40+ years of industry experience

International experience with countries leading waste management innovation

Following regulation and legislation

Experience providing regional planning within the framework of state solid waste plans



## Experience in:

Organics Diversion and Management systems, both composting and anaerobic digestion

Sustainable Materials Management and Zero Waste Planning

Education and Consultation

Design and Construction

# Northeast Resources - Solid Waste Solutions



Catskill Mountains, Greene County, NY

Taken by Tetra Tech staff near Greene County site in Hunter, NY

Our Solid Waste Management Team has extensive experience providing local governments and waste authorities with waste diversion planning and implementation.

- Highly practiced with planning through engineering and implementation of solid waste facilities, large-scale composting operations, as well as managing sewage and biosolids.
- Significant waste characterization study experience (over 50 studies) and solid waste planning services.
- Continuously working to pave the way for newer, better, more efficient, and more environmentally responsible approaches to optimizing solid waste resources for our clients.

# Ulster County Resource Recovery Agency, New York Local Solid Waste Management Plan (LSWMP)



Ulster County exports all the solid waste and recyclable material collected within the County. Out-of-County transport of these materials required more than 1,000,000 miles of transport annually.

To address this, Tetra Tech recently completed the LSWMP for Ulster County, New York, approximate population 175,000 that:

- Focuses on leveraging the County's existing materials management infrastructure.
- Evaluates the feasibility of developing new, local solid waste and recyclable materials management systems.
- Short-listed four locally responsible alternative solutions for further feasibility evaluation that would:
  - Reduce greenhouse gas emissions and overall carbon footprint of their system
  - Not shift the management of County-generated materials to other geographic areas.

# Lee County, Florida Master Plan

Assisted Lee County, Florida with Integrated Waste Management System (IWMS) Master Plan project.

- Identified and evaluated available technologies to expand, supplement, or replace the County’s existing infrastructure.

Evaluated County growth rates and expected changes of quantity and type of waste generated in County and nationally.

- Study considered future capacity requirements to meet County’s needs.
- Program included evaluating current assets (landfills, transfer stations, mulching/composting operation.)

Evaluated alternatives

- Created conceptual designs for new administrative building, transfer station, materials recycling center, and other potential new assets.



## KEY FEATURES

- Full system review
- Identifying and evaluating available technologies
- System Master Plan

# T.Y. International, New York

Provided engineering services for a New York State Part 360 Solid Waste and Air Permit for the Synergy LLC biogas facility.

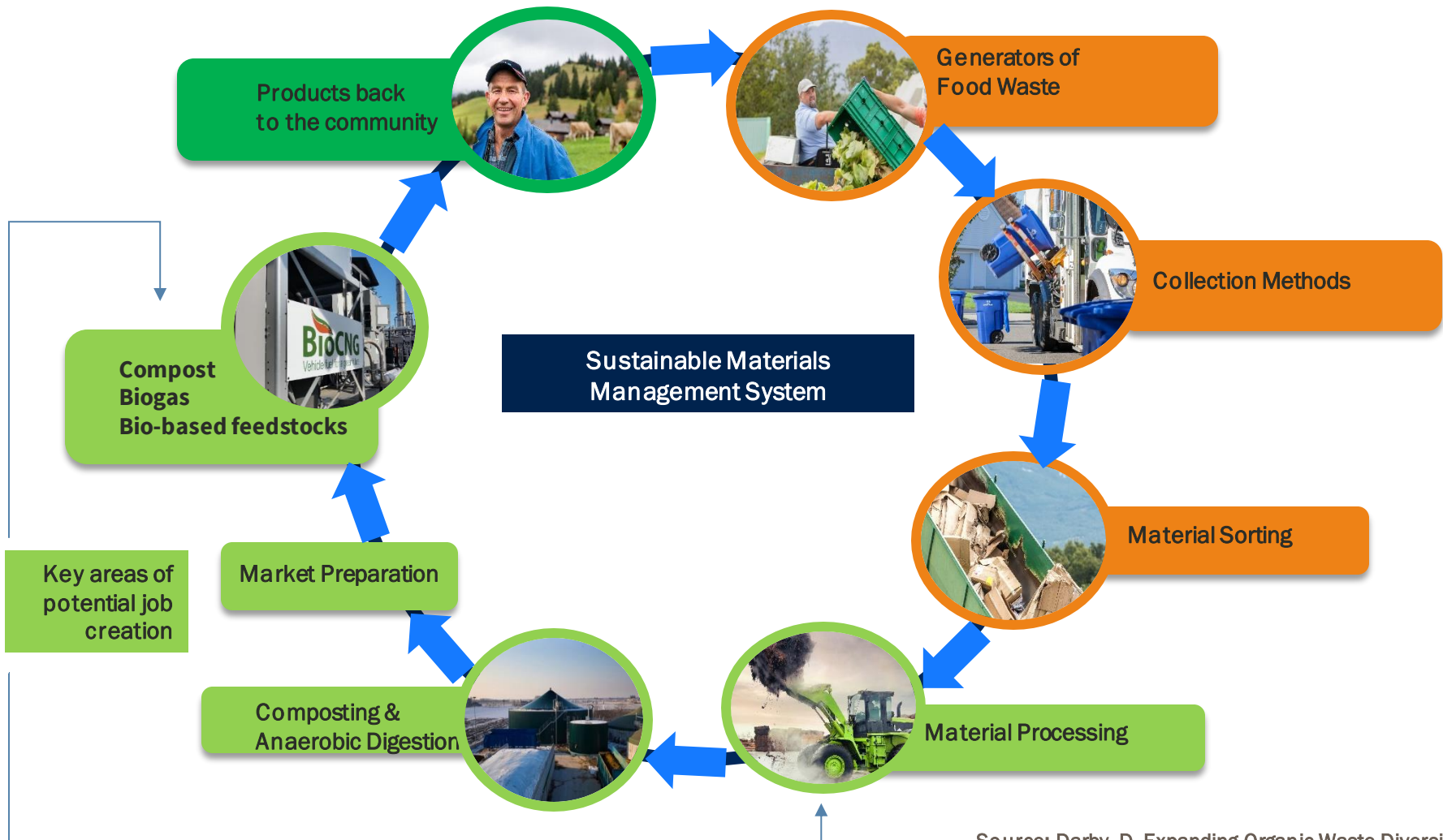
- A 2,375,000-gallon digester that uses manure and other organic substrates to generate methane.
- The facility will combust the methane in one containerized combined heat and power (CHP) unit to produce up to 2,248 kW and 4,550 MBTU per hour.
- The biogas will be produced by mixing and anaerobically digesting manure and other available organic waste.



## KEY FEATURES

- Part 360 Solid Waste Permitting
- Air Permitting
- Beneficial Use Determination (BUD)

# Organics Material Management



Source: Darby, D. Expanding Organic Waste Diversion in New England at the Municipal Level, May 2016



## Co-Collection Program

Counties and municipalities in the Northeast are addressing the impacts of limited MSW disposal capacity by diverting organics from the MSW Stream.



# Organix Co-Collection – How it started

*In 2002 Hennepin County MN started planning for Organics Diversion to reduce the MSW stream and increase the county's recycling rate...*



*How do we launch an organics pilot...?*

*2 interested parties: City of Wayzata and Randy's Environmental Services responded.*

*We can help!*

*We can too!*



\* Randy's is the parent company of Organix Solutions.

*Challenge: Make it affordable and design it to be convenient for the end user.*

- Haulers are under pressure to provide organics collection.
- There is a cost for collection of organics - containers, collection, processing
- Routing density efficiency – rural, seasonal yard waste, voluntary participation

*The amount of time and dedicated research invested to develop this solution that was designed by a municipality and a hauler.*



Source: OrganixSolutions.com

What evolved over a decade of development is the Blue Bag (in MN) and the Green Bag Organix program, also known as Organix Co-Collection.

# Program Research and Development



## Dedicated Organics Route Not Feasible

- Scattered routes were inefficient and costly (additional truck, fuel, and driver)
- Devised plan to develop a compostable bag to be collected with the trash and placed in the same cart.
- No available compostable bag was suitable. Randy's Environmental Services decided to design its own durable compostable bag to withstand the collection process.

## New Compostable Bag - Third Party Tested

- Hauled in/out of the truck. Good puncture and tear resistant; withstands cold, rain, humidity and UV.
- Biodegrades 45 days at a commercial composting facility
- Program evaluated by the Minnesota Pollution Control Agency (MPCA) and MN Dept of Revenue (DOR).
  - MN Statute 297H.06 Exemptions; recyclables must be separate from the SW. SSO is classified as a recyclable.
  - Blue Bag maintains the organics separate from the SW in the truck through to the composting facility.

# Co-Collection Program Launched in 2012

## Wayzata MN



- Residents place Blue Bag liner inside regular weekly trash cart for curbside pickup on trash day
- Bags are sorted at a transfer station or MRF.
- Eliminates the need to add trucks, routes, and containers.
- City Receptive to Organics Co-Collection.
- Neighborhood coordinators volunteered.
- Residents participation was good with very little contamination.

*Photos courtesy: Organix Solutions*

# Green Bag Organix Evolution

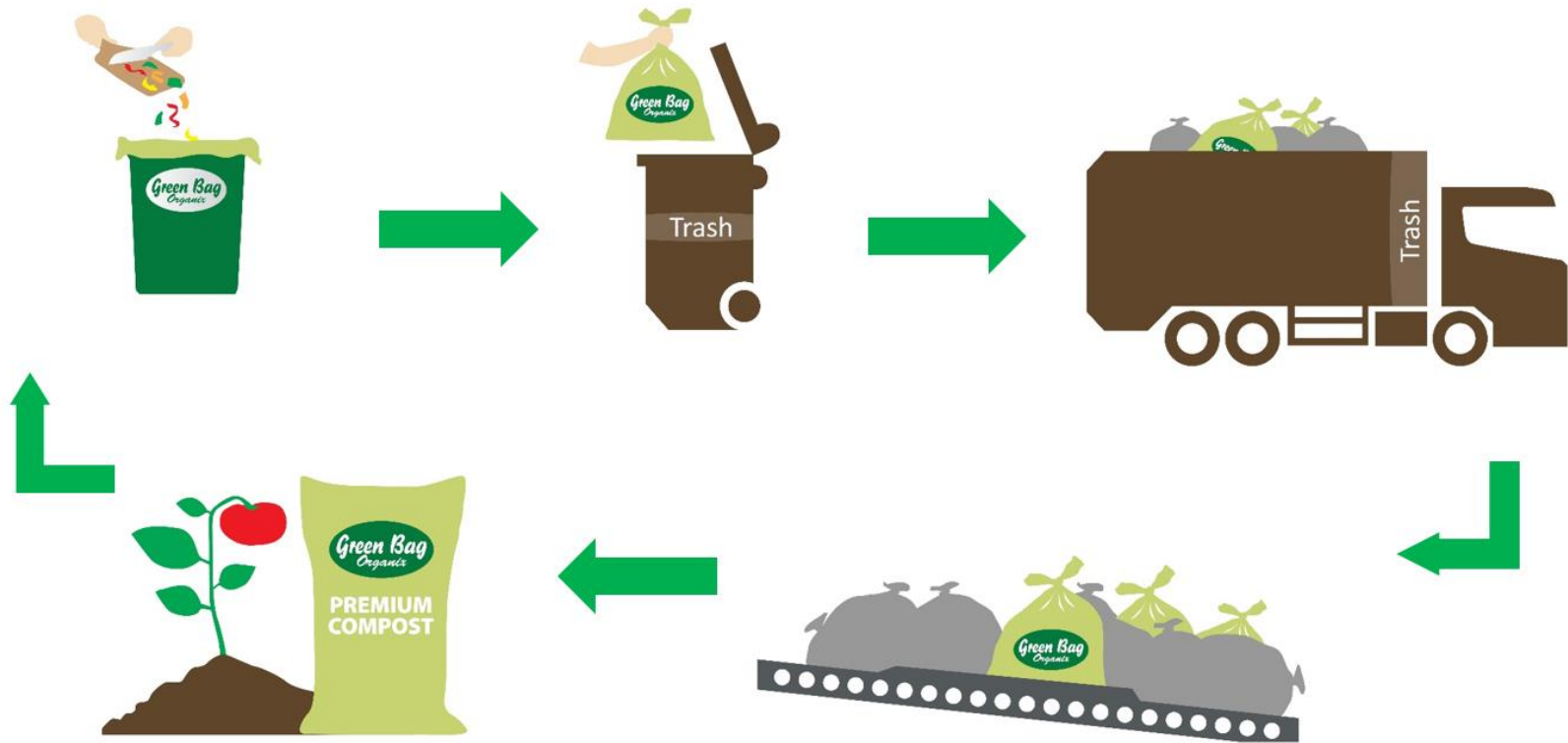
## Organics Recycling is as EASY as 1-2-3



- Outside of Minnesota the program is marketed as Green Bag Organix™
- Bags are the same. Just different color
- Certified by the Biodegradable Products Institute (BPI) to meet the industry standard test methods of ASTM D6400 for compostability at an industrial composting facility.
- Of the 48 communities in Minnesota with residential curbside organics collection, 42 have implemented the Organix Co-Collection program as of December 2019.

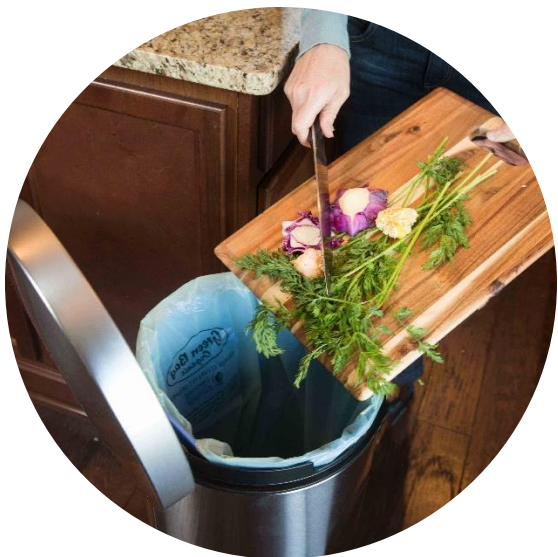
*Source: Minnesota Composting Council*

# Organix Co-Collection – The Process



Source: Organix Solutions

# Co-Collection Data



- An average household generates 8-12 lbs. of organic waste (food scraps and food-soiled papers) per week.
- An average of 10 to 15% enrollment with an initial program launch.
- When organics collection is offered as a voluntary program, residents make the effort to source separate organics at home with little contamination.
- Marketing and education is needed. Recommend early, frequent, and ongoing engagement.
- Co-Collection is designed as a municipal curbside organics collection program that can phase in overtime. All residents pay and have access to the program, and they just need to opt-in.
- Or the program can be offered as a subscription service.

*Photo courtesy: Organix Solutions*

# Co-Collection to Expand in MN

- [Ramsey and Washington counties](#) have worked together on waste management since the 1980s. Today, the counties work jointly through Ramsey/Washington Recycling & Energy (R&E).
- MN state law requires counties to achieve 75% recycling goal by 2030. Current combined rate is about 53% for the two counties.
- In the March 2019 report, *Assessment of Organics Collection and Recyclable Recovery Enhancements in East Metro*, use of the durable compostable bags (DCB and the Organix Co-Collection method of sorting the bags) is likely to be the most efficient and cost-effective method of collection residential organics.
- The counties plan to roll out a curbside organics collection program to approximately 200,000 single family households using the DCB program.



**RAMSEY/WASHINGTON  
RECYCLING & ENERGY**

CONNECTING VALUE TO WASTE



# Organics Diversion and Management

## Benefits of Compost Use

- Sequesters carbon dioxide in soil preventing release into the atmosphere.
- Binds and degrades pollutants.
- Increases soil moisture retention, reduces runoff into waterways.
- Reduces desertification - persistent degradation of ecosystems by variations in climate and human activities.

Diverting organic materials from MSW by reducing, recycling and composting are sustainable means to protect human health and the environment.

Contact a consultant to assist you.

Permitting  
Development  
Design  
Composting and AD facilities



Aerobic Digestion



Commercial Composting



Home Composting

# Thank you.



Debra Darby

[Debra.Darby@Tetrattech.com](mailto:Debra.Darby@Tetrattech.com)



USCC Certified Composting Professional (CCP)