

The Organix Solutions Delano Anaerobic Digester



The Company

- **Organix Solutions is a Randy's Sanitation, Inc. company.**
 - Randy's Sanitation is located in Delano, Minnesota. It is a successful, innovative leader in the waste management industry serving the Twin Cities and surrounding communities.
 - Organix Solutions provides consulting services for organics collection and recycling programs. In addition, Organix Solutions is the operating company for Blue Bag Organics and manufactures compostable bags in Maple Grove, Minnesota.
 - Organix Solutions is the owner/operator of the digester project in Delano, Minnesota and we believe in an innovative, layered approach to organics recovery that seeks to involve all stakeholders.
- **This approach relies on a sustainable source separated organics (SSO) recycling program.**
- **The curbside program will provide local compost facilities a year round stream of clean SSO not hampered by seasonal collection or DNR regulations.**





The Layers of Organics Collection/Processing

By involving all stakeholders, Organix Solutions seeks to benefit from a highest and best use scenario. All clean source separated material, both residential and commercial, goes directly to the local compost facilities. Our system is designed to remove the organics and non-recycled paper that remain in the waste stream. That material will go into our digester. By maximizing those programs that collect clean organics, we increase the overall throughput of our processing equipment and ultimately, our digester.





The Layers of Organics Collection and MSW Processing

Layer 1

Curbside collection of SSO combined with commercial organics programs

- Easily composted with yard waste
- Very little contamination (1-3) percent
- Creates high value, class 1 compost that can be bagged and sold at retail

Layer 1 currently represents 10 to 15 percent of the waste stream.





The Layers of Organics Collection and MSW Processing

Layer 2

MSW processed in a Material Recovery Facility designed to recover the 2 to 3 inch minus material. This may include the recovery of other recyclables as well.

- 2 to 3 inch screened material - represents 20 to 30% of the MSW waste stream
- Easily composted with added carbon source
- Meets Class 1 compost standard
- Remaining small glass fraction prohibits retail sale. Suitable for soil remediation projects or soil amendment
- *Note - traditional recyclables recovery, minus paper, could add another 4.12%





The Layers of Organics Collection/Processing

Layer 3

All Organic Material, Including Non Recycled Paper

- Represents 50 to 60 percent of the MSW waste stream
- Easily digested in a Dry Fermentation Digester with excellent gas value
- Meets Class 1 compost standard without added carbon source
- Remaining small glass fraction prohibits retail sale. Suitable for soil remediation projects or soil amendment

*Note - traditional recyclables recovery, minus paper, could add another 4.12%

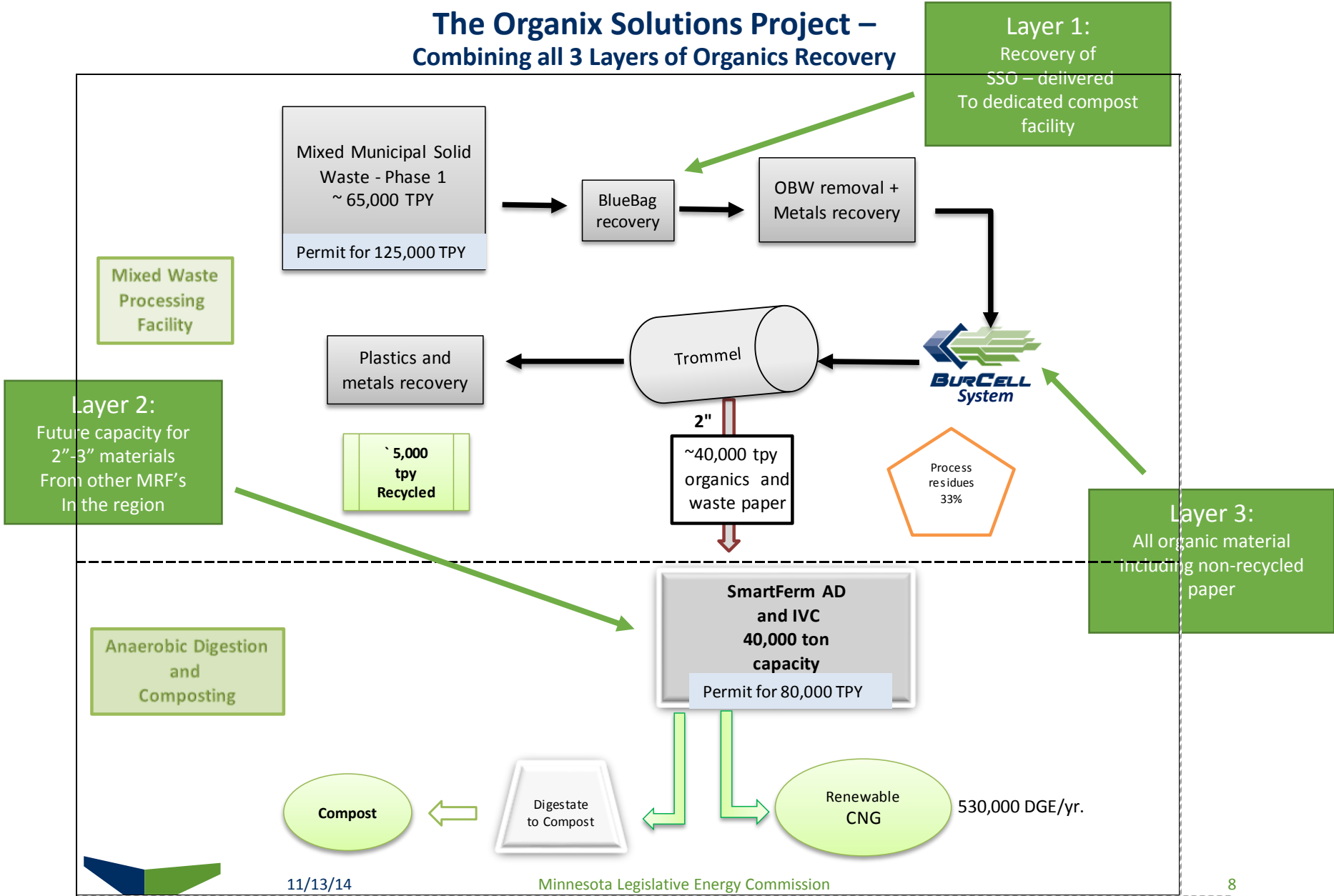


The Organix Solutions Project – The Future of Waste Management and Energy Recovery

- **An innovative waste processing, materials, and energy recovery project that will reduce landfilling by >67%:**
 - The *BurCell*™ process will recover the waste organic and non-recycled paper fraction of the municipal solid waste stream producing a processed engineered feedstock (PEF)
 - The MRF will recover metals, plastics and other recyclable materials
- **The PEF will provide the primary feedstock for a state of the art anaerobic digestion process producing:**
 - A renewable natural gas with a zero carbon footprint
 - A soil amendment suitable for a variety of agricultural applications
- **The Project will be located on a new site in the Delano Eco-Park adjacent to existing Randy's operations**



The Organix Solutions Project – Combining all 3 Layers of Organics Recovery



SMARTFERM Dry Anaerobic Digestion - Technology

- Dry Fermentation
- 21 Day Batch Process
- Proven Digestion Biology
- Low Temperature (131^oF) and Pressure System (0.16 – 0.24 psi)
- All systems monitored and controlled by PLC



The Organix Solutions Project – Project Metrics

- **Mixed Municipal Solid Waste Processed** – 65,000 tons per year, (permitted for 125,000 TPY). **All Blue Bag Organics or SSO will go direct to local composters. None of this material will be used as fuel for the digesters.**
- **Landfill Diversion** - 35,000 – 40,000 tons per year of processed organics, 4,000 – 6,000 tons of metals, plastics and other recyclable material.
- **Biogas Produced** - > 110 million cubic feet per year, yielding > 70 million cubic feet of methane (green natural gas).
- **Fuel Potential** > 525,000 diesel gallon equivalents per year of CNG. Randy's Environmental Services has contracted to buy the CNG to fuel it's fleet of 50 CNG trucks.
- **Compost** > 35,000 tons per year of finished product.
- **CO2 Recovery Potential** > 35 million cubic feet (2,000 tons)
- **Jobs** - > Construction of the Project will generate 60-80 short-term jobs. Operations will generate 12-15 long-term employment opportunities.



SMARTFERM Dry Anaerobic Digestion – Odor Management

- Fully enclosed negative air pressure facility
- Exhaust air treated in bio filter
- Carbon filters to remove H₂S from biogas prior to bio-methane upgrading
- In-Vessel Composting (IVC) tunnels to strip ammonia from digestate prior to outdoor composting
 - Acid scrubber pre-treatment to remove 95% of ammonia prior to final polishing in bio filter
- Enclosed flare to burn biogas with low methane content at the end of the AD batch process










Organix Solutions Digester Project

San Jose site with Bio filters



San Jose site with Compost Pad



Location	Owner/Operator	Project Volume	System	Completion Date
Marina, CA	Zero Waste Energy	5,000 TPY for AD CHP Conversion	 SMARTFERM MOBILE SYSTEMS	April 2013
San Jose, CA	Zero Waste Energy Development Company	84,000 TPY for AD CHP Conversion	 KOMPOFERM GET THE RIGHT PERFORMANCE.	December 2013
Oxnard, CA	Agromin	5,000 TPY for AD CHP Conversion	 SMARTFERM MOBILE SYSTEMS	2015
So. San Francisco, CA	So. San Francisco Scavengers	11,000 TPY for AD CNG Conversion	 SMARTFERM MOBILE SYSTEMS	October 2014
Montgomery, AL	IREP-Montgomery	150,000 TPY MRF 12,000 TPY for AD CNG Conversion	 SMARTFERM MOBILE SYSTEMS	April 2014 (MRF) 2015 (AD)
Napa, CA	Napa Recycling/City of Napa	25,000 TPY for AD CNG Conversion	 SMARTFERM MOBILE SYSTEMS	Early 2016
Delano, MN	Organix Solutions/ Randy's Sanitation	120,000 TPY MRF 80,000 TPY for AD CNG Conversion	 SMARTFERM MOBILE SYSTEMS	2016



The Organix Solutions Project – Project Team

Role	Responsibility
Project Owner/Operator	Organix Solutions, LLC a wholly owned subsidiary of RSI (Randy’s Sanitation, Inc.)
Technology Team – MRF and AD facility, biogas cleaning and facility construction	ZeroWaste Energy, LLC (ZWE) Bulk Handling Systems (BHS) Project engineering (AMEC) General Construction manager (Anderson Cos.)
Technology Team - <i>BurCell</i> Process - vacuum-assisted thermal decomposition for recovery of organic feedstock from MSW	Cornerstone Resources, LLC technology manufactured by The Environmental Solutions Group of The Dover Corp.
Project Development Manager	Cornerstone Resources, LLC
Permitting	Sambatek, Inc. (formerly MFRA)
Solid Waste Supply Contract	Randy’s Sanitation, Inc. (RSI)
CNG Purchase Contract	Randy’s Sanitation, Inc (RSI) Other local users
Composting	Organix Solutions or SET



Preliminary Project Cost / Funding Plan

<u>SOURCE AND USE OF FUNDS</u>	<u>SOURCES</u>		<u>USES</u>
Project Equity	5,000,000	13%	
Project Debt	27,000,000	68%	
Project Grants	8,000,000	20%	
Development and Design			2,000,000
MRF and <i>BurCell</i> process			9,000,000
SMARTFERM AD and CNG Production			21,800,000
Other project costs			550,000
Property + site development			1,250,000
Financing and working capital			2,050,000
Project Contingency			3,350,000
TOTAL PROJECT COST	\$ 40,000,000	100%	\$ 40,000,000





Questions & Answers

