

# Today and Tomorrow: Mixed Waste Processing at Wasatch Integrated Waste Management District

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Minneapolis, Minnesota



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## Presentation

- Who is Wasatch Integrated?
- Why Mixed Waste Pre-processing?
- Impact of Mixed Waste Pre-processing
- What's Next?



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## District Overview

- ✓ Special Service District
- ✓ Owned by Davis and Morgan Counties and 15 Cities
- ✓ 275,000 tons of MSW Annually
- ✓ Serve 290,000 Residents



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## GBB Waste-to-Energy and Conversion Technology Expertise

200+ Assignments Involving Utilization of Waste for its Energy Content Since 1980

Tracks 475+ Alternative Conversion Technology Companies

Enhanced WTE/Waste Facilities Engineering Services with Acquisition of Energy Facilities Group of RRC Power & Energy

Wide Range of Services

- Technology Evaluation
- Initial Feasibility Study and Economic Analysis
- Procurement & Vendor Negotiations
- Financing Activities Assistance
- Construction and Commercial Operations Monitoring



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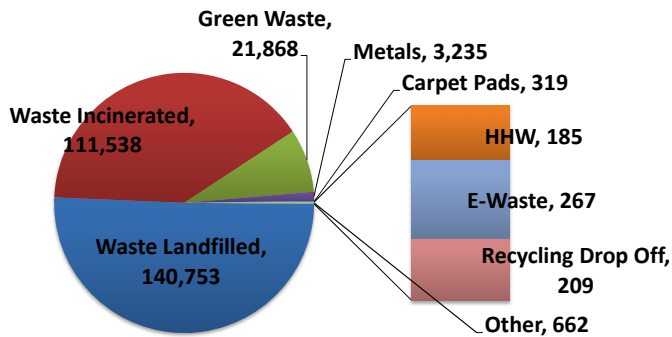
### Davis Energy Recovery Facility (DERF)

Closing - primarily due to energy sales revenue loss from Hill Air Force Base



### System Performance 2014

Wasatch Integrated Waste Management District - 2014

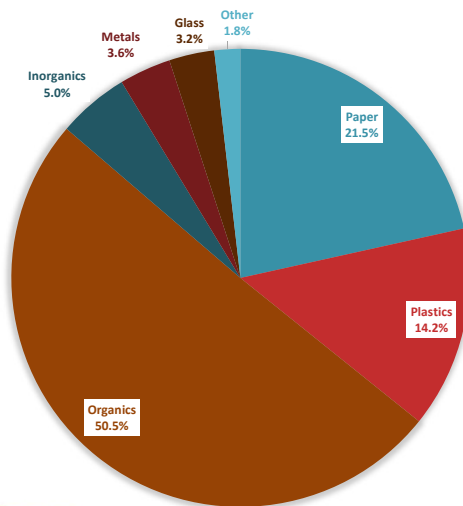


### Typical Curbside Waste



### Summer Waste Sort

WIWMD WASTE CHARACTERIZATION RESULTS:  
RESIDENTIAL SOURCES  
(AVERAGE MASS FRACTION)





## Dealing with Yard Waste

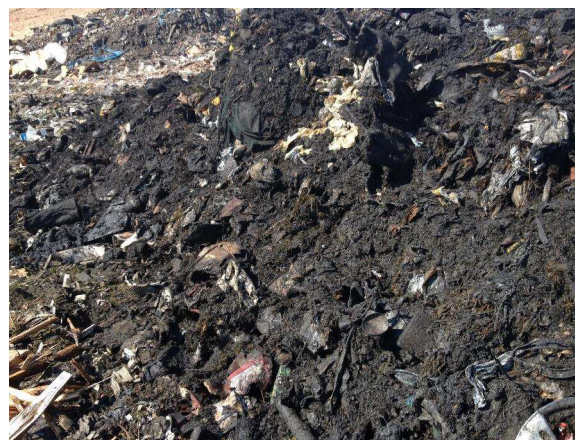
- Implemented Curbside Collection of Yard Waste in 7 of 15 Cities
- Typical Participation Rate 30 to 50%
- High Level of Contamination
- Only Partially Effective Improving Combustion
- Expansion of Curbside Collection Expensive



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## Poorly Combusted Waste



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## Why Mixed Waste Pre-Processing?

- Improve Fuel quality for the Energy Recovery facility
  - Lower Auxiliary Fuel Costs
- Other anticipated benefits:
  - Lower Maintenance Costs
  - Improved Metals Recovery
  - Lower Emissions
  - Lower Odors at Landfill



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## Pre-Processing Objectives

- Remove Non-Processable Material
  - Large Items, Hoses, Electronics, Propane, Batteries
- Recover Limited Recyclables
- Open Bags and Break Glass
- Remove Everything Smaller than Two Inches
  - Yard Waste, Dirt, Glass, Organics, Small Batteries



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## Trommel Test



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## Mixed Waste Processing Facility Construction

- Owners Engineer - Renewable Resource Consultants
- Equipment Provider – MachineX
  - \$1.57 Million
- Building and Site Work – Jacobsen Construction
  - \$1.72 Million
- Total Project Cost \$4 Million



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**Mixed Waste Pre-Processing Facility  
- In Feed Conveyor**



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**Mixed Waste Pre-Processing Facility  
- Sorting Platform**



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**Mixed Waste Pre-Processing Facility  
- Trommel (2" holes)**



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**Mixed Waste Pre-Processing Facility  
- Overs to DERF**



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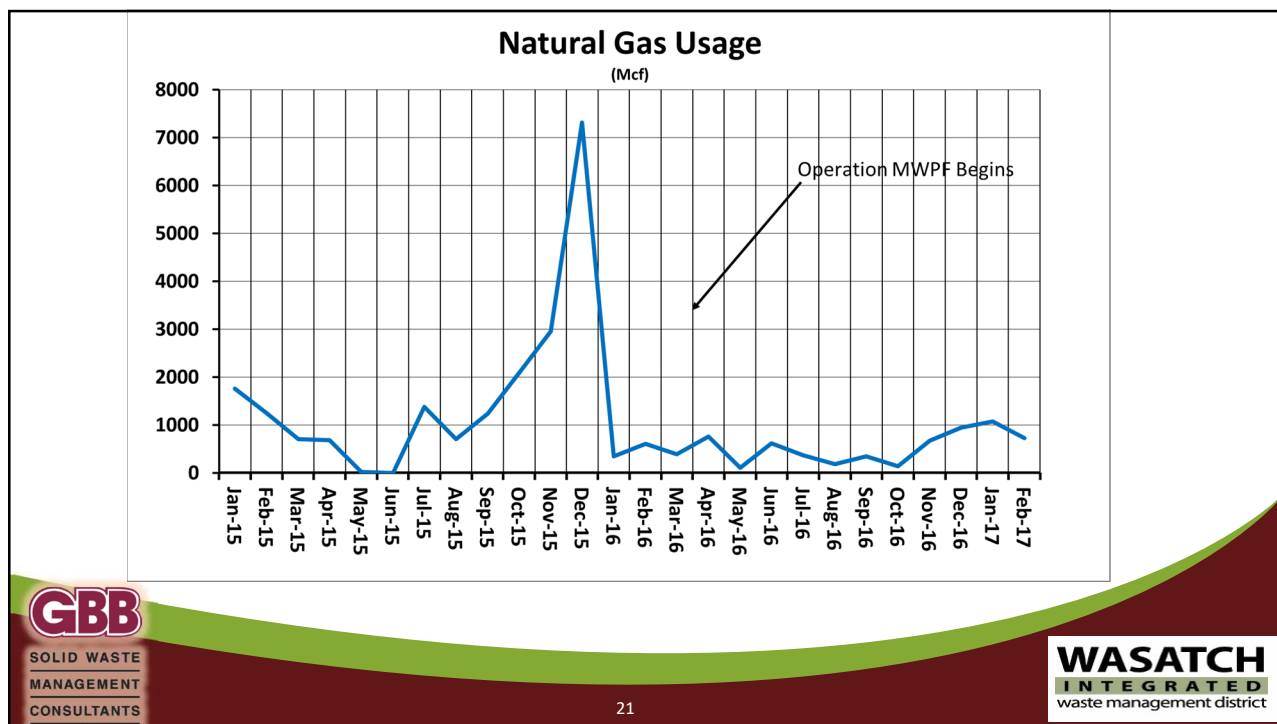
**Mixed Waste Pre-Processing Facility  
- Unders**



**Impact of Mixed Waste Pre-Processing**







## Summary

- ✓ Better Combustion – YES!
- ✓ Lower Fuel Bills – YES!
- ✓ Lower Odor at the Landfill – Maybe
- ✓ Lower Air Emissions – Yes for SO<sub>2</sub> and HCl
- ✓ Lower Maintenance Cost – To be Determined
- ✓ Better Metals Recovery – To be Determined
- ✓ No Longer Divert Residential Waste
- ✓ 35% to 50% Reject Rate





## What's Next?

- RFP issued for demolition and salvage of DERF
- Updating 2013 Solid Waste Management Plan based on closing DERF
- Board decisions
  - New Transfer Station and Tipping Floor
  - Expanded Materials Recovery
  - Organics (2" unders) to planned AD plant for South Davis Sewer District
- Future consideration of engineered fuel for cement plant



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## Future Operations (Based on Board Decisions)

- Phase 1
  - Transfer waste to NUERA Bayview Landfill (limited to 125,000 tons per year)
  - Add Material Recovery
  - Wasatch Resource Recovery (WRR) Project (South Davis Sewer District)
  - Single Stream Recyclables Processing
- Phase II
  - Expanded MRF for Commercial Stream
  - Engineered Fuel/Holcim Cement

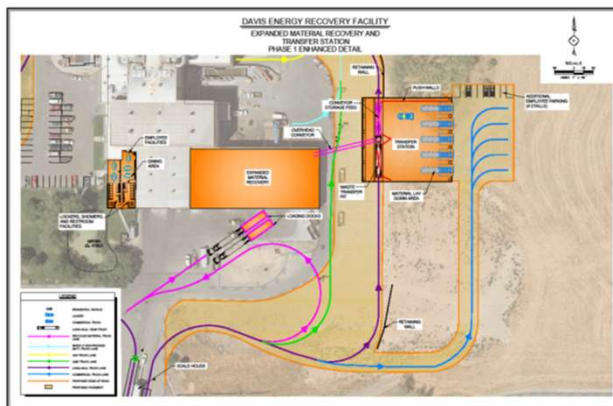


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## Phase 1 – Transfer Station

- Transfer Station with transfer of 125,000 TPY waste to Bayview landfill
- NUERA Bayview Landfill - 90 miles away. (Northern Utah Environmental Resources Agency)

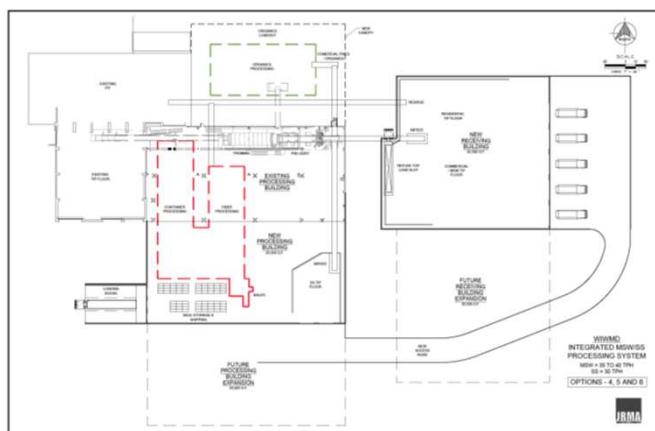


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## Phase 1 – Processing Equipment Addition

- Process organics from trommel for WWR
- Increase materials recovery from residential stream
- Process single sort recyclables



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Figure 2. Biomass to Energy Facility at the South Plant



Figure 3. Illustration of Gas Treatment Lineup



Figure 4. Process Concept for Source Separated Food Wastes

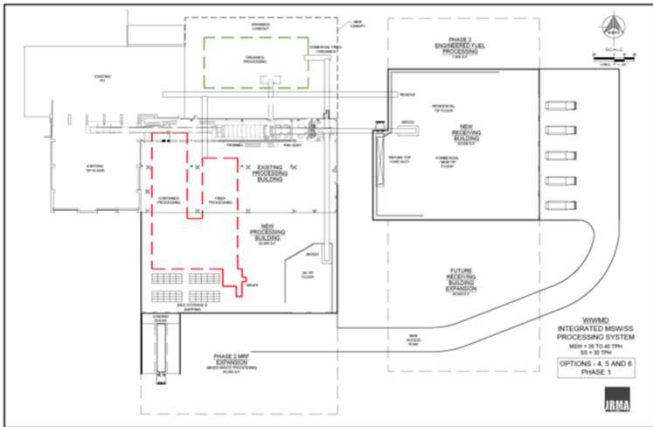
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CONSULTANTS

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**WASATCH**  
INTEGRATED  
waste management district

## Phase 2 – Potential Increased Diversion

- Process commercial waste to recover recyclables (expand material recovery)
- Prepare and sell engineered fuel to Holcim Cement



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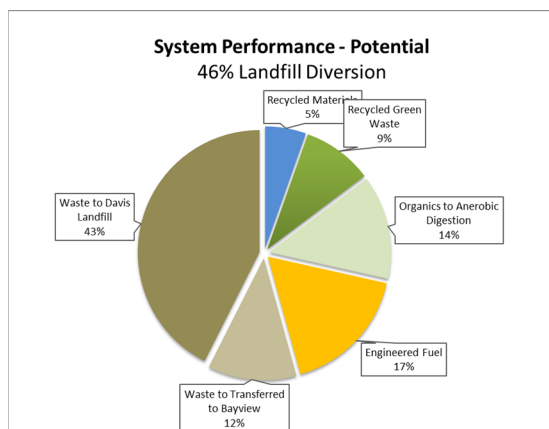
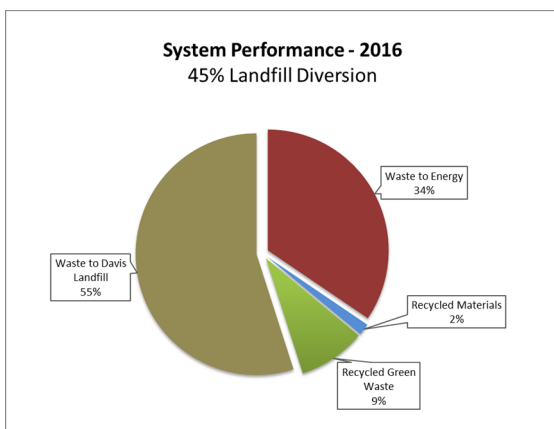
## Local Cement Company- Engineered Fuel Project



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## Diversion – Past and Potential



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# Questions & Answers

**Thank you!**

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