



RAMSEY/WASHINGTON
RECYCLING & ENERGY

Pre-Proposal Conference

End Markets for Refuse Derived Fuel (RDF) from the Recycling & Energy Center

December 14, 2022

Proposal Due Date: February 21, 2023

Welcome

- Please keep your mic **muted** during the presentation
- Meeting will be recorded
- **Questions?**
 - **Ask today:** use the “chat” feature in Teams to type in your question
 - *Note: Oral statements (including during this pre-proposal conference) shall not be relied upon to be terms of the RFI documents. All modifications to RFI documents shall be in writing.*
 - **Ask after the meeting:** email jredmond@recyclingandenergy.org



Agenda

- Presentation
 - Overview of Ramsey/Washington Recycling & Energy
 - Overview of End Markets for RDF RFI
 - Feedstock Materials (RDF and process residue)
 - RFI process and information
- Q&A



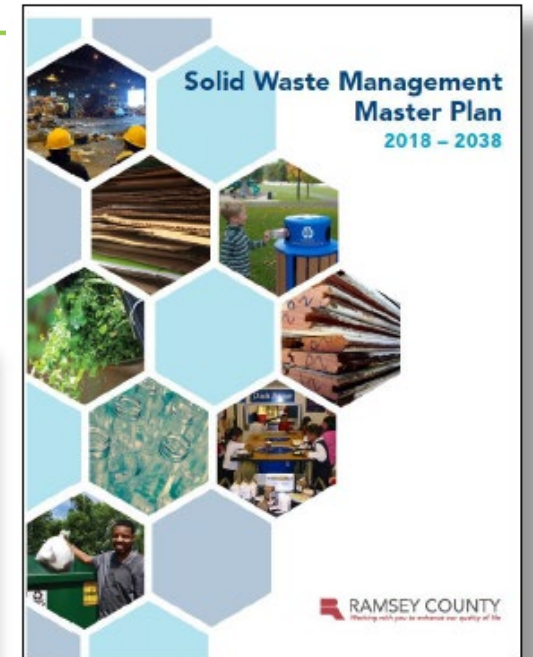
Ramsey & Washington Counties, MN

- Two counties in the eastern part of the seven-county Minneapolis-St. Paul metropolitan area
- Population of around 813,000
 - 14% of the population of Minnesota
 - Over 70,000 businesses
- Nearly 600 square miles
- Consists of urban, suburban and rural areas
- In Minnesota, counties are the unit of government responsible for the management of solid waste



An Integrated Waste System

- Prioritizing waste reduction & reuse
- Emphasis on source-separation
 - Traditional recyclables
 - Organics (food waste)
 - Yard waste
- Robust “problem material” management
 - Household hazardous waste
 - Commercial hazardous waste regulation
- Resource recovery at the R&E Center
 - Produce RDF for waste-to-energy
 - Food scrap bag sortation
 - Recover recyclables
 - Plans to recover more materials



Recycling & Energy Board

- Joint powers board
- Five Ramsey County and four Washington County commissioners
- Ex officio members from Minnesota Pollution Control Agency and City of Newport (where R&E Center is located)
- Board projects completed by R&E employees, working closely with staff from each county's public health department



Mission, Vision & Guiding Principles

- **Mission:** Enhancing public health & the environment by creating value from waste through partnerships
- **Vision:** Vibrant, healthy communities without waste
- **Guiding Principles**
 1. Plan for a 20- to 30-year horizon
 2. Build on the current system and allow changes in processing to emerge over time
 3. Assure flexibility
 4. Manage risks
 5. Pivot the view from “waste” to “resources” to add value to the local economy and the environment



R&E Center

Located in Newport, MN

Began operations in 1989

- In 30 years, over 10.5 **million** tons of MSW have been delivered here

Purchased by the two counties in 2015

- Designation (flow control) ordinances: 2018

Annually, the R&E Center:

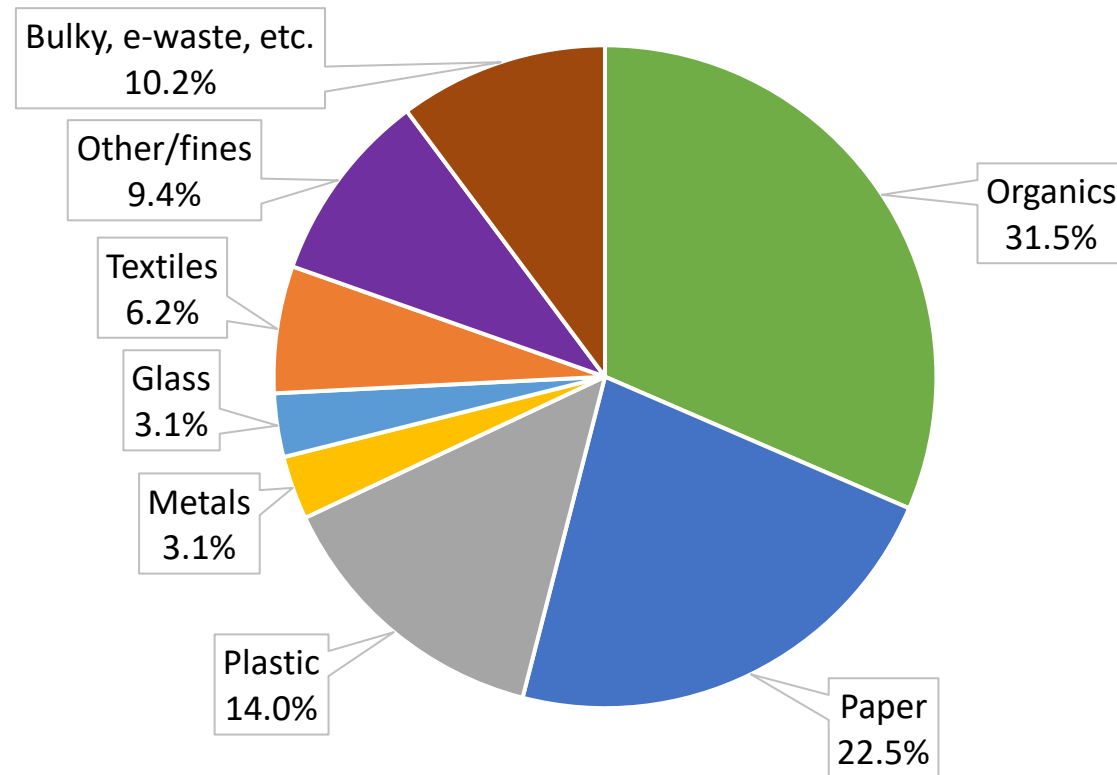
- Manages about 450,000 tons of MSW
- Recovers ~13,000 tons of metals from MSW for recycling
- Landfills less than 15% of MSW generated in the counties

Trash is processed into fuel source called "***refuse-derived fuel***" that is sent to Xcel Energy power plants to be turned into electricity



Opportunity to Capture Resources

MSW Composition by weight (2018)



Paradigm Shift: Waste as a Resource

- Turning a liability into an asset
- Follows 8+ years of exploration & analysis
- Looking ahead to the next generation
- Critical shift in thinking and policy
- Why?
 - To manage resources locally
 - Ensure flexibility
 - Embrace new technology

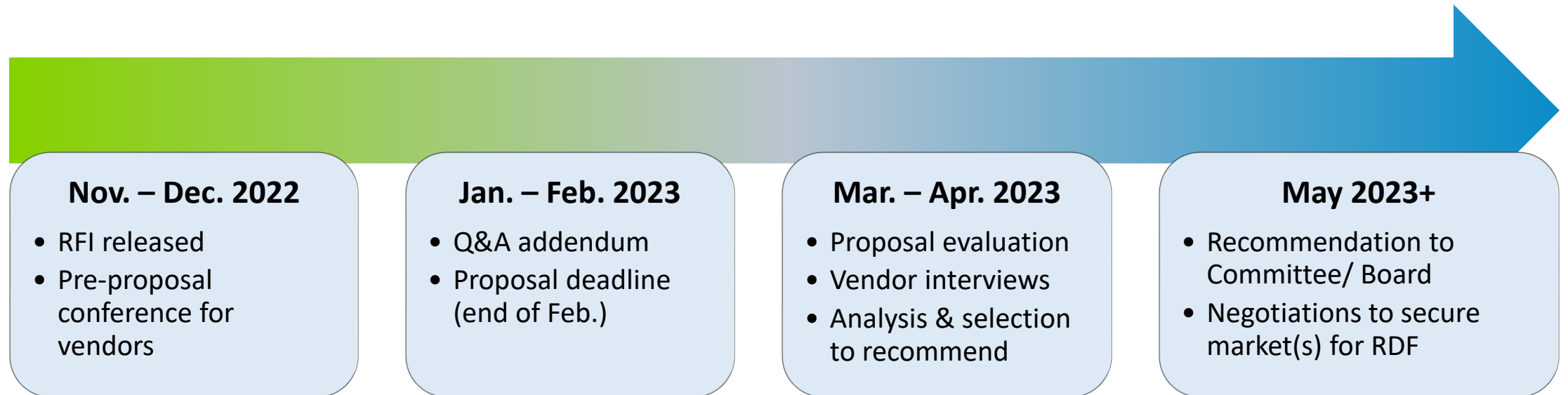


RDF End Markets RFI: Project Goals

1. The project(s) will support the integrated solid waste system and solid waste management master plans of Ramsey and Washington counties.
2. The project will minimize the negative environmental health impacts of MSW management, including minimizing anthropogenic and biogenic greenhouse gas and criteria pollutant emissions.
3. The R&E Board will ensure adequate local organics capacity for organic wastes managed from the two counties.
4. The R&E Board preference is for private financing, ownership, development and operation of a proposed facility. However, R&E Board would consider a project that is R&E Board financed and/or owned.
5. The project will be located on a site secured by the proposer, acceptable to the R&E Board. The R&E Board and its member counties may consider providing a site as an alternative option.
6. The project will commence full operations within five (5) years of contract execution, contingent upon timely federal, state and local approvals.

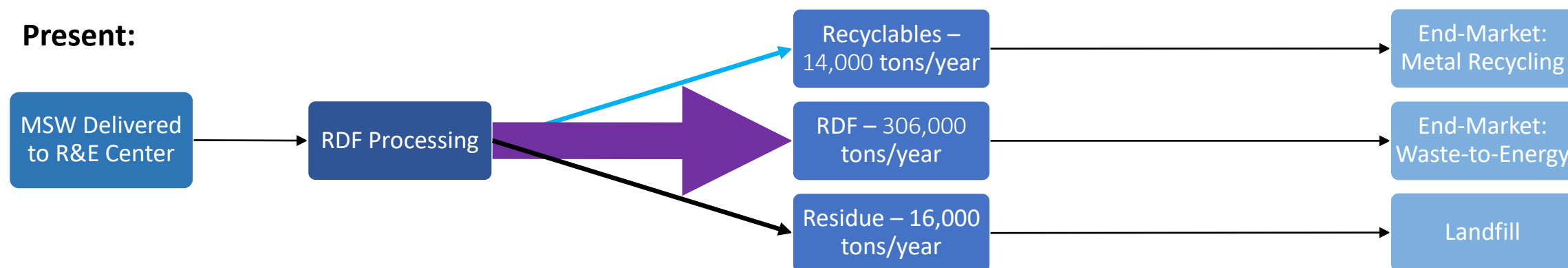


Request for Information (RFI) Timeline

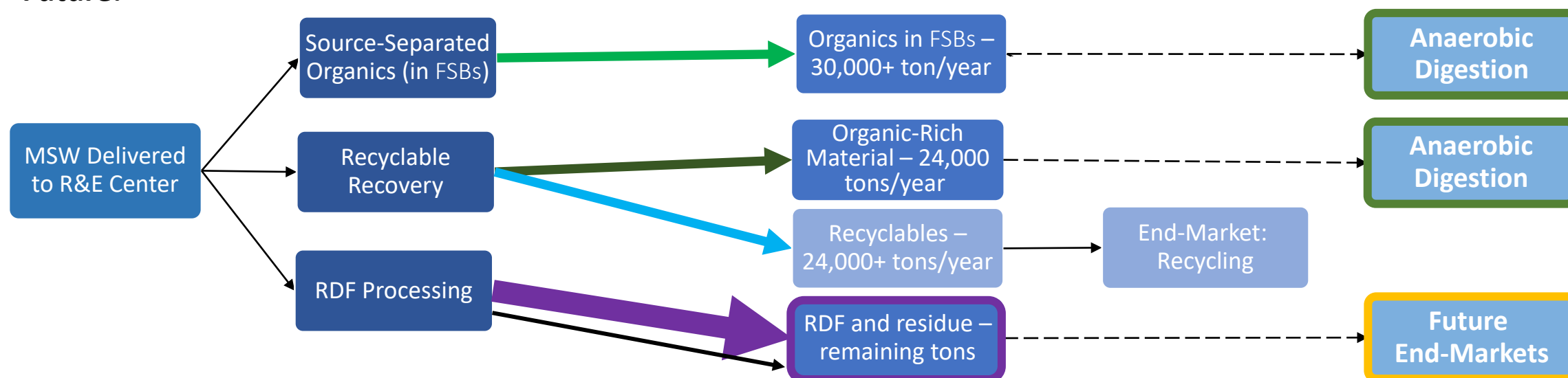


R&E Center Products to End-Market Feedstocks

Present:



Future:



Feedstock Materials from the R&E Center

- Refuse-derived fuel (RDF)
- Process residue (2-inch minus)

This RFI is intended to find qualified vendors to accept and use one, or both feedstock materials.

Technologies for the management of the materials may include, but is not limited to, combustion, chemical recycling, gasification or pyrolysis.



Refuse-Derived Fuel

- R&E Center currently produces ~350,000 tons of RDF annually
- Currently used by Xcel Energy in two waste-to-energy (combustion) facilities in Southern MN
- RFI is seeking vendors that can accept and use **20,000 tons or more** of RDF annually

RDF Analysis/Xcel Requirements
(Excerpted from Table 2-5)

Characteristic	Average	Max.
BTU/lb.	5000-5500	-
Moisture	25%	40%
Particle Size	8" x 8"	12" x 12"
Ash (Dry)	15%	20%



Process Residue

- R&E Center currently produces ~23,000 tons of process residue annually
- All process residue is currently being landfilled
- RFI is seeking vendors that can utilize some or all of the process residue in addition to the RDF

	October 2016	March 2017	May 2017	August 2017
Moisture Content (%)	26.61	33.88	38	37.1
Percent Fines (<6mm, %)	28.31	6.79	11.39	9.76
Inorganics (%)	Not Tested	16.92	41.19	Not Tested
BMP (mL CH ₄ /g)	110.1	Not Tested	109.72	Not Tested



RFI Process Point of Contact & Addenda

Section 1.7 of RFP – Table 1-2 – Point of Contact

All inquiries shall be submitted to James Redmond at jredmond@recyclingandenergy.org

All addenda will be published on the R&E website at www.recyclingandenergy.org/vendors



RDF End-Markets RFI Schedule

Key Dates

- | | |
|-------------------------------------|---------------------------------------|
| • Deadline for questions | December 28, 2022, 4 pm CT |
| • Final addendum for Q&A published | January 17, 2023 |
| • Deadline for Proposal Submissions | February 21, 2023, 4 pm CT |
| • Vendor interviews (as necessary) | Week of April 3, 2023 |
| • Proposers informed of selection | To be determined, based on evaluation |



RFI Checklist (Section 4.1 – Table 4.2)

- Transmittal Letter (page 15)
- Executive Summary (page 16)
- General Company Information (page 17)
- Description of Technology (page 17-18)
- Description of Operations (page 18)
- Description of Materials Management (page 18-19)
- End-Products Marketing Information and Experience (page 19)
- Environmental Permits and Controls (page 19)
- Reference Facility (page 20)
- Facility Economics and Financing (page 20-21)
- Project Siting, Permitting, and Timelines (page 21-22)
- Completed Solicitation Response Form (Attachment 1)
- Application for Designation of Trade Secret Information (Attachment 2)



RFI Evaluation Criteria (Section 3.2)

Technical/Operational:

- Proposer's demonstrated experience in project development, permitting, design and construction, and operation of proposed facilities
- Proposer's demonstrated experience in marketing and selling the products (or similar products) to be produced
- The proven commercial viability of the technology and the responsiveness of the proposer's technical proposal
- The scalability and adaptability of the technologies and facilities proposed and overall approach and fit to the RDF(or process residue) produced by the R&E Center
- Proposer's proposed project schedule
- Proposer's comprehensive identification of and approach to siting and permitting requirements and issues.

Financial:

- Proposer's demonstrated financial strength and ability to finance the capital costs, including construction and operation of the facilities proposed
- The contractual terms and price to be offered to or requested from the R&E Board
- Project economics and funding
- Innovative ideas to reduce the expected initial or ongoing costs and environmental impacts of the project



Next Steps

- Notify Jim Redmond via email (jredmond@recyclingandenergy.org) if you wish to be added to the email distribution list
- Next Steps
 - Addendum with pre-proposal conference questions
 - Additional questions due by December 28, 2022, 4:00 pm CT



Question & Answer



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