



**RAMSEY/WASHINGTON
RECYCLING & ENERGY**
CONNECTING VALUE TO WASTE

**MEETING NOTICE
RAMSEY/WASHINGTON RECYCLING & ENERGY BOARD
FACILITY AND FINANCE COMMITTEE**

Date: Thursday, June 18, 2020
Time: 10:00 am to 12:00 pm
Virtual meeting: <https://zoom.us/j/91735053874?pwd=Rlk4M0U1V0dwd3cyYnU5cFV0Nm5PdZ09>
Meeting ID: 917 3505 3874 | Password: 231884 | Phone: +1-651-372-8299

The Chair of the Ramsey/Washington Recycling and Energy Board has determined that an in-person meeting is not practical or prudent because of the COVID-19 pandemic and the declared state and local emergencies. Commissioners will participate by telephone or other electronic means and the Board meeting will be conducted pursuant to and in compliance with Minnesota Statute 13D.021 and 13D.04 Subd. 3. Members of the public will be able to watch the public meeting live online.

AGENDA

- I. Call to Order and Introductions**
- II. Approval of Agenda** Action Page 1
- III. Approval of Minutes – May 21, 2020** Action Page 2
- IV. Finance**
- V. Facility**
 - a. Enhancements Financing Action Page 8
- VI. Updates and Reports**
 - a. End-Use Markets Solicitation Policy Discussion Page 32
 - b. Durable Compostable Bag Program (DCB) Update Information Page 48
 - c. Enhancements System Design Update Information Page 49
- VII. Other**
 - a. Electric Vehicle Update Information Page 55
 - b. Schedule Next Facility & Finance Committee Meeting Action
- VIII. Adjourn**



THURSDAY, MAY 21, 2020
RECYCLING & ENERGY BOARD FACILITY & FINANCE COMMITTEE MINUTES

A meeting of the Ramsey/Washington Recycling & Energy Board Facility & Finance Committee (Facility & Finance Committee) was held as a remote Zoom meeting at 1:00 p.m. on Thursday, May 21, 2020. Essential staff participants met at the Ramsey County Environmental Health Office, 2785 White Bear Avenue North, Suite 350, Maplewood, Minnesota. Other participants joined through Zoom.

The Chair of the Ramsey/Washington Recycling and Energy Board has determined that an in-person meeting is not practical or prudent because of the COVID-19 pandemic and the declared state and local emergencies. Commissioners will participate by telephone or other electronic means and the Board meeting will be conducted pursuant to and in compliance with Minnesota Statute 13D.021 and 13D.04 Subd. 3. Members of the public will be able to watch the public meeting live online.

MEMBERS PRESENT

Commissioners Toni Carter, Trista MatasCastillo – Ramsey County
Commissioner Wayne Johnson – Washington County

IN ATTENDANCE AT RAMSEY COUNTY ENVIRONMENTAL HEALTH

Leigh Behrens, Zack Hansen, Katie Keller, John Ristad, Nikki Stewart, Jody Tharp, Jordan Thone, Ryan Tritz, Kris Wehlage

ATTENDING REMOTELY

Kathy Aho, Joel Andersen, Elizabeth Bergman, Shannon Conk, Dan Donkers, Dushani Dye, Rae Eden Frank, Kelli Hall, Sam Hanson, Terri Heaton, Matt Herman, Sam Holl, Fatima Janati, Kevin Johnson, Bruce Kimmel, Jennefer Klennert, Nate Klett, N. Kluge, Sandy Koger, Alexandra Kotze, Kevin Magnuson, Craig Martindale, Leslie McCollam, Andrea McKennan, Mike Moroz, Jennifer O'Rourke, Melissa Peck, Afriani Rohim, Peder Sandhei, Jim Smith, David Suihkonen, Kecia Thomason, Mark Thompson, Britta Torkelson, Rob Vanasek

CALL TO ORDER AND COMMISSIONER ROLL CALL

Chair Carter called the meeting to order at 1:00 p.m. Introductions of staff present at Maplewood were made. A roll call of commissioners was conducted.

Roll Call:	<u>Commissioner</u>	<u>Present</u>	<u>Absent</u>
	Carter	X	
	Johnson	X	
	MatasCastillo	X	

APPROVAL OF AGENDA

Commissioner Johnson moved, seconded by Commissioner MatasCastillo, to approve the agenda.

Roll Call:	<u>Commissioner</u>	<u>Aye</u>	<u>Nay</u>
	Carter	X	
	Johnson	X	

MatasCastillo X

Motion Carried.

APPROVAL OF R&E FINANCE & FACILITY COMMITTEE MINUTES – FEBRUARY 20, 2020

Commissioner MatasCastillo moved, seconded by Commissioner Johnson, to approve the February 20, 2020 minutes.

Roll Call:	<u>Commissioner</u>	<u>Aye</u>	<u>Nay</u>
	Carter	X	
	Johnson	X	
	MatasCastillo	X	

Motion Carried.

FINANCE

Kris Wehlage, R&E Accounting Manager, reported on the 2019 budget. Highlights for 2019 include surpluses in Facility and Joint Activity budgets and establishment of the Enterprise Reserve Fund. 2019 financial statements are being finalized with a report due in June.

2019 Year-End Budget Report

Facility Budget:

- More landfill expenses due to GRE closure, Xcel downtime, and more volume in the system
- More transload expenses due to more waste going through transfer stations than expected
- Facility operations had more expense due to 28 new trailers purchased required retrofitting, as well as higher insurance costs
- Revenue up due to more tonnage received

Joint Activities:

- Hauler rebates higher due to more waste in system than budgeted
- Surplus will go to the Enterprise Reserve Fund

Equipment Maintenance and Replacement:

- Expenses are on target
- All programs and projects are completed

2020 Budget Status

Kris Wehlage presented an update on the 2020 budget.

Facility Budget:

- It is early in the year and R&E is using conservative projections.
- There has been a reduction in tons being delivered to the facility since the onset of the pandemic.
- Calculated projections are based on an anticipated 5% reduction in tonnage for the year.
- Even with reduced tonnage, the 2020 finances will remain within budgeted parameters.

Commissioner Johnson asked about changes in residential tonnage vs. commercial and whether there is a difference in cost to process residential vs. commercial. Ryan Tritz, R&E Center Manager, responded that the center has seen a decrease in commercial tonnage and slight increase in residential tonnage during the pandemic, but that commercial tonnage is now increasing toward pre-pandemic levels. Tritz indicated that every ton is priced the same whether residential or commercial.

Joint Activities:

- \$2.4 million savings is due primarily to BizRecycling grants and grantees affected by COVID-19.
- Surplus will go to the Enterprise Reserve Fund.

Equipment Maintenance and Replacement:

- On target for budget.

2021 Budget Discussion

Kris Wehlage presented information on the 2021 budget plans. The budget structure was explained: Joint Activities, Facility, Equipment Maintenance and Replacement. It is anticipated there will be another budget specific to future center improvements.

Wehlage reviewed the budget schedule. The plan is that the Facility & Finance Committee reviews the budget in May and votes to present it to full board in June. This may change due to the state bonding timing.

Budget Proposals:

- Joint Activities - No change
- Equipment Maintenance and Replacement - No change
- Facility - Presenting an amended budget
 - Total appropriations remains the same
 - No increase in tipping fees
 - Review and recategorization of personnel and contracts for facility vendors:
 - Currently experiencing high overtime due to staff turnover, particularly 3rd shift
 - Add 4 FTE to Facility Budget: 1 supervisor, non-union; 2 processor helpers, union; 1 electrician, union
 - Reduces overtime/double time and reduces employee fatigue
 - Reduces dependence on and expense of contracted labor

Commissioner Johnson asked how realistic it will be to find new personnel. Ryan Tritz responded that the nearby Gerdaup plant is closing in June, which could be a potential source of employees. R&E might also anticipate job seekers due to other businesses shutting down.

Commissioner MatasCastillo asked how much will be saved by adding staff and reducing contracted labor. Wehlage responded that anticipated savings will be roughly \$450,000. Commissioner Johnson inquired how the loss of overtime might affect current staff who may rely on overtime for their personal budgets. Wehlage answered that the R&E Center runs three shifts, 24/7 and that staff fatigue is creating safety issues. Commissioner Johnson indicated he is fully supportive of adding staff if it is to address a safety issue.

FACILITY

Termination of Negotiations with Enerkem

Zack Hansen, Joint Leadership Team (JLT), presented a brief overview of negotiations with Enerkem for gasification of RDF. In 2018, R&E planned for two-phase procurement for gasification of RDF. In 2019, the Joint Leadership Team (JLT) was authorized to negotiate with Enerkem; however, Enerkem lost a major funder in early 2019 and has struggled to find additional funding since. Attempts to negotiate have been unsuccessful, and JLT recommends the following draft resolution be brought forward to the full board by the Facility & Finance Committee.

Draft Resolution R&EB-2020-03

WHEREAS, The Ramsey/Washington Recycling & Energy Board ("R&E Board") is governed by the amended and restated joint powers agreement by and between Ramsey County and Washington County dated September 22, 2015 ("Joint Powers Agreement"); and

WHEREAS, The R&E Board, and its predecessor the Ramsey/Washington County Resource Recovery Project Board ("Project Board"), invested considerable time and effort into evaluating the future of the solid waste system in the East Metro area; and

WHEREAS, As part of that evaluation, the Project Board and R&E Board investigated and evaluated different waste management technologies, including gasification systems that convert waste to fuels and industrial chemicals and other products; and

WHEREAS, The Scope for Resource Management, which outlines the strategic direction for waste management, includes use of refuse derived fuel ("RDF") produced at the Recycling & Energy Center ("R&E Center") in gasification systems; and

WHEREAS, At its meeting on March 22, 2018, the R&E Board approved a two-phase procurement process and authorized the Joint Leadership Team ("JLT") to release of the first phase RFP (Resolution 2018-R&EB-10); and

WHEREAS, At its meeting on September 27, 2018, the R&E Board approved the selection of Enkema, Inc. to receive a phase II RFP (Resolution 2018-R&EB-18); and

WHEREAS, At its meeting on January 24, 2019 the R&E Board authorized the JLT to enter into negotiations with Enkema (Resolution R&EB-2019-03); and

WHEREAS, Because of loss of an investor and a change in business direction, Enkema has not entered into negotiations with R&E and has agreed to terminate negotiations. NOW, THEREFORE, BE IT

RESOLVED, The R&E Board hereby authorizes the JLT to terminate negotiations with Enkema, Inc. for acceptance of refuse derived fuel (RDF) for use in a gasification facility. BE IT FURTHER

RESOLVED, The R&E Board hereby authorizes the JLT to aggressively identify and evaluate alternate markets for RDF and other products derived from solid waste.

Commissioner MatasCastillo moved, seconded by Commissioner Johnson, to recommend the Draft Resolution terminating negotiations with Enkema to the R&E Board on June 25, 2020.

Roll Call:	<u>Commissioner</u>	<u>Aye</u>	<u>Nay</u>
	Carter	X	
	Johnson	X	
	MatasCastillo	X	

Motion Carried.

Enhancements Financing Report

Nikki Stewart, Joint Leadership Team (JLT), introduced a discussion regarding the Enhancements Financing Report. Because a bonding bill did not pass during the regular session of the legislature, the JLT recommends that the committee and R&E Board discuss the report and resolution and wait to take any action until the result of state bonding is known.

Stewart recognized the many people involved in preparing the report:

- R&E finance, planning, procurement, human resources, operations staff
- Ramsey & Washington County finance staff
- Ramsey & Washington County public health staff
- Baker Tilly – Finance advisers to Ramsey & Washington counties
- Ehlers – Finance adviser to R&E
- Ramsey & Washington County attorneys offices
- Stoel-Rives – Legal adviser to R&E

- Foth Environment & Infrastructure

Background

Stewart reviewed the path to present, from 2013-14 discussions of whether the facility should be purchased. The revised scope for resource management was reviewed, looking ahead to 2028 and beyond. Stewart discussed the two parts of enhancements: a system for food scrap collection using durable compostable bags (DCBs), and a system for recovering additional recyclables from trash.

Current Economy & Waste

Current economic conditions have affected waste management. Evaluation of economic effects on the waste industry is ongoing, and projections are challenging. Gross domestic product was used as part of the evaluation, as it is closely related to waste generation. It is a good predictor but is not exact.

Commissioner Johnson inquired about plans if R&E gets \$8 million of its requested \$21 million from the state bonding bill, and whether there are portions of the project that can be completed with the \$8 million, while waiting on additional funding. Stewart responded that R&E applied for the PCA CAP grants as two entities with two projects, and that R&E is trying to anticipate all possible scenarios.

Commissioner Johnson asked about resolution wording that may commit counties to the project even if R&E does not receive its full bonding request. Zack Hansen clarified that R&E is not proposing this resolution be put forward today; it would be premature, since the legislature hasn't yet acted.

Commissioner Johnson inquired about the how the GDP forecast might change going forward. Hansen responded that a 0-5% reduction in waste is projected for 2020, based on GDP projections. It is anticipated that growth will be slow through 2021, but will eventually reach pre-pandemic levels.

Zack Hansen introduced a report on the impact of R&E Center enhancements on the Minnesota economy, prepared by Dr. William Lazarus, Applied Economist at the University of Minnesota. Dr. Lazarus updated his report in May with the pandemic hitting, at no cost to R&E. Dr. Lazarus analyzed the effect on state and local economies of moving forward with center enhancements (job creation and economic activity for the state).

- Construction will see 155-198 new jobs and \$55-\$64 million added to the economy.
- Ongoing operation will see 42 new jobs and more than \$9 million added to the economy.

Hansen summarized the local finance proposal that was prepared by Baker Tilly and explained the work done by Ehlers on resources to support debt service, should bonding not be approved. Analysis was conducted on how to mitigate or eliminate the need to invoke county property tax levies or other county general support for debt payments. Eight options were identified and presented to the committee. Ehlers conducted sensitivity analysis to test the ability of the strategies to respond to prolonged reduction in waste volumes. The stress test indicated that there are multiple ways in which R&E could mitigate a reduction in tipping fees.

Timelines will be modified because bonding decisions didn't occur as scheduled. Timelines will be revised and presented to the board after bonding decisions have been made.

Commissioners Carter and MatasCastillo expressed gratitude to the many people involved in preparing the report.

UPDATES AND REPORTS

Facility Update

Ryan Tritz, R&E Center Facility Manager, presented an update on center operations and staff.

- The Center has enough PPE, and staff are using it responsibly.
- As COVID-related restrictions are being relaxed, safety at work and outside work is being stressed.
- Cleaning efforts are being further stepped up.
- After a decrease at the onset of the pandemic, steady increase in tonnages are now being seen.
- All major maintenance work has been completed, on time and on budget.
- The rest of the year moves into more processing, with fewer projects and maintenance.
- Remaining projects:
 - A radiation detector on the in-bound scale, which is common in the industry, will be installed in late June to mid-July.
 - Fire Rover installation is moving forward; it is a bit behind due to travel restrictions associated with COVID-19.
 - Selection of a vendor for robots for used beverage cans recovery is moving forward.
 - Planning is on schedule for the admin building renovation and RDF residue area enclosure. Request for bids will go out late June or early July.

Commissioner Johnson thanked everyone working in the facility for the efforts to keep it clean, organized, and safe under the current circumstances.

OTHER

Set Next Facility & Finance Committee Meeting

Zack Hansen proposed a meeting of the Facility & Finance Committee one week prior to the June 25, 2020 R&E Board meeting. R&E staff will update the committee on financing recommendations based on state bonding bill decisions and recommendations from the two counties' finance departments. The committee will decide at that meeting recommendations to bring forward to the full board.

Commissioner MatasCastillo moved, seconded by Commissioner Johnson, to schedule a Facility & Finance Committee meeting on Thursday, June 18, 2020, 10 am – 12 pm.

Roll Call:	<u>Commissioner</u>	<u>Aye</u>	<u>Nay</u>
	Carter	X	
	Johnson	X	
	MatasCastillo	X	

Motion Carried.

ADJOURNMENT

Commissioner Carter adjourned the meeting at 2:34 p.m.

Approved: _____

Date: _____



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R&E FACILITY & FINANCE COMMITTEE MEETING DATE:		June 18, 2020		AGENDA ITEM:		V.a.	
SUBJECT:	Enhancements Financing						
TYPE OF ITEM:	<input type="checkbox"/>	INFORMATION	<input type="checkbox"/>	POLICY DISCUSSION	<input checked="" type="checkbox"/>	ACTION	
SUBMITTED BY:	Joint Leadership Team (JLT)						

FACILITY & FINANCE COMMITTEE ACTION REQUESTED:

The Facility and Finance Committee is requested to recommend that the Recycling & Energy Board that it approve the following, upon knowing the outcome of state bonding:

1. Accept the state bond funds in the amount approved by the legislature and authorize the Joint Leadership Team (JLT) to negotiate documents for receipt of state bond funds, with such agreements brought back for R&E Board approval as soon as possible.
2. Authorize the chair of the R&E Board to execute documents necessary for the receipt of state bond funds, upon approval as to form by the county attorney.
3. Authorize proceeding with the full scope of the R&E Center enhancements, including the durable compostable bag organics recycling system and the recyclables recovery system, and authorize the JLT to proceed with final engineering, architecture and construction plans to prepare for construction bidding as soon as funds are available.
4. Approve and recommend that the county boards approve and implement a financing structure for the R&E Center enhancements, said financing structure to include the following:
 - a. Each county shall loan a proportionate share to the R&E Board sufficient to cover its share of total financing for the R&E Center enhancements, according to of the percentages set forth in the joint powers agreement: Ramsey County – 73%, Washington County – 27% (the “County Enhancement Loans”).
5. Ramsey County shall issue general obligation bonds on behalf of both counties (the “County Bonds”) to fund the full loan amount for the R&E Center enhancements.
6. Ramsey County and Washington County shall enter into an agreement whereby Washington County agrees that Ramsey County will issue bonds on behalf of both counties, and that Washington County shall pay its share of the total financing of the R&E Center Enhancements through its loan agreement with the R&E Board.
7. The R&E Board shall be obligated to and is hereby authorized to enter into one or more loan agreements pursuant to which it will agree to repay the County Enhancements Loans from facility revenues, CEC funds and other available revenues on terms and conditions that match, or are otherwise consistent with, any terms and conditions of any bonds issued to fund its County Enhancements Loans.

SUBJECT: *Enhancements Financing*

8. Authorize the JLT to make all necessary budget adjustments related to the R&E Center enhancements project.

EXECUTIVE SUMMARY:

The Recycling & Energy Board (R&E Board) has been engaged in policy development to achieve environmental, economic and social benefits through the Recycling & Energy Center (R&E Center) since 2013. As a step to achieve the next phase, the R&E Center will require expansion and system improvements. At its May 2019 meeting, the board stated its intent to move forward with the enhancements. This triggered a series of actions, including approval of financing and procurement plans at its August 2019 meeting, pursuit of partial state funding, and authorization to proceed with development of construction-ready engineering documents.

A report on financing these enhancements was presented at the May 21, 2020 Facility & Finance Committee meeting and the May 28, 2020 R&E Board meeting. Commissioners discussed the report, and the approach recommended for the local match met with favorable comments.

Commissioners also discussed the status of R&E's request for state bonding, and the timing of action by the R&E Board to move forward with local funding. The Minnesota legislature is slated to hold a special session beginning just before or on June 12. During this special session a bonding bill may be on the agenda. The result of state bonding is integral into R&E and the counties' decisions on local funding.



The report presented to the committee and board in May is attached for reference, as is the resolution that would initiate financing action. In addition, a memo with additional information is provided.

ATTACHMENTS:

1. Resolution
2. Memo from JLT
3. Enhancements Financing Report

FINANCIAL IMPLICATIONS:

The recommended actions would result in the R&E Board approving loans from the two counties in an amount to be approved upon resolution of state bonding. R&E would pay back the loans to the counties using revenue from tipping fees. The exact financial implications are not known until state bonding is complete during the current legislative session.

AUTHORIZED SIGNATURES	DATE
JOINT LEADERSHIP TEAM	6/15/20
	
RAMSEY COUNTY ATTORNEY	6/15/20
	

SUBJECT: *Enhancements Financing*

WASHINGTON COUNTY ATTORNEY



6/15/20



RESOLUTION R&EB-FFC-2020-01

WHEREAS, it is the stated policy of the State of Minnesota, under the Waste Management Act, to manage solid waste in an environmentally sound manner; and

WHEREAS, Ramsey and Washington Counties (the “Counties”) have committed to continue to protect and ensure the public health, safety, welfare and environment of each County’s residents and businesses through sound management of solid and hazardous waste generated in each County; and

WHEREAS, Ramsey and Washington Counties have in place County Solid Waste Management Master Plans (“Master Plans”) approved by the Commissioner of the Minnesota Pollution Control Agency, which clearly state the policy goal of maintaining and improving an integrated system of solid waste management that supports Minnesota’s hierarchy of solid waste management, with an emphasis on waste reduction, reuse, recycling and composting before the remaining solid waste is managed through resource recovery; and

WHEREAS, the Master Plans also include policies that affirm the processing of waste, for recovering energy and recyclables, and other beneficially usable materials, as the preferred method to manage solid waste that is not reduced, reused or recycled; and

WHEREAS, the Ramsey/Washington Recycling & Energy Board (“R&E Board”) is governed by the amended and restated joint powers agreement by and between Ramsey County and Washington County dated September 22, 2015 (“Joint Powers Agreement”); and

WHEREAS, R&E has conducted extensive evaluation and analysis of methods to enhance recovery of value from the waste stream using source separation and mechanical separation of organics and recyclables, and has designed system changes to assist in meeting state recycling goals; and

WHEREAS, a peer-reviewed preliminary engineering design has been completed for enhancements to the R&E Center that would recover source separated organic waste in durable compostable bags and add equipment for removal of recyclables; and

WHEREAS, extensive analysis of these enhancements has been completed for technology, economics, environmental benefits, risk assessment and procurement; and

WHEREAS, to be “shovel ready” R&E has engaged the services of a construction manager and architect/engineer to prepare plans and budgets for these enhancements, and has completed the schematic design and budget, with a timeline to complete design and procurement with construction to begin in late 2020; and

WHEREAS, the R&E Board has applied to receive funding from the state of Minnesota to assist with construction of the proposed enhancements to provide this necessary public service, through the Minnesota Management and Budget (MMB) administered capital grants program, and through the Minnesota Pollution Control Agency’s (MPCA) capital assistance program, both of which require a local matching of funds; and

WHEREAS, At its meeting on August 21, 2019 the R&E Board approved Resolution R&EB-2019-16, which approved the Financing Plan to fund the capital improvements necessary for the system enhancements for recycling, and also approved a Procurement Plan (Resolution R&EB-2019-18) for steps necessary to proceed with design and budgeting of the enhancements; and

WHEREAS, the Joint Leadership Team (JLT), working with the two county finance departments, the counties' financial advisors and bond counsel, the R&E financial advisor Ehlers, and county attorneys, as completed a Financing Report to move forward the R&E Board's plans for R&E Center enhancements. NOW, THEREFORE, BE IT

RESOLVED, the R&E Facility & Finance Committee hereby recommends that the R&E Board approve the following upon knowing the outcome of state bonding:

RESOLVED, The R&E Board hereby approves the R&E Center Enhancements Financing Report. BE IT FURTHER

RESOLVED, the R&E Board hereby accepts state bond funds in the amount approved by the legislature and authorizes the Joint Leadership Team (JLT) to negotiate documents for receipt of state bond funds, with such agreements brought back for R&E Board approval as soon as possible. BE IT FURTHER

RESOLVED, The R&E Board hereby authorizes the Chair of the R&E Board to execute documents necessary for the receipt of state bond funds, upon approval as to form by the county attorney. BE IT FURTHER

RESOLVED, the R&E Board hereby authorizes proceeding with the full scope of the R&E Center enhancements, including the durable compostable bag food scraps recycling system and the recyclables recovery system and authorizes the JLT to proceed with final engineering, architecture and construction plans. BE IT FURTHER

RESOLVED, the R&E Board hereby authorizes the JLT to apply for permits necessary for the enhancements, and further authorizes the Chair to execute necessary easement and permit documents upon approval as to form by county attorneys. BE IT FURTHER

RESOLVED, The Recycling & Energy Board hereby approves and recommends that the county boards approve and implement a financing structure for the R&E Center enhancements, with said financing structure to include the following:

- Each county shall loan a proportionate share to the R&E Board sufficient to cover its share of total financing, including all financing costs, for the R&E Center enhancements, according to the percentages set forth in the joint powers agreement: Ramsey County – 73%, Washington County – 27% (the "County Enhancement Loans").
- Ramsey County shall issue general obligation bonds on behalf of both counties (the "County Bonds") to fund the aggregate County Enhancement Loan amount for the R&E Center enhancements.
- Ramsey County and Washington County shall enter into an agreement whereby Washington County agrees that Ramsey County will issue bonds on behalf of both counties, and that Washington County shall provide its general obligation pledge to Ramsey County for its share of the financing and pay its share of the total financing of the R&E Center Enhancements through its loan agreement with the R&E Board.

- The R&E Board shall be obligated to and is hereby authorized to enter into one or more loan agreements pursuant to which it will agree to repay the County Enhancements Loans from facility revenues, CEC funds and other available revenues on terms and conditions that match, or are otherwise consistent with, any terms and conditions of any other loans outstanding and owed to the counties, additional covenants required by the counties and the County Bonds issued to fund R&E Board's County Enhancements Loans. BE IT FURTHER

RESOLVED, The R&E Board hereby authorizes the JLT to make all necessary budget adjustments related to the R&E Center enhancements project.

Toni Carter, Facility & Finance Committee Chair
June 18, 2020



June 12, 2020

To: Recycling & Energy Facility & Finance Committee

From: Joint Leadership Team (Zack Hansen, Nikki Stewart, Dushani Dye)

RE: Facility Enhancements

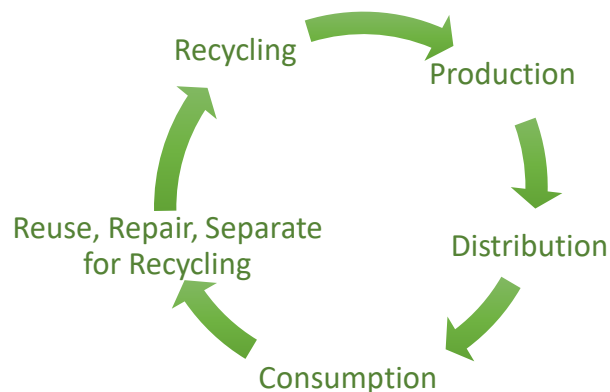
Introduction

Ramsey and Washington counties, first through the Ramsey/Washington Resource Recovery Project and more recently through the Recycling and Energy Board (R&E Board), have continuously evaluated technologies related to waste processing, dating back to the late 1990s. Since 2013, as it first began to contemplate purchase of the Ramsey/Washington Recycling & Energy Center (R&E Center), the R&E Board accelerated its examination of technologies to assess how to realize greater value from waste and advance goals for the East Metro's solid waste system. Since the purchase, the focus of the R&E Board's work has been on evaluating how to:

- increase waste reduction and reuse and continually improve recycling at homes and businesses
- integrate new technology into the R&E Center that will enhance recovery of materials and energy
- develop markets for organic materials through anaerobic digestion
- develop markets for refuse-derived fuel (RDF) through gasification

The R&E Board has been engaged in policy development to achieve environmental, economic and social benefits as identified in the R&E vision, "vibrant, healthy communities without waste." Pursuit of that vision is at work in R&E activities and each county's programs, which focus upstream, preventing waste and increasing source-separation of recyclables. Further, the R&E Center will be redesigned and repurposed to recover more value from waste.

R&E's work has been to reframe the waste/resource system in the East Metro, so that it can meet the principal aim of the system, protecting health and the environment, but also supporting and growing the local economy, local jobs, keeping the value of resources local and reducing financial risks to public and private sectors. This work will move the East Metro from a disposal-based economy and build the foundation for a circular economy.



SUBJECT: *Enhancements Financing Memo*

There are several dimensions to the analysis that have led to decisions about the proposed system enhancements, shown below. Work on all dimensions has been reported in previous board meetings and workshops.



The tables below show a portion of the analysis results from the March 2019 workshop. These are comparative analyses of the recommended approaches of DCBs for organics recycling and a recyclables recovery system at the R&E Center.

	DCB Approach	Separate Organics Carts Approach
Costs	Initial: \$13.4-\$19.3M; Ongoing: \$5.3-\$10.8M/year	Initial: \$29.9M+; Ongoing: \$33M+/year
GHG Impact of Collection	No additional GHG impact due to using existing trucks/routes	Increase roughly 2,675 MTCO ₂ e (equivalent to 568 cars or burning 2,924,379 lbs of coal)
System Control	Same program for all residents in both counties	Program differences between cities likely
Implementation Timeline	Launch planned for 2022-2023	Launches will vary by community
Equity Considerations	All residents with garbage service, regardless of location, will have access with no additional fees	Variable access/rates by location. Renter access limited in cities with organized garbage if landlord does not want to pay extra fee.

	Recyclables Recovery System	Increased Source-Separation Efforts
Costs	Initial: \$15.1M-\$20.5M; O&M: \$2.4-\$2.6M	Variable – all programs est. \$12.8M/year
Revenue	Est. \$1.9M-\$2.8M annually, offsets O&M	Any revenue is recovered by haulers/MRFs
Material Capture	6.4-9k tons of recyclables + 14-24k tons of organic-rich materials annually	No model to predict tonnage – will rely on measurement post-implementation
GHG Impact of Recovery	Reduce GHGs by 7,020-10,395 MTCO ₂ e/year = 1,490-2,207 cars removed from road	Challenging to measure (any new recycling/reduction that occurs reduces GHGs)
Equity Considerations	Recyclables recovery regardless of access to recycling collection or education efforts	Reaching underserved communities remains challenging; regulation burdensome

From a financial perspective, the costs of both systems are borne primarily by R&E, using both the Finance Budget and Joint Activities budget for different operating expenses. When viewed through the lens of waste generators, primarily residents, the cost to achieve the environmental and economic outcomes is lower, and more predictable, than the alternative methods.

At its May 2019 meeting, the R&E Board stated its intent to move forward with enhancements to the R&E Center that will allow for the removal of durable compostable bags (DCBs) that contain source separated organics and separate high-value recyclables from trash. Two reports followed that action, which were approved in August 2019: financing the enhancements and procurement of materials and services for the R&E Center.

State Bonding

Applications for state bond funds were submitted to Minnesota Management and Budget (MMB) for \$21 million, and the Minnesota Pollution Control Agency (MPCA) for \$8 million (the maximum request through the MPCA's Capital Assistance Program (CAP)). Lobbyists have been retained to work with the counties' lobbyists on this effort.

The Governor included \$8 million for the R&E Center project in the MPCA CAP bonding request. Bills were introduced in the House and Senate, which include both the \$8 million and \$21 million requests. Tours of the facility were held for the Governor, Governor's staff, the MPCA commissioner, the MMB commissioner, and Senate and House members.

The legislature adjourned on May 18 without approving a bonding bill. At the time this document was prepared the legislature was in Special Session, and it is possible a bonding bill will be addressed.

State funding of East Metro solid waste system changes is important because first, the counties are demonstrating strong partnership with the state by implementing policies for environmental protection, and state assistance will reduce the magnitude of local funding and associated costs and risk.

Structure of Local Funding – County Loans to R&E Financed with General Obligation Bonds

- R&E will sign a loan agreement with each county and pledge to repay the loans as scheduled.
- Ramsey County will sell general obligation (G.O.) bonds to fund the entire loan amount. Washington County will pledge its general obligation to Ramsey County for 27% of the bond repayment (Fiscal responsibility for each county is Ramsey County 73% and Washington 27%).
- As with its existing loan obligations, R&E will use net revenues from the R&E Center enterprise to pay scheduled principal and interest on each of the new county loans.
- The G.O. bonds will likely have a 20-year term. R&E and the counties will determine the specific bond and loan repayment structures after the R&E Board's decision to proceed.
- G.O. bonds were determined to provide the lowest cost financing for the R&E Center enhancements, and is a financing mechanism compatible with the Center's provision of an essential community service.
- Revenue bonds were considered but not selected because of the underwriting challenges due to R&E's relatively short history owning and operating the Center.

Financial Projections

Ehlers has prepared proformas to forecast the R&E Center's future financial performance using the best available information for the proposed enhancements and different financing assumptions. Each scenario estimates the annual tipping fees required for break-even operations given the scenario assumptions.

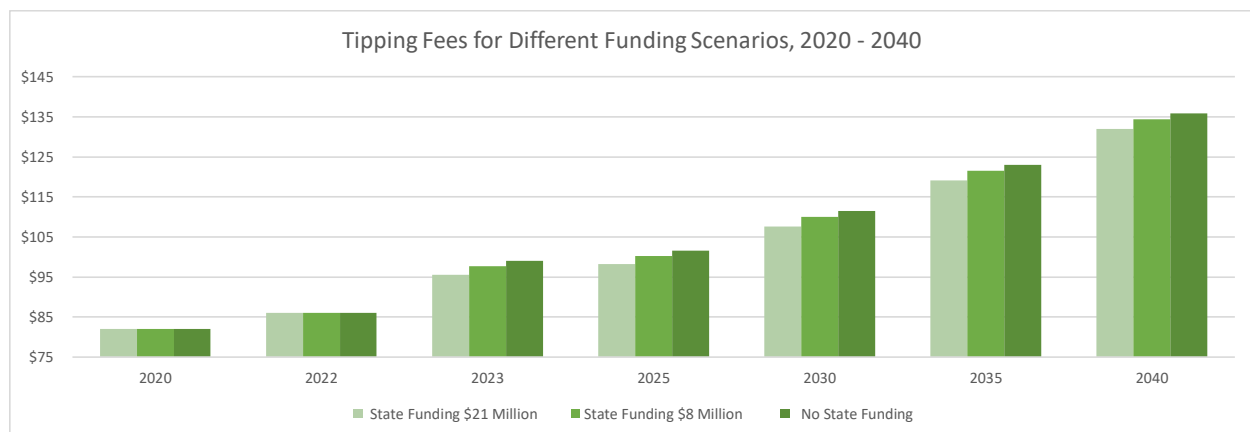
- The proformas are based on the 2019 R&E financial results and 2020 Facility Budget, with operating revenues and expenses projected annually to 2042.
- Some costs are fixed and are escalated based on a 2% consumer price index. Some costs are variable, and are escalated the same way, but change over time as new systems come on line.

SUBJECT: Enhancements Financing Memo

- Revenue is from two sources: tipping fees and recyclables recovery revenues. Tipping fees are based on waste volumes, which are projected at 450,000 tons per year (464,000 tons were received in 2019). Recycling revenues are conservatively estimated and reflect current economic conditions.
- Debt service reflects all existing loans / notes and the proposed enhancement loans (i.e. assuming different levels of state funding, and therefore different county bonding and R&E loan amounts).

The estimated tipping fees required for break-even R&E Center operations (including loan repayments) are summarized in the following table and graph. Also included in the table are the expected tipping fees over the same time period should the enhancements not be developed; this is a business-as-usual illustration, and is included for comparison to the other scenarios.

Tipping Fees by Year							
Scenario	2020	2022	2023	2025	2030	2035	2040
State Funding \$21 Million	\$82	\$86	\$96	\$98	\$108	\$119	\$132
State Funding \$8 Million	\$82	\$86	\$98	\$100	\$110	\$121	\$134
No State Funding	\$82	\$86	\$99	\$101	\$111	\$123	\$136
No Enhancements	\$82	\$86	\$88	\$91	\$101	\$111	\$123

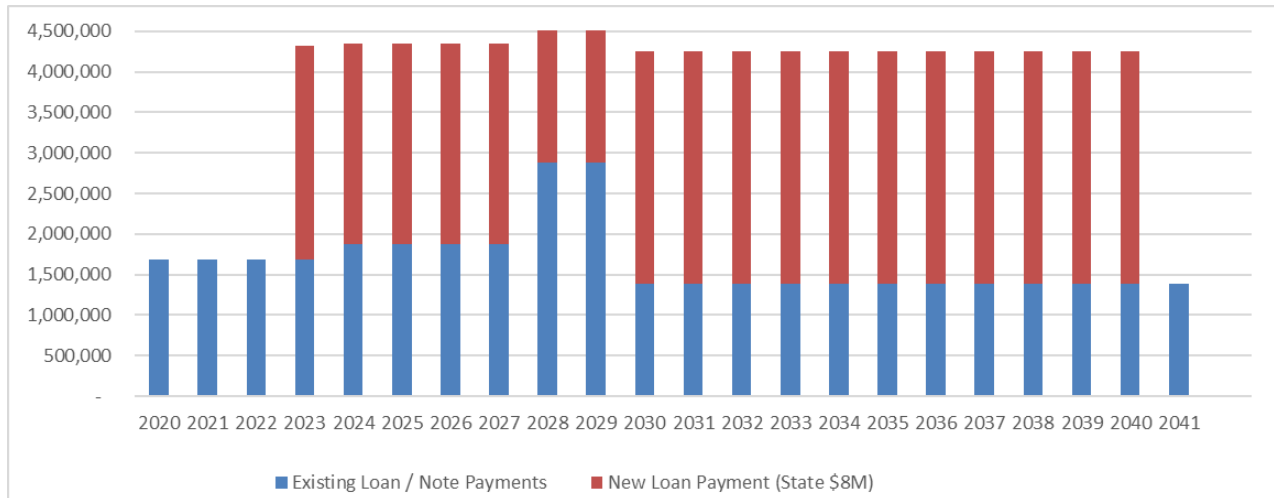


Observations:

- The projected tipping fees are consistent with projections made in the *Ramsey and Washington Counties Joint Designation Plan* (2018) and the preliminary engineering design for the R&E Center enhancements (2019)
- Tipping fees will see a large increase in 2023 over 2022 for three reasons: (1) regular on-going operations will escalate in costs; (2) new enhancement operating costs (labor, utilities, etc.); (3) debt service.
- An average household generates about one ton of trash per year; the effect of the 2022-2023 increase ranges from \$10 per year to \$13 per year (\$0.83 to \$1.08 per month) depending on the level of state funding.

SUBJECT: Enhancements Financing Memo

- The new bond and loan repayments are projected to start when the enhancements are operational in 2023 and remain stable in 2030-2040 (i.e. after an existing series of notes are retired in 2029).
 - To illustrate, the chart below shows R&E's existing loan / note payments in blue and its estimated new enhancement loan payments (assuming the "middle-ground" scenario of \$8 million of state funding) in red.



Circling back to all three scenarios, the portion of the annual tipping fees that R&E would use to repay the prospective new loans for the R&E Center enhancements is as follows:

Portion of Tipping Fees for New Loan Payments, by Year							
Scenario	2020	2022	2023	2025	2030	2035	2040
State Funding \$21 Million	\$0	\$0	\$3.67	\$3.45	\$4.02	\$4.02	\$4.02
State Funding \$8 Million	\$0	\$0	\$5.84	\$5.49	\$6.40	\$6.39	\$6.40
No State Funding	\$0	\$0	\$7.18	\$6.75	\$7.86	\$7.86	\$7.86

- The average household is estimated to generate one ton of waste annually. Accordingly, looking at the tipping fees required for debt service / loan repayments in 2030 and beyond, the highest average household impact ranges from \$0.34 to \$0.66 per month for the three scenarios shown above.

Risk Management

Financial risks differ between R&E and the counties, and analyses have been conducted for each.

R&E Risk

- The R&E Center operates as an enterprise fund, meaning that Center expenses are expected to be funded with Center revenues. The most significant risk, therefore, is that R&E revenues are lower than projected and cannot cover all operating and debt service expenses.

- The two primary revenue sources at risk:
 - If waste deliveries drop below projections, tipping fee revenues would be reduced; and
 - If recycling revenues drop below projections.
- R&E has determined that it could mitigate / offset the effects of temporarily reduced revenues (for example, for 1-5 years) implementing a number of strategies, which were listed in a priority order in the recent Board document. That listing, however, is suggestive, and R&E would likely adopt a combination of measures depending on the specific circumstances (i.e. instead of using them strictly in order).
 - Cost containment: Expenditure or other budget adjustments (Facility and Joint Activities) during the fiscal period;
 - Deployment of budgeted contingency;
 - Draw on Joint Activities Fund Balance (R&E General Fund Balance);
 - Draw on ORF/ERF balances (with pledge to replenish adopted in policy);
 - Equipment Maintenance & Replacement reserve balance;
 - Adjust the tipping fee (90-day implementation window);
 - Reduce the Equipment Maintenance & Replacement budget; and
 - County Environmental Charge (short term loan).
- Ehlers prepared a sensitivity analysis to demonstrate R&E's ability to offset a significant revenue reduction with a combination of the above measures.
 - The purpose of this projection is to illustrate several ways in which R&E could mitigate a volume-driven reduction in tipping fee revenues. This should not be viewed as a prediction of future waste volumes or a corresponding "game plan."
 - This analysis assumes a sustained 10% reduction in waste volume below the 450,000 annual amount (464,000 tons were received in 2019), starting in 2020 and continuing through 2025.
 - The sensitivity analysis showed that a 10% reduction in waste volumes from 450,000 tons for the 5-year period would result in annual revenue shortfalls of \$2.4-3.9 million per year.
 - The analysis indicates that R&E has available and would need to deploy several the above mitigation strategies to maintain financial viability and be able cover operating costs and loan payments.
 - In the illustration the mitigation strategies included reducing operating expenses, using the Facility budget contingency fund, drawing down on joint activities fund balance and increasing tipping fees \$1.00 to \$2.00 per year above the amount shown above.
- In the event of a more permanent revenue reduction (for example, due to a protracted shortage of waste deliveries), major steps could be taken that were not included in the Ehlers sensitivity analysis. For example, personnel costs can be reduced by matching waste processing to reduced waste deliveries and altering the number of processing shifts at the Center or revising processing schedules. The number of permanent employees could be changed, either by holding vacancies, furloughing employees, or reducing the workforce

- In addition, R&E would have the longer-term option to pursue and capture more processible waste (such as processible construction/demolition or industrial wastes) that are currently exempt from designation, or to secure waste from other counties.

County Risk

- With the R&E Center's short financial history and new enhancement projects being brought online, projecting future financial performance of the R&E Center is difficult.
- The proposed issuance of general obligation debt to finance the enhancement projects means the counties will be obligated to pay the required debt service on the bonds, regardless of the financial performance of the R&E center and its ability to make its loan payment to the counties.
- The principal risk to the counties is that the R&E Board is unable to meet its loan repayment obligations, thereby requiring the counties to use other resources to pay the associated general obligation bond debt service.
- The most effective way to mitigate this county risk is for all parties to collaborate and sustain mutual confidence in the financial viability of R&E Center operations – both before and after the organics and recyclables recovery enhancements are fully operational in 2023.
- An important step will be for R&E and the counties to fine-tune the enhancements financing plan once the level of state funding is known, and to ensure that the G.O. bond structure and corresponding loan payment schedule will be compatible with the R&E Center's expected operational plan and financial capacity to make all loan / note payments.
- To facilitate ongoing communication and be transparent in R&E Center fiscal viability a dashboard can be developed, with regularly updated information about key measures of the presence or absence of fiscal stresses on the R&E Center's Facility Budget. While updates are provided to the R&E Board in the form of budget reports, a dashboard would add other factors, such as waste delivery trends.
- The disruption to daily life caused by the COVID-19 virus and current social unrest, has been mirrored in the markets, including the municipal bond market. The municipal bond market is not functioning as it has in the past and is somewhat tentative in some instances as it responds to new announcements or events. At this writing, we do not expect high quality credits such as Ramsey County or Washington County general obligations to encounter problems selling bonds. Rates remain at historically low levels and access has been available.

Phasing or Delay of Enhancements

At the May 2020 meeting of the R&E Board the question of phasing the DCB and Recyclables Recovery System was asked. This would mean delaying one of the projects while the other proceeded. The question was asked in the context of state bonding: if the full amount desired by the counties (\$21 million) was not received, but instead the amount recommended by the Governor (\$8 million) is allocated, could projects be phased.

- With regard to state bonding, the House bill and Governor's recommendation has been to fund the MPCA's CAP program to include \$8 million for the R&E enhancements. That amount is calculated using a formula found in State Law, which allows for up to \$2 million per project per local jurisdiction. Should R&E receive the \$8 million, it could not use that full amount for only part

of the enhancements but could use half for one enhancement and the other half for the remaining enhancement. Funds would need to be spent by 2024.

- About the cost of delay, the Construction Manager Agency (CMA) for the enhancements work, Adolphson & Peterson (A&P), provided financial estimates for construction costs delayed two years. Two years was used because the next “official” bonding year at the legislature is in 2022. A one year delay would be half of the amounts shown below:
 - For delay of the Recyclables Recovery Enhancements - an additional \$2,227,000
 - For delay of the DCB enhancements, an additional \$1,346,000
 - For delay of both enhancements, a total of \$3,573,000 in additional costs

Beyond the financial impacts of delaying the construction of the enhancements at the R&E Center, there are several other areas that will be impacted by a scenario that delays one or both projects.

Permitting Process - The R&E Center enhancements projects will require a permit modification from the MPCA. If one enhancement starts in 2020 and another in 2022, R&E will need to negotiate with the MPCA to request completing one permit modification. This is still within a normal permit cycle. If the MPCA does not allow that, R&E would need to undergo two separate permit modification processes.

Municipalities and Communities

Many members of the community are eager to have access to a curbside food scraps (organics) recycling collection program.

- Surveys of residents in Ramsey and Washington counties have consistently shown that a high proportion of residents (between 78% and 90%) are interested in participating in curbside organics recycling, with similar results in support for the counties to implement additional infrastructure to recover recyclables from the trash.
- In a 2019 survey to municipalities, 92% indicated willingness to partner on outreach and education to support the DCB program. One reason given for this support was demand for organics recycling programs by their residents. Also in that survey, about one-third of communities requested launch in the early-phase, one-third in the middle-phase, and one-third in the late-phase of roll-out.

Alternative MSW Uses

- At present, R&E plans to begin a solicitation process for anaerobic digestion (AD) in mid-2020. The ability to deliver feedstock, such as organics from the DCB system and the RRS, are key to entering into agreements with AD vendors. R&E’s current timeline for an AD facility estimates one could begin accepting materials by 2026 to 2027. Each delay pushes that timing back.
- R&E’s pursuit of an alternative use for refuse-derived fuel (RDF), such as gasification, would be set back by a delay in the enhancement somewhat, with staff and consultant time dedicated to the enhancements work. Further delaying launch of that program means that there is a higher volume of material not being diverted, for which the R&E is responsible to find an alternative management method. Without alternative technology, that could mean extending the agreements with Xcel, if Xcel is willing, or landfilling that material.



To: Ramsey/Washington Recycling & Energy Board Facility & Finance Committee
From: Joint Leadership Team (JLT)
Re: Report on Recycling & Energy Center (R&E Center) Enhancements Financing
Date: May 15, 2020

Action Requested

In the attached resolution, the Facility & Finance Committee is requested to recommend that the Recycling & Energy Board (R&E Board):

- Accept the state bond funds in the amount approved by the legislature and authorize the Joint Leadership Team (JLT) to negotiate documents for receipt of state bond funds, with such agreements brought back for R&E Board approval as soon as possible.
- Authorize the chair of the R&E Board to execute documents necessary for the receipt of state bond funds, upon approval as to form by county attorneys.
- Authorize proceeding with the full scope of the R&E Center enhancements, including the durable compostable bag food scraps recycling system and the recyclables recovery system.
- Authorize the JLT to proceed with final engineering, architecture and construction plans; necessary permits; and construction bidding documents as soon as funds are available.
- Authorize the JLT to apply for permits necessary for the enhancements, and further authorize the Chair to execute necessary easement and permit documents upon approval as to form by county attorneys.
- Approve and recommend that the county boards approve and implement a financing structure for the R&E Center enhancements, with said financing structure to include the following:
 - Each county shall loan a proportionate share to the R&E Board sufficient to cover its share of total financing, including all financing costs, for the R&E Center enhancements, according to the percentages set forth in the joint powers agreement: Ramsey County – 73%, Washington County – 27% (the “County Enhancement Loans”).
 - Ramsey County shall issue general obligation bonds on behalf of both counties (the “County Bonds”) to fund the aggregate County Enhancement Loan amount for the R&E Center enhancements.
 - Ramsey County and Washington County shall enter into an agreement whereby Washington County agrees that Ramsey County will issue bonds on behalf of both counties, and that Washington County shall provide its general obligation pledge to Ramsey County for its share of the financing and pay its share of the total financing of the R&E Center Enhancements through its loan agreement with the R&E Board.
 - The R&E Board shall be obligated to and is hereby authorized to enter into one or more loan agreements pursuant to which it will agree to repay the County Enhancements Loans from facility revenues, CEC funds and other available revenues on terms and conditions that match, or are otherwise consistent with, any terms and conditions of any other loans outstanding and owed to the counties, additional covenants required by the counties and the County Bonds issued to fund R&E Board’s County Enhancements Loans.
- Authorize the JLT to make all necessary budget adjustments related to the R&E Center enhancements project.

This memo covers the following:

- Background on the R&E Center enhancements
- Pandemic-related economic conditions and R&E financing
- Economic activity generated by the enhancements
- Recommendations on implementation of the August 2019 R&E Center Enhancements Finance Plan
- Timelines
- Summary of community engagement

Background

The R&E Board has been engaged in policy development to achieve environmental, economic and social benefits through the Recycling & Energy Center (R&E Center) since 2013. The R&E vision, “vibrant, healthy communities without waste,” is being pursued through a variety of efforts. While R&E activities and each county’s programs compliment each other in working upstream, preventing waste and increasing source-separation of recyclables, the R&E Center will be redesigned and repurposed to recover more value from waste.

The effort to recover more value from waste has progressed since purchase of the R&E Center. Work already completed includes construction of the new building addition to streamline the bulky waste loadout area and provide storage space, creating room for further enhancements. Procurement is underway for a robotic separator to clean the non-ferrous metals that are separated on the processing lines to make these used beverage containers more valuable at market. Procurement is also underway to add a magnet to the bulky waste shredder, allowing the metal from mattresses to be recycled, and the fluff to be used as refuse-derived fuel (RDF).

These improvements will be followed by enhancements to the R&E Center to accommodate source-separated organics and to separate high-value recyclables from trash. Also under development are plans to use the remaining waste, now used to produce refuse-derived fuel, to produce alternate products through more modern conversion technologies, such as gasification, digestion to biofuels and/or chemical recycling.

As a step to achieve the next phase, the R&E Center will require expansion and system improvements. At its March 2019 meeting, the R&E Board received the preliminary design documents for enhancements to the R&E Center. At its May 2019 meeting, the board stated its intent to move forward with the enhancements. This triggered a series of actions, including approval of financing and procurement plans at its August 2019 meeting, pursuit of partial state funding, and authorization to proceed with development of construction-ready engineering documents.

Pandemic-Related Economic Conditions and R&E Financing

The JLT, R&E staff and finance team have approached these recommendations fully aware of and with understanding of the significance of the current COVID-19 pandemic. The current economic downturn has affected the waste and recycling industry, both in positive and negative ways. Because the R&E Center operates as an enterprise fund and relies solely on R&E Center revenues, the status of waste deliveries as the pandemic proceeds is important to understand. With that in mind, R&E has evaluated probable and possible effect of the economic uncertainty on the solid waste stream and economics of trash, and has also conducted financial tests to determine the resilience of R&E’s finances.

Projections of the future of the economy are challenging. Relating economic projections to waste generation is also difficult. However, staff and consultants have been gathering information that can inform the R&E Board's decision moving forward. While there are predictions at the national and state level, it is important to note that "all trash is local." The composition of the East Metro area residential, commercial and industrial waste generators determines the volumes and types of waste and recyclable material.

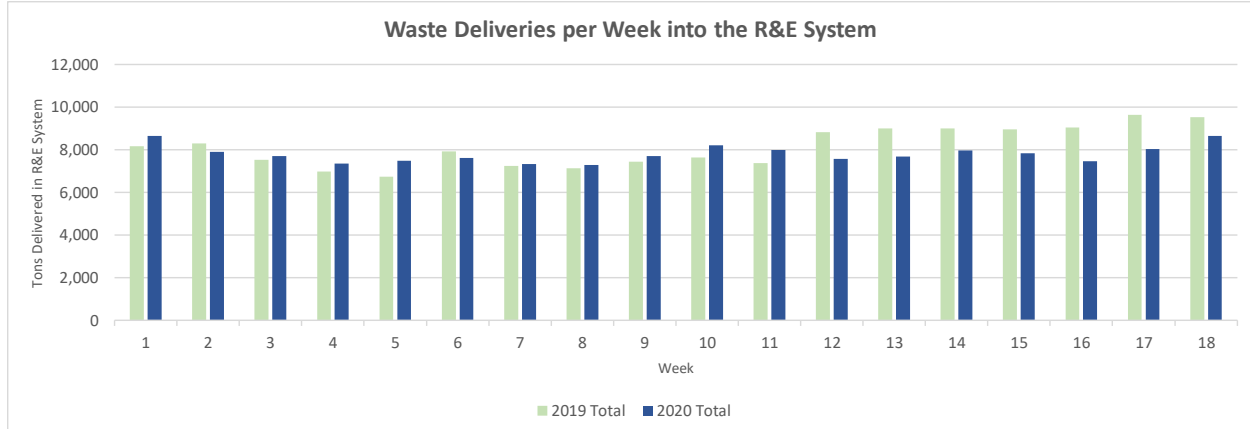
This section of the report is a summary of the pandemic's expected effects on waste generation, short term and long term. In short, these are the findings:

- The gross domestic product (GDP) is a good predictor of waste generation, but it is not exact and does not always reflect local conditions.
- The GDP is expected to drop for three quarters in 2020, and then begin to grow again. This means an economic recession for three quarters, then resumed economic growth.
- The rate of growth is uncertain – the downturn is heavily related to consumer activity, and it depends on the rate of business openings, jobs, and consumer spending.
- Waste volumes in the East Metro have declined over the past eight weeks, then have rebounded somewhat.
- Waste volumes will likely expand to pre-pandemic levels.
- Financial analyses in this report take the pandemic into account.

Short Term Effects

Current effects on the waste industry will likely not last. Executive orders closing many businesses resulted in a significant reduction in commercial and industrial waste generation. At the same time, residential waste volumes have increased with more people staying at home. Some of the residential increase is attributed to home clean-outs.

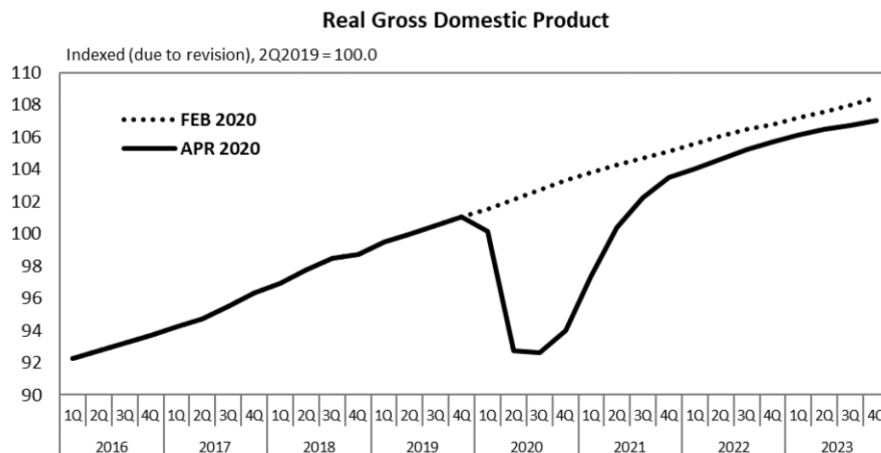
Through May 4, this year's deliveries at the R&E Center were 140,546 tons, compared to 146,618 tons in 2019, a difference of 6,072 tons, or 4%. Between March 17, 2020 and May 4, 2020, deliveries have been below 2019 levels for the same period by 13%. Week-to-week comparisons show an initial drop, then rising deliveries to approach 2019 levels. Commercial tonnage is expected to increase as businesses reopen in late May, which will begin to close the gap with 2019. The graph below compares first quarter 2019 waste totals by week to 2020. At this time, R&E projects a 0-5% reduction in total annual deliveries for 2020, which would be 440,000 tons delivered in 2020 compared to 462,000 tons in 2019. With regard to R&E Center receivables, there have been no issues with hauler payments, nor a departure from previous remittance patterns. The reopening of commercial establishments and industries in the two counties will be a key factor in total waste receipts in 2020.



Long Term Effects

The current economic condition is unprecedented. While the great recession in 2009 had a downturn that both began and was resolved gradually, the current situation was abrupt, as shown in the drop in waste deliveries between weeks 11 and 12 in the graph above. There is no consensus about how growth will occur looking forward.

A reasonable projection produced by the State of Minnesota's [May 2020 Interim Budget Projection](#) outlines, at a national level, projected changes in the GDP, shown in the graph below:



The Interim Budget Projection states that:

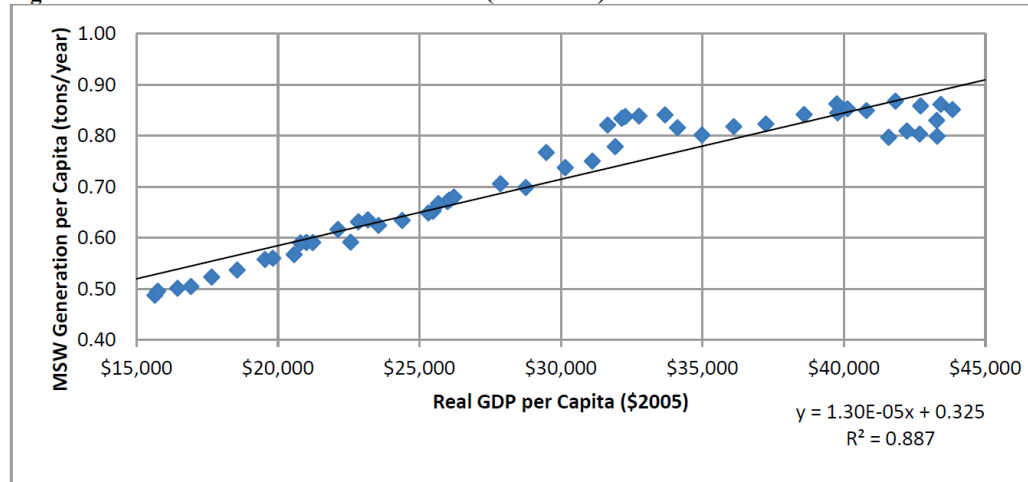
"IHS Markit (IHS), Minnesota's macroeconomic consultant, is now forecasting a three-quarter recession, resulting in a 5.4 percent decline in real GDP in 2020.

"IHS expects real GDP to reach its pre-pandemic level in mid-2021, but within our projection horizon, GDP does not get back to where it would have been without the pandemic. Moreover, the recession is expected to dampen business investment, and slower growth in capital services will limit future economic growth. Consequently, while IHS forecasts the U.S. to regain full employment in 2024, they expect GDP in that year to be below the level they forecast for 2024 February."

In other words, after a recession over three quarters of the year, economic growth will occur, but reaching pre-pandemic rates will likely take several years.

There is a strong relationship between GDP and waste generation, as cited by the Environmental Protection Agency in “Economic Indicators and Scoping Analysis,” 2013. The following figure shows that strong relationship. The higher the GDP per capita, the more trash is produced. In Figure 3, the solid line represents GDP, and the diamonds represent per capita waste generation.

Figure 3: MSW Generation Versus Real GDP (1960-2012)



From the Interim Budget Projection, one can infer that there will be a drop in waste generation during a recession lasting three quarters and then an increase as GDP grows. While the relationship is strong, waste generation will not mirror GDP exactly. And the local economy in the East Metro will determine the effects on waste.

A March 17, 2020 Brookings article, [“The Places a COVID-19 Recession Will Likely Hit Hardest,”](#) states *“While essentially all of America will likely be affected by COVID-19’s economic effects, those effects will be distinct and varied from place-to-place. Given that, we must not only act quickly, but also attend to the unique regional and local impacts within this national crisis.”* This article reports and builds on work by the chief economist at Moody’s, which examines the five most vulnerable industries in the current situation and looks at the share of those industries in 384 metropolitan areas across the U.S. The Minneapolis-St. Paul-Bloomington region ranked 248th in their list, indicating a certain level of resilience and less vulnerability than other regions. The five industries at highest risk are: leisure and hospitality, travel arrangements, employment services, transportation, and mining.

Reports from other sources on the subject of waste generation related to the current pandemic find some noted effects and probable changes in the solid waste stream. Below are three examples:

- Out of consumer concern for hygiene coming out of the pandemic, there may be an increase in packaging to protect products.
- There may be less comfort with dining-in restaurants and possibly an increase in take-out packaging.
- During an economic downturn and corporate belt-tightening, less investment is likely on “greener” innovations. On the other hand, some businesses will see this as an opportunity to streamline processes and packaging, with a focus on sustainability. Others may be ready to invest more in the circular economy aimed at waste elimination and continual use of resources.

In May 2020, Foth Infrastructure and Environment, LLC contacted David Biderman, executive director/CEO of the Solid Waste Association of North America (SWANA) to get a national view on waste generation and the impacts of the pandemic. He reported that, in an April 2020 SWANA presentation on COVID-19 impacts, Michael E. Hoffman, managing director, Stifel, indicated that he anticipated that the economy would recover in 2021 along with growing waste volumes. Mr. Biderman, who is in regular contact with firms in the industry, indicated that in his opinion, industry is past the worst of the current debacle. Mr. Biderman's view also is confirmed by earnings calls recently held by Waste Management, Republic, and Waste Connections. Overall, commercial waste volumes continue to be down approximately 20 percent. Residential volumes are trending 5-30 percent higher. Mr. Biderman felt that volumes have normalized for the solid waste sector. His caveat was that volumes could again decrease if a second surge of COVID-19 occurs this fall.

A [May 12 article](#) in Waste 360, an online industry journal, reported on the major publicly-traded waste firms, most of which recently held conference calls with first quarter results. These firms include Waste Management, Republic Services and Waste Connections, which operate in the East Metro. Firms reported on the significant downturn in late March but noted stabilization. "Across the board, the companies noted recent green shoots and signs of a bottom, if not an uptick, that generally appeared in the last week of April or first week of May. RSG [Republic Services] was perhaps the most optimistic in stating that a bottom had been put in, but WM [Waste Management] also noted that the rate of volume decline had improved, while WCN [Waste Connections] noted that a number of its metrics had turned in the last week: Service increases exceeded service decreases and net new business went positive again." The article noted that firms are being cautious, continuing with cost saving measures, deferring mergers and acquisitions, and waiting to see second quarter results.

Economic Activity Generated by the Enhancements

R&E Center Enhancements – Effect on the Minnesota Economy:	
Construction:	155 – 198 new jobs; \$55,556,254 - \$64,718,413 added to the economy
Operation:	42 new jobs; \$9,099,556 added to the economy

Dr. William F. Lazarus, a professor of applied economics at the University of Minnesota, prepared a report for R&E titled "Economic Impact of the Ramsey/Washington Recycling & Energy Center," which can be found in Attachment 1. The IMPLAN input-output software package and 2017 IMPLAN data was used for the analysis.

The report presents an economic impact analysis of the R&E Center. Three main scenarios are compared: R&E Center in its current state, R&E Center with the planned enhancements implemented for organics recycling and recyclables recovery, and R&E Center with enhancements and RDF being processed for alternative use.

- In its current state, the R&E Center, with 66 employees and \$36,715,217 in spending, results in an overall economic impact in the state of 367 jobs and \$88,319,850 in economic activity.

- With the addition of the R&E Center enhancements (with an additional 18 new employees at the R&E Center) and in full operation, the overall impact rises to 490 jobs and \$97,419,406 in economic activity.
- The enhancements alone generate 42 additional jobs (18 at the R&E Center and the rest are indirectly created) and \$9,099,556 in economic activity. During the two-year construction period for the enhancements, the impact is between 155 and 198 jobs, and \$55,556,254 and \$64,718,413.

Finance Plan

At its August 2019 meeting, the R&E Board approved the enhancements financing plan and authorized several actions related to financing of the enhancements for organics and recyclables recovery. These include a state bonding request, with a local match using a loan from the counties using general obligation bonds, and consideration of possible outside funding. Since that time, the counties have aggressively pursued state bonding, a finance team has developed specific recommendations for local funding, and the JLT has applied for funding from the Closed Loop Fund.

Closed Loop Fund

An application was submitted for a \$5 million zero-interest loan from the Closed Loop Fund, which is managed by Closed Loop Partners, an investment firm focused on the circular economy that manages a revolving loan fund. While R&E had conversations with the Closed Loop Fund several times since 2016, and had been led to believe that the enhancements project had elements that would be eligible for a loan, the application that was submitted in March was turned down by the Closed Loop Fund. JLT is following up to identify specific reasons for the decision.

State Bonding

Applications for state bond funds were submitted to Minnesota Management and Budget (MMB) for \$21 million, and the Minnesota Pollution Control Agency (MPCA) for \$8 million (the maximum request through the MPCA's Capital Assistance Program (CAP)). Lobbyists have been retained to work with the counties' lobbyists on this effort.

The Governor included \$8 million for the R&E Center project in the MPCA CAP bonding request. Bills were introduced in the House and Senate, which include both the \$8 million and \$21 million requests. Tours of the facility were held for the Governor, Governor's staff, the MPCA commissioner, the MMB commissioner, and Senate and House members.

The legislature is scheduled to adjourn on May 18, prior to the Facility & Finance Committee meeting, but after this document was prepared. The committee will be updated about the status of state bonding at its May 21 meeting.

Local Funds

The JLT created a finance team comprised of R&E staff, respective county finance departments, R&E and county financial advisers (Ehlers and Baker-Tilly, respectively), bond counsel for the counties, and attorneys (Stoel Rives and county attorneys) have prepared the process and documents to proceed with funding the enhancements upon R&E Board and county board approvals.

The finance team examined the use of general obligation bonds issued by the counties versus revenue bonds issued by R&E. As a result of the analysis, the team recommends the use of general obligation bonds, issued by Ramsey County on behalf of both counties.

R&E has requested that Ramsey and Washington counties provide loan(s) for capital funding of the proposed enhancements. In 2015, when the facility was initially purchased, the counties provided the acquisition capital in the form of loans according to established funding percentages of 73% for Ramsey County and 27% for Washington County. Ramsey County issued bonds to fund its share. Washington County funded its share from available cash. In each case, the Recycling & Energy Board entered into a loan agreement and promissory note with each respective county to repay the obligations from Net Revenues of the facility. The two 2015 county loans are on a parity, or equal claim, with one another.

Due to the amount of funding anticipated to be needed and if the enhancements project is approved, the counties expect to access the capital markets (sell bonds) as the funding source. R&E has requested that the counties use their general obligation pledges to back the financing/s. Any county's financing that goes forward is subject to approval in final form by the respective county boards. However, after consideration of options, finance department staff from both counties have agreed to bring forth a funding proposal that includes the following basic elements:

1. A single fixed rate bond issued by Ramsey County for the full amount needed (the "County Bond"). The County Bond will be a general obligation of Ramsey County; however, 27% of the debt obligation will be secured by a general obligation bond issued by Washington County to Ramsey County for its 27% share. Repayment terms of Washington County's bond will mirror those of the Master Bond.
2. A final bond structure is yet to be determined; however, it is anticipated that the overall term will be 20 years. Alternatives are being considered that will moderate the debt service cost in the first two years as the project is being completed. Alternatives could include interest only and/or capitalized interest.
3. County, state and federal bonding requirements for the proposed financing have been preliminarily reviewed by bond counsel. In particular, requirements related to the average life of the bonds and the average life of the items being financed are being reviewed. Preliminary legal findings indicate that such considerations should be able to be accommodated within a 20-year debt structure.
4. Ramsey County and Washington County will loan their respective funding amounts to R&E, funded by the Master Bond. The repayment of the R&E debt to each county will be evidenced by a loan agreement(s) and secured by a pledge of Net Revenues of the facility. The loan agreement(s) will be on a parity with the 2015 loan agreements: each loan will have an equal, proportionate claim on Net Revenues as each of the other loans. Repayment of the 2020 loan(s) will be pledged to Ramsey County in support of the Master Bond.
5. Due to the amount of the combined 2015 and 2020 borrowings, exacerbated by impact of the current pandemic, additional covenants may be requested of R&E. Any such covenants will be discussed and documented prior to final action of R&E, Ramsey County and Washington County with consideration given to the impact, if any, on operations or tipping fees.
6. R&E would pay back the 2015 and 2020 loans using Net Revenue from the facility, primarily from tipping fees. Net Revenue is defined under the existing loan agreements to include "...gross revenues of the facility (including without limitation operating revenues and any contributions by Washington County or Ramsey County of County Environmental Charge revenues) after payment of all reasonable expenses of the current operations and

maintenance of the Facility and will be calculated in accordance with the policies and procedures established in accordance with Section VII.F of the Joint Powers Agreement.”

The primary source for payment of debt service is expected to be Recycling & Energy facility revenues. The use of Ramsey County and Washington County general taxing authority is not anticipated and would only be sought in the absence of all other available R&E resources.

As noted in this memo, the COVID-19 pandemic has impacted daily life and private and public economics. As a result, additional financial analyses were performed by R&E and the description of the proposed funding mechanism described above is subject in all respects to review of those analyses and the ability of the bond market to fund the anticipated Master Bond.

R&E has identified additional resources and actions to support debt service payments should net revenues of the R&E Center be insufficient to meet debt service requirements. Any allocation of these resources would be intended to mitigate or eliminate the need to invoke county property tax levies or other county general support for debt payments. Those resources and actions are set forth below in priority order:

1. Expenditure or other budget adjustment during the fiscal period
2. Deployment of contingency budget towards debt service
3. Adjust the tipping fee (90-day implementation window)
4. Draw on the Joint Activities Fund balance (R&E General Fund balance)
5. Draw on ORF/ERF balances (with pledge to replenish adopted in policy)
6. Equipment Maintenance & Replacement Reserve balance
7. Equipment Maintenance & Replacement Reserve budget
8. County Environmental Charge (short-term loan from counties)

Degradation in R&E revenues would likely be foreseen as a result of declining volumes that would manifest over time. The JLT would bring mitigation strategies before the R&E Board for consideration and action, as well as consulting with both counties through such process. It should be noted that the R&E Center’s cost structure is highly correlated to processing volumes. Therefore, variable expenses would decline at some proportion to waste volumes.

The balances in the funds referenced above as of December 31, 2019 are as follows:

Joint Activities Fund	\$3,120,414
ORF	\$4,100,000
ERF	\$1,650,000
EM&R Reserve	\$514,000
TOTAL	\$9,384,414

Ehlers conducted a sensitivity analysis to test the ability of these strategies to respond to a prolonged reduction in waste volumes, which was provided to the county finance team. The analysis assumed a sustained 10% reduction in waste volume, starting in 2020 and continuing through 2025. The purpose of this “stress test” was to illustrate several ways in which R&E could mitigate a volume-driven reduction in tipping fee revenues – including reducing variable operating costs and contingencies, raising the tipping fee, and drawing on reserves. The sensitivity analysis showed the R&E could successfully apply a variety of strategies to maintain a strong financial position with a substantial reduction in waste volume over a prolonged period.

Financial Impacts

Ehlers has prepared a template for a pro forma for the enhancements. Because the level of state bonding is not known at this time, a pro forma is not included in this memo, but will be provided at the May 21 Facility & Finance Committee meeting.

Financing Timeline

Attachment 2 is the timeline for financing the enhancements, starting with R&E Board approval to proceed on May 28. This includes actions to be taken for:

- Ramsey County to consider a bonding ordinance for the County Bond
- Washington County to consider a bonding resolution for its general obligation pledge to Ramsey County for Washington County's portion of the County Bond
- Ramsey and Washington counties to each consider
 - Loan agreement(s) between the counties and R&E Board, contingent on sale of bonds
 - An agreement between Washington County and Ramsey County on joint bonding

This schedule results in funds being available for final construction design, equipment development and construction on November 15, 2020.

Construction Timeline

The R&E's construction manager, Adolfson & Peterson Construction, has prepared a construction schedule, which is shown in Attachment 3. This schedule is aligned with the Financing Timeline, and shows a construction start in April 2021, with the DCB building and equipment complete in early December 2021, and the recycling recovery system complete in late July 2022.

Community Engagement

Community engagement has helped inform major decisions made by the counties and R&E regarding the region's waste management system. R&E sees community engagement work as an ongoing work critical to building and maintaining relationships, educating partners and the community, and informing R&E's work. Attachment 4 summarizes community engagement to date around the following topics:

- Purchasing the R&E Center
- 2018-2038 county solid waste management master plans
- Waste designation
- Waste-to-energy
- System enhancements – recyclables recovery and durable compostable bags

Community engagement informed and shaped each of these decisions and continues to do so for ongoing work.

Attachments

- Attachment 1: Dr. Lazarus' Economic Analysis report
- Attachment 2: Bonding Schedule
- Attachment 3: Construction schedule from A&P
- Attachment 4: R&E Community Engagement Summary
- Attachment 5: Memorandum from Baker Tilley



**RAMSEY/WASHINGTON
RECYCLING & ENERGY**
CONNECTING VALUE TO WASTE

R&E FACILITY & FINANCE COMMITTEE MEETING DATE:	June 18, 2020	AGENDA ITEM:	VI.a.
SUBJECT:	End-Use Markets Solicitation		
TYPE OF ITEM:	<input type="checkbox"/> INFORMATION	<input checked="" type="checkbox"/> POLICY DISCUSSION	<input type="checkbox"/> ACTION
SUBMITTED BY:	Joint Leadership Team (JLT)		

FACILITY & FINANCE COMMITTEE ACTION REQUESTED:

For information and policy discussion.

EXECUTIVE SUMMARY:

Ramsey and Washington counties have been evaluating alternate waste management technologies for nearly two decades. The Ramsey/Washington Recycling & Energy Board (R&E Board) has continued that work to achieve environmental, economic and social benefits for the East Metro. Planned enhancements to the R&E Center will accommodate source-separated organics and enable the recovery of high-value materials from trash in the next two to three years. Plans for these materials and the remaining waste, now used to produce refuse-derived fuel (RDF), have taken shape through extensive research, facility site visits and discussion with technology providers. Opportunities to produce alternative products through modern conversion technologies include anaerobic digestion, gasification and chemical recycling, among others.

A team of R&E staff and consultants has begun developing an approach for a solicitation to find qualified vendors to manage materials that are currently or will be recovered at the R&E Center once facility enhancements are completed. The materials being targeted are source-separated organics in durable compostable bags (DCBs), organic-rich material from the recyclables recovery system, and components of RDF. Vendors may propose technologies for managing one, two or all three of these materials.

To obtain proposals for R&E consideration, a two-phase competitive procurement process is proposed. This process is similar to the procurement undertaken in 2018 for gasification of RDF. During Phase I of the solicitation, R&E will remain "technology agnostic" and solicit responses from vendors proposing anaerobic digestion, gasification, chemical recycling and other processes. R&E will receive proposals and, based on the review as described in the RFP, select the proposer(s) from whom R&E would like to receive more detailed proposals. In Phase II, the selected proposers from Phase I will be invited to respond to a supplemental RFP, to conduct further analyses based on the technologies proposed during Phase I. At the conclusion of Phase II, the R&E Board may select one or more finalists for contract negotiation on the basis of the responses to both Phase I and Phase II for the development of one or more proposed projects.

Staff will review the draft Phase I RFP scope and proposed timeline with the committee.






SUBJECT: *End-Use Markets Solicitation*

ATTACHMENTS:

1. Memo
2. Draft scope of services

FINANCIAL IMPLICATIONS:

None.

AUTHORIZED SIGNATURES		DATE
JOINT LEADERSHIP TEAM		6/15/2020
		6/12/2020
		6/12/2020
RAMSEY COUNTY ATTORNEY		6/14/2020
WASHINGTON COUNTY ATTORNEY		6/15/2020



To: Ramsey/Washington Recycling & Energy Board Facility & Finance Committee
From: Joint Leadership Team (JLT)
Re: End-Use Markets Solicitation
Date: June 15, 2020

Background

Ramsey and Washington counties have been evaluating alternate waste management technologies for nearly two decades. The Ramsey/Washington Recycling & Energy Board (R&E Board) has continued that work to achieve environmental, economic and social benefits for the East Metro. The R&E vision, “vibrant, healthy communities without waste,” is being pursued through a variety of efforts. R&E activities and each county’s programs complement each other in working upstream, preventing waste and increasing source-separation of recyclables. Plans are currently being pursued for the R&E Center to be redesigned and repurposed to recover more value from waste. Coinciding with these efforts, R&E is working to pursue technologies for alternative uses of high-value materials in the waste stream.

The R&E Board principle to pivot the view from “waste” to “resource, combined with the principles that focus on the long-term and a need for flexibility, frame R&E Center as a “value-added waste processing facility.” R&E takes the raw material – trash – and processes it into a variety of products for market. Currently, recovered metals are sold to private sector recyclers, and refuse-derived fuel (RDF) is marketed to Xcel Energy. The next step is to further separate materials in the waste stream for recovery and recycling into new products.

Planned enhancements to the R&E Center will accommodate source-separated organics and enable the recovery of high-value materials from trash in the next two to three years. Plans for these materials and the remaining waste, now used to produce RDF, have taken shape through extensive research, facility site visits and discussion with technology vendors. Opportunities to produce alternate products through more modern conversion technologies include anaerobic digestion, gasification, and/or chemical recycling. At this stage, R&E has begun developing an approach for a solicitation to find qualified vendors to manage materials separated at the R&E Center in new ways to capture their value.

It is important for R&E to identify multiple markets for material that is separated from trash. This approach is a mitigation strategy for the business risk of marketing those materials. In addition, this solicitation will likely help address a capacity shortage for organic materials that currently exists in the metropolitan area.

Feedstock Materials

The solicitation process is intended to find qualified vendors to manage materials that are currently or will be recovered at the R&E Center once facility enhancements are completed. The materials being targeted are source-separated organics in durable compostable bags (DCBs), organic-rich material from the recyclables recovery system (RRS), and components of RDF.

Source-separated organics in DCBs

R&E is committed to ensuring that organics are separated and collected for recycling in Ramsey and Washington counties. Recent waste composition studies show that over 25% of trash generated in the two counties is food waste. Adding to food waste reduction efforts, food rescue, and current organics recycling opportunities (such as the counties' food scrap drop-off sites and backyard composting), a new system for curbside organics collection using DCBs is an efficient and cost-effective method of recovering source-separated organics.

Residential and commercial generators will separate organics into DCBs, which will be co-collected with trash. DCBs containing organics will be separated from the trash at the R&E Center using robotic sortation equipment. Interested transfer stations servicing the R&E Center will also be invited to separate DCBs at their facilities and could be included in the total R&E organics feedstock. The separated loads of DCBs containing organics will be sent to a facility for recycling into compost, energy production or other value-added products

The DCBs will be compostable, BPI-certified and PFAS-free. Vendors proposing to manage source-separated organics in DCBs will provide details on how the feedstock materials will be used, requiring composting or digestion of the bags and prohibiting landfilling or combustion of bags if they are separated from the organics during processing.

The DCB system is expected to launch in 2022 and will be rolled out to communities in phases over the subsequent two to three years. At program maturity, it is expected that about 40% of households in the two counties will separate their organics using DCBs. Estimates indicate that, by 2027, about 30,595 tons of organics in DCBs will be separated from trash at the R&E and transfer stations annually.

Organic-rich materials from the recyclables recovery system (RRS)

In a parallel process to the development of the DCB system, work has progressed to install equipment at the R&E Center to remove recyclables and organics from trash at the R&E Center. Technology to sort organic-rich material from MSW uses size and density, with small and heavy materials being separated. The process concentrates the organics, which consists predominantly of discarded food that was not separated in DCBs. As MSW proceeds through the system, materials smaller than two inches in size are collected. The resulting material is composed largely of organics, but also contains inorganics, such as stones, glass shards, sand and grit.

Marketing of organics recovered from the organic-rich fraction from trash has special constraints. While this will be an organic-rich material fraction, there is an amount of non-organic materials that can be considered contaminants. Vendors that propose a project to manage organic-rich material will provide details that identify how this material will be processed into usable products (such as compost) or otherwise utilized for a beneficial use.

The RRS equipment is expected to be installed at the R&E Center in 2022 and will be able to separate organic-rich material from trash at a rate of 24,226 tons annually.

Refuse-derived fuel

The R&E Center currently produces about 350,000 tons of RDF annually for combustion at Xcel Energy waste-to-energy facilities in Red Wing and Mankato. Trash generated in the two counties is processed at

the R&E Center using mechanical means to break down and sort by size and density to create an eight- to twelve-inch material consisting of organic and inorganic waste materials.

Analysis of RDF composition indicates the current biogenic (containing carbon from plant or animal sources) and non-biogenic (containing carbon from non-plant or animal sources, such as plastics) content for the material. While the analysis showed significant variation in this material, on average, RDF consists of about 66% biogenic content and 34% non-biogenic content.

For this solicitation, R&E will seek vendors that can utilize 20,000 or more tons of RDF annually. Preferred end uses are for RDF to be converted to fuel or chemicals, but products such as digestate or other beneficial uses will be considered. Vendors that propose a project to manage RDF will be asked to describe their processes and end products.

Potential Technologies for Managing Materials

During the initial phase of the solicitation, R&E will remain “technology agnostic” and solicit responses from vendors proposing anaerobic digestion, gasification, chemical recycling and other processes. Vendors may propose technologies for managing one, two, or all three of the materials described above.

Anaerobic Digestion

Anaerobic digestion (AD) is a process in which organic materials are placed into a container deprived of air. Microorganisms break down these materials and produce biogas and digestate. There are different AD processes that are largely based on the feedstock composition. Biogas produced and captured during the process of anaerobic digestion, largely composed of methane and carbon dioxide, can be used for heat or generating electricity. It can also be refined into renewable fuel as a substitute for fossil gas – used for vehicles or in the natural gas grid for use in homes and businesses. Refined biogas is also known as renewable natural gas (RNG). Digestate, the solid and/or liquid residual from the AD process, contains high amounts of plant nutrients from the breakdown of organic waste. Solid digestate can be composted to make a soil amendment for farms or building projects, or it can be converted into other value-added products. Liquid digestate can be used as liquid fertilizer, usually for agricultural use.

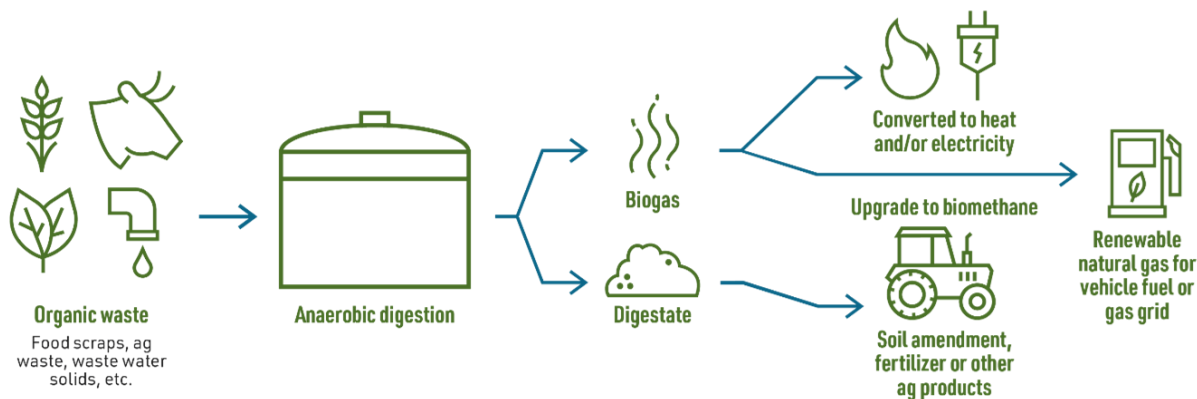


Figure 1: overview of an anaerobic digestion system

AD is a proven technology for managing organic wastes, with flexibility and decades of operation and success in North America and worldwide.

Gasification

Gasification is a process that uses heat to convert biomass-based materials into a synthetic gas, called syngas. There are different gasification processes, but generally they all use heat in a low-oxygen system to pull gases from the feedstock. Syngas can be used directly as a fuel to generate steam or drive an engine. It can also be used as a chemical feedstock, resulting in biochemicals or biofuels.

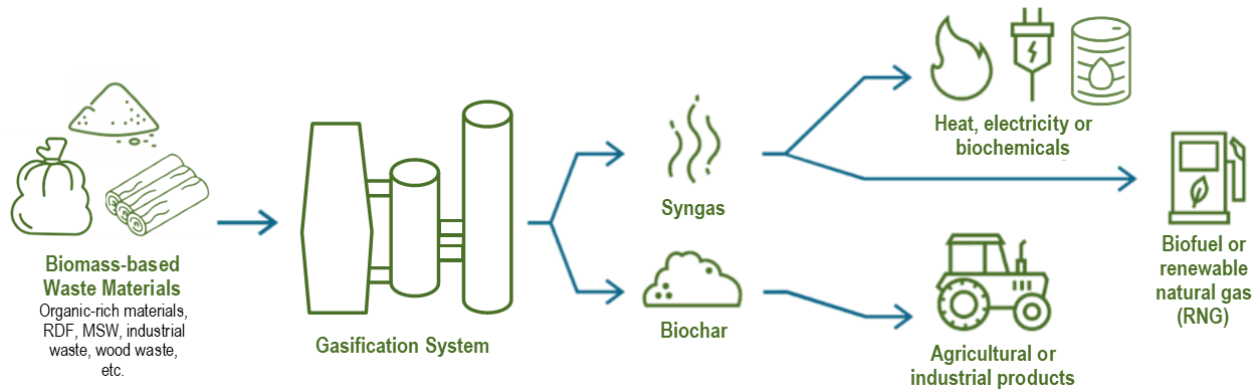


Figure 2: overview of a gasification system

Gasification is more efficient in recovering the energy value of feedstock than combustion, and it is a more flexible technology. While gasification is not a new process, the use of mixed municipal solid waste as a feedstock is a relatively new area for developers of this technology.

Chemical Recycling

Chemical recycling is a type of process to convert hard-to-recycle plastics into a value-added commodity such as fuel or plastic resin. Seen as a closed-loop solution to recover waste plastics as a resource and displace fossil fuel use, chemical recycling technology has recently seen a surge in interest, research and investment in the US and worldwide. Two types of chemical recycling technologies most prevalent currently are plastic-to-fuel ("PtF") and plastic-to-plastic/product ("PtP"). These processes involve the chemical and/or thermal breakdown of materials into their molecular components, which then become the building blocks for new products such as syngas, diesel fuel or plastic resins to make new products.

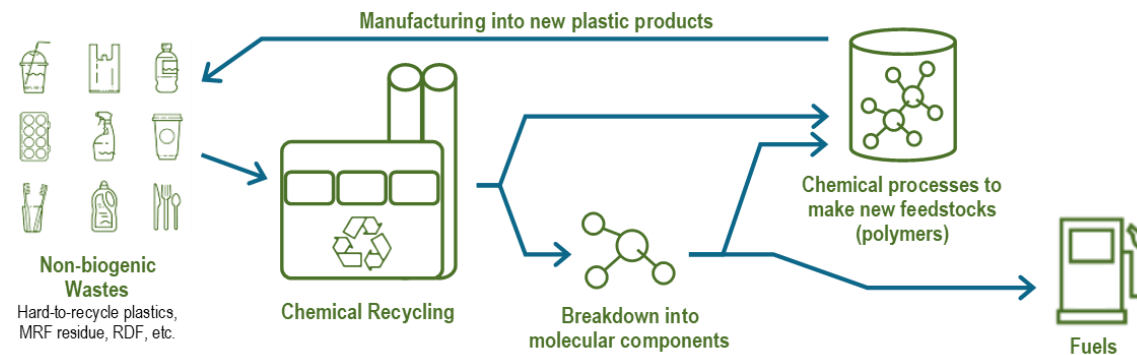


Figure 3: overview of a chemical recycling system

Chemical recycling processes have existed for many years, but renewed industry interest in circular recycling opportunities in recent years has spurred research and development to scale up this technology. Facilities in Europe and Asia have been operating for ten or more years, and used that

experience to improve processes as new facilities are designed and built. Development in the US has started to grow more recently, particularly with systems to handle larger quantities (100,000 tons or more) of feedstock.

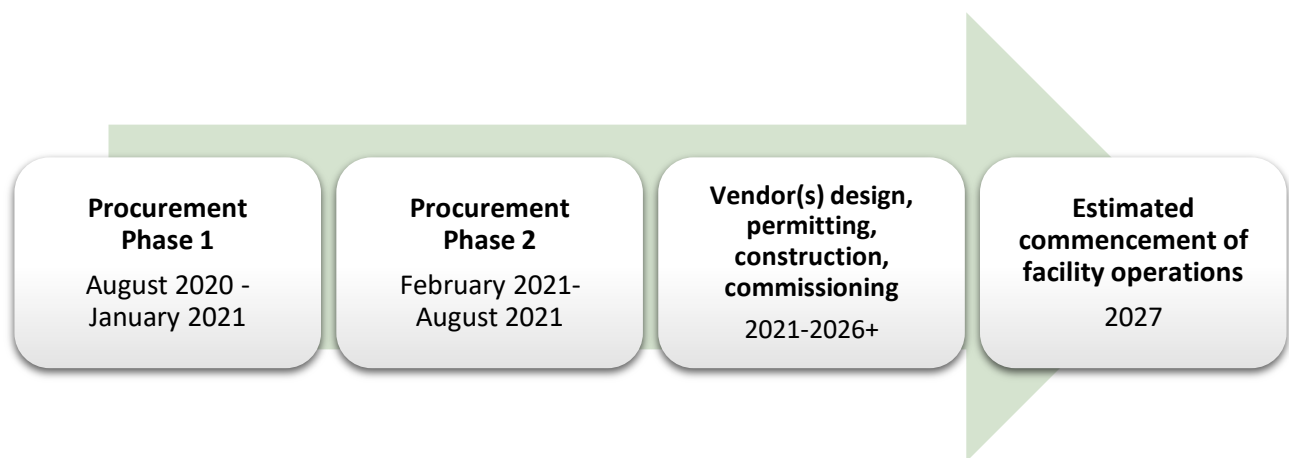
Timeline for Two-Phased Solicitation

To obtain proposals for R&E consideration, a two-phase competitive procurement process is proposed. Please note that completing this process is dependent on moving forward with the processing enhancements at the R&E Center. This process is very similar to the procurement undertaken in 2018 for gasification of RDF.

Upon authorization from the R&E Board, Phase I of procurement would commence with the release of the Phase I RFP. R&E will receive proposals and, based on the review as described in the RFP, select the proposer(s) from whom R&E would like to receive more detailed proposals.

In Phase II, the selected proposers from Phase I will be invited to respond to a supplemental RFP, to conduct further analyses based on the technologies proposed during Phase I, and to submit a final proposal. Final proposals will include pricing and details on the technical approach; proposed project structure, such as business, marketing, legal, financing, and administrative aspects of the project; and proposed contracts, letters of intent, or memoranda of understanding with lenders, financial sponsors, guarantors, and insurers required to proceed swiftly to contract negotiations.

At the conclusion of Phase II, the R&E Board will select one or more finalists for contract negotiation based on the responses to both Phase I and Phase II. Following a final selection, the R&E Board may direct R&E staff to enter into an agreement for the development of a proposed project. The timeline for the procurement is illustrated in Figure 3.



The current estimated procurement process will be completed by mid-2021, at which point vendors will commence design work and permitting. In a recent survey commissioned by the Partnership on Waste and Energy and completed by the Great Plains Institute, AD developers in Minnesota indicated that their experience undergoing permitting and environmental review took between two and four years to complete. In discussions with R&E staff, AD developers have indicated that construction and commissioning of AD facilities generally occurs in a one- to three-year timeframe. Recognizing that

timelines will likely be dependent on facility type and other factors, a general estimate can be made that project(s) selected by R&E would be operational around 2027 or thereafter.

Summary of Phase I Scope of Services

Section 2 of a draft Phase I RFP, the scope of services, is attached. The information contained therein falls into the following categories:

- Background
- Description of DCB system
- Description of organic-rich material
- Description of RDF
- Requirements for end-product use
- Experience requirements
- RFP timeline

The draft Phase I RFP is structured to encourage a variety of interested and qualified vendors to submit proposals for R&E consideration. Vendors may propose on one, two, or all three types of materials. One goal of this approach is for the East Metro to see the development of multiple outlets for materials.

The additional sections of the Phase I RFP, such as the vendor questionnaire, are currently in development. The complete RFP will be provided to the R&E Facility & Finance Committee and R&E Board when the solicitation is brought forward for authorization.

Phase 1 – Scope of Services Format

2.1 Purpose

The Recycling and Energy Center (R&E Center) intends to produce Refuse Derived Fuels (RDF) plus two additional outputs after 2022: source-separated organics in Durable Compostable Bags (DCBs) and Organic-Rich Materials (ORM). This RFP is intended to find qualified Vendors for management of one, two, or all three of the materials. Management of the materials may include but is not limited to anaerobic digestion, chemical recycling, composting, gasification or pyrolysis. The R&E Board provides no warranty of quality of the DCBs or ORM described in this Request for Proposal (RFP).

The R&E Board is seeking Vendors that currently own and/or operate facilities of the management type proposed with a proven throughput of 20,000 tons per year or more located preferably in North America. Reference facilities should manage similar materials, DCBs, ORM, or RDF, to what is planned to be provided by the R&E Center as described herein.

The R&E Board encourages all interested and qualified Vendors to submit proposals pursuant to this RFP for the development, siting, ownership, and operation of facility(ies) in or near the East Metro that would utilize DCBs, ORM, or RDF produced at the R&E Center, potentially along with other sources, to produce value-added products. Proposers should note that the R&E Center, and the site on which it sits, will not be available for use by the proposer.

2.2 Project Goals

The Proposer shall take into account the following goals of the R&E Board:

1. The project(s) will support the integrated solid waste management system and solid waste management master plans of [Ramsey County](#) and [Washington County](#).
2. The project will minimize the negative environmental health impacts of Mixed Municipal Solid Waste (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 operation of a proposed facility. The project may be privately financed and owned or R&E Board financed and 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 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.

2.3 Background

The R&E Board has been engaged in policy development to achieve environmental, economic and social benefits through the R&E Center since 2013. The R&E vision, “vibrant, healthy communities without waste,” is being pursued in several phases. While R&E activities and each county’s programs partner to work upstream, preventing waste and increasing source separation of recyclables, the R&E Center will be redesigned and repurposed to recover more value from waste.

Recovering more value from waste has progressed since the R&E Board purchased the R&E Center in 2016. R&E intends to continue with modifications to the R&E Center in order to recover more value from waste. The Work already completed, includes construction of the new building addition to streamline the bulky waste loadout area, provide space for metals recovery from mattresses, and provide storage space, creating room for further enhancements.

The R&E Center is also exploring new technology. A procurement is underway for a robotic separator to quality control sort the non-ferrous metals that are removed from the MSW to improve the quality/purity of the used beverage containers and improve the value of the nonferrous metal at market.

The R&E Board intends to make additional processing enhancement upgrades to accommodate separation of source-separated organics (DCBs) and separation of high-value recyclables and the organic fraction (2 inch minus - ORM) from the MSW. Details of the processing enhancements can be found [here](#). Also under development are plans to use the remaining MSW, now used to produce refuse-derived fuel, to produce alternate products through more modern conversion technologies, such as gasification or digestion to biofuels, and chemical recycling. Table 2-1 includes a general breakdown of the main inputs and outputs from the R&E Center in 2019 (not all inputs or outputs are included in Table 2-1).

**Table 2-1
R&E Center Outputs (2019)**

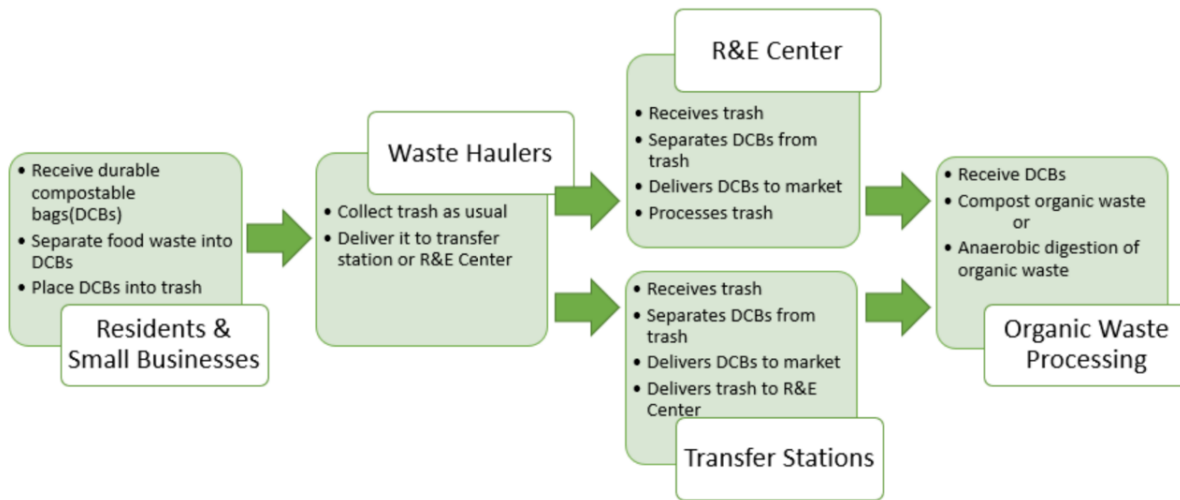
Material	2019
MSW Received (tons)	427,159
RDF Produced (tons)	346,472
Non Ferrous (tons)	1,034
Process Residue (tons)	16,487
Ferrous (tons)	13,931
Bulky Waste Residue (tons)	40,606

2.4 Source Separated Durable Compostable Bags

Organics recycling in Ramsey & Washington Counties occurs through a combination of drop-offs located in both [Ramsey](#) and [Washington](#) Counties and after 2022 an opt-in subscription program available at no additional charge to residents in both counties. Drop-off materials are collected in dumpsters by a private company under contract with the individual counties and are not included in this RFP.

Starting in 2022, Ramsey and Washington County residents who opt-in to the program will be provided with DCB's at no charge to the residents. The DCB Process is on Figure 2-1. Small businesses will be able to purchase DCBs for a fee and opt-in to the program. Food scraps and other compostable products are placed into these extra strong bags which are then tied shut and placed into the MSW. DCB's will then be sorted out of the MSW either at the R&E Center or transfer stations contracted to deliver material to the R&E Center. DCB's will be certified compostable by the Biodegradable Products Institute and be Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonate (PFOS) free.

**Figure 2-1
DCBs Process**



A detailed list of currently acceptable and unacceptable organic waste materials for this program is available at:

- ♦ [Ramsey County Food Scraps](#)
- ♦ [Washington County Food Scraps](#)
- ♦ [Ramsey County Organics Acceptability List](#)
- ♦ [Washington County Organics Acceptability List](#)

The opt-in program will roll-out in late 2022. The program will be rolled out in phases and is anticipated to reach maturity in approximately five years. Table 2-2 includes estimated volumes of organics from the DCBs. Food scraps and other compostable materials in DCBs must be accepted in a combined manner. DCBs separated from food scraps and other compostable materials must be either digested or composted. DCBs may not be landfilled or used for energy recovery. The R&E Board seeks Vendors that can process all available DCBs. However, this RFP is not intended to prevent the Vendor from accepting materials from other sources.

**Table 2-2
Durable Compostable Bags Quantities & Volumes 2022 to 2028 (Estimated)**

	Number of Bags per Year	Annual Tons of DCBs
2022 (2% Participation)	382,440	1,530
2023 (5% Participation)	956,100	3,824
2024 (10% Participation)	1,912,200	7,649
2025 (20% Participation)	3,824,400	15,298
2026 (30% Participation)	5,736,600	22,946
2027 (37% Participation)	7,075,140	28,301
2028-2032 (40% Participation)	7,648,800	30,595

2.5 Organic Rich Materials

The R&E Board intends to install a Recyclables Recovery System (RRS) at the R&E Center as part of the processing enhancements with operation beginning in late 2022. The RRS will recover high value recyclables and separate an organic rich fraction identified as ORM from the MSW. The ORM is organics recovered from loose MSW (i.e., not in DCBs) as part of the RRS. The ORM is primarily from the 2-inch minus fraction but can also be from the 6-inch plus (unders) fraction. ORM is highly organic but has a large amount of fines (grit, sand, glass, and dirt).

In 2016 and 2017, the ORM was manually sorted at the R&E Center from the MSW and the resulting ORM was analyzed. Based on the sort, 25 percent of the inbound waste is ORM. However, not all waste will be processed to remove the ORM, and not all ORM will be recovered by the RRS. Table 3 is anticipated low and high volumes of ORM available starting in late 2022. Table 4 is the compiled laboratory analysis of the seasonal sampling of ORM and includes the biomethane that could potentially be used to generate biogas from the ORM. The R&E Board seeks Vendors that can process all or a portion of available ORM. The Vendor must guarantee to manage the amount of material contracted by the R&E Board with delivery and acceptance requirements for both parties. However, this RFP is not intended to prevent the Vendor from accepting materials from other sources.

Table 2-3
Estimated Tons Organic Rich Material Recovered with
Recyclables Recovery System at the R&E Center

Material	Waste Composition (%)	Total Tons ^{1, 2}	Low Estimated Percent Recovery (%)	Low Estimated Tons Recovered	High Estimated Percent Recovery (%)	High Estimated Tons Recovered
Organic Rich Materials (food and yard waste) ³	25%	48,452	30%	14,535	50%	24,226

1. Material in Waste Stream Based on Waste Characterization.
2. Assumes 194,000 tons of MSW will be processed with two processing lines at the R&E Center annually.
3. Assumes recovery of ORMs from the Processing Enhancements equipment targeting recyclables only (not DCB organics recovery). Volumes may change significantly at DCB system maturity.

Table 2-4
Test Results on the Organic Rich Material (2-inch minus)
as Sampled from the Seasonal Waste Composition Studies, 2016 – 2017

	October 2016	March 2017	May 2017	August 2017
Moisture Content (%)	47.0%	33.3%	37.2%	60.0%
Percent Fines (<6mm, %)	30.2%	no data	19.8%	11.4%
Inorganics (%)	NT	47.7%	30.2%	14.6%
BMP (mL CH ₄ /g)	196.9	NA	149.6	339.0

2.6 Refuse Derived Fuel (Biogenic/Non-biogenic)

The R&E Center currently produces RDF as an end-product. RDF is combusted in two Xcel Energy former coal combustion plants located in Red Wing and Mankato to generate electricity. The current contracts with Xcel Energy expire in 2027. Table 5 shows the RDF characteristic required in the current contract with Xcel Energy. The R&E Center has met these requirements and has not had any loads rejected. Table 6 shows RDF volumes since purchase of the R&E Center by the R&E Board in 2016.

Table 2-5
Xcel Energy RDF/Proximate Analysis RDF Requirements

	Minimum	Average	Maximum
BTU/lb	5000	5000-5500	As determined by Operating Committee
Moisture	N/A	25%	40%
Particle Size	N/A	8" x 8"	12" x 12"
Ash (Dry)	N/A	15%	20%

Table 2-6
R&E Center Actual RDF Volumes 2016 to 2019

Year	2016	2017	2018	2019
RDF Produced (tons)	357,027	324,965	329,468	346,472

In anticipation of RDF being utilized for RDF to fuels or RDF to chemicals, the R&E Center has been conducting analysis of the biogenic and non-biogenic content of the RDF utilizing [ASTM Standard D6866-18](#): Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis. Table 7 shows R&E Center RDF Characteristics. The R&E Center does not guarantee the future composition of RDF due to plans to install a RRS to remove ORM and removal of food scraps from the waste utilizing DCBs. Table 8 shows the current data pertaining to the biogenic and non-biogenic content of the RDF. The R&E Board seeks Vendors that can utilize 20,000 tons or more annually of RDF. The R&E Board seeks Vendors that can process all or a portion of available RDF. The Vendor must guarantee to manage the amount of material contracted by the R&E Board with delivery and acceptance requirements for both parties. However, this RFP is not intended to prevent the Vendor from accepting materials from other sources.

Table 2-7
R&E Center RDF Characteristics

	October 2016	March 2017	May 2017	August 2017
Moisture Content (%)	33.18	30.19	30.50	34.70
Percent Fines (<6mm, %)	12.68	17.25	6.19	8.99
Carbon Content (%)	43.21	46.31	42.12	46.34
H (%)	12.50	22.34	17.90	6.60
N (%)	0.35	0.48	0.43	0.82
Inorganics (%)	19.40	23.94	18.56	16.07
Calorific value (BTU/lb dry material)	9322	8226	7479	7917
BMP (mL CH4/g)	NT	NT	NT	NT

Table 2-8
R&E Center RDF Biogenic/Non-Biogenic Content

Sample	Sample Day	Percent Biogenic Carbon Content (%)	Percent Non- Biogenic Carbon Content (%)
Summer 2019 Sample 1	Monday	63%	37%
Summer 2019 Sample 2	Tuesday	80%	20%
Summer 2019 Sample 3	Wednesday	62%	38%
Summer 2019 Sample 4	Thursday	74%	26%
Summer 2019 Sample 5	Friday	73%	27%
Fall 2019 Sample 1	Monday	62%	38%
Fall 2019 Sample 2	Tuesday	29%	71%
Fall 2019 Sample 3	Wednesday	61%	39%
Fall 2019 Sample 4	Thursday	39%	61%
Fall 2019 Sample 5	Friday	70%	30%
Winter 2020 Sample 1	Monday	90%	10%
Winter 2020 Sample 2	Tuesday	86%	14%
Winter 2020 Sample 3	Wednesday	72%	28%
Winter 2020 Sample 4	Thursday	74%	26%
Winter 2020 Sample 5	Friday	57%	43%
Average		66.1%	33.9%

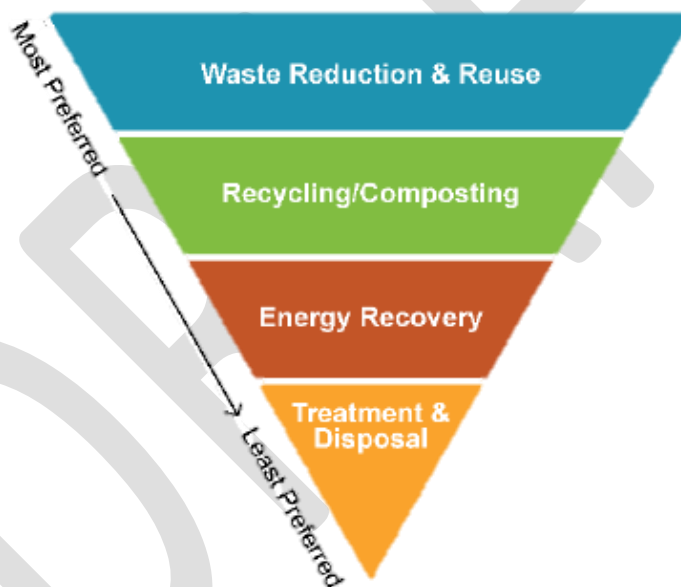
2.7 Technology Preference

The R&E Board is agnostic about the technology to be utilized by the qualified Vendor. The R&E Board seeks a Vendor with a technology that can manage one or, two, or all three of the materials, DCBs, ORM, and RDF. Proposals should indicate the entire life cycle and markets for the end products. The R&E Board strongly prefers Anaerobic Digestion for management of DCBs.

2.8 Digestate & Offtake Requirements (DCBs and ORM)

The R&E Board anticipates that digestate and other end products will be created from the digestion process. Digestate from anaerobic digestion must be composted or otherwise used in a way that is Recycling/Composting in the solid waste management hierarchy (Figure 2-2), as indicated in the [Ramsey County Solid Waste Management Master Plan 2018-2038](#) and the [Washington County Waste Management Master Plan 2018-2036](#). If specific materials cannot be digested and then made into usable products (e.g., compost), provide details on how the digestate can be otherwise utilized as a part of a manufacturing process or other beneficial use.

Figure 2-2
Waste Management Hierarchy



Source: Ramsey County Solid Waste Management Master Plan 2018-2038

The R&E Board anticipates an offtake agreement for gases such as methane produced from the DCBs and ORM. The R&E Board has a preference for Renewable Natural Gas (RNG) production, but is open to other alternatives.

2.9 End Product & Offtake Preferences (RDF)

The R&E Board anticipates that chemicals, fuel, digestate or other end products can be produced from RDF. The R&E Board has a preference for RDF to fuel or RDF to chemicals but is open to any and all beneficial reuse options. The R&E Center intends to provide RDF in an “as-is state” to be further processed (if necessary) by the manufacturer to create end products. The Vendor should describe their processes and end products in the proposal response.

2.10 Financing & Economics

The R&E Board is seeking Vendors that currently own and/or operate an AD facility. The R&E Board intends to provide all there materials, DCBs, ORM, and RDF in an “as-is state” with a specific volume to be negotiated. The Vendor should provide a preferred specification for the DCBs, ORM, or RDF. The R&E Board is open to different options for ownership and requests Vendors provide specifics on their offering. A contract to accept materials from the R&E Board does not preclude the Vendor from obtaining additional materials from other outlets.

2.11 Experience

The R&E Board prefers a Vendor with previous permitting and siting experience within North America. However this should not preclude Vendors with similar facilities outside of North America from proposing. The Team should meet all requirements as described further in the RFP.

2.12 Proposed Timelines of RFP

Event	Estimated Date
Request for Proposals Phase I Released	August 5, 2020
Phase 1 Pre-Proposal Conference	August 27, 2020
Deadline for Questions From Vendors	4:00pm CST, September 17, 2020
Addendum for Questions/Answers Published	October 8, 2020
Deadline for Phase I Proposal Submissions	4:00pm CST, December 4, 2020
Vendor Interviews (if necessary)	Week of January 4, 2020
Proposers informed of selection for Phase II consideration	February 15, 2021
Request for Proposals Phase II Released	March 29, 2021
Deadline for Questions From Vendors	4:00pm CST, April 12, 2021
Final Addendum for Questions Published	May 5, 2021
Deadline for Phase II Proposal Submissions	4:00pm CST June 2, 2021
Negotiation of full and final contract terms, consistent with RFPs and Proposals	June – August 2021



**RAMSEY/WASHINGTON
RECYCLING & ENERGY**
CONNECTING VALUE TO WASTE

R&E FACILITY & FINANCE COMMITTEE MEETING DATE:		June 18, 2020		AGENDA ITEM:		VI.b.	
SUBJECT:		Durable Compostable Bag Program (DCB) Update					
TYPE OF ITEM:	<input checked="" type="checkbox"/>	INFORMATION	<input type="checkbox"/>	POLICY DISCUSSION	<input type="checkbox"/>	ACTION	
SUBMITTED BY:		Joint Leadership Team (JLT)					

FACILITY & FINANCE COMMITTEE ACTION REQUESTED:

For information only.

EXECUTIVE SUMMARY:




Staff will provide an update on the planning work for the DCB program for residential curbside collection of food scraps, including bag manufacturing, online order and distribution, role of transfer stations, and timelines. The DCB program is a component of the Recycling & Energy Center (R&E Center) enhancements.

ATTACHMENTS:

None.

FINANCIAL IMPLICATIONS:

None.

AUTHORIZED SIGNATURES		DATE
JOINT LEADERSHIP TEAM		6/10/20
		6/10/20
		6/11/20



**RAMSEY/WASHINGTON
RECYCLING & ENERGY**
CONNECTING VALUE TO WASTE

R&E FACILITY & FINANCE COMMITTEE MEETING DATE:	June 18, 2020	AGENDA ITEM:	VI.c.
SUBJECT:	Enhancements System Design Update		
TYPE OF ITEM:	<input checked="checked" type="checkbox"/> INFORMATION	<input type="checkbox"/> POLICY DISCUSSION	<input type="checkbox"/> ACTION
SUBMITTED BY:	Sam Holl, Contract Manager		

FACILITY & FINANCE COMMITTEE ACTION REQUESTED:

For Information and discussion only.

EXECUTIVE SUMMARY:




Staff will provide an update on processing enhancements system design.

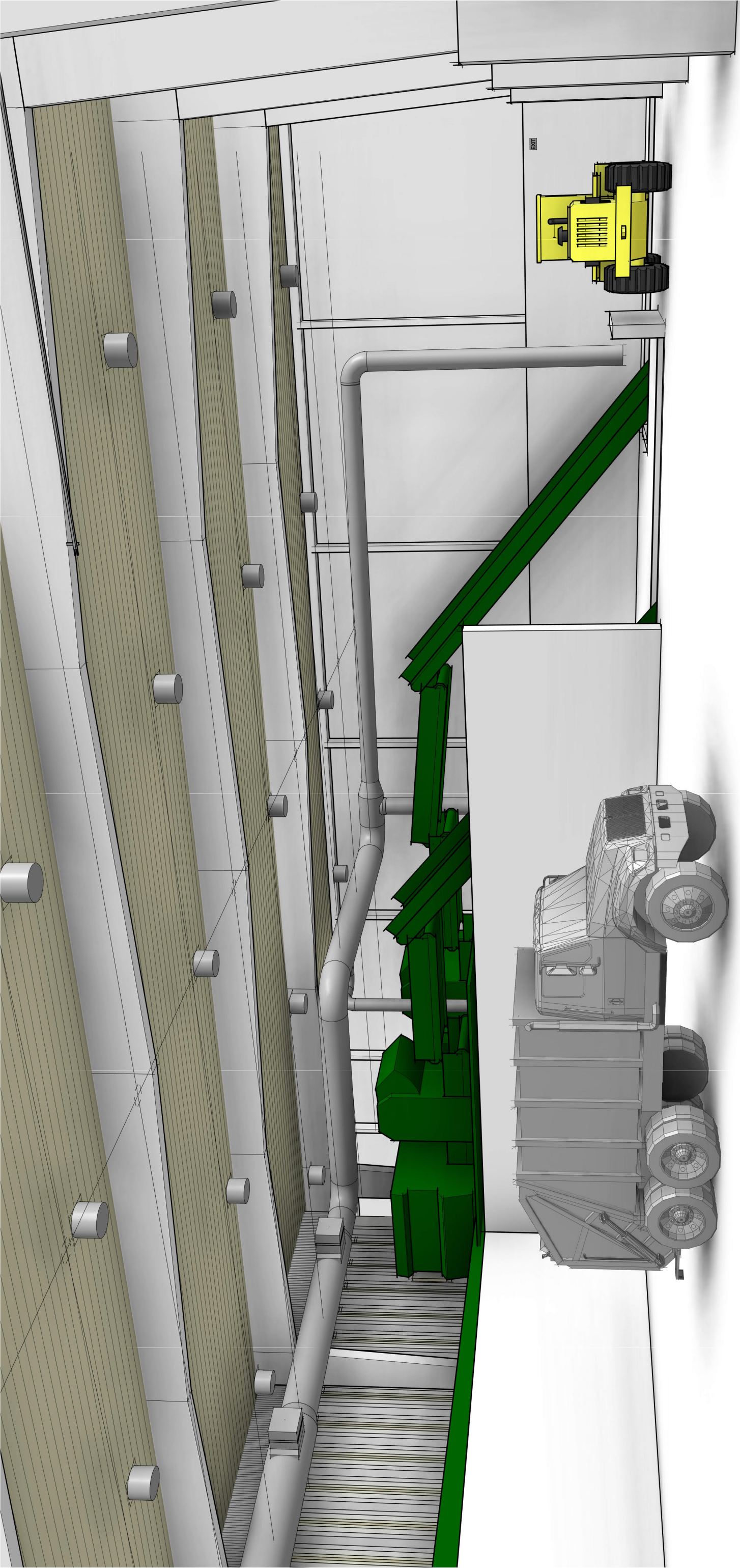
ATTACHMENTS:

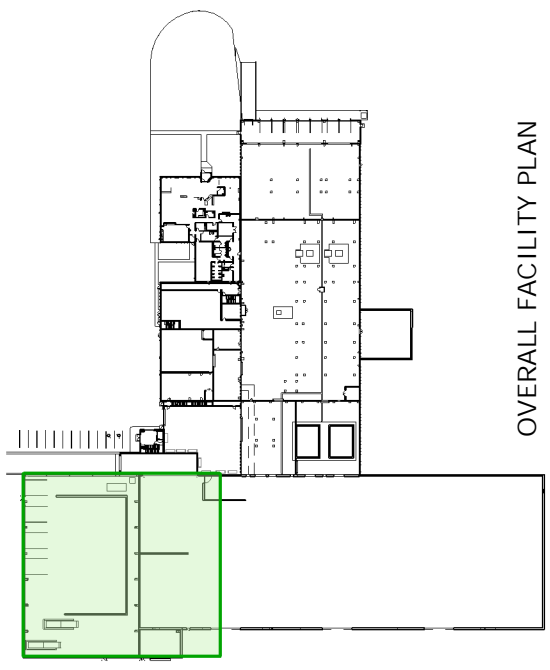
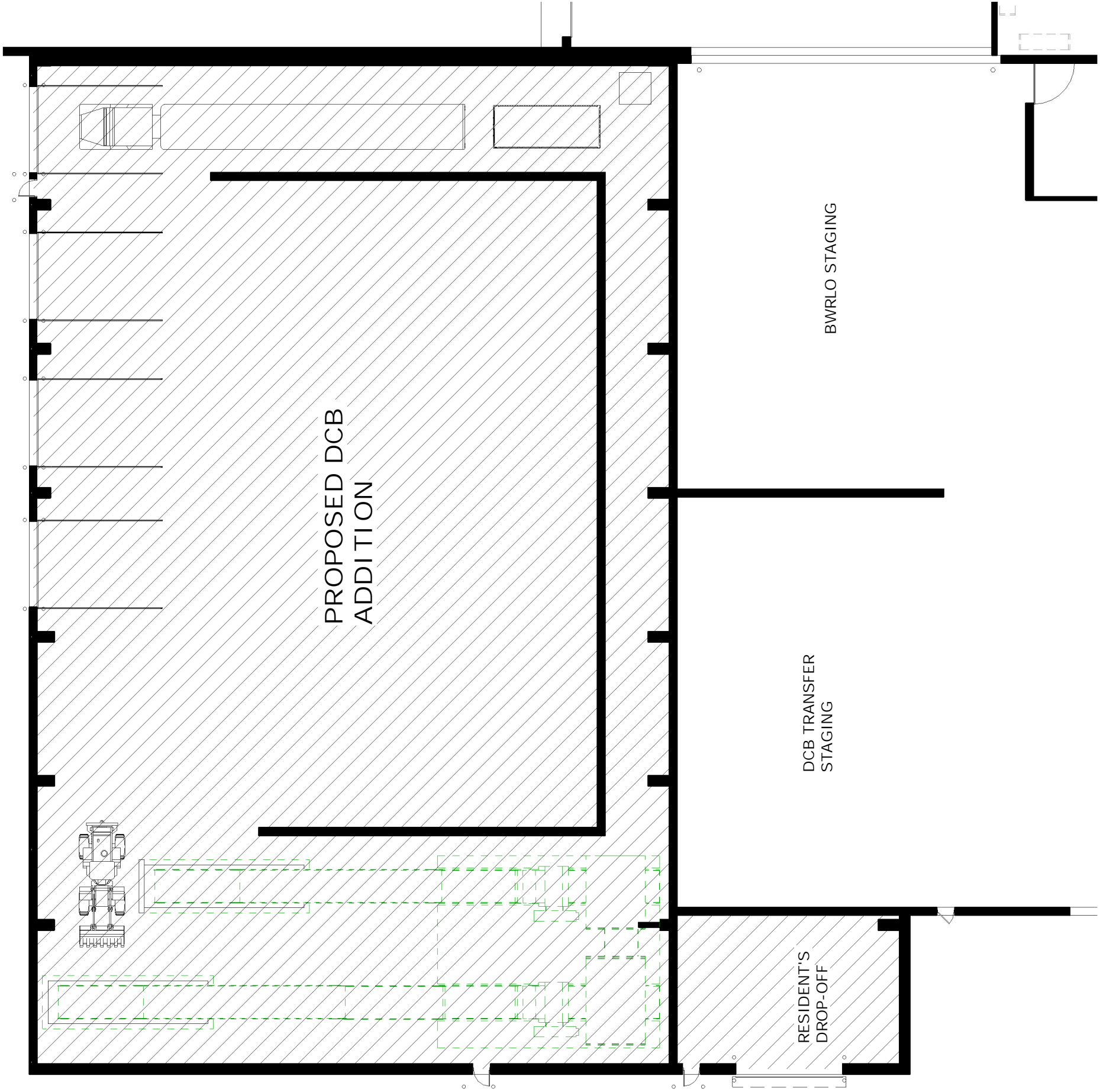
1. Preconstruction & Construction Projects Schedule
2. DCB Building & Equipment Design
3. Processing Enhancements Equipment Design

FINANCIAL IMPLICATIONS:

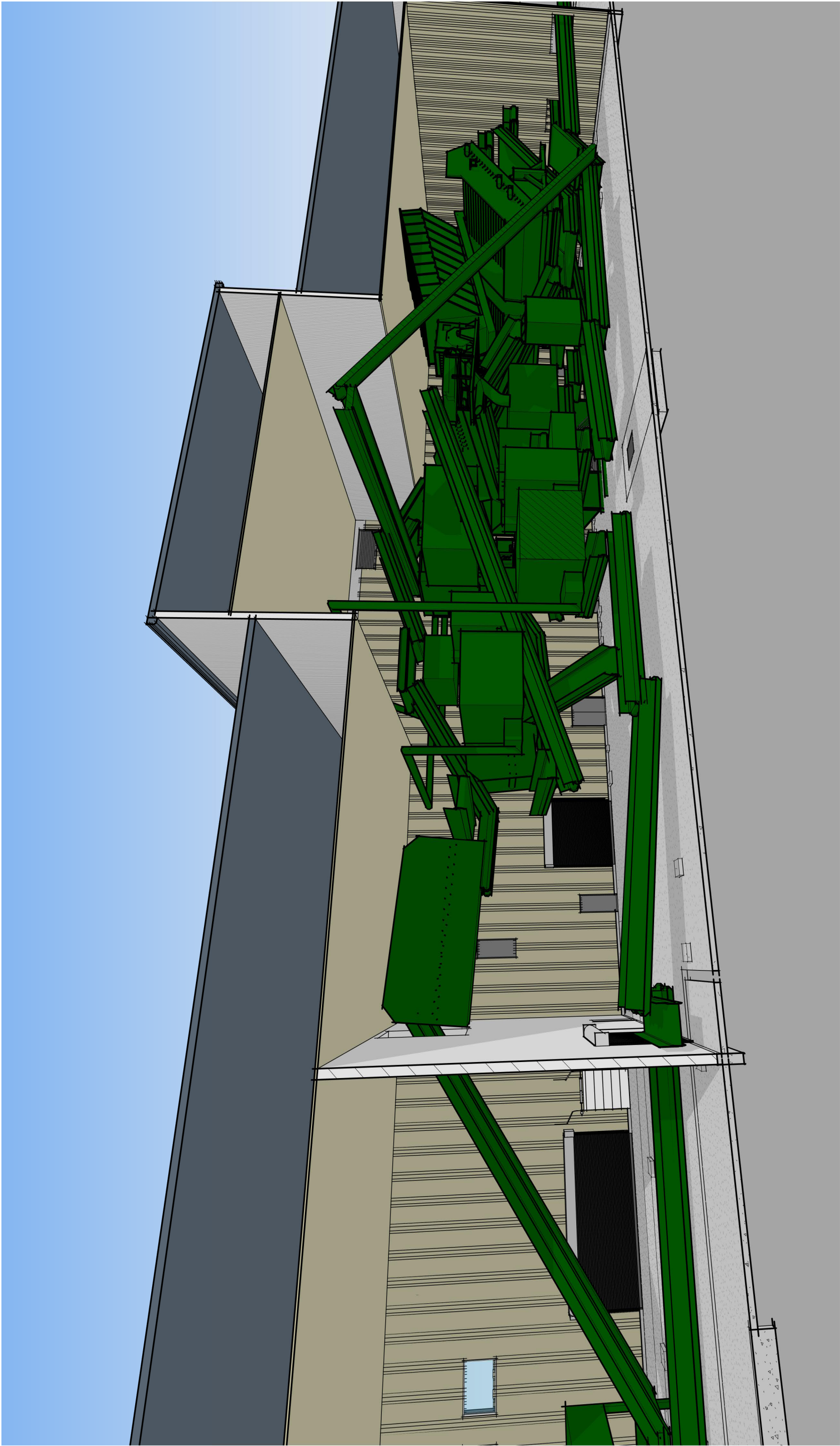
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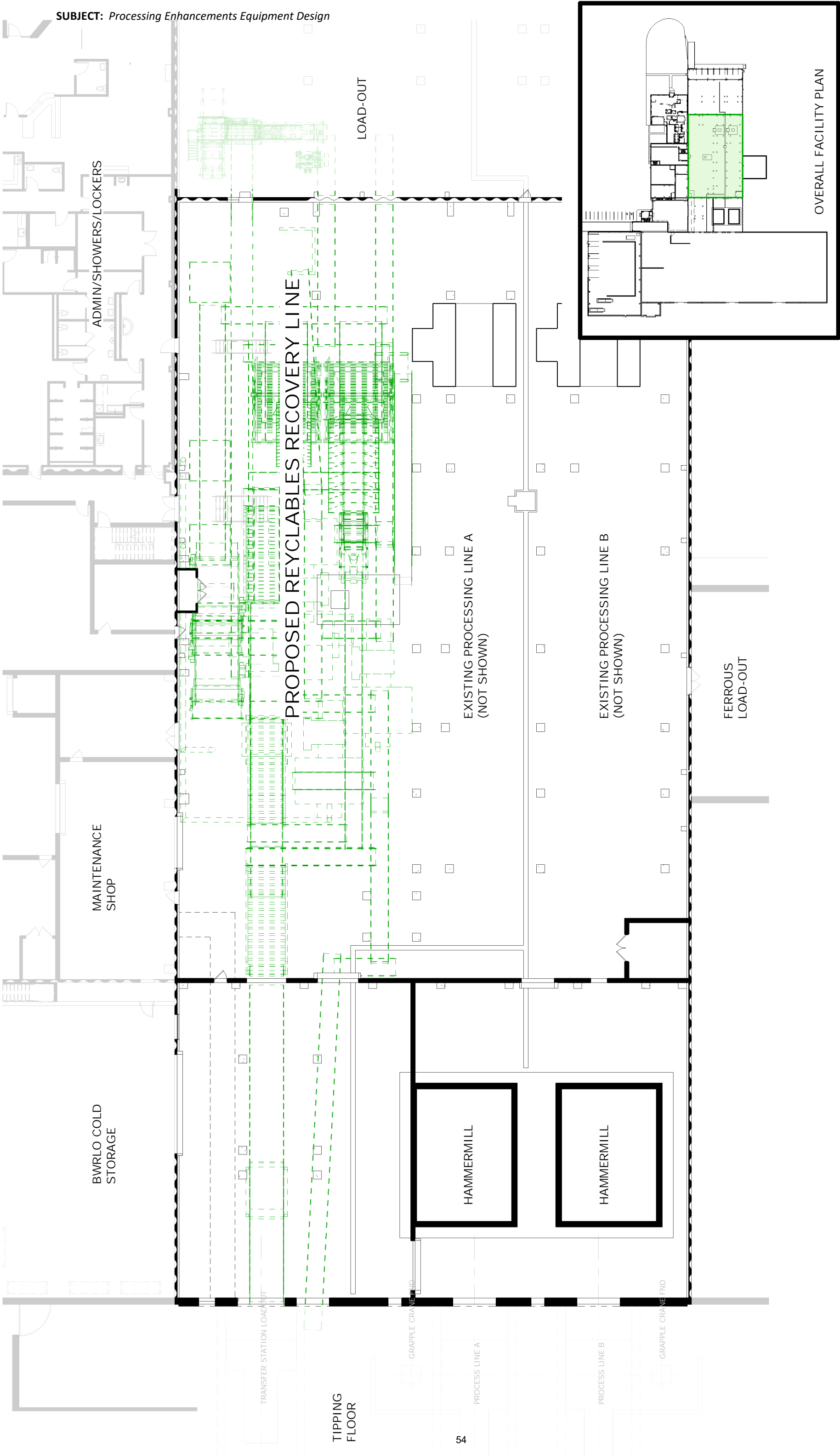
AUTHORIZED SIGNATURES	DATE
JOINT LEADERSHIP TEAM   	6/15/2020





OVERALL FACILITY PLAN





SUBJECT: Processing Enhancements Equipment Design

OVERALL FACILITY PLAN



**RAMSEY/WASHINGTON
RECYCLING & ENERGY**
CONNECTING VALUE TO WASTE

R&E FACILITY & FINANCE COMMITTEE MEETING DATE:	June 18, 2020	AGENDA ITEM:	VII.a.
SUBJECT:	Electric Vehicle Update		
TYPE OF ITEM:	<input checked="" type="checkbox"/> INFORMATION	<input type="checkbox"/> POLICY DISCUSSION	<input type="checkbox"/> ACTION
SUBMITTED BY:	Sam Holl, Contract Manager		

FACILITY & FINANCE COMMITTEE ACTION REQUESTED:

For Information only.

EXECUTIVE SUMMARY:

Staff will provide an update on electric vehicle grant and visit to manufacturer site.

ATTACHMENTS:

1. None.

FINANCIAL IMPLICATIONS:

None.

AUTHORIZED SIGNATURES	DATE
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JOINT LEADERSHIP TEAM

Sam Holl

6/15/2020

Nicole Stewart

Deshani Dye