ITEM: 2

Staff Report

SOLID WASTE MANAGEMENT

May 16, 2023

BACKGROUND:

In late 2022, the City Council received two reports concerning topics that interact with the City's waste-to-energy system. The first was a staff report regarding organized solid waste collection, which was delivered to the City Council on September 27, 2022. The second was a final Waste-to-Energy Options Study report from RRT Design and Construction, received on December 20, 2022.

Upon receiving each of these reports, the City Council directed staff to take certain follow-up steps and then report back to the City Council. This staff report contains responses to these follow-up steps in the sections below, along with staff's related analysis and recommendations.

It should be noted that for the purposes of this report, the term "garbage/trash," refers to the portion of Municipal Solid Waste (MSW) that is not separated recyclables, organics, or yard waste.

ORGANIZED SOLID WASTE COLLECTION FOLLOW-UP:

In response to resident inquiries, the City Council received a report from staff on September 27, 2022, regarding organized solid waste collection. "Organized Collection" is a model of solid waste collection in which local government relies on private haulers to provide a uniform set of collection services and the community is divided into one or more concentrated service areas to maximize efficiency.

This model contrasts with the "Open Collection" system that exists in Ames, where residents may choose from among a variety of private sector garbage haulers. Open collection generates more traffic, road wear and tear, noise, and pollution compared to organized collection alternatives. However, organized collection limits customer choice and may impact the level of customer service provided.

Upon receiving the September 2022 report, the City Council directed staff to seek input on the outcomes and goals discussed in the report from the current haulers operating residentially in the City. In response to this direction, City staff met individually with each of the seven haulers currently licensed to provide residential solid waste collection in Ames.

The haulers were asked about the following topics:

1. Whether they currently provide or have the capability to provide recycling, organic collection, and yard waste collection.

2. Whether they provide, or could provide, pay-as-you-throw rates.

3. Whether they have any concerns about eliminating the requirement to offer twice weekly residential garbage collection.

4. How they set up their routes for efficiency and sustainability.

5. Whether their fleets use alternative fuel sources, such as 100% biodiesel, CNG, electric, etc.

6. Ideas they have to address customer costs, sustainability, availability of services/diversion offerings, and traffic and noise issues.

7. Whether they would consider bidding if the City moved to a model where collection was provided by a single hauler per zone.

8. Their appetite for changes to how the collection model in Ames works.

Hauler Feedback:

Recycling, Organic, and Yard Waste Collection:

Recycling - Three of the haulers currently provide recycling collection in Ames. Two haulers indicated they do not currently provide it but would do so if there was more demand or a mandate to provide it. A sixth hauler does not provide recycling in Ames and indicated they are required to provide recycling in Marshalltown and believes the requirement to provide recycling leads to contamination issues. The seventh hauler does not provide recycling and did not indicate that recycling could be provided.

Organics - None of the haulers provide organics collection in Ames, although one provides organics collection in other communities. Concerns were raised about a lack of customer interest and odor issues. A consistent theme in the feedback regarding organics collection was that there was no feasible place to take organic material if it was collected in Ames.

Yard Waste - All seven of the haulers provide some option for yard waste collection, with variations for regular service, on-call service, bags, and bins.

Pay-as-You-Throw Rates:

Two haulers provide different sizes of carts with higher prices for the larger cart (pay-as-you-throw). One offers a smaller cart, but charges the same fee as the larger cart. The

remaining four provide a single size of cart. The arguments for a single size of cart include standardization for inventory and use with automated trucks, smaller carts being more susceptible to tipping from wind or animals, and customer confusion regarding multiple prices and sizes.

Twice-Weekly Residential Garbage/Trash Collection:

Note: Municipal Code currently requires that haulers provide twice weekly garbage/trash collection for residential customers, unless the customer requests once per week collection.

Six of the seven haulers indicated they had no concerns about eliminating the requirement for twice weekly garbage hauling, and the majority prefer to offer a second can for extra material rather than collect twice per week. One hauler indicated that prohibiting twice weekly collection would be problematic because 1/3 of its customers have twice weekly pickup, but they are considering going to once per week pickup starting this summer. Since the conversations with the haulers occurred, several haulers have indicated to customers that they would no longer be offering twice per week as an option, opting instead to provide a second can for customers who have larger volumes of weekly garbage.

Route Efficiency and Sustainability:

Three of the haulers indicate they use routing software to maximize efficiency. A fourth is considering obtaining software. The remainder set up zones manually by day and consider how to combine commercial pickups and residential collection to reduce mileage.

Alternative Fuel Sources:

Five of the haulers use diesel trucks and operate using bio-diesel blends in the summer months. One operates using regular diesel year-round. Two of the haulers that operate using diesel indicated they would look into the equipment necessary to operate on 100% biodiesel. One hauler operates using compressed natural gas (CNG) for its residential collection trucks. Several of the haulers indicated they were aware of electric trucks for garbage collection, but the current generation of these trucks is not yet capable of driving significant distances.

Ideas to Address Costs, Sustainability, Availability of Services, Traffic/Noise:

Several haulers suggested that each neighborhood be assigned a designated day for collection, rather than the current system where collection trucks may be in a neighborhood each day of the week. The haulers indicated they receive very few individual noise complaints.

Several haulers also indicated that a local transfer station for recyclables and a location for construction and demolition debris would reduce the traffic and carbon footprint

associated with haulers driving to the Des Moines metro area and Boone County Landfill for these materials.

Response to a Potential Bid System for Collection:

Most of the haulers do not support a system for dividing the City into zones and soliciting bids to serve each zone. Two haulers indicated they support this concept. Two other haulers indicated they would participate in bidding but do not support moving in that direction. The remaining three are opposed to a bidding system and point to the loss of competition as removing the incentive to provide quality customer service. Additionally, these haulers point to zones as limiting their potential customer growth. They indicate that they have made substantial investments in equipment, facilities, and employees to operate in Ames and are concerned about the risk to these investments if the City was divided into zones or a contract.

One hauler suggested as an alternative that the seven existing haulers be permitted to continue collecting, but no additional haulers would be licensed, thereby capping the potential for increased truck traffic and related issues.

Response to Other Potential Changes in Ames' Collection System:

The haulers note that the lead time for trucks, cans, and other equipment is very long, which makes transitioning collection systems difficult. They also indicate that the labor market is challenging, so there is risk if a contract system is implemented that the providers selected may not be able to provide the service. One hauler indicated that uncertainty is causing it to consider leaving the business, and that a community dialogue should be held before a decision is made to move to a contract system. This hauler felt that customers want the choice of haulers.

Several haulers pointed out that with Ames' unique rental move-in/out time in July and August, the volume of garbage could be overwhelming for one or two haulers to collect and transport. It was also noted that some landlords do not supply waste service with the rental agreement, leaving that responsibility to tenants instead. This can lead to garbage being piled at the residence or curb during move in and move out when residents assume that garbage collection is included with their rent. The haulers suggest that requiring landlords to furnish waste collection with the rental agreement would eliminate this problem.

WASTE-TO-ENERGY OPTIONS STUDY FOLLOW-UP:

The Waste-to-Energy Options Study was initiated in 2020 and a final report and presentation were provided by the consultants in 2022. The purpose of the study was to evaluate all possible, credible options for disposing municipal solid waste (MSW) in a new or modified waste-to-energy system and satisfy the majority of Story County residents' solid waste disposal needs for 2023 and beyond. The options evaluated in this study

would serve as a component of a reliable, sustainable, waste management solution and allow the City of Ames to perform as a leader/innovator in the Waste to Energy Industry, focusing on providing community wide sustainability with minimum impact to the environment. In addition, the study evaluated the opportunities to reduce the amount of municipal solid waste that must be combusted in the existing Power Plant units, thereby allowing Electric Services to take advantage of market energy prices when those prices are low.

The study involved developing projections regarding the quantity and characteristics of municipal solid waste entering the system into the future, and evaluating options for waste-to-energy systems to dispose of that waste. For each option, the consultant was asked to evaluate capital costs, operational and maintenance costs, environmental impacts and permitting, externalities (such as truck traffic, odor, and noise), and the timeline to design and construct. The ability to provide redundant systems and re-use existing components was also to be evaluated. Additionally, the consultant was asked to identify the impacts of each option on the existing diversion programs (glass and food waste).

Seven options were requested to be evaluated:

1. Maintain Resource Recovery Plant and Power Plant as-is (Base Case used for comparison)

2A. Maintain existing Resource Recovery Plant and install a new, dedicated refuse-derived fuel (RDF) unit inside the Power Plant (Unit 8 as a backup)

2B. Modify the Resource Recovery Plant to produce 20” RDF, and install two new dedicated RDF units

3A-1. Construct a new Resource Recovery Plant and a dedicated RDF unit at the former Coal Yard (Unit 8 as a backup)

3A-2. Construct a new Resource Recovery Plant and two new dedicated RDF units producing steam to an industrial host at a greenfield site

3B-1. Construct two new MSW mass burn units (no Resource Recovery Plant pre-processing) at the former Coal Yard

3B-2. Construct two new MSW mass burn units (no Resource Recovery Plant pre-processing) producing steam to an industrial host at a greenfield site.

After finalizing the options, the consultants evaluated the technical aspects of each option, including feasibility, performance, availability/redundancy, environmental impacts, technology options, and capital/operating/maintenance costs. The costs developed were then used to prepare a comprehensive financial model. The financial model, which has been provided to City staff, allows for adjustments to be made to key assumptions,

including natural gas costs, waste volumes, recovery/reject rates, purchased power costs, and other variables.

The total design and construction costs for each option range from $115.82 million to $228.74 million (2022 dollars). **Among the evaluated options (excluding the "as-is" Option 1), City staff has evaluated the cost of the least costly option (Option 2A – Maintain existing Resource Recovery Plant and install a new, dedicated refuse-derived fuel (RDF) unit inside the Power Plant (Unit 8 as a backup)) to determine the potential impacts to rates and fees if such a project was pursued**.

According to the study, Option 2A involves an estimated capital cost of $115,820,000. City staff estimates that the principal and interest payments over 20 years would total $183,914,212.50, or an average bond payment of $9,195,710.63 per year. It is estimated that the utilization of a dedicated RDF boiler could save the Electric utility approximately $8,000,000 per year. This is the net savings after reducing the consumption of natural gas and adding back the cost of purchased power that is no longer being produced in the Power Plant. **It is important to note that the $8,000,000 savings is associated with the current natural gas contract which ends this year. Under a new natural gas contract that will be required next year, staff anticipates the cost for natural gas to be at least $4,000,000 higher. Therefore, the avoided cost is expected to exceed the annual debt service payment for the new facility under Option 2A.**

At the December 20 meeting, the City Council authorized staff to explore two further waste-to-energy system concepts that were not envisioned at the time the consultant was retained for the Waste-to-Energy Options Study. These concepts are:

Combustion Turbine #2 Heat Recovery Steam Generator (HRSG) Concept

The City's Electric Utility operates two combustion turbines (CTs) at the Dayton Avenue substation. CT #2 was installed in 2005 and is capable of generating 29 megawatts of electricity. These CTs operate by firing fuel oil to rotate a turbine, which is connected via a shaft to a generator. With some infrastructure modifications, the units could be converted to operate using natural gas. These units are used at times of peak electric demand, for backup when other infrastructure has failed, as a price hedge for market energy, and to meet the utility's obligation to have generation capacity equal to 110% of its historical peak electric load.

Both existing CTs are a simple-cycle design, meaning the heat generated from the combustion process is exhausted to the atmosphere; only the rotational energy of the turbine is used to generate electricity. This contrasts with a "combined-cycle" process, where the energy from the exhaust gas heat of combustion is extracted and used to increase the total power output of the unit, thereby decreasing the cost to produce energy.

Staff desired to investigate whether it would be possible to move CT #2 near a newly constructed waste-to-energy boiler and steam turbine as envisioned in Option 2A. This

would allow the steam produced by the RDF combustion to produce energy through an existing generator, saving the cost of purchasing a new generator. Additionally, this would convert CT #2 from a simple-cycle to a combined cycle unit, which increases the rated capacity of the unit and decreases the overall operating cost when its needed to run.

The City Council authorized a contract with Sargent & Lundy, LLC, Chicago, IL (S&L), to determine the technical and financial feasibility of this potential project. S&L reviewed the feasibility of the arrangement by developing a conceptual diagram, proving the theory of the concept, reviewing relevant research papers, and soliciting feedback from WTE boiler suppliers. Relevant research papers were found with configurations similar to the base concept. S&L was able to locate one similar installation to the desired concept. However, this application is significantly larger than that needed for the City and has unique characteristics different than the concept that would be implemented in Ames.

S&L is still developing a final report but has indicated the concept is feasible regarding theory of operation. **However, it is believed the concept is cost prohibitive for the following reasons:**

- There is no practical experience with this concept in the United States and only limited experience world-wide. As such, this would be a unique, first of a kind design carrying risk if implemented.

- This concept would require the continuous use of both systems, which does not align with the City's desire that the WTE boiler and steam turbine should be able to operate independent of CT #2.

Since there is no previous known example of a similar installation in the United States, and as only one example was found to exist in Spain, a detailed capital cost estimate is very difficult to develop.

Based on this analysis, this option has significant challenges associated with it, and, therefore, is no longer being recommended as an option by staff.

Potential Partnership with Lincolnway Energy

Lincolnway Energy uses a substantial amount of steam in its process to manufacture ethanol. Representatives of the company indicated to City staff that they were interested in exploring the use of a waste-to-energy system to generate that steam, in a scenario similar to Option 3A-2 or 3B-2. Steam produced from a waste-to-energy process, as opposed to the steam Lincolnway Energy currently generates from natural gas boilers, would have advantages for the marketability of the ethanol produced.

Staff has held preliminary discussions with Lincolnway Energy regarding the possibility of a partnership whereby a third party would construct a new, larger waste-to-energy facility near Lincolnway Energy's ethanol plant in Nevada, to collect waste from a regional

customer base. In this scenario, the City of Ames would sell refuse-derived fuel to the new facility for combustion. Additionally, RDF or MSW from other communities would be transported to the facility to provide additional fuel and allow the Waste-to-Energy system to benefit from economies of scale and lower the overall cost of the process. **Under this scenario, Ames' role would be as a "fuel" supplier to the overall system, and the City would purchase power from the generating plant.**

It should be emphasized that this option is still in the high-level conceptual stages. A substantial amount of analysis would be necessary to evaluate the feasibility of this option. As of yet, no cost information has been developed. Further, Ames would not be the primary driver under this scenario and would rely on other parties to lead this development as well as provide the capital investment.

STAFF COMMENTS:

As City staff has worked on these two follow-up projects (Organized Collection report follow-up and WTE Options Study follow-up), two issues have become clearer:

1. **There are a variety of recent documents that concern the subject of how municipal solid waste should be handled in Story County and in the City's waste-to-energy system.** These documents include:

    a. 2022 Waste-to-Energy Options Study
    b. 2022 Organized Garbage Collection Report
    c. Climate Action Plan
    d. Central Iowa Solid Waste Management Association (CISWMA) Comprehensive Plan (this plan, expiring in 2025, is the basis for the connection between Story County, the Resource Recovery System, and the Boone County Landfill)

2. **There does not yet exist a strategy to reconcile these varied influences and guide the City's future steps in response to them.**

Many of the City's core services, infrastructure development, and operational decisions are guided by strategic plans that synthesize many influences to identify specific projects and performance goals. These kinds of plans are used by the City for zoning and development (Ames Plan 2040), transportation (Long-Range Transportation Plan), bicycle infrastructure (Bike-Ped Master Plan), wastewater treatment plant needs (WPCF Long-range Facility Plan), and others. **However, no such strategic planning document exists to guide the City's solid waste planning efforts. This makes it challenging to determine which prospective initiatives and policies related to solid waste should be pursued, and the prioritization of them.**

As staff has reviewed these various documents, it appears that a preliminary hierarchy of goals emerges. This hierarchy is, in priority order:

1. Landfill as little as possible.

2. Combust as little natural gas and RDF as possible, and when we do combust it, do so when it is most economical to do so.

3. Divert as much Municipal Solid Waste from the Resource Recovery Plant as possible.

This tracks closely with the Environmental Protections Agency's Waste hierarchy:

In addition, these goals appear to fit with the historical role of Resource Recovery to promote solid waste reduction, reuse, recycling, and the creation of RDF as an alternate fuel source. To accomplish the goals, staff has brainstormed an initial list of potential waste-related strategies to explore:

1. Alternative collection and disposal methods for recycling (glass, plastic, cardboard, ferrous and non-ferrous metals).

2. Alternative collection and disposal methods for organic debris.

3. Alternative disposal methods for construction and demolition (C&D) debris to avoid the Boone County Landfill.

4. Conversion of existing pilot programs for waste diversion to broader scale, more universal approaches.

5. Additional partnerships to identify opportunities for Story County waste to be recycled, reused, or disposed of in mutually beneficial ways.

6. Partnering with Resource Recovery System communities to identify their goals and preferences; explore if there are alternative methods of waste disposal that would be mutually beneficial and desirable.

7. Policies that would implement greater separation of recyclable and organic materials from MSW before it is disposed of, through economic incentives/disincentives or requirements for separation.

8. Policies and incentives that could be imposed by haulers to encourage disposing of lower volumes of MSW and discourages disposing of greater volumes of MSW (pay-as-you-throw).

9. The feasibility of expanding the use of the Water and Pollution Control Facility for the disposal of food waste/organic materials as an alternative to landfilling or long-distance transport.

10. Reducing the volume of RDF that is produced to allow it to be combusted in the smaller boiler at the Power Plant, thereby reducing natural gas consumption.

11. Whether the RDF could be reduced to a point where it could be stored for combustion at times when market energy prices are high.

12. Further adjustments/equipment to the RRP System that increase the separation of recyclable/reject materials from the RDF stream.

NEXT STEPS:

Among the ideas indicated above, staff believes four potential strategies rise to the top as more immediate priorities to pursue:

1. Alternative Disposal of Construction/Demolition Debris – Staff has learned from conversations with Boone County officials over the past two years that construction and demolition debris from Story County represents a major challenge for the landfill's future operations by taking up available capacity. This material does not compact, and higher tipping fees do not reduce the amount generated. C&D debris in Story County is not counted within the Resource Recovery System's annual tonnage statistics since this material is considered a "direct haul" to Boone County Landfill (BCL). However, BCL has indicated that it received 17,291 tons of Story County C&D on average each of the past three years.

   Staff has made some inquiries with landfill operators and waste agencies outside Story/Boone counties to determine if alternatives may be available. The Marshall County Landfill is a potential alternative site for C&D materials (it has a lower tipping fee, but haulers would have to travel farther). Metro Waste Authority in Polk County is another potential alternative site for C&D.

2. Develop a Closer Partnership with Metro Waste Authority – Staff has toured Metro Waste Authority's Grimes recycling facility and discussed a variety of mutual experiences and challenges. City staff came back from these discussions with an appreciation for the expertise Metro Waste Authority has regarding organized collection, recycling facilities, and recyclable collection programs. Similar to the Ames/Story County program for collecting glass for recycling at several drop-off locations, Metro Waste Authority has implemented drop-off bins for glass and for cardboard. These materials are then recycled in the Grimes recycling facility.

   Capacity exists in Metro Waste Authority's facilities for processing additional waste and recyclable materials. Additionally, like the City of Ames, Metro Waste Authority is a governmental entity and could be a stable long-term partner. City staff believes there is much more to be gained from continuing the discussions with Metro Waste Authority regarding potential collaboration.

3. Develop a Pilot Drop-off Recycling Program – When City staff presented the proposed FY 2023/24 City Budget, it was noted that an upcoming activity would be the development of a pilot program for drop-off of recyclable materials at the Resource Recovery Center. Following conversations with Metro Waste Authority as described above, staff believes it is possible to move this initiative forward through a partnership. Metro Waste Authority has expressed a willingness to consider transporting and processing a limited amount of the materials collected at an Ames pilot drop-off site. This pilot program would provide staff with information regarding the community's interest in additional recycling initiatives, so larger-scale programs could be effectively developed using the data.

4. Plan Next Steps Regarding Organized Collection – It does not appear that there is consensus among the haulers that organized collection is a preferred approach. Although one alternative suggestion from the haulers was to establish specific days that specific zones could be served, staff believes concentrating all the providers onto the same street on the same day could make certain issues (e.g., traffic) worse, and have a negligible effect on other issues that are caused by multiple truck trips on the same street. Staff has doubts as to whether the City has the legal authority to require landlords to include garbage service in their lease agreements, which was an additional suggestion from haulers.

   As City staff has further explored organized collection approaches alongside 1) the capacity limitations of MSW to be processed in the Resource Recovery System, 2) the challenges presented in combusting RDF in the Power Plant, and 3) the limitations of the Boone County Landfill to receive material, it becomes increasingly apparent to staff that organized collection may be an important step not only for the issues experienced in neighborhoods, but to manage the significant volume of waste that the City's Resource Recovery System and Power Plant must dispose of.

It would be far more effective to implement and monitor waste reduction/diversion programs and policies in an organized collection system with contracts and performance measures, versus an open collection system. Such programs could include curbside separation of recyclable materials from the waste stream and initiatives that reduce the volume of MSW entering the Resource Recovery System, and therefore the volume of RDF burned in the power plant.

Examples from other communities indicate that organized collection can be successfully implemented (from customers' perspectives), and in the time since the organized collection report was originally provided to the City Council in 2022, City staff has evaluated variations on organized collection that could address many of the Ames haulers' unique concerns.

It is clear from discussing with the haulers and from consulting with Metro Waste Authority that a contract where the entire community is dependent upon a single hauler is risky. The City would be at risk of a lack of acceptable alternatives if the hauler fails to perform, along with unexpected price hikes at contract renewal time, and challenges with the hauler being able to secure labor, equipment, and materials needed to serve the community. **Therefore, staff believes that if the Council proceeds with organized collection, an approach that involves as many of the existing haulers as possible would be best – the key change would be to coordinate their services in a manner that maximizes the efficiency of collection.**

Staff believes the two options for contract collection models shown below could mitigate the concerns that several haulers have regarding a bid system:

<u>Model #1:</u>

The City could be divided into perhaps 10-15 zones, with sizes that offer a variety of residential customers. The invitation to bid would describe a specific set of services that are desired by the City, and haulers would be invited to indicate their bid price per household per month for the services. **In the scoring criteria, the City could indicate that proposals involving sub-contracts with other haulers will receive more points (e.g., one hauler provides the garbage collection for a zone while another provides the recycling collection for the zone). Additionally, the City could indicate that due to the concerns over having just one or two haulers serve the community, the policy of the City would be to award contracts to at least X number of haulers.**

In the original organized collection report in 2022, staff expressed concern that a zoned system could cause some parts of the

community to pay different prices for the same service. Staff now believes that a method to resolve that issue would be for the City to handle billing for residential waste collection as part of the City's utility billing. The haulers would receive payment from the City for the total number of households served, multiplied by their bid price.

The monthly fee charged to residents would be determined by the total cost of all the collection contracts with haulers in the City divided by the number of households in the City receiving service. In this way, the price remains uniform across the City for residential collection, contract end dates could be staggered in duration to soften the impact of future price increases, a variety of haulers could remain in the market (providing alternatives if customer service issues arise with a hauler), and the areas in which they collect would be consolidated. Haulers would receive the added benefit of not having to handle billing or collections, and the City would be able to include policies in the contracting process that address the City's waste diversion and reduction goals.

The disadvantage to this approach is that residential customers would no longer have the ability to choose their hauler. However, with the City involved in handling billing and the contract performance, any customer service issues could be mediated and resolved by the City.

<u>Model #2:</u>

The second potential approach to consider is to again divide the City into zones, then for the City to determine a set of desired services and to offer a price per household. Haulers would be invited to apply if they are willing to provide the listed services and accept the City's offered price. The haulers that bid would then be assigned a customer zone, taking into consideration if there are areas of the City where their customers are already concentrated.

This model provides greater assurance to the haulers as to whether they will be allowed to continue providing residential service (the answer is simply whether they agree to the offered price or not). However, it is possible that the price offered by the City is either lower than the cost the haulers are able to accept (in which case few or no bids will be received), or that the bid price is much higher than the real cost to the haulers to provide service (in which case residents will be paying more for the service than is actually necessary).

Like the model described above, this approach could be combined with the City providing the billing services. Additionally, this approach

continues to have the disadvantage that customers would not have the ability to select their own hauler.

Of the four "next steps" described above, staff anticipates the City Council would have no objections to proceeding with items #1-3. However, staff will need further guidance from the City Council as to whether there is a desire to proceed with Next Step #4 (organized collection).

It appears there is a difference of opinion among the haulers regarding the interest in organized collection. Additionally, the City Council has requested that questions regarding the potential for organized collection be included in the Resident Satisfaction Survey; these results will not be returned to the City Council until late summer 2023. However, some City Council members might have already received input from residents about their desire to maintain a system that allows them to choose their hauler.

If the Council desires to proceed with considering an organized collection system, staff recommends that direction be given to staff to develop the outline of a request for proposals and the details that will need to be decided upon prior to issuing it. This would take several months to complete, allowing time for continued discussions with the haulers and receipt of the Resident Satisfaction Survey data. Staff would also use this time to consult with Metro Waste Authority to determine what assistance it can provide in preparing for a potential transition to such a collection system.

Solid Waste Workshop

May 16, 2023

Follow-up to Two Council Reports

Organized Collection Report

- September 27, 2022
- Council direction to consult with haulers and discuss the outcomes and goals outlined in the report

Waste-to-Energy Options Study

- December 20, 2022
- Council direction to additionally explore:
  - CT #2 Heat Recovery Steam Generator Concept
  - Potential Partnership with Lincolnway Energy

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Organized Collection Follow-up:

Met with 7 haulers:

- 5/7 provide or are willing to provide recycling collection
- Concern with providing organic collection (lack of customer interest, lack of disposal site)
- 7/7 provide yard waste collection
- 2/7 provide pay-as-you-throw rates
- Most prefer standardized size for ease of collection and to avoid wind/animal issues

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Organized Collection Follow-up:

- **Support from haulers to eliminate the requirement for twice weekly residential collection**
  - **Some haulers already transitioning away from this**
- **3/7 haulers use routing software. A fourth is considering it**
- **5/7 use biodiesel blends. 1/7 uses CNG trucks**
  - **Technology for electric garbage trucks is not yet ready**

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Organized Collection Follow-up:

- **Suggestions from haulers:**
  - **Assign one collection day to each neighborhood**
  - **Need for local transfer station for recyclables, C&D debris**
  - **Cap number of licenses to prevent *more* traffic/trucks**
  - **Require landlords to furnish garbage service rather than tenants**

- **2/7 support zone-and-bid system for contract hauling**
- **2/7 do not support, but would participate in the bid**
- **3/7 strongly opposed to bidding, unclear if they would participate**

- **Issues related to equipment lead times, labor, ability to service move-in/move-out, and customer choice/competition**

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Waste-to-Energy Options Study Follow-up:

- Heat Recovery Steam Generator (HRSG) Concept:
  - Sargent & Lundy analysis
  - Feasible in theory
  - No comparable installations
    - Very difficult to estimate costs

- Lincolnway Energy
  - City would provide RDF
  - RDF or MSW from other communities needed
  - Third-party would build and operate WTE facility
  - Steam sales to Lincolnway Energy, energy sales to Ames Electric
  - Very preliminary and many details to evaluate

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Reconciling Many Plans and Influences:

- **Waste-to-Energy Options Study**
- **Organized Collection Report**
- **Climate Action Plan**
- **Central Iowa Solid Waste Management Association Comprehensive Plan (exp. 2025)**

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Reconciling Many Plans and Influences:

- **Hierarchy of Goals:**
  - **Landfill as little as possible**
  - **Combust as little natural gas as possible, and when we do combust it, do so when it is most economical to do so.**
  - **Divert as much Municipal Solid Waste from the Resource Recovery Plant as possible**

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Potential Strategies to Achieve the Goals:

- Alternative disposal for recycling (glass, plastic, cardboard, metals)
- Alternative disposal for organic debris
- Alternatives to BCL for construction/demolition debris
- Expanding existing pilot programs to broader scale
- Outside partnerships for waste to be disposed of in mutually beneficial ways
- Discussing with RRP partnering communities to discuss goals and explore whether there is continued mutual benefit for disposal at RRP
- Economic incentives/disincentives to achieve greater separation of recyclable/organic materials from other trash
- Policies such as pay-as-you-throw, which could be implemented by haulers

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Potential Strategies to Achieve the Goals:

- **Feasibility of expanding use of WPC facility for organic disposal**
- **How to reduce/store RDF to allow combustion in smaller Unit 7 with less natural gas**
- **How to reduce/store RDF to allow combustion to be timed to high market energy prices**
- **Adjustments to RRP equipment to improve materials separation**

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Next Steps:

1. Solve Construction and Demolition Debris Challenges
   - Major pain point for Boone County Landfill
   - Substantial amount of debris comes from Story County
   - Alternatives exist – would need to get Boone County, Ames, haulers/construction firms, and other landfill(s) on board with a change

2. Develop Closer Partnership with Metro Waste Authority
   - Wealth of expertise in hauling, processing, landfilling
   - Committed to stable, governmental partnerships
   - Willingness to share lessons and experience with City staff

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Next Steps:

3. Pilot Drop-off Recycling Program
   - Budgeted activity to develop a pilot drop-off program
   - Use to learn about customer demand, contamination, costs, resource needs, etc.

4. Plan Next Steps Regarding Organized Collection
   - No consensus among haulers
   - It may be difficult to substantially change MSW volume and composition issues at RRP/Power Plant without more City involvement in how collection is accomplished
   - Risk in having one hauler serve community (price changes, lack of alternatives, challenges with labor/equipment/materials, etc.)

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Next Steps:

4. **Plan Next Steps Regarding Organized Collection (cont.)**
   - **Staff originally had concerns about zone bidding leading to different prices for different customers**
   - **Alternatives exist that would have the City bid the zones to haulers and handle billing, payment, etc.**
     - **Keeps several haulers in the community, uniform pricing and services, alternative haulers if one has service issues, addresses traffic issues**
     - **Does not provide customer choice**

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Council Direction Needed:

Next Steps 1-4:

1. **Solve Construction and Demolition Debris Challenges**
2. **Develop Closer Partnership with Metro Waste Authority**
3. **Pilot Drop-off Recycling Program**
4. **Plan Next Steps Regarding Organized Collection**

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