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Parkhill

FINAL REPORT

June 2021

IDENTIFY THE BEST OPTIONS

MESQUITE
T E X A S
Real. Texas. Service.

Prepared for:
City of Mesquite
757 N Galloway Avenue
Mesquite, TX 75149

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Section 1 INTRODUCTION

The purpose of this report is to provide a summary of the potential options recommended for inclusion in the Solid Waste Master Plan. This report is intended to build upon the analyses of potential options previously conducted that are provided in the Evaluate Potential Changes to the Solid Waste System report. The culmination of evaluation efforts and stakeholder feedback were used in identifying which potential changes to the system are recommended for the Solid Waste Master Plan. Discussions with City staff regarding the evaluations and stakeholder feedback were held in June 2021 and consensus was reached to include the options described in this report in the Solid Waste Master Plan.

Similar to prior reports, this report is divided into the following segments of the City's solid waste system: collection, transfer, processing, disposal, and other City facilities/infrastructure. A financial segment is also included to provide recommendations on the City's funding of the Solid Waste Division.

- **Collection** refers to the act of collecting materials, whether from homes at the curb or alley, or at a local business, and delivering materials to the appropriate facilities.
- **Transfer** refers to the act of transferring materials from a transfer station and delivering materials to the appropriate facilities.
- **Processing** refers to the act of processing materials such as recyclables and yard waste to prepare them for sale or use by others.
- **Disposal** refers to waste that is not recycled or diverted but is instead landfilled.
- **Other City Facilities/Infrastructure** refers to facilities or infrastructure other than the facilities that directly manage materials and includes the Municipal Service Center.



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Section 2 COLLECTION

Based on the preliminary assessments of the City’s current collection system and discussions with City staff, the following seven collection related options were evaluated.

- Residential Collection – Move from Alley to Curbside (where practical)
- Residential Collection – Feasibility of Automated Collection
- Residential Recycling Collection Options – Style, Frequency, Approach
- Residential Large Brush and Bulky Items Collection Options
- Enhanced Code Enforcement for Residential Collection
- Commercial Collection – City-provided
- Residential Collection Services - City of Talty

Details of the evaluations are provided in the Evaluate Potential Changes to the Solid Waste System report. The remainder of this section provides a summary of the assessments and recommended options to be implemented related to collection services. For each option, the financial, environmental, and social impacts are summarized, and an implementation schedule is included. The implementation schedule provides the steps, responsible party(ies) and anticipated timing of implementation.

2.1 Residential Collection – Move from Alley to Curbside (where possible)

Homes with a driveway that connects to the street are estimated at 19,600, or 52%. All residents must place large brush and bulky items and appliances at the curb for collection, but in the current collection system approximately 60% of homes set garbage, recyclables, and yard waste in the alley for collection, while 40% set out garbage, recyclables, and yard waste at the curb. It is estimated that an additional 4,400 homes, or 12%, that currently set out garbage and recyclables in the alley have a driveway that connects to the street. Alley collection may be considered more convenient by residents because the garbage containers and recycling bins do not have to be stored near the house in between collection days. However, during route observations conducted in August 2020, it was observed that the alleys had more litter, loose piles, or insufficient garbage containers (i.e., grocery store sized bags, or damaged garbage cans) than the curbside collection areas. Additionally, some alleys (though not all alleys) in the City present challenges for collection vehicles and personnel to effectively provide collection services (i.e., narrow alleys, damaged pavement or other poor conditions in the alleys, low hanging wires).

Recommendation

The City should document which alleys in the City are wide enough and otherwise in acceptable condition to continue to provide collection services in the alleys (“serviceable alleys”), and which ones are not in acceptable condition (“unserviceable alleys”). Once the determination of “serviceable alleys” is documented, the City should take a phased approach to moving homes from alley to curbside service; first require residents with driveways to the curb that are on “unserviceable alleys” to bring their garbage, recyclables, and yard waste to the curb, then require residents with driveways to the curb that are on “serviceable alleys” to bring their garbage, recyclables, yard waste to the curb. To the extent there are

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homes on “unacceptable alleys” but without driveways to the curb, the City could, over time, require these homes to bring their materials to the curb. Residents may resist the change from alley to curbside collection because of the convenience of alley collection; therefore, education and outreach material would need to be updated accordingly and provided to these residents. However, moving collection services out of the “unacceptable alleys” will allow for more efficient collection and be more conducive to potential changes in collection style the City may contemplate in the future (i.e., cart collection).

Financial Impacts

- Potential cost savings on alley repairs
- Potential efficiency improvements could provide modest cost savings on fuel

Environmental Impacts

- Less litter
- Potentially less vehicle idling/ fuel consumption

Social Impacts

- Neighborhood aesthetics
- More efficient for collection personnel
- Collection vehicles on more residential streets (versus alleys)

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. This strategy is not necessarily time-sensitive, but documenting “acceptable alleys” should begin in the short term.

Steps	Responsible Party(ies)	Timing
Document “acceptable alleys”	Solid Waste Division in coordination with GIS	As directed by the City Manager’s Office
Develop phased approach to moving homes from alley to curbside collection, prioritizing homes that are on “unacceptable alleys” with driveways to the curb first.	Solid Waste Division in coordination with the Communications and Marketing Department	As directed by the City Manager’s Office
Revise solid waste ordinance to reflect that some homes with alleys may be required to place garbage, recyclables, and yard waste at the curb, per the City Manager’s determination.	Solid Waste Division, City Manager’s Office, City Attorney’s Office	As directed by the City Manager’s Office

2.2 Residential Collection – Feasibility of Automated Collection

Carts can be collected using a semi-automated style of collection, where rear load vehicles are fitted with tippers, which require one driver and at least one collector; or carts can be collected using a fully automated style of collection where automated side load vehicles (ASL) are used, which require only a driver (no collectors) and the automated arm on the vehicle grabs the cart, tips the cart, and places the cart back down at its original location. There are advantages and disadvantages to using carts for collection as well as with the type of truck used for collecting carts (i.e., semi-automated, fully automated). Standard cart sizes, which can vary depending on the cart manufacturer, typically come in approximate capacities of 35 gallons, 45 gallons, 65 gallons, and 95 gallons. There are advantages and disadvantages of using carts and of the different approaches to the style of collection that are detailed in the Evaluate Potential Changes to the Solid Waste System report that should be considered.

Recommendation

While cart collection is operationally feasible in the City, the impacts to the entire collection system should be further investigated including customer acceptability and determination of the best approach to collecting the carts. The City should further evaluate the operational impacts to the yard waste collection service, which is currently provided on Wednesdays with the same vehicles that are used for garbage collection, as well as operational impacts on bulky items collection since cart collection limits the resident to only those items that fit into a cart for garbage collection. Because of the anticipated impacts on yard waste collection and bulky items collection, cart collection with the same frequency and level of service Mesquite residents are accustomed to is not financially feasible. Cart collection could be financially feasible with changes to the level of service (i.e., once per week garbage collection; customers would only set out what fits in the cart for garbage collection; bulky items set out restrictions would be enforced; yard waste collection day would change from only occurring on Wednesdays). Customer acceptability of carts and the other collection service changes that would be necessary should be considered. Extensive education and outreach would be necessary if the City changed to cart collection, limiting the frequency and amount of garbage that can be set out, and potentially changing yard waste collection days. Changing to cart collection should include a commitment to enforcing the rules for properly setting out materials.

Financial Impacts

- Cost of carts
- Minimal cost of retrofitting vehicles with tippers and/or greater cost of new vehicles
- Cost of educating residents on the changes in service
- Potential cost savings with more efficient routes

Environmental Impacts

- May reduce litter
- Potential environmental benefit with more efficient routes

Social Impacts

- Neighborhood aesthetics
- Residents with curbside service would have to store the cart

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Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. This option is not necessarily time sensitive and should begin with more research into customer acceptability and operational impacts prior to implementing cart collection to determine the best vehicle type, or combination of vehicle types, to provide cart collection, and considering the impacts on other collection services, personnel, route logistics, and customers.

Steps	Responsible Party(ies)	Timing
Further research to determine customer acceptability of carts and the potential for limited volume and/or reduced frequency of collection	Solid Waste Division in coordination with Communications and Marketing Department	As directed by City Manager's Office
Further research to determine best vehicle or combination of vehicle types (i.e., semi-automated or fully automated)	Solid Waste Division	As directed by City Manager's Office
Further research to determine impacts on other collection services (i.e., yard waste, large bulky items) including limiting the volume of bulky items collection	Solid Waste Division	As directed by City Manager's Office
If carts are to be implemented, prepare for the changes including procuring carts, procuring or retrofitting vehicles, rebalancing routes, educating residents, and enforcing rules	Solid Waste Division in coordination with Communications and Marketing Department	As directed by City Manager's Office

2.3 Residential Recycling Collection Options

The City currently uses bins and blue bags to collect recyclables from residents once per week. It is estimated that approximately one-third of the residents participate in the recycling program and approximately 24% of the material set out for recycling by residents is contamination (refuse, or materials that are not accepted by the recycling program and which must be landfilled). The Evaluate Potential Changes to the Solid Waste System report details advantages and disadvantages to a range of options for recycling collection, including discontinuing alley/curbside collection, changing style of collection (i.e., carts) and changing frequency of collection from once per week to every-other-week.

Recommendation

Based on customer feedback, the City should continue to provide alley/curbside collection of recyclables. Coordinating with other potential changes being considered for the collection system, the City should further investigate the operational costs and benefits of changing the style of collection from bins/blue bags to carts. If the City determined to implement cart collection, every-other-week collection of recyclables could be considered since a cart provides greater capacity than a bin. (Every-other-week collection is not recommended with the current bin/blue bag system.)

Financial Impacts

- Cost of carts if cart collection is implemented
- Potential for operational cost savings with every-other-week collection
- Cost of educating residents on changes in service

Environmental Impacts

- Potential for reduced carbon emissions with every-other-week collection
- Increased tons of recyclables if cart collection implemented
- Potential for more contamination in cart collection (versus bins/bags)
- Less litter if cart collection

Social Impacts

- If every-other-week collection, reduction in frequency of service
- If cart collection, neighborhood aesthetics
- If cart collection, greater capacity
- If cart collection, storage of carts between collection for curbside customers

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. This option is not necessarily time sensitive, and more research into the customer impacts and operational impacts should be conducted prior to implementing any changes to recycling collection. Cart collection should be considered in conjunction with cart collection for garbage (see Section 2.2.).

Steps	Responsible Party(ies)	Timing
Further research to determine customer acceptance of changes to recycling collection	Solid Waste Division in coordination with Sustainability Program Coordinator and Communications and Marketing Department	As directed by the City Manager's Office
Further research to determine operational costs and benefits (in coordination with other changes to collection system)	Solid Waste Division	As directed by the City Manager's Office
Determine preferred approach to recycling collection (bins/blue bags or carts)	Solid Waste Division in coordination with Sustainability Program Coordinator	As directed by the City Manager's Office
If carts, then determine frequency (once per week or every-other-week)	Solid Waste Division in coordination with Sustainability Program Coordinator	As directed by the City Manager's Office
Determine operational steps (i.e., if carts will be used, procure the carts, distribute the carts; procure the vehicles, train drivers; etc.)	Solid Waste Division	As directed by the City Manager's Office
Educate residents of change in approach to recycling collection	Solid Waste Division in coordination with Sustainability Program Coordinator and Communications and Marketing Department	As directed by the City Manager's Office

2.4 Residential Large Brush and Bulky Items Collection Options

The City currently provides once per week large brush and bulky collection service of an unlimited amount at no additional charge to residents. The City also offers a “cost plus” service for contractors or for move-outs from rental properties at a rate of \$250 per 30 cubic yards. Otherwise, residents are not required to call ahead and are not charged any additional fee, regardless of how many cubic yards of material are set out for collection. As part of the Clean City Initiative, the City has approved revisions to the relevant solid waste ordinance sections to limit the amount or number of bulky items that may be placed at the curb to 8 cubic yards, though large brush will continue to be unlimited. An administrative fee of \$20 will be assessed for amounts greater than the 8 cubic yard limit and for special bulk pick-up requests.

Recommendation

The implementation of changes to large brush and bulky items collection could be done in phases, beginning with limiting bulky items to 8 cubic yards and assessing an administrative fee for amounts greater than 8 cubic yards and for special pick-up requests, both of which were included in the recently approved revisions to the solid waste ordinance. After making the initial change to the large brush and bulky items collection and enforcing the changes, the City should consider reducing the frequency of collection from once per week to once per month. Before changing the frequency, the City should survey customers to determine acceptability of reduced frequency.

Financial Impacts

- Cost savings associated with fewer routes required, if once per month implemented
- Increased cost for education and enforcement

Environmental Impacts

- Reduced carbon emissions associated with less vehicles providing the service, if once per month implemented
- Reduction in service could have an adverse impact on illegal dumping

Social Impacts

- Residents could view reduced frequency as a reduction in service
- Less heavy vehicle traffic on residential streets if once per month implemented

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. Since revisions to the solid waste ordinance were recently approved, education regarding the set out limit of 8 cubic yards for bulky items and associated administrative fees should begin immediately. Enforcement of the revisions will take effect October 1, 2021.

Steps	Responsible Party(ies)	Timing
Adopt 8 cubic yard limit on bulky items via ordinance	Solid Waste Division, Sustainability Program Coordinator, City Manager's Office	Approved June 21, 2021
Educate and enforce the set out limit for bulky items, by tagging improper set outs and assessing the associated administrative fee	Solid Waste Division	Education - July 2021, ongoing Enforcement – October 1, 2021, ongoing
Survey customers regarding once per month collection	Solid Waste Division, Sustainability Program Coordinator, Communications and Marketing Department	As directed by the City Manager's Office
If advisable, reduce frequency to once per month; promote the change in advance; educate and enforce	Solid Waste Division, Sustainability Program Coordinator, Communications and Marketing Department	As directed by the City Manager's Office

2.5 Enhanced Code Enforcement for Residential Collection

Specific ordinance language related to how and where customers set out materials for collection allows solid waste supervisors to provide written citations to residents that do not comply. Currently, supervisors primarily only issue citations for sharps in the garbage, and otherwise focus on educating residents to properly set out materials rather than issuing citations. The recently approved revisions to the solid waste ordinance require residents to place materials out for collection in proper containers (i.e., secured in bags between 13 and 32 gallons then placed in authorized containers no larger than 48 gallons in capacity) no earlier than 5:30 p.m. the evening before collection, no later than 7:30 a.m. the morning of collection, and remove emptied cans from the point of collection by 8:00 p.m. the night of collection. The ordinance revisions also limit bulky items placement for collection to no earlier than 1 day before the scheduled collection occurs (in addition to limiting bulky items to 8 cubic yards and assessing an administrative fee for more than 8 cubic yards described in Section 2.4).

Recommendation

The City should take a phased approach to enhancing code enforcement for residential collection. In the short term, the City could focus on educating the public about the effects of improper set outs (e.g., litter in neighborhoods, longer route times, higher contamination in recycling, etc.) and the reasons for the regulations included in the Code of Ordinances. The solid waste supervisors that already have the authority to issue citations should start by leaving notice/education tags as issues are brought to supervisors' attention. The ordinance changes include administrative fees for violations associated with collection services. Once these administrative fees take effect, solid waste supervisors should start leaving citations with administrative fees for violations observed at residences. Because the solid waste supervisors have additional responsibilities, code enforcement officers dedicated to solid waste should eventually be hired to solely focus on enforcement issues to enhance the City's "Clean City Initiative" already underway.

Financial Impacts

- Cost of notice/education tags

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- Eventual cost of hiring code enforcement officers dedicated to solid waste issues, and vehicles for each additional code enforcement officer
- Revenue from administrative fees could be used to offset cost of notice/education tags, dedicated code enforcement officers' costs

Environmental Impacts

- Less litter
- Better compliance with all services provided, which could include more recycling and less contamination

Social Impacts

- Residents could receive violation citations that could result in administrative fees
- Residents would have a better understanding of the collection services requirements
- Cleaner neighborhoods

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. It is anticipated that the enhanced code enforcement option would be done in phases and is not necessarily time sensitive. Efforts could begin immediately and continue on an ongoing basis, as directed by the City Manager's Office. Note that ordinance revisions related to the Clean City Initiative, revising set out requirements and allowing administrative fees to be assessed, were approved June 21, 2021.

Steps	Responsible Party(ies)	Timing
Develop education materials for the public to show evidence of impacts of not enforcing to build consensus for enforcing	Sustainability Program Coordinator in coordination with Solid Waste Division and Communications and Marketing Department	As directed by the City Manager's Office
Prepare notice/education tags (design and print)	Solid Waste Division in coordination with Communications and Marketing Department	As directed by the City Manager's Office
Distribute notice/education tags	Route supervisors, as violations are observed or called in	As directed by the City Manager's Office
Once ordinance revisions with administrative fees take effect, begin assessing administrative fees	Route supervisors, as violations are observed or called in	As directed by the City Manager's Office
Hire code enforcement officers dedicated to solid waste issues to continue enforcement efforts	Code Enforcement in coordination with Solid Waste Division	As directed by the City Manager's Office

2.6 Commercial Collection – City-provided

Currently, businesses contract directly with Republic Services, with whom the City has a service contract, for collection of garbage, with the size dumpster and frequency of service agreed upon between the customer and Republic Services. Commercial customers can also request and receive collection of recyclables from Republic Services although commercial recycling services can be provided by other commercial collection companies, unlike garbage which is exclusive to Republic Services. Republic Services pays the City a monthly flat “Agreement Fee” as well as a street and alley use fee equal to 10% of gross revenues. In recent years, the commercial collection rates charged by Republic Services have increased by 4.56% in 2018, 7.0% in 2019, and 7.29% in 2020.

Recommendation

Based on the assumptions and analysis described in the Evaluate Potential Changes to the Solid Waste System report, the City is projected to generate excess revenues of nearly \$1,500,000 per year if the City elects to provide commercial garbage and recycling collection services. It is important to note that the project team conservatively estimated total annual commercial front load and roll off revenues of \$8,238,933. Per Republic Services Fee Reports, total revenue for the last calendar year (2020) was approximately \$9 million. Based on revenues of \$9 million, there is a potential the City could generate excess revenues of nearly \$2.3 million per year if the City elects to provide commercial garbage and recycling collection.

Financial Impacts

- Cost of vehicles, equipment, and Solid Waste Operations Center expansion
- Cost of staffing
- Revenue from commercial customers to cover the costs of providing commercial collection services
- New revenue stream to City

Environmental Impacts

- The City could have more control to promote recycling among businesses, thus increasing recycling over time

Social Impacts

- City would provide more user-friendly service than a private sector provider due to familiarity, focus, and proximity to the City’s businesses

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. Because the City’s current contract with Republic Services expires on January 31, 2022, the City would need to take steps in 2021 to begin the process of taking over commercial collection services, if the City elected to do so. An extension of the current contract would be necessary. The timing shown below is a rough estimate as many discussions need to be held with vendors, the business community, City staff, City Council, and Republic Services.

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Steps	Responsible Party(ies)	Timing
Determine by when the City can have equipment, personnel, and Solid Waste Operations Center prepared for the additional services	Solid Waste Division	September 2021
Determine whether City will take over commercial collection	City Manager's Office in coordination with Solid Waste Division to seek Council approval	September 2021
Determine length of renewal necessary with Republic Services	City Manager's Office in coordination with Solid Waste Division	September 2021
Execute renewal with Republic Services	City Manager's Office in coordination with Solid Waste Division with Council approval	October 2021
If taking over commercial collection, determine whether/how many containers City can buy from Republic Services	Solid Waste Division	Spring 2022
Expand Solid Waste Operations Center to accommodate additional personnel	Solid Waste Division in coordination with other departments	Begin in FY 2022 with site plan layout. Begin procurement/construction in FY 2023 (12 to 18 months to complete; see Section 6.1)
Procure vehicles and containers	Solid Waste Division	By February 2023
Hire necessary personnel and conduct route training, etc.	Solid Waste Division	By February 2023
Notify commercial customers of the change in service providers, and establish service contracts	Solid Waste Division in coordination with Communications and Marketing Department	By February 2023
Coordinate removal of Republic Services containers where necessary	Solid Waste Division	January – February 2023
Begin providing commercial collection services	Solid Waste Division	March 2023

2.7 Residential Collection Services – City of Talty

There have been prior discussions regarding the potential for the City to provide residential collection services in the nearby community of Talty, located in Kaufman County. Talty's estimated population in 2019 was 2,760. Providing organized collection for such a small population in an efficient manner may be better accomplished by combining collection from the residents of Talty with the collection services Mesquite currently provides its residents.

Recommendation

The City should have follow-up discussions with Talty. If Talty was only provided garbage collection and in the same style and frequency as Mesquite, the operational and financial impacts would be limited to the cost of adding a new route. As the City is already planning to add one new route every other year to accommodate growth, whether Talty could be absorbed in what is already planned should be investigated. If Talty desired a style or frequency of service different than what Mesquite offers, the

impact to operations would be greater and the cost to provide the service may be prohibitive. As Mesquite considers changes to style of service (see Section 2.2 and 2.3), the impact of adding Talty to the customer count should also be considered.

Financial Impacts

- Additional administrative and operating costs to cover more homes
- Additional revenue, billing more customers

Environmental Impacts

- Reduce carbon emissions associated with one collection provider versus the multiple collection providers currently serving Talty

Social Impacts

- More convenient service for Talty residents
- Potential for less collection vehicles on Talty residential streets versus multiple collection providers currently serving Talty

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. This option is not necessarily time-sensitive but could begin immediately or as Mesquite and Talty see fit.

Steps	Responsible Party(ies)	Timing
Determine Talty's interest	City Manager's Office	As City Manager's Office determines
Determine which collection services would be provided to Talty residents	City Manager's Office in coordination with Solid Waste Division	As directed by City Manager's Office
Determine operational and financial impacts on Mesquite	Solid Waste Division	As directed by City Manager's Office
Determine price to be charged for the service	Solid Waste Division in coordination with Finance Department and City Manager's Office	As directed by City Manager's Office
Determine billing and other administrative protocol	Solid Waste Division in coordination with Finance Department and City Manager's Office	As directed by City Manager's Office
Educate the residents of Talty about the collection services	Solid Waste Division in coordination with Talty or with Communications and Marketing Department	As directed by City Manager's Office
Begin providing collection services in Talty	Solid Waste Division	As directed by City Manager's Office

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Section 3 TRANSFER

Based on the preliminary assessments of the City's current system and discussions with City staff, the following transfer related options were evaluated.

- Current Transfer Station Operations – Potential Changes
- The Potential Construction of a Second Transfer Station (i.e., the City would operate two transfer stations, with the second one potentially located in Kaufman County.)

Details of the evaluations are provided in the Evaluate Potential Changes to the Solid Waste System report. The remainder of this section provides a summary of the recommended options to be implemented related to the transfer of waste. For each option, the financial, environmental, and social impacts are summarized, and an implementation schedule is included. The implementation schedule provides the steps, responsible party(ies) and anticipated timing of implementation.

3.1 Current Transfer Station Operations – Potential Changes

The City of Mesquite's Transfer Station (TCEQ MSW Permit No. 1263) was permitted in 1979 and has been in operation for more than 40 years. The project team's evaluations included capacity, equipment, staffing and safety aspects of the current facility. Details of the evaluations are provided in the Evaluate Potential Changes to the Solid Waste System report.

Recommendation

The City should update the Site Operating Plan to reflect additional tonnage received at the existing Transfer Station. The City should develop a staffing succession plan to ensure the continued successful operation of the Transfer Station without the risk of losing facility-specific knowledge of staff. The City should continue to maintain a critical parts inventory for equipment. The City should conduct periodic safety audits and adapt safety protocols as warranted.

Financial Impacts

- Nonapplicable

Environmental Impacts

- Keeping the Transfer Station running smoothly results in less/no need to direct haul to the landfill

Social Impacts

- Succession planning for staff operating the Transfer Station increases facility-specific knowledge
- Improved safety associated with enhanced safety standards

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. The efforts associated with

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staffing, repairs and maintenance, and enhanced safety protocol should begin immediately and would continue on an ongoing basis.

Steps	Responsible Party(ies)	Timing
Update the Site Operating Plan to reflect additional tonnage	Solid Waste Division	Initiate immediately
Develop succession plan for staffing to ensure continued smooth operations	Solid Waste Division	Initiate immediately, continue efforts on an ongoing basis
Continue to maintain critical equipment parts inventory	Solid Waste Division	Initiate immediately, continue efforts on an ongoing basis
Periodically conduct safety audits and adapt safety protocols as warranted	Solid Waste Division	Initiate immediately, continue efforts on an ongoing basis

3.2 Second Transfer Station – Feasibility Analysis

Using the annual tonnage forecast previously developed and discussions with City staff as well as Kaufman County representatives, assumptions were developed regarding the estimated amount of tons that could be delivered to a potential second transfer station in the vicinity of IH-20 East and Malloy Bridge Road (FM740). For the purpose of sizing a potential second transfer station, it was estimated that certain existing residential garbage collection routes in the City, certain commercial garbage collection routes in the City, and an estimated percentage of waste generated in Kaufman County outside City limits, totaling roughly 116,000 tons annually could be brought to a potential second transfer station.

Recommendation

The City should further investigate the feasibility and advisability of building and operating a second transfer station, taking other recommended options into consideration (i.e., taking over commercial collection, providing collection services to Talty). If it is determined advisable, other City departments should be included in discussions regarding the purchase of land to site the second transfer station which could also be used to site other City functions.

Financial Impacts

- Potential costs associated with designing, building, and operating a second transfer station
- Revenue associated with the cost per ton charged to users of a second transfer station

Environmental Impacts

- Reducing the long-haul aspect of collection vehicles in the area that currently direct haul to a landfill could reduce carbon emissions by shortening haul distances of individual collection vehicles

Social Impacts

- Developments or future developments near the proposed transfer station location may not appreciate being near a transfer station

- If a citizen's convenience center is co-located with the second transfer station, dropping off materials may be more convenient for some

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. The timing shown below is merely provided as a potential guide for the City to consider. The timing of the need for this facility will be based upon how the City continues to grow, service to Talty, whether the City takes over commercial collection, etc. Regardless, if the City considers moving forward with the construction of a second transfer station, the purchase of land is a key first step as site options will only diminish as land continues to be acquired by developers for future residential and commercial growth.

Steps	Responsible Party(ies)	Timing
Further investigate the potential tonnage and operational impacts of a potential second transfer station to determine feasibility and advisability, which should be determined in conjunction with other potential options such as the City taking over commercial collection	Solid Waste Division	By Summer 2022
Identify land suitable for the transfer station and acquire it	Solid Waste Division, City Manager's Office, other City departments	Late 2022/ Early 2023
Procurement for engineering Services (permitting and design of the transfer station)	Solid Waste Division, Engineering Consultant, City Manager's Office, City Procurement	By June 2023
Conceptual design of transfer station complete for permitting	Engineering Consultant	By January 2024
Obtain the required Solid Waste Permit and other approvals	Solid Waste Division, Engineering Consultant, City Manager's Office, TCEQ	By June 2025
Final design of transfer station complete for Construction	Engineering Consultant	By June 2025
Procurement for construction of the transfer station	Solid Waste Division, Engineering Consultant, City Procurement	By January 2026
Construct the transfer station	Solid Waste Division, Contractor, Engineering Consultant	By January 2027
Transfer station operational	Solid Waste Division	By Spring 2027

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Section 4 PROCESSING

Based on the preliminary assessments of the City's current system and discussions with City staff, the following processing related options were evaluated.

- Analysis of recycling markets and potential impacts on the City's recycling system
- Potential long term operational changes or initiatives for the City's Citizens Convenience and Recycling Center and Compost Facility

Details of the evaluations are provided in the Evaluate Potential Changes to the Solid Waste System report. The remainder of this section provides a summary of the recommended options to be implemented related to the processing of materials. For each option, the financial, environmental, and social impacts are summarized, and an implementation schedule is included. The implementation schedule provides the steps, responsible party(ies) and anticipated timing of implementation.

4.1 Analysis of Recycling Markets

The volatility of the recycling markets, especially the recent impacts of the "China Sword" caused the City to have to renegotiate a supplemental agreement with FCC, its current processor, for processing recyclables, which suspended the revenue share arrangement. The current processing agreement expires in February 2022.

Recommendation

The City should determine whether to seek another 1-year extension for its current agreement with FCC to see if commodity markets improve, or the City issue a Request for Proposals (RFP) for processing capacity to obtain competitive pricing from Material Recovery Facilities (MRF) in the region prior to expiration of the current agreement. Because processing costs remain relatively high, an RFP process could be helpful to know the City is getting the best possible price, though it appears there may be limited competition in the region. (It is believed that there is one other MRF in the region, approximately 26 miles from the City versus the current MRF that is approximately 15 miles from the City.) The cost to direct haul collection vehicles to the processing location should be taken into consideration. Efforts on the City's part to minimize contamination (see Section 2.5 - Enhanced Code Enforcement) should also be explored to reduce the impacts of contamination on recycling program costs.

Financial Impacts

- Processing costs increase or decrease resulting from the RFP process
- Potential cost of hauling further than current FCC location, if processor changes

Environmental Impacts

- Carbon emissions associated with hauling collection vehicles a longer distance than current FCC location

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Social Impacts

- Potential for higher or lower overall recycling program costs paid by customers

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. This option is time sensitive as the existing agreement expires February 20, 2022.

Steps	Responsible Party(ies)	Timing
Determine whether to seek another 1-year extension or issue the RFP	Solid Waste Division in coordination with City Manager's Office	By August 2021
If extending, initiate supplemental agreement process	Solid Waste Division in coordination with City Manager's Office	By October 31, 2021 (4 months before expiration of current agreement)
If issuing an RFP, develop RFP package	Solid Waste Division in coordination with City Procurement	Sept 2021
Release RFP	Solid Waste Division in coordination with City Procurement	Oct 2021
Evaluate and rank responses to RFP	Solid Waste Division in coordination with City Procurement	Dec 2021
Award agreement	Solid Waste Division in coordination with City Manager's Office and City Council	Jan/Feb 2022
Begin new agreement	Solid Waste Division	Feb 21, 2022

4.2 Potential Long Term Operational Changes for the City's Citizens Convenience and Recycling Center and Compost Facility

The City's Compost Facility is co-located with a Citizens Convenience and Recycling Center at 3550 Lawson Road. Composting materials at the facility are placed into "static piles" for 9 to 12 months prior to further processing. Net available area for the composting operation, estimated using Google Earth Image, is approximately 35 acres representing over 450,000 cubic yards of airspace capacity for compost. Approximately 190,000 square feet of this area is currently used for stockpiling at the Compost Facility. The facility currently has more than twenty composting piles with varying age ranges from 1 to 3 years. The upcoming Wastewater Treatment Plant expansion will absorb approximately 2 acres of the current Compost Facility site.

Recommendation

Given the projected increase in yard waste through the 20-year planning horizon and the limited footprint of the current Compost Facility, the City will exceed capacity at the existing site within the last 5 years of the 20-year planning horizon. The City will be able to reorganize composting stockpiles to maximize space as needed for the next several years. However, when maximizing the current location is no longer sufficient, the City generally will have three options: 1) decrease tons delivered to the Compost Facility by discontinuing commercial landscapers use of the facility and only process yard waste and brush collected

by the City; 2) increase throughput at the current Compost Facility; or 3) identify an alternative site. (At the time of this writing it is not believed that another location as centrally convenient as the current site is readily available.)

Financial Impacts

- Currently unknown

Environmental Impacts

- Currently unknown

Social Impacts

- Currently unknown

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. The timing of the implementation steps should be closely monitored as the City continues to grow and the Compost Facility’s capacity to manage the yard waste throughput is no longer sufficient.

Steps	Responsible Party(ies)	Timing
Reorganize compost stockpiles as necessary	Solid Waste Division	As throughput volumes increase over the next 10 to 15 years
Once current site is at capacity, determine whether to stop accepting from commercial landscapers, or how to increase throughput, or identify an alternative site	Solid Waste Division	As necessary (anticipated in 15 years)
Conduct periodic safety audits	Solid Waste Division	Immediate, and ongoing
Implement changes to safety protocols as necessary	Solid Waste Division	As necessary

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Section 5 DISPOSAL

Based on the preliminary assessments of the City's current system and discussions with City staff, the following disposal related option was evaluated.

5.1 Long Term Landfill Options

The current contract with Waste Management for disposal of the City's residential waste at Skyline Landfill expires in September 2022. The current (as of March 2020) disposal rate paid by the City for residential solid waste is \$16.88 per ton. The rate for commercial solid waste collected by Republic Services, which is required to be delivered to Skyline Landfill per the collection service contract, is \$19.59 per ton.

Three landfills in the region were identified as feasible for the City to use for disposal capacity. Each landfill was receptive to the idea of the City hauling their waste to their respective landfill and would consider a discounted rate determined based on number of tons and disposal contract length. Details of the evaluation are provided in the Evaluate Potential Changes to the Solid Waste System report.

Recommendation

The City should proceed with its disposal capacity RFP process to determine the best overall landfill option for the City.

Financial Impacts

- Tipping fees
- Transfer Station and hauling costs

Environmental Impacts

- Transfer distance and wait times to tip the load will impact carbon emissions associated with the transfer vehicles

Social Impacts

- Tipping fees impact price to customers

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. Because the City's current disposal contract expires in September 2022, the City should initiate the procurement process with ample time to secure a new disposal contract prior to September 2022.

Steps	Responsible Party(ies)	Timing
Develop RFP package	Solid Waste Division in coordination with City Procurement	January 2022

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Steps	Responsible Party(ies)	Timing
Release RFP	Solid Waste Division in coordination with City Procurement	February 2022
Evaluate and rank responses to RFP	Solid Waste Division in coordination with City Procurement	April 2022
Award agreement	Solid Waste Division in coordination with City Manager's Office and City Council	June 2022
Begin new agreement	Solid Waste Division	September 2022

Section 6

OTHER CITY FACILITIES/INFRASTRUCTURE

Based on the preliminary assessments of the City’s current system and discussions with City staff, the following option was evaluated.

6.1 Solid Waste Operations Center – Future Needs

The City’s Solid Waste Division office and equipment yard is conveniently located adjacent to the City’s Transfer Station. Space at this facility is limited and the City’s Solid Waste Division may be challenged to expand their operations in the future at this current location.

The Solid Waste Division’s parking and maintenance of its rolling stock is currently performed at this location. If the City is to expand their operations to include additional commercial collection vehicles or add additional transfer vehicles in support of a second transfer station, these vehicles would need to be parked and maintained at this same location. Based on our observations and conversations with staff there is sufficient parking area and fleet service bays to maintain this expansion of the City’s solid waste vehicles fleet, if it were needed.

Future projected growth of the Solid Waste Division staff in support of additional operations (commercial collection), will exceed the current office space capacity that can be provided in the current location. Expansion of the existing Solid Waste Operations Center would be the best alternative. An estimated cost of \$3.3 million would be necessary for the anticipated expansion efforts, which was included in the “Debt” portion of the analysis in Section 2.6 – Commercial Municipalization.

Recommendation

Expand the Solid Waste Operations Center to accommodate future expected growth, including the approximately 20 individuals that may be involved with a commercial collection operation.

Financial Impacts

- Necessary expansions at the Solid Waste Operations Center estimated at \$3.3 million

Environmental Impacts

- Nonapplicable

Social Impacts

- Nonapplicable

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation. Note that this option is primarily tied to whether the City will take over commercial collection as described in Section 2.6.

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Steps	Responsible Party(ies)	Timing
Determine how current Center and proposed expansion would be shared amongst the various departments	Solid Waste Division in coordination with other departments, as appropriate	By September 2021
Determine staffing and office space needs for each department for the next 20 years	Solid Waste Division in coordination with other departments, as appropriate	By September 2021
Retain a firm to conduct a site plan layout to meet staffing needs noted above	Solid Waste Division in coordination Procurement Department	October 2021
Procurement and construction	Solid Waste Division in coordination Procurement Department	Begin in Fiscal Year 2023 (18 months)

Section 7 FINANCIAL

The City operates its Solid Waste Division as part of the City’s General Fund. In FY 2020, the City budgeted approximately \$6.8 million to operate its Solid Waste Division. These costs are recovered through a residential user fee and revenues generated from the operation of the City’s Citizens Convenience and Recycling Center and Compost Facility. User Fees are reviewed at least every 2 years for the effects of inflation and revised subject to City Council approval. The current user fee is \$22.25 per month for a residential customer.

A preliminary financial assessment shows that the Solid Waste Division is in good financial shape and the residential user fee is generating sufficient revenue to recover the Division’s operating costs. As part of the development of the City’s Solid Waste Master Plan, the project team completed a comprehensive cost of service and rate design analysis. Described in more detail in the Cost of Service and Rate Design Study report, the analysis included a detailed examination of the Solid Waste Division’s forecasted operating and capital costs; including a detailed analysis of what each residential service costs to provide, on an annual basis, as well as on a monthly cost per household basis.

7.1 Two Alternative Scenarios

The project team was asked to develop two alternative scenarios for the City. In the first scenario, the Solid Waste Division remains in the General Fund, and the City issues debt to fund all vehicle purchases. In the second scenario, the Solid Waste Division would transition to an Enterprise Fund, the Division would pay \$1.5 million to the General Fund each year, and the City will use Pay-As-You-Go (PAYG) cash funding to pay for all vehicle purchases.

Residential Cost of Service

The total residential cost of service for the 5-year forecast is shown in Table 7-1. The City’s policy is to transfer excess revenues to the General Fund. At the current rate of \$22.25, the City is generating approximately \$2,553,000 of excess revenues. For purposes of this analysis, the project team assumed the Division will target to transfer \$2.5 million to the General Fund each year of the forecast. Based on this, Table 7-1 shows the total monthly cost of service to operate the Division with and without the \$2.5 million transfer to the General Fund.

**Table 7-1
Residential Cost of Service**

Service Category	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
Revenue Requirement					
Garbage	\$4,987,740	\$5,471,748	\$5,738,866	\$5,986,118	\$6,278,338
Recycling	475,374	542,703	567,001	590,603	617,532
Yard Waste	764,958	793,777	835,679	868,866	924,488
Large Brush	712,323	727,475	757,259	788,700	853,779



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**Table 7-1
Residential Cost of Service**

Service Category	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
Bulky Items	659,737	712,004	745,248	779,791	816,965
Appliances	41,204	42,738	45,182	46,951	49,554
Citizens Convenience and Recycling Center and Compost Facility ¹	421,337	431,053	440,836	452,300	521,617
Total Revenue Requirement²	\$8,062,647	\$8,721,533	\$9,130,071	\$9,513,327	\$10,062,274
Transfer to General Fund	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000
Total With General Fund Transfer	\$10,562,647	\$11,221,533	\$11,630,071	\$12,013,327	\$12,562,274
Total Monthly Cost of Service²	\$17.74	\$18.93	\$19.55	\$20.10	\$20.97
Total Monthly Cost of Service (With General Fund Transfer)²	\$23.24	\$24.36	\$24.91	\$25.38	\$26.16

1. The Citizens Convenience and Recycling Center and Compost Facility revenue requirement is less than the total cost of service due to the allocation of costs to yard waste collection and large brush collection (\$726,263 - \$76,231 - \$228,694 = \$421,337).
2. Any minor arithmetic deviation is due to rounding.

General Fund versus Enterprise Fund

If the City were to transition to an Enterprise Fund, it would allow the Solid Waste Division to build up a capital reserve to pay for future capital with cash instead of issuing debt. This is advantageous because the City would avoid any interest costs associated with future rolling stock purchases if there were all cash financed.

**Table 7-2
Alternative Scenarios**

	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
Scenario 1 – Solid Waste Division remains in General Fund					
Debt Funded	\$88,576	\$247,095	\$371,949	\$517,988	\$673,360
Cash Funded	-	-	-	-	-
Transfer to General Fund	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
	\$2,588,576	\$2,747,095	\$2,871,949	\$3,017,988	\$3,173,360
Scenario 2 – Solid Waste Division to Enterprise Fund					
Debt Funded	\$0	\$0	\$0	\$0	\$0
Cash Funded	\$1,150,512	1,150,512	1,150,512	1,150,512	1,150,512
Transfer to General Fund	1,554,990	1,601,640	1,649,689	1,699,180	1,750,155
	\$2,705,502	\$2,752,152	\$2,800,201	\$2,849,691	\$2,900,667
Difference	(\$116,926)	(\$5,057)	\$71,748	\$168,297	\$272,693

Recommendation

The City should decide whether they want to operate the Division in the General Fund or as an Enterprise Fund.

Financial Impacts

- Potential impact to the General Fund
- Potential interest expense savings on capital purchases

Environmental Impacts

- Nonapplicable

Social Impacts

- Nonapplicable

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation.

Steps	Responsible Party(ies)	Timing
Discuss financial impact of converting the Division to an Enterprise Fund	Solid Waste Division and City Manager's Office	FY 2022
If converting to an Enterprise Fund, coordinate conversion with Finance Department personnel	Solid Waste Division and Finance Department	By September 30, 2023 (end of FY 2023)

7.2 Residential Rates

Based on whether the City elects to keep the Division in the General Fund (Scenario 1) or transitions to an Enterprise Fund (Scenario 2), the project team recommends the following residential rate increases for the two scenarios.

**Table 7-3
Proposed Residential Rates Increases**

	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
Increase per HH per Month (Scenario 1)	-	\$1.00	\$0.75	\$0.50	\$0.50
Increase per HH per Month (Scenario 2)	-	\$1.00	\$1.00	\$0.75	-

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Table 7-4 shows the impact of the residential rate increase for each of the two scenarios.

**Table 7-4
Proposed Residential Rates**

	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
Scenario 1					
Single Family resident	\$22.25	\$23.25	\$24.00	\$24.50	\$25.00
Scenario 2					
Single Family resident	\$22.25	\$23.25	\$24.25	\$25.00	\$25.00

Recommendation

Based on whether the Solid Waste Division remains in the General Fund (Scenario 1) or transitions to an Enterprise Fund (Scenario 2), the project team recommends the rate increases shown above.

Financial Impacts

- Increase in residential rates

Environmental Impacts

- Nonapplicable

Social Impacts

- Nonapplicable

Implementation Schedule

The following summarizes the steps that would need to be taken to implement this option and notes the timing and responsible party(ies) that would be involved in implementation.

Steps	Responsible Party(ies)	Timing
Rates should be increased as shown above	City Manager's Office and City Council	To be implemented prior to each fiscal year, as needed

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PREPARED BY:

