

SOLID WASTE MASTER PLAN

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



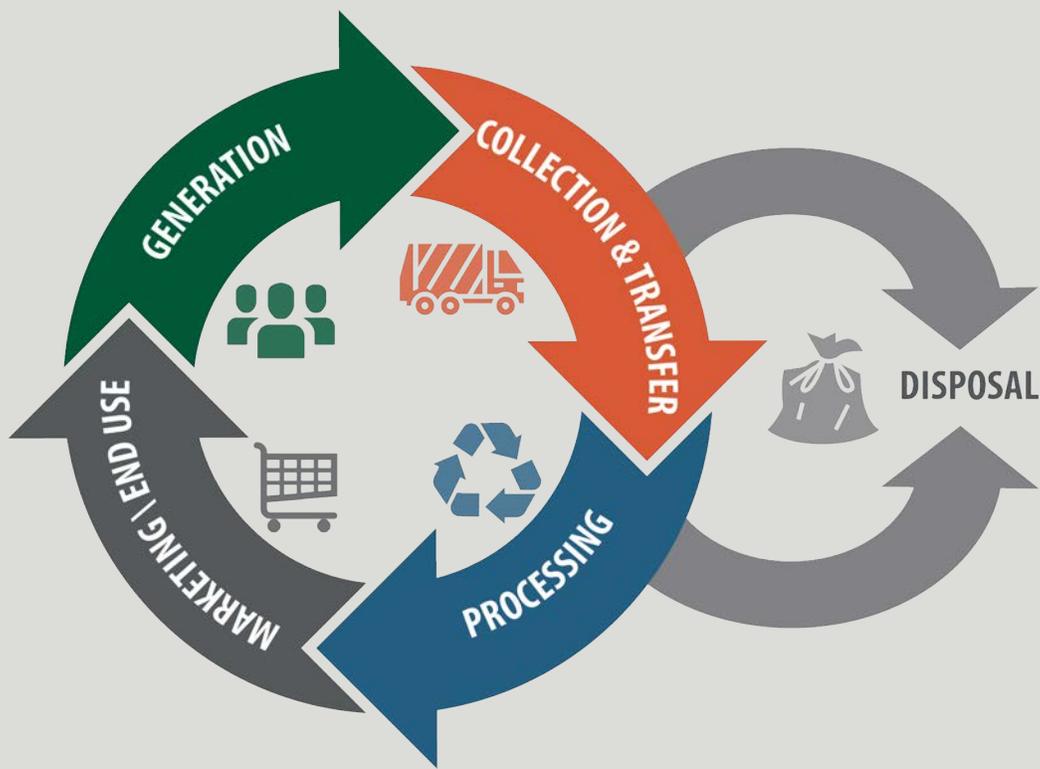
SYSTEM
ASSESSMENT



STAKEHOLDER
OUTREACH



SOLID WASTE
PRIORITIES



PREPARED IN PARTNERSHIP WITH



ENGINEERING SUPPORT PROVIDED BY



CONTENTS



Acknowledgements	01
Planning Purpose and Approach	03
Stakeholder Outreach and Input	05
Overview of the City's Current Solid Waste System	10
Assessment of Existing System, Options and Future Needs	18
Strategies Recommended for Implementation	42
Potential Impacts of Recommended Strategies	57



ACKNOWLEDGEMENTS

The City of Mesquite Public Works Department's Solid Waste Division staff and its consultant, NewGen Strategies and Solutions, LLC with subconsultant Parkhill for engineering related support (collectively referred to as the "project team"), would like to thank the following stakeholders who have provided their time, energy, and input into helping make this planning process a success.



MESQUITE RESIDENTS AND BUSINESSES

We appreciate all of our residents and businesses, and especially want to thank the **1,192 Mesquite** residents and **42 businesses** who took the time to respond to our online solid waste customer survey. Your input was very helpful.



CITY COUNCIL AND CITY MANAGER'S OFFICE

A very special thank you to the **Mesquite City Council** and the **City Manager's Office** for encouraging a solid waste management planning process and allowing the NewGen project team to be a part of it.

THANK YOU!

THANK YOU!



CITY STAFF

The NewGen project team would like to expressly thank the **Public Works Department and Solid Waste Division staff** for their tireless dedication to the planning process and to providing the residents and businesses of Mesquite with a high-quality solid waste management program.



North Central Texas
Council of Governments

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG)

We would also like to acknowledge the NCTCOG for its commitment to planning for sustainable materials management in North Central Texas. NCTCOG, a voluntary association of local governments with a membership of 235 jurisdictions, is central to “planning for common needs, cooperating for mutual benefit, and recognizing regional opportunities for improving the quality of life in North Central Texas”. As stated in the North Central Texas Waste Management Plan (2015 to 2040), the North Central Texas region is anticipated to grow by 57% between 2015 and 2040, making managing and disposing of materials in a responsible manner, as well as reducing consumption and recovering value through recycling and repurposing, increasingly important.

The goal of the NCTCOG’s “2015 Planning for Sustainable Materials Management in North Central Texas” is to reduce waste, ensure materials are reused and recycled whenever possible, reduce illegal dumping, and safely handle remaining waste at permitted facilities.

As an active member of the NCTCOG, the City of Mesquite sought **consistency with the regional goals in the development of the City’s Solid Waste Master Plan.**

This Plan will serve as the guide to continue to deliver high-quality service for solid waste operations and program development to meet the future solid waste system needs of the City over the next 20 years.

02

PLANNING PURPOSE AND APPROACH



PLANNING PURPOSE

The Public Works Department Solid Waste Division has embarked upon preparing a 20-year Solid Waste Master Plan (Plan) to improve the efficiencies of current services and provide alternatives for the future of the City's solid waste system. The purpose of this endeavor was to analyze the City's existing solid waste programs and services; research practical and effective options for policies and programs; identify operational changes that will maximize the efficiencies of collection operations; capitalize on resource recovery, waste reduction, and

waste diversion efforts, where applicable; and ensure financial stability for the future of the solid waste system. Evaluations of potential options did not only examine traditional financial impacts but holistically evaluated impacts to the triple bottom line, considering environmental, social, and financial impacts.

The City has "a new community vision of setting standards of excellence in areas of services, programs and overall quality of life. Mesquite's innovative programs have led to state, national and international recognition."¹ The

City's Mayor, Bruce Archer, expressed a commitment to become the "Safest, Cleanest, Most Employed and the Kindest City in America" on his Facebook page in August 2020. Referred to as the "Clean City Initiative," the solid waste system has an important role to play in achieving this community vision. Obtaining feedback from the residents and businesses of Mesquite was an important aspect of the planning process to develop a Plan that reflects the community.

The City of Mesquite's Solid Waste Division is dedicated to providing high-quality

¹ <https://www.cityofmesquite.com/156/Awards>

solid waste services to all of its residents and businesses. The current solid waste system includes using City crews to collect residential waste, recyclables, and yard waste at curbside or in alleys, and large brush and bulky items at curbside, as well as manage a service contract for a private hauler to collect waste from businesses in Mesquite. The City also operates a Citizens Convenience and Recycling Center that allows residents to deliver brush and yard

waste, recycled material, and electronic waste; a Compost Facility that processes yard waste into mulch and compost, which is one of the best forms of waste reduction and diversion from area landfills; and the City owns and operates the City of Mesquite Solid Waste Transfer Station, co-located at the Municipal Service Center.



PLANNING APPROACH

Our planning process included five basic steps. **Step 1** focused on laying the groundwork for assessing current conditions to have a clear baseline understanding of the issues and opportunities regarding the City's solid waste system. **Step 2** focused on assessing needs and opportunities and identifying potential strategies for the future of the system. **Step 3** focused on evaluating the potential strategies for efficiency, effectiveness,

cost-benefit, environmental and social impacts. **Step 4** focused on narrowing down the list of potential strategies to those most viable for the City. **Step 5** focused on the actions necessary to implement the viable strategies to enhance the solid waste system.

The results of each of these steps are summarized throughout the rest of this Plan.



PLANNING APPROACH TASKS & REPORTS

THE PROJECT TEAM ACCOMPLISHED EACH OF THESE STEPS THROUGH A SERIES OF TASKS THAT FOCUSED ON THE FOLLOWING AREAS AND RESULTED IN INDIVIDUAL TASK REPORTS, WHICH ARE AVAILABLE FOR REVIEW AT WWW.CITYOFMESQUITE.COM/SOLIDWASTEMASTERPLAN:

- Baseline Analysis
- Operational Review of Residential Collection Services
- Identify Potential Changes to the Solid Waste System
- Evaluate Potential Changes to the Solid Waste System
- Stakeholder Outreach Results Summary
- Identify the Best Options
- Cost of Service and Rate Design Study



A combination of online customer surveys and online public workshops were conducted.

03

STAKEHOLDER OUTREACH AND INPUT



APPROACH TO OBTAIN FEEDBACK

Due to the impacts of the COVID-19 pandemic, an adjustment in the approach to stakeholder outreach was made. In-person public workshops were originally contemplated; however, in an effort to increase the number of residents and businesses with access to provide feedback, while protecting the health of participants, a combination of online customer surveys and online public workshops were conducted in the month of December 2020.

The outreach activities included the development and analysis of an online survey for residential customers and an online survey for commercial customers (both available in English and Spanish). The Communications and Marketing Department created a separate webpage dedicated to the outreach efforts. The online surveys were available on the website for the entire month of December 2020.

The public workshop material was designed to cover information relevant to both residential and commercial customers. The same dedicated webpage was used to promote the public workshops. There were two workshops held, both covering the same information but on different days and at different times of the day to drive more participation in the surveys and the workshops.

The Communications and Marketing Department was instrumental in advertising the surveys and the public workshops to drive up participation. Their efforts included:

- Council Connection e-newsletter
- City Council meetings during "Special Announcements"
- Facebook (City of Mesquite + Council accounts)
- Nextdoor
- Twitter
- Notify Me (alerts to subscribers)
- Press release
- City website news section
- City website calendar



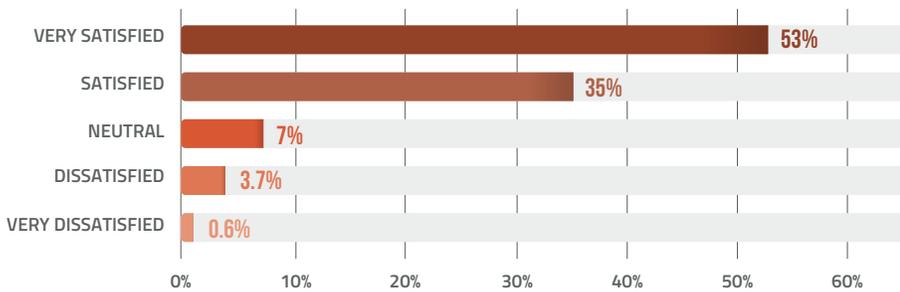
SUMMARY OF THE RESIDENTIAL CUSTOMER SURVEY RESULTS

The residential survey included a total of 27 questions, with 24 multiple choice questions, and 3 open-ended narrative response questions. A total of 1,192 responses were received (approximately a 3% response rate based on roughly 38,000 homes in the City), though not every respondent answered every question. The complete report of results is available online in the **Stakeholder Outreach Results Summary**. Some interesting items to note that can be gleaned from the residential survey responses include the following.

Large majority of respondents are happy with current Solid Waste Services

In general, 88% answered satisfied (35%) or very satisfied (53%) with their overall impression of the current collection services. Only about 4.3% indicated dissatisfied (3.7%) or very dissatisfied (0.6%).

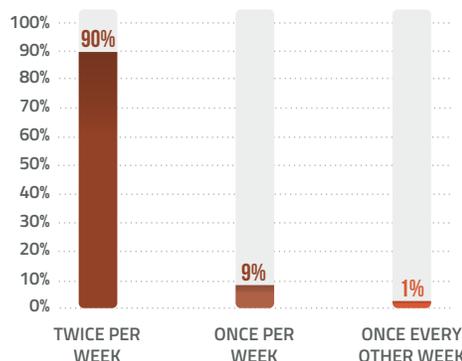
WHAT IS YOUR OVERALL IMPRESSION OF THE CURRENT ALLEY/CURBSIDE COLLECTION SERVICE?



Vast majority of respondents set out garbage twice per week

A vast majority of respondents (90%) indicated they set out garbage twice per week, and 57% indicated they need twice per week collection of garbage.

HOW OFTEN DO YOU TYPICALLY SET OUT GARBAGE FOR COLLECTION?





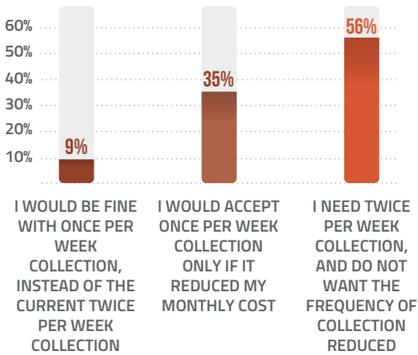
Majority of respondents say recycling collection is an important service

Approximately 68% of respondents indicate they feel it is extremely (48%) or very important (20%) for the City to offer recycling collection. Only 24% of respondents indicated they do not participate in the recycling program, while 58% indicated they set out recyclables once per week.

Less than half of respondents would prefer or accept once per week garbage collection

Approximately 44% of respondents indicated they would be fine with once per week (9%) or would accept once per week collection of garbage if it reduced cost (35%).

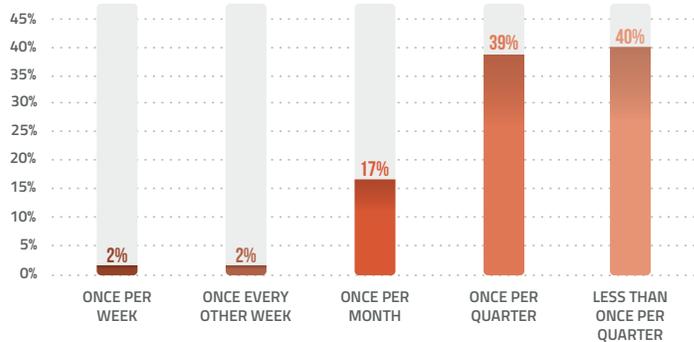
WHICH OF THE FOLLOWING STATEMENTS DO YOU AGREE WITH REGARDING FREQUENCY OF GARBAGE COLLECTION?



Vast majority of respondents set out large brush and bulky items once per quarter or less

A vast majority of respondents (79%) indicated they set out large brush and bulky items once per quarter (39%) or less than once per quarter (40%), and nearly 100% indicated the items were generated at their home (versus generated off-site and brought home).

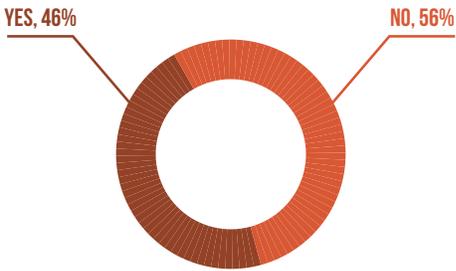
HOW OFTEN DO YOU TYPICALLY SET OUT BULKY ITEMS AND/OR LARGE BRUSH FOR COLLECTION



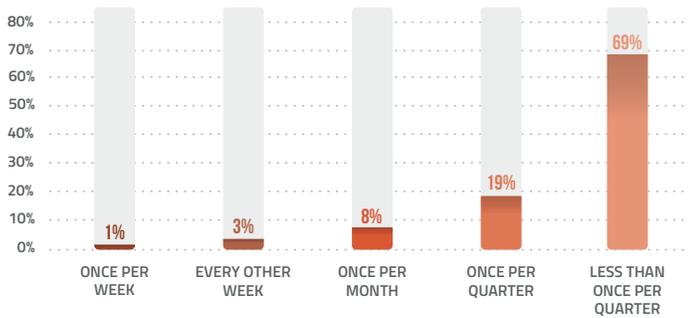
Less than half of respondents bring items to the Citizens Convenience and Recycling Center

Only 46% of respondents indicated they have brought items to the Citizens Convenience and Recycling Center, with 69% indicating they bring items less than once per quarter.

HAVE YOU EVER DELIVERED MATERIALS TO THE CITIZENS CONVENIENCE AND RECYCLING CENTER?



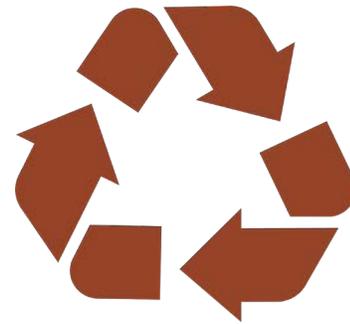
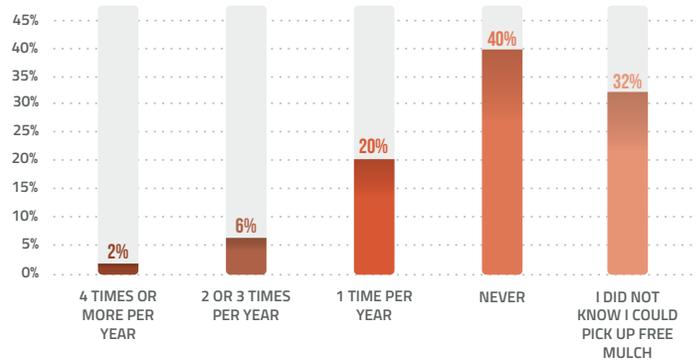
HOW OFTEN DO YOU DELIVER MATERIALS TO THE CITIZENS CONVENIENCE AND RECYCLING CENTER?



About a third of respondents did not know they can pick up free mulch from the Compost Facility

Only 28% of respondents indicated they have picked up mulch from the Compost Facility before, while 32% indicated they were not aware they could pick up free mulch.

HOW OFTEN DO YOU PICK UP FREE MULCH FROM THE CITY'S COMPOST FACILITY CO-LOCATED AT THE CITIZENS CONVENIENCE AND RECYCLING CENTER?



SUMMARY OF THE COMMERCIAL CUSTOMER SURVEY RESULTS

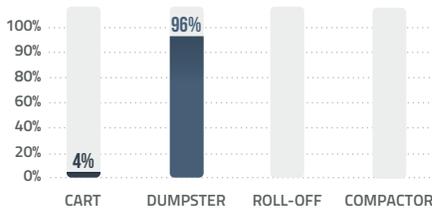


The commercial survey included a total of 17 questions, with 14 multiple choice questions, and 3 open-ended narrative response questions. A total of 42 responses were received (approximately a 2.7% response rate based on roughly 1,560 businesses in the City), though not every respondent answered every question. The complete report of results is available online in the **Stakeholder Outreach Results Summary**. Some interesting items to note that can be gleaned from the commercial survey responses include the following.

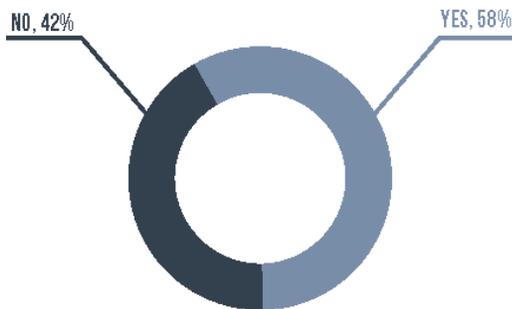
Majority of respondents use dumpsters in enclosures for garbage collection

A vast majority of respondents (96%) indicated their business uses dumpsters for garbage collection, and 58% indicated their dumpsters are in enclosures. A majority of respondents (52%) indicated garbage collection service is provided to their business once per week.

WHAT TYPE OF CONTAINER IS USED FOR YOUR BUSINESS'S GARBAGE COLLECTION?



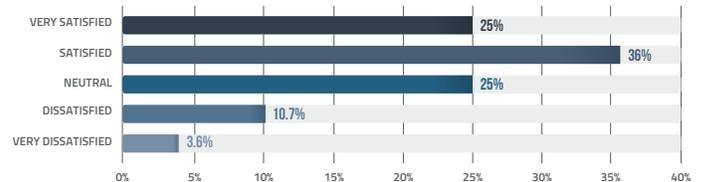
IF YOU USE A DUMPSTER(S), IS IT IN AN ENCLOSURE?



Majority of respondents are satisfied or very satisfied with collection services

In general, approximately 61% of respondents answered satisfied (36%) or very satisfied (25%) with their overall impression of the current collection services. Only about 14% indicated dissatisfied (10%) or very dissatisfied (4%).

WHAT IS YOUR OVERALL IMPRESSION OF THE COLLECTION SERVICES PROVIDED?

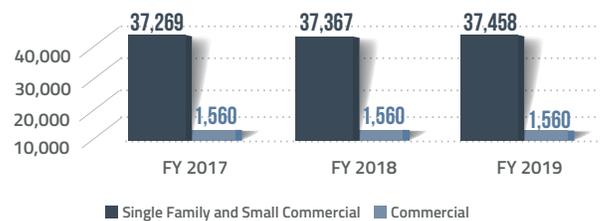


*Neutral respondents chose neither satisfied nor dissatisfied

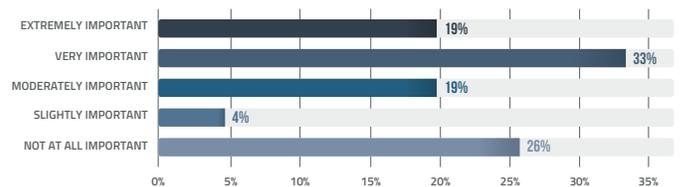
Few respondents participate in business recycling, but a majority believe it is important to offer

Only 15% of respondents indicated their business participates in a recycling program; however, 52% feel it is extremely (19%) or very important (33%) for the City to offer recycling services to businesses.

FIGURE 1 - WASTE GENERATION SECTORS



HOW IMPORTANT IS IT TO YOU THAT MESQUITE OFFERS RECYCLING SERVICES TO BUSINESSES?



Fully understanding the current solid waste system is key to developing an effective Solid Waste Master Plan.



04

OVERVIEW OF THE CITY'S CURRENT SOLID WASTE SYSTEM

The City of Mesquite is located on the east side of the Dallas/Fort Worth Metroplex. Most of the City is located in Dallas County, with a small portion located in Kaufman County. The 2019-2020 Strategic Goals and Objectives for the City include:

- Safe Community
- Attractive Neighborhoods
- Improved Transportation and Mobility
- Vibrant Economy
- High Performing/Transparent Government
- Quality Recreation and Culture

At the Federal and State level, legislation is moving beyond the focus on responsibly managing waste and into managing waste as a resource. Recent efforts on the part of the U.S. Environmental Protection Agency as well as the Texas State Legislature have focused on recycling and end market infrastructure, recognizing the importance of sustainable materials management. At the regional level, as previously noted, the City is an active member of the NCTCOG, which is continuing efforts to plan for sustainable materials management in North Central Texas focusing on reducing waste, ensuring materials are reused and recycled whenever possible, reducing illegal dumping, and safely handling remaining waste at permitted facilities. At the local level, the City has “a new community vision of setting standards of excellence in areas of services, programs and overall quality of life. Mesquite’s innovative programs have led to state, national and international recognition.” The City’s Mayor, Bruce Archer, expressed a commitment to become the “Safest, Cleanest, Most Employed and the Kindest City in America” on his Facebook page in August 2020. Referred to as the “Clean City Initiative”, Mayor Archer has assembled a task force of community leaders to make recommendations to the City Council for how to accomplish this important goal. The City’s Solid Waste Division has an important role in accomplishing this initiative, which contributes to the Strategic Goals and Objectives for the City.

The first step to developing an effective Solid Waste Master Plan is to fully understand the current solid waste system.

To provide a comprehensive overview of the City’s solid waste system, aspects of the system are generally organized around the “solid waste loop”.

Generation refers to waste, recyclables and other materials that are generated by residents, businesses, and visitors. Education and outreach efforts are also described as part of generation since those efforts reach out to generators directly.

Collection refers to the act of collecting materials, whether at the curb or alley, or at 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 process or manage materials and includes the City’s Municipal Service Center.

End Markets refers to the materials that are processed and returned to a useful item, such as recyclables that are recycled back into consumer products or yard waste that is processed into mulch or compost.



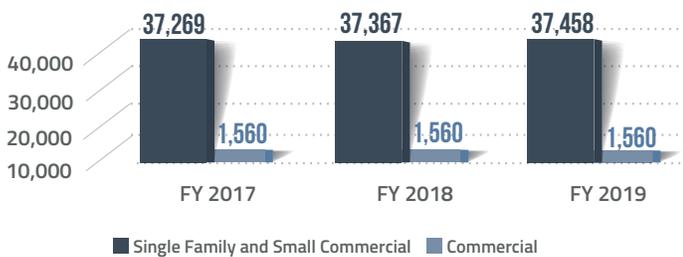
SOLID WASTE LOOP

Waste Generation Sectors

For the purpose of this Solid Waste Master Plan, waste generation sectors are primarily segregated into two categories: (1) City-managed waste generated by single family residential and small commercial generators (collectively referred to as “residential”) as well as material dropped off at the Citizens Convenience and Recycling Center and Compost Facility; and (2) multifamily, commercial and industrial generators (collectively referred to as “commercial”), who receive collection services through a City agreement with a private hauler, Republic Services.

As indicated in Figure 1, according to utility billing data in Fiscal Year (FY) 2019 there were 37,360 single family units and 98 small commercial units. According to customer counts provided by Republic Services, there were 1,560 commercial units Citywide in 2018.

FIGURE 1 - WASTE GENERATION SECTORS

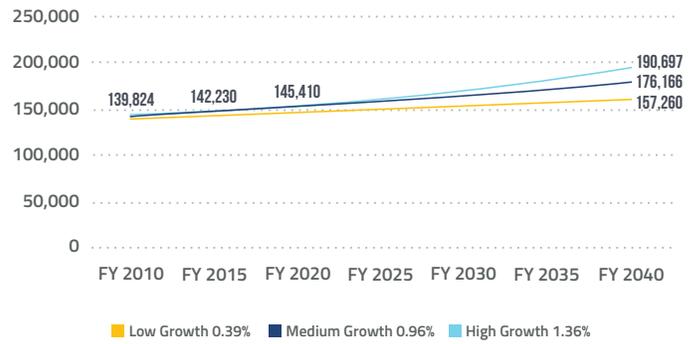


Population Projections

Figure 2 presents historical and projected population growth patterns for the City, using three scenarios: low, medium, and high growth estimates.

- **Low growth:** In this scenario, population is projected based on the compound annual growth rate (CAGR) of the City’s actual population from 2010 to 2020. The CAGR for this period was 0.39%.
- **Medium growth:** In this scenario, population is projected based on the CAGR of the combined actual population of Dallas County and Kaufman County from 2010 to 2020 as reported by NCTCOG’s 2020 Population Estimates. The CAGR for this period was 0.96%.
- **High growth:** In this scenario, population is projected based on the CAGR of the combined 2040 projected population made by the NCTCOG. The CAGR for this period is 1.36%.

FIGURE 2 - POPULATION PROJECTIONS



As shown in Figure 2, the City’s population in 2020 is 145,410. Over the twenty-year planning period (through 2040), population in the City is estimated to reach 157,260 in the low growth scenario, 176,166 in the medium growth scenario, and 190,697 in the high growth scenario, by 2040.

Tonnage Projections

The tonnage generation projections are based on an analysis of historical generation per capita over the last three years, and population projections. Three different approaches were considered for the waste projections, based on the three scenarios of population projections:

- Scenario 1: Low growth
- Scenario 2: Medium growth
- Scenario 3: High growth

These projections assume no material changes in the City’s policies, programs, participating entities, or facilities over the planning period, and account only for tonnage increases resulting from projected population growth within the City.

Figure 3 shows the breakdown by material type managed by the City through residential and small commercial collection and drop off at the Citizens Convenience and Recycling Center and Compost Facility in FY 2020. Figure 4 shows the general breakdown by material type collected from the commercial/ industrial sector by the private sector in FY 2020.



FIGURE 3 - CITY-MANAGED TONNAGE BREAKDOWN

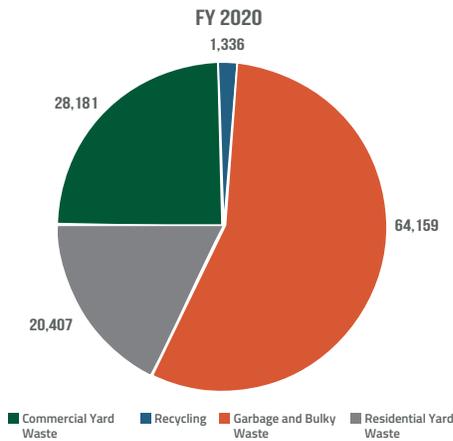


FIGURE 4 - COMMERCIAL TONNAGE BREAKDOWN

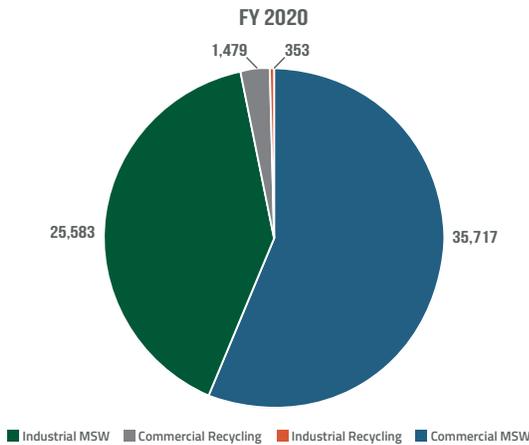


FIGURE 5 - TONNAGE PROJECTIONS — MANAGED BY THE CITY

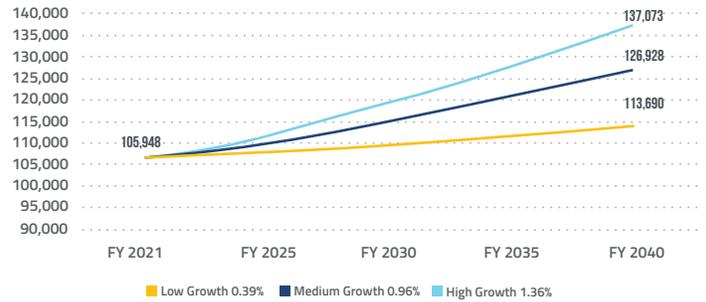
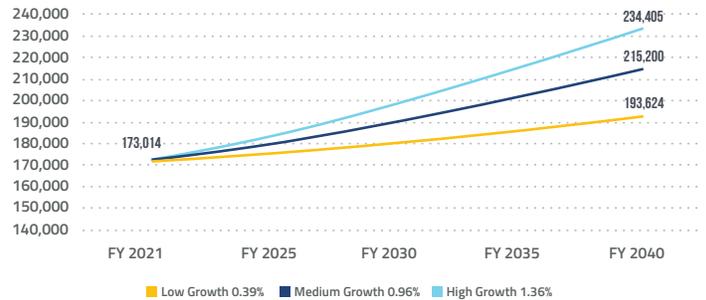


FIGURE 6 - TONNAGE PROJECTIONS — TOTAL GENERATED IN THE CITY

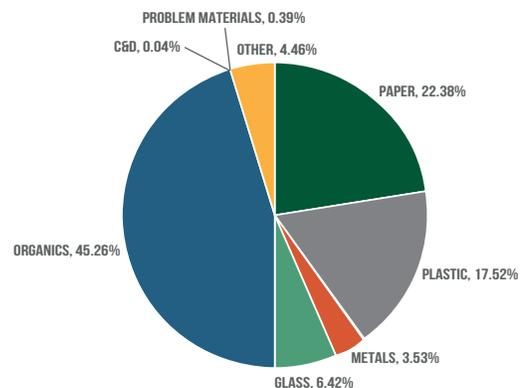


Over the twenty-year planning period (through 2040), tons managed by the City is estimated to reach 113,690 tons in the low growth scenario, 126,928 tons in the medium growth scenario, and 137,073 tons in the high growth scenario, by 2040. As shown in Figure 6, overall tons projected to be generated (residential plus commercial) in the City is estimated to reach 193,624 tons in the low growth scenario, 215,200 tons in the medium growth scenario, and 234,405 tons in the high growth scenario, by 2040.

Composition of Waste

A composition study of the City’s waste was completed in 2019, as part of a larger composition study completed for the NCTCOG planning region, the results of which are shown in Figure 7. The waste composition is based on garbage loads from residential routes. The largest constituents are shown to be organics (45.26%), paper (22.38%), and plastic (17.52%). **Approximately 30% of materials currently placed in the garbage could be placed in the recycling bins or bags.**

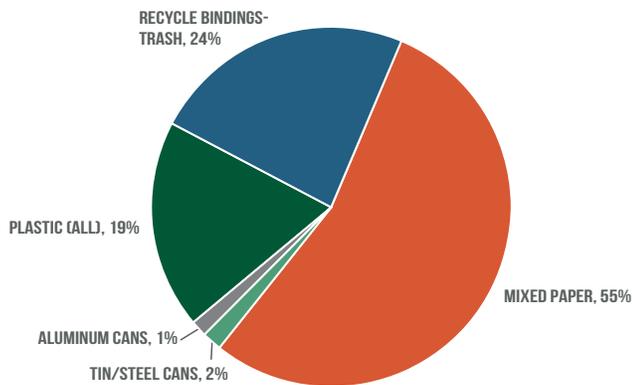
FIGURE 7 - COMPOSITION OF RESIDENTIAL WASTE



Composition of Recyclables

Figure 8 shows the composition of the residential recycling material stream, based on City-provided data. Mixed paper is the largest percentage at 55% of the recycling material stream, followed by contaminants at 24%. The volatility of the recycling markets is exacerbated by contamination in the recycling material stream, which is a common problem in most residential recycling collection programs. Contamination reduces the efficiency of processing and the quality of materials to be sold.

FIGURE 8 - COMPOSITION OF RESIDENTIAL RECYCLING



Education and Outreach

The City is partnering with the NCTCOG to launch the “Know What to Throw” recycling education campaign. The City’s website² provides a description of the campaign and provides links to TimeToRecycle.com that encourages everyone to rethink waste as a resource. The information available on the site shows residents what should be recycled and what is not acceptable. The City’s own residential recycling program webpage provides information for how a resident can receive a green bin, and what day to set out recyclables. Multifamily residents wanting to recycle can do so at the Citizens Convenience and Recycling Center. The City hosts annual neighborhood meetings in October (associated with National Night Out) that on occasion include speakers from the Solid Waste Division to promote all of its solid waste related programs.



COLLECTION

Residential Collection

The City’s Solid Waste Division provides alley or curbside collection of household garbage, recyclables, yard waste, large brush and bulky items, and appliances with municipal crews for roughly 38,000 single family homes. Residents pay for these collection services on their monthly utility bill. The FY 2021 rate for these collection services is \$22.25, a \$1.00 increase from the 2020 monthly rate of \$21.25. Small commercial customers receiving collection service from the City are charged a monthly fee of \$35.00.

Houses with paved alleys may place garbage, recyclables, and yard waste on the property line nearest the alley, outside their fence (if applicable), and must not block any portion of the alley. Residents without paved alleys must place materials at the curb for collection. All residents must place large brush, bulky items, and appliances at the curb, whether they have paved alleys or not.

More details about the current collection services are available in the **Operational Review of Residential Collection Services** report.

Garbage

Residential customers are provided garbage collection service twice per week, either on Monday and Thursday or on Tuesday and Friday, using rear load vehicles. Residential customers are required to provide their own garbage receptacles. There are two personnel per vehicle, in most instances each with a Commercial Driver License (CDL), so that either person can operate the vehicle, and the two personnel switch who is driving and who is collecting multiple times throughout the day to mitigate fatigue. However, due to a lack of CDL licensed drivers, some routes are conducted with one driver and one collector. The City typically operates 20 routes per day. Garbage is delivered to the City’s Transfer Station where it is consolidated and then transported to the Waste Management of Texas, Inc. Skyline Landfill.



REAR LOAD COLLECTION VEHICLE

² <https://www.cityofmesquite.com/265/Residential-Recycling-Program>

Recycling

Residential customers are provided recycling collection service once per week on one of the scheduled garbage collection days, using rear load vehicles. Green 18-gallon recycling bins are provided by the City to residential customers on request. Residents may also use blue recycling bags which can be purchased from the City. The City uses three rear load vehicles to manually collect the recyclables five days per week, with two personnel per vehicle. Each of the three routes per day typically average about 2,500 homes per route, which is possible because it is estimated that only about a third of the residents participate in the recycling program. The graphic below shows the materials included in the City's residential recycling program as posted on the City's website.

RECYCLE (RECICLE) THANK YOU FOR RECYCLING THESE: GRACIAS POR RECYCLAR ESTO ARTÍCULOS SUELTOS:

- Cans** (Latas): Aluminum and Steel Cans (latas de aluminio y metal)
- Cartons** (Cartones): Food and Beverage Cartons (de comida y bebida)
- Glass** (Vidrio): Bottles and Jars (botellas y frascos)
- Paper** (Papel): Cereal Boxes, Newspaper, Magazines, Mail and Flattened Cardboard (periódicos, revistas y apilado, las cajas de cartón)
- Plastic** (Plásticos): Kitchen, Laundry, Bath: Bottles and Containers (productos de cocina, y baño: botellas y envases)

NO!

- No Plastic Bags (take back to retail) / No coloque bolsas de tiendas (devuélvalas a las tiendas)
- No Food or Liquid (empty all containers) / No coloque comida ni líquido (vacíe todos los recipientes)
- No Hoses, Wires, or Chains / No coloque materiales que puedan enredarse, cables, mangueras o cadenas
- No Batteries / No coloque baterías in recycle o basura (devuélvalas a las tiendas)
- No To-go Containers para llevar comida

CITY WEBSITE RECYCLING INSTRUCTIONS

Yard Waste

Residential customers are provided yard waste collection service once per week, on Wednesday, using rear load vehicles. Yard waste should be placed in plastic bags or kraft bags designed for the purpose of holding grass clippings and leaves. Branches and tree limbs may be placed in a pile no longer than 6 feet and no higher than 4 feet. The garbage collection crews that collect garbage on Mondays, Tuesdays, Thursdays, and Fridays conduct the yard waste collection service for their respective garbage routes on Wednesdays. The same rear load vehicles with the same two personnel provide the yard waste service. As yard waste is collected, collection personnel debag at each stop. Yard waste is delivered to the City's Compost Facility.

Large Brush and Bulky Items

Residential customers are provided large brush and bulky collection service once per week of an unlimited amount of material. Residents do not have to call ahead for service. Collection is provided Monday through Friday, by designated area. The large brush and bulky items are collected in Roto-boom ("boom") vehicles operated by one person per vehicle. The City typically operates five boom vehicles per day averaging about 1,500 homes per route. Each boom vehicle operator

runs the entire route for brush and creates a list of bulky items to collect when the brush route is complete. Clean brush loads are delivered to the City's Compost Facility, and bulky loads are delivered to the City's Transfer Station.



ROTO-BOOM VEHICLE

Appliances

Appliances are collected on Wednesdays. Since the number of appliances set out each week is relatively low (typically 10 to 20 appliances per week throughout the City), the Solid Waste Supervisors collect the appliances in their pickup trucks and deliver the appliances to the Citizens Convenience and Recycling Center. Residents can place old refrigerators, dishwashers, washers, dryers, water heaters, stoves, lawnmowers, scrap metal, and other household appliances at the curb for pickup. In order to schedule a pickup, residents must call the City's Solid Waste Division prior to Wednesday, or schedule collection online.

Citizens Convenience and Recycling Center and Compost Facility

The Solid Waste Division operates the co-located Citizens Convenience and Recycling Center and Compost Facility that allows residents to deliver brush and yard waste, recycled material, and electronic waste. Commercial landscapers can also drop off yard waste at the Compost Facility. The Center provides the City's residents the ability to dispose of junk and other items at no cost.

The appliances collected from residential customers or dropped off by residents at the Citizens Convenience and Recycling Center are sent to a scrap metal dealer, Lake June Scrap Metal. The City typically delivers several loads per month, and the City

is paid a market rate based on weight. Lake June weighs the incoming load and pays the City for the scrap metal. The funds from selling the scrap metal go into the General Fund. The City contracts with Electronics Recyclers, Inc. (ERI) for processing residential e-waste dropped off at the Citizens Convenience and Recycling Center and at the bi-annual Mesquite Recycles Day events.



COMMERCIAL GARBAGE COLLECTION



MESQUITE CITIZENS CONVENIENCE AND RECYCLING CENTER

Commercial Collection Service

Commercial collection of garbage and recyclables is provided via a contract between the City and Republic Services. Businesses contract directly with Republic Services for collection of garbage in 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.

Other Collection Services

The Solid Waste Division provides additional collection services throughout the City. These additional services, using City personnel and equipment, include cleanup of abandoned houses, houses the City purchases, homeless encampments, litter on the sides of highways, and litter in Section-8 neighborhoods.

TRANSFER

The City owns and operates the City of Mesquite Solid Waste Transfer Station (Transfer Station) located at 1101 E. Main St. The Transfer Station operates from 7:00 a.m. to 7:00 p.m., Monday through Friday. The Transfer Station is co-located at the Municipal Service Center, which accommodates several different City services.

The Transfer Station only accepts residential municipal solid waste that is brought to the facility on the City's collection vehicles (either rear loaders or boom vehicles), and does not allow private contractors, residents, or other outside persons to use the facility or unload waste at the facility. Only Solid Waste Division collection vehicles, Park Maintenance Division litter trucks or authorized contractors are allowed to unload waste at the Transfer Station. At peak operation, the Transfer Station processes two to three 75 cubic yard loads an hour. The transfer trailers transport waste to Waste Management's Skyline Landfill.



TRANSFER STATION

PROCESSING

Recyclables Processing

The City contracts with FCC Environmental of Texas, Inc., (FCC) to process recyclable materials the City collects through its curbside/alley collection services and at the Citizens Convenience and Recycling Center. FCC is located at 5200 Simpson Stuart Rd. Dallas, Texas, approximately 15 miles from the City’s Solid Waste Operations Center located at 1101 E. Main St. in Mesquite.

The volatility in the recyclables market has always existed, going back to the early 1990s, but the import policy changes of China brought a new level of uncertainty to the market. Due to the “China Sword” policy and the decline in worldwide recycling markets, the City was forced to renegotiate its contract with FCC in November 2019. The supplemental agreement suspended the original revenue sharing agreement, and the City began paying FCC a processing fee of \$16.72 per ton for all materials delivered to FCC for processing, which is the same rate that the City would pay to landfill the material. However, in June of 2020, FCC raised the City’s processing fee to \$60.00 per ton as the recycling markets continue to be a challenge as does contamination in recyclables.



FCC ENVIRONMENTAL OF TEXAS, INC.

Yard Waste Processing

The City believes that processing yard waste into mulch and compost is one of the best forms of waste reduction and diversion from area landfills. As growth continues in the North Texas area, the diversion of green waste from the overall solid waste stream must be a top priority in order to increase the lifespan of area landfills. The Solid Waste Division operates the Compost Facility, co-located with the Citizens Convenience and Recycling Center, that allows residents to deliver brush and yard waste, recyclable material, and electronic waste. Because the City de-bags yard waste at the point of collection and distributes compost and mulch through bulk loads, the City is not in competition with local retailers or nurseries who sell mulch and compost to the public.

The City’s Compost Facility is open for residents and local landscape companies. The City has a contract with a private company to grind and process brush and yard waste through 3-inch screens to create material suitable for screening and

producing compost. This material is placed into “static piles” for 9 to 12 months to create material suitable for screening and producing compost. The City allows residents to pick up free mulch and compost at the Compost Facility.



COMPOST FACILITY

DISPOSAL

The City entered into a solid waste disposal agreement with Waste Management of Texas Inc. (Waste Management) on September 16, 2002. On June 4, 2012, the City extended its contract with Waste Management through September 30, 2022. The current 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 is \$19.59 per ton. The City disposes of its waste at the Waste Management Skyline Landfill, located at 1201 North Central Avenue, which is roughly 20 miles outside of the City.



SOLID WASTE DISPOSAL

OTHER CITY FACILITIES/ INFRASTRUCTURE

The City's Solid Waste Division shares space at the Municipal Service Center (1101 E Main St.), where the Solid Waste Division has its Transfer Station, office, and equipment yard. Space at this facility is extremely limited and multiple City services use the location, including Park Maintenance, a fueling station for City vehicles, and a repair and maintenance facility.

END MARKETS

Traditional recyclables are sold to end markets by the City's contracted processor, FCC. The City sells a large portion of processed yard waste to bulk distributors, such as Old Castle and Jemasco. The City also distributes compost and mulch to residents at no cost. Non-residents and commercial businesses may purchase compost for \$20.00 per cubic yard, and mulch for \$4.00 per cubic yard. In FY 2020, the sale of mulch and compost generated \$204,457 in revenues from sales. As previously noted, the City sells appliances to a scrap metal dealer, and contracts with a vendor to process electronics collected in the City.

CITIZENS CONVENIENCE AND RECYCLING CENTER ACCEPTED ITEMS

The Citizens Convenience and Recycling Center allows City of Mesquite residents to dispose of junk items at no cost. Below is a list of acceptable and unacceptable items to drop off:

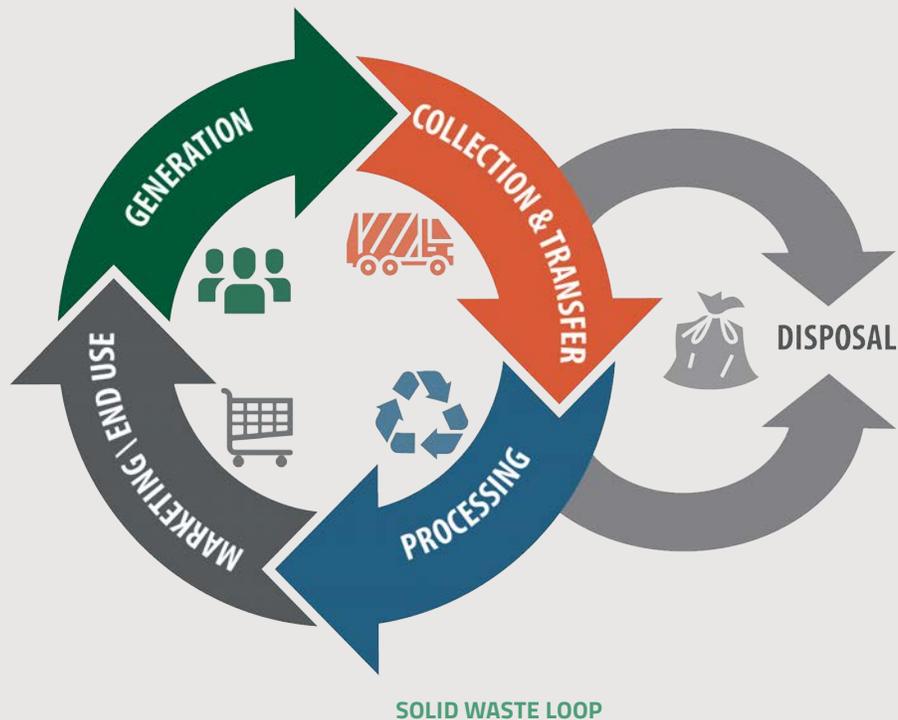
Acceptable Items: Trash, yard waste, fencing, furniture, lumber, appliances, automotive batteries, tires (limit 4). Small amounts of brick and concrete are also accepted.

Recyclable Items: Plastic containers, newspaper, magazines, telephone books, chipboard, cardboard, tin, steel, aluminum, glass, and all types of metal, and electronic waste (computers, monitors, televisions, etc.)

Unacceptable Items: Hazardous materials (pesticides, chemicals, solvents) paint, commercially generated waste, roofing materials, rocks, dirt, oil and other automotive fluids.



ASSESSMENT OF EXISTING SYSTEM, OPTIONS AND FUTURE NEEDS



Building upon the observations and assessments conducted in the **Baseline Analysis** and the **Operational Review of Residential Collection Services**, potential changes to the solid waste system were identified and discussed with City staff. Stakeholder outreach in the form of a residential customer survey and a commercial customer survey, as well as virtual public workshops were held to gauge customer opinions about the solid waste system. Taking the **Baseline Analysis, Operational Review**

of Residential Collection Services and the **Stakeholder Outreach** into consideration, the potential options to further evaluate were decided upon as described in the **Identify Potential Changes to the Solid Waste System** report and evaluations of each of the options identified were conducted as detailed in the **Evaluate Potential Changes to the Solid Waste System** report. A detailed **Cost of Service and Rate Design Study** was also conducted.

The following provides an overview of the existing system assessment, potential changes identified for further evaluation, results of the evaluations, and the key recommendations, which are generally organized around the solid waste loop. Full reports are available on the City's webpage here: [//www.cityofmesquite.com/SolidWasteMasterPlan](http://www.cityofmesquite.com/SolidWasteMasterPlan).

GENERATION

As described in more detail in the **Baseline Analysis** report, it is estimated that the City directly manages approximately 60% of the total tons generated in the City (i.e., residential waste). Approximately 40% of the total tons generated in the City is generated by the commercial sector, which is managed via a contract between the City and Republic Services. Based on the results of the NCTCOG funded regional composition study completed in 2019, **approximately 30% of the materials found in the garbage could be recycled** in the City's recycling program. In addition, based on 2019 composition and tonnage data provided by the City for the residential recycling collection services, **approximately 24% of what is placed in recycling bins or blue bags by residents is not recyclable** (i.e., contamination). Currently, education and outreach efforts to residents in the City are primarily

limited to City website information, with occasional neighborhood meetings.

Given the number of recyclables found in the garbage and the amount of contamination found in the recyclables, there is room for improvement on how and what residents set out for collection (garbage and recycling). The City is a member of the NCTCOG, which has a focus on education and outreach efforts in the region in order to streamline messaging. One such effort is the "Know What to Throw" campaign, for which the City partnered with NCTCOG to launch a campaign to better educate residents on what and how to recycle. In addition to streamlining messaging on recycling to reduce contamination, the NCTCOG is investigating the potential for expanded organics diversion possibilities in the region.



KEY RECOMMENDATIONS FOR OUTREACH:

- ▶ Continue the City's involvement with the NCTCOG, aiming to improve education and outreach efforts to increase tons recycled and decrease contamination in the recycling stream.

COLLECTION

As previously noted, the City provides collection services to residential customers using municipal crews. Houses with paved alleys may place garbage, recyclables, and yard waste on the property line nearest the alley, outside their fence (if applicable), and must not block any portion of the alley. Residents without paved alleys must place materials at the curb for collection. All residents must place large brush, bulky items, and appliances at the curb, whether they have paved alleys or not. Commercial collection is provided through a service contract between the City and Republic Services.

Based on the preliminary assessments of the City's current system and discussions with City staff, six residential collection options were evaluated, and one commercial collection option was evaluated, for a total of seven collection related options.

Residential Collection

The **Operational Review of Residential Collection Services** evaluated current collection practices and identified potential issues and opportunities for service optimization. Evaluation efforts included route observations, collection system modeling, and follow up discussions with City staff relating to residential collection. Route observations were coordinated with City staff and occurred in August 2020 for residential garbage, yard waste, and bulky items collection. As the residential recycling

program was suspended due to the COVID-19 pandemic from March through October 2020, residential recycling routes were observed in December 2020.

Table 1 shows the City of Mesquite compared to peer communities for level of service and rates. The City updates these metrics annually to continue to monitor the region for style and level of service as well as rates charged to residents. As shown in Table 1, four of the peer communities use an automated style of collection, using carts for garbage and recycling; and five communities (including Mesquite) use a manual, rear load, style of collection for garbage and recycling. The communities using an automated style of collection provide once per week garbage collection, while the communities using a manual style of collection offer twice per week garbage collection.



GARBAGE COLLECTION

Table 1: Comparison with Peer Communities

City	Collection System	# of Residential Homes	Homes per Route	Pick-up Schedule					Monthly Charge
				Garbage	Recycle	Yard Waste	Large Items	Appliance	
Arlington	3 Man Rear Loader	135,333	Republic Services	2 X Week Bags Only	1 X Week Cart	Pick-up with Garbage 1 CY Max Limbs Only	Pick-up with Garbage Household - No Const/Demo	Pick-up with Garbage	\$16.23
Carrollton	Automated	48,817	Republic Services	1 X Week Cart	Every Other Week Cart	Pick-up with Garbage, 4' Bundles Max	1 X Week No Const/Demo	With Garbage, Freon Must be Removed	\$21.42, Extra Cart \$8.50
Dallas	Automated and Laborers	513,443	Dallas Automated	1 X Week Cart	1 X Week Cart	Pick-up with Garbage Limbs Only	1 X Month Large Brush & Junk - No Const/Demo	With Large items	\$33.04, Extra Cart \$10.56
Garland	Automated	64,000	1000 Garland	1 X Week	2 X Month Cart	Pick-up with Garbage	1 X Week Brush & Junk - No Const/Demo	1 X Week by Request	\$20.58, Extra Cart \$7.10
Grand Prairie	3 Man Rear Loader	46,000	Republic Services	2 X Week Bags Only	1 X Week Green Bin Only	Pick-up with Garbage Limbs Only	1X Week by Request - No Const/Demo	1 X Week by Request	\$16.35
Irving	2 Man Rear Loader	45,000	1100 4-10 Hour Days M-T-Th-Fri	2 X Week Bags Only	1 X Week Bags Only	Pick-up with Garbage	1 X Week - No Const/Demo	With Large Items, \$25 Fee to Evac	\$25.42
Mesquite	2 Man Rear Loader	38,000	1000 Mesquite	2 X Week Cans or Bags	1 X Week Green Bin or Blue Bag Only	1 X Week	1 X Week	1 X Week by Request	\$22.25
Plano	Automated	87,000	1150 4-10 Hour Days	1 X Week Cart	2 X Month Cart Only	1 X Week Paper Lawn Bag Only, Brush Smaller than 6'x4'x4'	1 X Month \$10 per CY Brush & Junk Larger Than 6'X4'X4'	On Call, \$25 Fee to Evac	\$17.10 - 95 GAL \$12.25 - 68 GAL
Richardson	2 Man Rear Loader	34,534	1200 4-10 Hour Days M-T-Th-Fri	2 X Week Bags Only	1 X Week Blue Bag Only	Grass/Leaves Compost Bags, Max Brush 6, X	1 Week Limit, 8 Calls per Year, No Const/Demo	1 X Week by Request	\$21.00, Bags Only

Alley versus Curbside Collection

It is estimated that of the roughly 38,000 homes in Mesquite, approximately 18,400, or 48%, do not have driveways that connect directly to the street. Homes with a driveway that connect 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. Because of the operational challenges that alley collection poses, the option to move as many homes as possible from alley to curbside collection was considered.

Some of the operational challenges for alley collection include:

- Maneuverability issues for collection vehicles in the narrower alleys
- Low hanging wires
- Damage to alleys
- More widely scattered garbage takes longer for collection personnel to collect

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.³

³ Note that the City recently approved (June 2021) revisions to the solid waste ordinance to improve the conditions for collecting garbage, including the types of bags used and a requirement for items to be containerized.



ALLEY COLLECTION



CURBSIDE COLLECTION

RELEVANT RESIDENTIAL CUSTOMER SURVEY RESULTS

70% of respondents indicated they receive alley collection; 67% indicated they “prefer setting material out in the alley for aesthetic reasons (I do not want trash at the curb)”.



KEY RECOMMENDATIONS FOR RESIDENTIAL ALLEY VERSUS CURBSIDE COLLECTION:

- ▶ Document which alleys in the City are wide enough and otherwise acceptable to continue providing collection services in the alleys.
- ▶ Take a phased approach to moving homes from alley to curbside starting with homes that have driveways to the street on the most challenging alleys (i.e., broken concrete, very narrow)

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. As part of the Clean City Initiative, 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 the amount or number of bulky items that may be placed at the curb to 8 cubic yards, though brush will continue to be unlimited. Administrative fees for violations of these set-out restrictions were also included in the recently approved revisions to the solid waste ordinance.

With current code enforcement efforts limited, issues of spillage and litter (particularly in the alleys), along with a 24% contamination rate in recyclables, and new restrictions on how, and how much, materials are set out for collection, enhancements to the current code enforcement efforts were considered. To identify potential enhancements to code enforcement, the project team benchmarked code enforcement practices related to solid waste issues in eight peer communities in the region. None of the peer communities benchmarked have dedicated solid waste code enforcement personnel, and violations specific to solid waste related issues are enforced to varying degrees within those communities. Though not in the region, and not a similar sized community, the City of San Antonio has taken a more pro-active approach to solid waste code enforcement worth noting. San Antonio has 34 dedicated Solid Waste Route Inspectors, with a total population of 1.5 million (equates to one route inspector per 45,000 people), with a focus on recycling issues. The San Antonio Solid Waste Management Department has an inspection team checking the blue bins. The team documents unacceptable items and places a hang tag on the cart, indicating that it will not be picked up until the trash is removed. After a warning, if the inspection team finds more trash, it could result in a \$25 administrative fee.



KEY RECOMMENDATIONS FOR ENHANCED CODE ENFORCEMENT:

- ▶ Take a phased approach to enhancing code enforcement for residential collection:
 - In the short term, 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 recent ordinance changes (June 2021) include administrative fees for violations associated with collection services. Once these administrative fees take effect (October 1, 2021), 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 could eventually be hired to solely focus on enforcement issues to enhance the City's "Clean City Initiative" already underway.

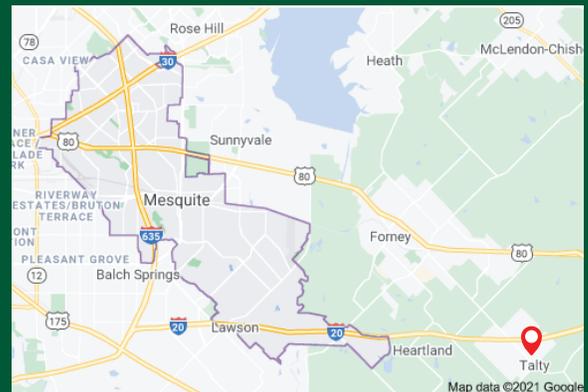
Residential Collection Services for the City of Talty

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 and the household count was estimated at 696, according to the US Census Bureau 2019 estimates (the latest data available for household counts). 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. As shown in the map to the right, Talty is located just a few miles east of the southeastern-most part of Mesquite's city limits.

Because Mesquite currently runs very efficient routes (i.e., averaging over 900 homes per garbage route), incorporating residential collection from Talty into the City's current residential collection routes may require adding one additional route as well as rebalancing existing routes. Talty's nearly 700 homes would preclude simply absorbing the Talty homes on multiple existing routes as there is not sufficient excess capacity to absorb the approximately 700 homes into the City of Mesquite's current residential collection routes. The following operational and administrative questions would need to be answered to determine the specific impacts to the City's collection system:

- Which services will be provided to Talty (i.e., garbage, recycling, yard waste, large brush and bulky items)?
- What frequency of service would be provided to Talty?

- What style of service would be provided to Talty (manual or automated)?
- How would billing of Talty residents for services be conducted?



TALTY PROXIMITY TO MESQUITE

KEY RECOMMENDATIONS FOR RESIDENTIAL COLLECTION SERVICES FOR THE CITY OF TALTY:

- ▶ Determine Talty's current interest in Mesquite providing collection services, which collection services, and with what frequency.
- ▶ If Talty is interested, determine cost to provide the service and billing mechanism to charge Talty residents for collection service.

Residential Garbage Collection

During route observations, it was observed that an average of 87% of homes set out on the first collection day of the week and an average of 82% of homes set out on the second collection day of the week. Based on weight information obtained at the end of each route observed, each household sets out an average of 40.5 pounds on the first collection day of the week and an average of 33.7 pounds on the second collection day of the week. While the City does not limit how many cans or bags of garbage are set out, it was observed that many homes set out what could be considered an excessive amount of waste.



EXCESSIVE SET OUT IN THE ALLEY



EXCESSIVE SET OUT AT THE CURB

While the City has ordinance language relating to the thickness of bags used to set out garbage, enforcement of the requirement is minimal at this time. It was observed that bags tore during the collection process, and some residents set out loose items (i.e., not in bags or cans). The City has recently approved revisions to the solid waste ordinance to improve the conditions for collecting garbage, including the types of bags used and a requirement for items to be containerized; however, enforcement of the existing and new ordinance requirements is necessary to implement the improvements for how garbage is set out by residents.

The City recently conducted a 6-month pilot program using 45-gallon carts in some areas and 96-gallon carts in other areas with approximately 1,000 homes participating. The carts were collected using a semi-automated style of collection, meaning tipper were added to the back of rear load vehicles for the collection personnel to bring the cart to the back of the vehicle, the tipper tips the cart into the back of the vehicle, and the collection personnel return the cart to the resident's property. Carts can be collected using a semi-automated style of collection, as the City did in its pilot program; or carts can be collected using a fully automated style of collection where automated side load vehicles 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. As shown in Table 2, there are advantages and disadvantages to using carts for collection as well as with the type of vehicle used for collecting carts (i.e., semi-automated, fully automated).

Table 2: Advantages and Disadvantages of Residential Collection Styles

Style	Advantages	Disadvantages
Manual (rear load)	<ul style="list-style-type: none"> ■ Customer choice of containers ■ No container cost for City or hauler ■ Can set out multiple cans/bags 	<ul style="list-style-type: none"> ■ Manual lifting required, increasing likelihood of injuries ■ More collection personnel required ■ Less uniform look
Semi-automated (rear load with tipper)	<ul style="list-style-type: none"> ■ Improves neighborhood aesthetics (uniformity) ■ Enhanced worker safety (mitigate heavy lifting) ■ Can allow "out-of-cart" set outs ■ Can collect in alleys 	<ul style="list-style-type: none"> ■ Cart cost for City ■ Material should be placed in the cart for more efficient collection ■ More collection personnel required than fully automated ■ Additional education and outreach
Fully automated (automated side load)	<ul style="list-style-type: none"> ■ Improves neighborhood aesthetics (uniformity) ■ Enhanced worker safety (no heavy lifting) ■ Less collection personnel required ■ More efficient collection 	<ul style="list-style-type: none"> ■ Cart cost for City ■ Material must be placed in the cart ■ Additional education and outreach ■ Cannot collect in narrower alleys ■ Areas with excessive on-street parking can be difficult to serve

As shown in Table 3, the alternative of using carts is estimated to result in slightly higher overall costs than the current manual system because of the cost of carts. A fully automated collection system would be slightly more expensive than a semi-automated system due to the higher price of fully automated vehicles; however, there are reduced labor costs associated with only needing a driver, and no collectors, to provide the service, which could also mitigate the challenges of hiring and retaining drivers.

Note that if the City considered changing to once per week garbage collection, as is common in the peer communities that provide garbage collection using carts, **the potential overall savings could be more than \$750,000 per year in a fully automated system due to less vehicles and personnel needed to provide the service.** However, impacts on other services (i.e., yard waste and bulky items collection) may offset the potential savings.

Table 3: Summary of Estimated Annual Financial Impacts

	Manual	Semi-Automated	Fully Automated
Annual Total Labor Costs	\$1,584,000	\$1,584,000	\$1,197,000
Annual Total Vehicle Operating Costs	\$373,813	\$373,813	\$442,820
Total Estimated Labor and Operating Costs	\$1,957,813	\$1,957,813	\$1,639,820
Annual Total Vehicle Capital Costs	\$422,857	\$445,714	\$835,714
Annual Total Cart Capital Costs	NA	\$205,480	\$205,480
Total Annual Estimated Collection Costs	\$2,380,670	\$2,609,008	\$2,681,017

Additional challenges of cart collection that should be considered include:

- Operational/labor configurations:** Fully automated routes would require only drivers and those drivers require additional training to operate the automated side load vehicles. Semi-automated routes would require a driver and a collector. In the current system, other drivers can fill in to manage absenteeism. For fully automated routes, the number of drivers available to fill in to manage absenteeism would be less unless all drivers received additional training to operate the fully automated vehicles.
- Impact on yard waste collection:** The City currently provides yard waste collection on Wednesdays using the same rear load vehicles and personnel that perform the garbage collection on Monday, Tuesday, Thursday, and Friday. If the City elected to implement cart collection using a combination of fully automated and semi-automated styles of collection, the City would either still need to maintain the same number of manual vehicles for yard waste or would need to consider changing yard waste collection to occur every day of the week to reduce the number of rear load vehicles needed to provide yard waste collection service.
- Impact on bulky items collection:** The City currently provides weekly large brush and bulky items collection using “boom” vehicles; however, in the current system, residents who set out materials that can be easily handled by a collector and placed into the rear load vehicle are

collected with the garbage routes. If the City implemented cart collection, only items that can fit into a cart would be part of garbage collection service. The City would need to enforce the rules of only collecting what can fit into the cart for garbage collection service and may need to operate a rear load route for every boom route to collect the items that cannot be placed into a cart but do not require a boom vehicle for collection.

- Impact on recycling collection:** If the City elected to use carts for garbage, consideration should be given to using carts for recycling. The same issue of alley versus curbside collection would need to be considered to determine the appropriate balance of semi-automated and fully automated vehicles.

Generally, fully automated collection vehicles can typically service between 1,000 and 1,200 homes per route (versus 850 to 950 homes per route with manual or semi-automated). Especially given the high growth that is expected in Mesquite over the next 10 years, the City could consider phasing in automated side load vehicles to provide garbage collection service in contiguous areas to create fully automated routes as these areas develop. However, because of route logistics, impacts on personnel, and impacts on other services (i.e., yard waste, bulky items), providing cart collection with semi-automated vehicles citywide may be the best approach in the short run. As the City continues to grow, larger areas of the City could be serviced by fully automated vehicles. A hybrid approach to collection, predominantly using fully automated vehicles, becomes more feasible, though impacts to other services and customer acceptance should be considered.



KEY RECOMMENDATIONS FOR RESIDENTIAL GARBAGE COLLECTION:

- ▶ While automated collection is operationally feasible in the City, meaning all residents receive carts, it would only be financially feasible with a reduction in frequency of service and would impact yard waste collection and bulky items collection.
- ▶ The City should conduct:
 - Customer outreach to determine acceptability of carts and other service level changes.
 - Further research to determine feasibility of areas of the City where carts could be collected with fully automated collection and where semi-automated would be necessary.
 - Further research to determine impacts on other collection services (i.e., yard waste and bulky items collection).

Residential Recycling Collection

Recycling routes were observed shortly after the City resumed the residential recycling collection service (temporarily suspended due to COVID-19), and the observed set-out rate was 16%. However, the average set-out rate the City experienced prior to the temporary suspension was 33%, which is expected to resume in the City. The average pounds per set-out of recyclables is estimated at 9.85 pounds per household.

The City currently uses bins and blue bags to collect recyclables from residents. 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).

There are a few different options that could be considered for residential recycling collection. The City could continue with the bin/bag manual approach but reduce frequency to every-other-week (EOW); the City could change to cart collection for recycling using semi-automated or fully automated collection with once per week collection or EOW collection; the City could discontinue curbside/alley collection of recyclables and only offer drop off of recyclables at the Citizens Convenience and Recycling Center.

As shown in Table 4, there are advantages and disadvantages to each of these options for residential recycling.

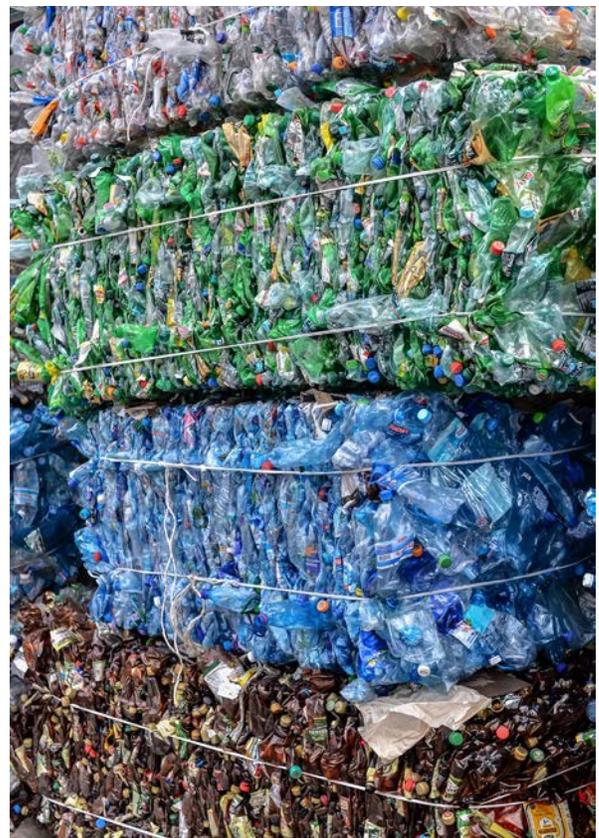


Table 4: Advantages and Disadvantages of Recycling Collection Options

Style and Frequency	Advantages	Disadvantages
Manual (bins/bags) 1 x week (Current)	<ul style="list-style-type: none"> Can set out multiple bins/bags Easier to detect contamination than in carts Continues frequency customers are used to 	<ul style="list-style-type: none"> Manual lifting required More collection personnel required Less uniform look
Manual (bins/bags) EOW	<ul style="list-style-type: none"> Can set out multiple bins/bags Easier to detect contamination than in carts Cost savings, versus weekly 	<ul style="list-style-type: none"> Manual lifting required More collection personnel required Less uniform look Less frequent service than customers are used to receiving May require additional bins per resident to accommodate 2 weeks of recyclables
Semi-automated (carts) 1 x week	<ul style="list-style-type: none"> Improves neighborhood aesthetics Enhanced worker safety (mitigate heavy lifting) Can allow "out-of-cart" set outs Can collect in alleys Continues frequency customers are used to 	<ul style="list-style-type: none"> Cart cost for City Material should be placed in the cart for more efficient collection More collection personnel required than fully automated Additional education and outreach Curbside customers would have to store the cart near the house between collections
Semi-automated (carts) EOW	<ul style="list-style-type: none"> Improves neighborhood aesthetics Enhanced worker safety (mitigate heavy lifting) Can allow "out-of-cart" set outs Can collect in alleys Cost savings, versus weekly 	<ul style="list-style-type: none"> Cart cost for City Material should be placed in the cart for more efficient collection More collection personnel required than fully automated Additional education and outreach Curbside customers would have to store the cart near the house between collections Less frequent service than customers are used to
Fully automated (carts) 1 x week	<ul style="list-style-type: none"> Improves neighborhood aesthetics Enhanced worker safety (no heavy lifting) Less collection personnel required More efficient collection Continues frequency customers are used to 	<ul style="list-style-type: none"> Cart cost for City Material must be placed in the cart Additional education and outreach Cannot collect in narrower alleys Areas with excessive on-street parking can be difficult to serve
Fully automated (carts) EOW	<ul style="list-style-type: none"> Improves neighborhood aesthetics Enhanced worker safety (no heavy lifting) Less collection personnel required More efficient collection Cost savings, versus weekly 	<ul style="list-style-type: none"> Cart cost for City Material must be placed in the cart Additional education and outreach Cannot collect in narrower alleys Areas with excessive on-street parking can be difficult to serve Less frequent service than customers are used to
Drop-off Only	<ul style="list-style-type: none"> Save on collection costs Reduce contamination 	<ul style="list-style-type: none"> Eliminates a service customers are used to Less convenient (may reduce participation) May result in less material diverted

As shown in Table 5, the alternatives of using carts with once per week recycling collection would result in higher overall costs than the current manual system because of the cost of carts. However, a fully automated collection system with every-other-week collection would only be approximately \$40,000 more expensive than the current system even with the cost of carts, due to labor savings. **Note that if the City elected to only provide carts to those customers who request it, fully automated collection would be less expensive than the current system.**

Table 5: Summary of Estimated Annual Financial Impacts of Recycling Collection Options

	Manual 1 x week	Manual EOW	Semi-Automated 1 x week	Semi-Automated EOW	Fully Automated 1 x week	Fully Automated EOW
Annual Total Labor Costs	\$297,000	\$198,000	\$297,000	\$198,000	\$199,500	\$133,000
Annual Total Vehicle Operating Costs	\$70,467	\$48,046	\$70,467	\$48,046	\$79,219	\$54,610
Total Labor and Operating Costs	\$367,467	\$246,046	\$367,467	\$246,046	\$278,719	\$187,610
Annual Total Vehicle Capital Costs	\$79,286	\$52,857	\$83,571	\$55,714	\$139,286	\$92,857
Annual Total Cart Capital Costs	NA	NA	\$205,480	\$205,480	\$205,480	\$205,480
Total Annual Estimated Collection Costs	\$446,753	\$298,903	\$656,519	\$507,240	\$623,485	\$485,947

Discontinuing curbside/alley collection of recyclables would save on collection costs but would adversely impact the number of participants and tons recycled. The City could reduce the frequency of recycling collection to every-other-week and save an estimated nearly \$150,000 in annual costs. If the City implements cart collection for garbage, the City could consider implementing cart collection for recycling as well. The decision to collect carts with semi-automated or fully automated vehicles, or a hybrid of the two, should mirror what is decided for garbage cart collection.

Given the NCTCOG’s emphasis on increasing diversion, and the City’s active participation with the NCTCOG, over time, the number of residents participating in recycling and the number of tons of recycled is likely to increase. As such, the City should prepare to manage a greater volume of tons in the future. Because cart collection provides greater capacity, cart collection of recyclables may become a preferred method of collection.



KEY RECOMMENDATIONS FOR RESIDENTIAL RECYCLING COLLECTION:

- ▶ Continue to offer curbside/alley recycling collection service.
- ▶ Determine feasibility of cart collection in conjunction with garbage collection.
- ▶ Determine customer acceptance of change in frequency of collection.

RELEVANT RESIDENTIAL CUSTOMER SURVEY RESULTS

48% of respondents indicated it is “extremely important” and 20% indicated it is “very important” for Mesquite to offer curbside/alley collection of recyclables. 58% indicated they set out recyclables once per week.

Residential Large Brush and Bulky Items Collection

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. 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 evaluation of alternatives to the unlimited, weekly, without residents calling ahead, approach of providing large brush and bulky collection was considered.

To identify potential changes to large brush and bulky items collection, the project team benchmarked collection practices in eight peer communities in the region. Table 6 summarizes the results of the benchmark efforts.

Table 6: Large Brush and Bulky Items Benchmark

Community	Frequency	Call Ahead (yes/no)	Set Out Restrictions	Included in base rate?
Arlington	1 x week	No, unless too large for regular collection	1 cubic yard per bulk collection day; No construction/demolition	Yes (plus two free landfill coupons for drop-off)
Carrollton	1 x week	No	No construction/demolition, except from small home improvements not exceeding 6'X 4' pile	Yes
Dallas	1 x month	No	10 cubic yards; residents allowed 1 x year up to 20 CY with call-ahead; no construction/demolition	Yes (non-compliant set out will be collected, and customer will automatically be billed for the non-compliant set out at a rate of \$60 per 5 cubic yards, billed in 5 cubic yard increments)
Garland	1 x week	No	No construction/demolition; will leave a tag if pile is not picked up to explain why	Yes
Grand Prairie	1 x week bulky items; 1 x month brush	Yes, for bulky items; no for brush	No construction/demolition	Yes
Irving	1 x week	No	No construction/demolition	Yes
Plano	1 x month bulky items; bulky yard waste “Special Paid Collection”	No, unless “Special Paid Collection” for large volumes at one time	If multiple 6'X 4'X 4' piles, all of the debris may not be collected at one time; can request Special Paid Collection	Yes, except piles larger than 6'X 4'X 4' that request Special Paid Collection \$10/CY
Richardson	1 x week (up to 8 x per year)	Yes	Limit of 8 calls per year; no construction/demolition	Yes

As shown in Table 6, only two of the peer communities currently require residents to call ahead to schedule large brush and/or bulky items collection, Grand Prairie and Richardson; though Dallas requires residents to call ahead for the once per year up to 20 cubic yard collection service. The cities of Arlington and Dallas limit the amount of material that may be set out as part of standard collection services. Dallas may collect more than the 10 cubic yard limit but will automatically bill the resident for the excess amount at a rate of \$60 per 5 cubic yards, billed in 5 cubic yard increments. Plano offers a “Special Paid Collection” for excessive amounts of bulky items. Plano requires the resident to request a Special Paid Collection for large brush that does not fit the requirements for the standard weekly yard waste collection. Dallas and Plano offer once per month collection of bulky items. The other peer communities offer the service once per week.

Amount: Mesquite is already taking steps to limit the amount or number of bulky items that can be set out to 8 cubic yards. Enforcing the set-out restriction may require “tagging” the piles (leave a tag on the pile or on the door) similar to what Garland does. Education and enforcement are important steps to ensuring residents abide by the restrictions.

Call Ahead: While some of the peer communities require the resident to call ahead for bulky items, in practice, residents may not always comply though collection crews can see the bulky items set out while driving the routes and often times collect the material anyway to avoid leaving the piles on the street.

Additional Charge: For residents who set out more than 8 cubic yards at one time (or request a special bulk pick-up), the City has approved revisions to the solid waste ordinance that allow the

City to charge an administrative fee of \$20. A route supervisor would need to photograph and document the excess bulky items. This enforcement is anticipated to go into effect on October 1, 2021.

Frequency: Mesquite could consider limiting the frequency of large brush and bulky items collection to once per month. If the City elected to limit collection to once per month, the City could be divided into four zones with bulk collection occurring in a different zone each week of the month. Educating residents on the change to frequency and informing them of their bulky items collection week would be essential. Part of educating residents would mean enforcing the proper timing of set outs by leaving a tag when bulky items are set out on a week other than the week collections occur, to mitigate bulky items being left at the curb for weeks at a time. A potential benefit to changing collection frequency to once per month is that drivers could be reassigned to garbage and yard waste routes, helping to alleviate the challenge of hiring and retaining CDL licensed drivers, which are in high demand.

As shown in Table 7, the operational and financial impacts estimated with changing frequency of large brush and bulky collection from once per week to once per month could result in estimated savings of approximately \$400,000 annually.

Table 7: Summary of Estimated Financial Impacts of Large Brush and Bulky Items Collection Options

	Large Brush & Bulky Items	Large Brush & Bulky Items
	1 x week	1 x month
Annual Total Labor Costs	\$332,500	\$133,000
Annual Total Vehicle Operating Costs	\$190,854	\$75,407
Total Labor and Operating Costs	\$523,354	\$208,407
Annual Total Vehicle Capital Costs	\$145,357	\$58,143
Total Annual Estimated Collection Costs	\$668,711	\$266,550

There are advantages and disadvantages to making changes to the frequency of large brush and bulky items collection that should be considered, summarized in Table 8 below.

Table 8: Advantages and Disadvantages of Large Brush and Bulky Items Collection Options

Advantages	Disadvantages
<ul style="list-style-type: none"> ■ Potential for operational cost savings ■ Potential for more drivers available for garbage and yard waste collection, where hiring CDL licensed drivers has been a challenge 	<ul style="list-style-type: none"> ■ Could be perceived by residents as a reduction in service ■ Extensive outreach and enforcement would be necessary to make sure residents understand the new schedule and set out limits, and deter illegal dumping



KEY RECOMMENDATIONS FOR RESIDENTIAL LARGE BRUSH AND BULKY ITEMS COLLECTION:

- ▶ Implement a phased approach to changes to large brush and bulky items collection by:
 - First, enforcing the new 8 cubic yard limit on bulky items and assessing fees for more than 8 cubic yards.
 - Then, determine customer acceptability of once per month large brush and bulky items collection.
 - If acceptable, implement once per month collection.

RELEVANT RESIDENTIAL CUSTOMER SURVEY RESULTS

40% of respondents indicated setting out bulky items or large brush "less than once per quarter"; 39% indicated setting out "once per quarter."

Commercial Collection

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.

The project team reviewed the City budget, along with salary estimates, capital estimates, and route sheets provided by Republic Services. Based on these data inputs, the project team compiled a proforma budget that estimates the over/(under) recovery the City would incur if they were to provide commercial collection services.

Based on a review of route sheets provided by Republic Services, the project team determined that the City would need the same number of front load and roll off drivers that Republic Services currently uses, to operate the 15 commercial collection routes. Two backup drivers, one supervisor, and two administrative clerks were also budgeted in the analysis, and the personnel costs were forecasted using the City's salary and benefit structure. The estimated total annual cost of salaries and benefits for these personnel is estimated at \$1,032,080.

Debt was forecasted based on the purchase price of eight new front load vehicles, two backup front load vehicles, seven new roll off vehicles, one roll off backup vehicle, roll off containers, compactors, and front load dumpsters. Proposed financing of the vehicles would use a 10-year, \$4.74 million bond at 3.5% interest; and financing the containers, compactors, and dumpsters using a 20-year, \$3.88 million bond at 5% interest. The annual principal and interest for the 10-year bond and the 20-year bond is \$577,190 and \$315,980, respectively.

To provide the commercial collection services, the City would need to expand their current Solid Waste Operations Center. To accommodate the expansion of the Solid Waste Operations Center, a proposed additional 20-year, \$3.3 million bond at 5%

interest has been included in the proforma. The principal and interest for this bond is \$268,178. Per conversations with City staff, \$695,892 was added to the proforma for a General Fund transfer. A franchise fee of 5.00% of gross revenues and a PILOT (payment in lieu of taxes), based on the estimated fixed assets for the commercial collection operation, were added to the proforma.

Based on the above cost assumptions and analysis completed by the project team, the City is projected to generate excess revenues of nearly \$1.5 million 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.

Because the City's current contract with Republic Services expires on January 31, 2022, the City would need to take steps in 2021 to be ready to take over commercial collection services, if the City elected to do so. An extension of the current contract is necessary whether the City takes over commercial collection or not.



TRANSFER STATION

KEY RECOMMENDATIONS FOR COMMERCIAL COLLECTION:

- ▶ Determine whether City will take over commercial collection and if so, how long of an extension in the current service agreement would be necessary to begin providing commercial collection services.
- ▶ If the City determines to take over commercial collection:
 - Acquire personnel and equipment.
 - Set up agreements with commercial customers.
 - Make the expansions at the Solid Waste Operations Center to accommodate personnel and vehicles.

RELEVANT COMMERCIAL CUSTOMER SURVEY RESULTS

82% indicated they currently receive service from the City's contracted hauler, Republic Services. 25% indicated they were "very satisfied" with service; 36% indicated "satisfied"; 25% indicated "neither satisfied nor dissatisfied"; 11% indicated "dissatisfied"; and 4% indicated "very dissatisfied."

TRANSFER

The City currently owns and operates a Transfer Station co-located at the Municipal Services Center. The Transfer Station only accepts residential municipal solid waste that is brought to the facility on the City's collection vehicles (either rear loaders or boom trucks), or the City's Park Division litter vehicles. Private contractors, residents, or other outside persons are not allowed to use the facility or unload waste at the facility. At peak operation, the Transfer Station processes up to three 75 cubic yard trailer loads per hour. The transfer trailers transport waste to Waste Management's Skyline Landfill for disposal.

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

Current Transfer Station Operations

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 City's solid waste Transfer Station is currently permitted to operate and accept waste from 7:00 am to 7:00 pm, Monday through Friday. Members of the project team conducted a site visit of the Transfer Station. The project team evaluated current operations resulting in the following observations and recommendations regarding capacity, staffing, equipment, and safety.

The existing Transfer Station Site Operating Plan (SOP) dated December 2019 indicates that the Transfer Station will receive 230 tons of daily waste. In the last decade (2011-2020), the incoming annual waste tonnage at the Transfer Station increased more than 40%. In FY 2020, the Transfer Station managed approximately 64,000 tons for transfer to the landfill. This represents an average of 246 tons per day. As currently configured, the existing Transfer Station appears to be operating beyond its capacity (per the SOP) and given the limited tipping floor surge capacity, does not appear to be configured to handle all the projected future growth.

The existing Transfer Station has been operated by a small number of trained City staff who have been involved with the Transfer Station equipment operations and maintenance for numerous years. Several of these staff members are reportedly nearing retirement, representing the potential loss of significant operational and maintenance knowledge related to the Transfer Station.

The current installed facility equipment is approximately 20 years old and is scheduled for replacement.⁴ Given the continued reliance on the conveyor and compactor required to load waste into the trailers for transport to the landfill, the City should maintain an inventory of critical spare parts that are sourced and replaced as they are used to ensure continued, uninterrupted operation of this equipment.

⁴ To date, staff have done an excellent job of sourcing parts to continue the ongoing maintenance of the facility and replacement of parts as required. However, that will only get harder as institutional knowledge is lost through retirements, technological obsolescence, etc.



KEY RECOMMENDATIONS FOR CURRENT TRANSFER STATION:

- ▶ Begin succession planning for staffing at the current Transfer Station.
- ▶ Update the Site Operating Plan to reflect additional tonnage.
- ▶ Continue to maintain critical equipment parts inventory.
- ▶ Periodically conduct safety audits.

Potential Second Transfer Station

This option considers the development of a second transfer station to better serve the growing areas in the eastern areas of the City and adjacent areas within Kaufman County. As a part of this evaluation, the project team evaluated the potential development of a new transfer station generally situated in the vicinity of IH-20 East and Malloy Bridge Road (FM740) to service this growing area of residential development. Based on the anticipated growth, it was confirmed that the potential transfer station would need to accommodate up to 500 tons per day of waste generation. The project team evaluated three potential alternatives, each of which assumed the following basic components.

- A minimum property size of 10 acres dedicated to the transfer station operation. 20 acres would be desirable to account for property shape, topography, and truck access queuing.
- The availability of utilities to the proposed location.
- Access to adequate roads to support the anticipated traffic associated with the transfer station.
- Appropriate adjacent land uses to support this type of development.
- Transport of waste from this facility to a remote landfill (i.e., either Skyline Landfill or McCommas Bluff Landfill or the Charles Hinton Landfill).

- The costs for the proposed alternatives are based on the construction and operations costs. Disposal fees (i.e., the tipping fee for the three possible landfills) were not considered in this part of the evaluation of comparing the alternatives for the second transfer station.

All three of the transfer station alternatives evaluated by the project team share similar features that include the building and onsite access configuration to minimize bias between the alternatives evaluated. The following describes the three alternatives evaluated. *Note that the three alternatives could be viewed as potential sequential stages of the operational development of a second transfer station, as additional services may be included to address customer use of this transfer station over time.*

Alternative 1: An 8,400 square-foot pre-engineered metal building with the availability of six unloading bays is proposed to support a top-loading transfer trailer operation. Included within this configuration would be a 700 square-foot employee office/breakroom/restroom space to support a staff of approximately eight employees. This site would require a 20-foot grade separation to accommodate the ability to top load the transfer trailer. This operation would be supported by transfer truck/trailer combinations capable of transporting the waste received to a remote landfill. A truck scale installed in the loadout tunnel would provide accurate loaded trailer weights, which would assist in streamlining the loadout activities. A separate scale house and truck scale would be included on the primary access road to weigh incoming vehicles for billing purposes. This building would include a restroom for the staff supporting this component of the operation. All access and departure routes within the facility property would be constructed with all-weather paved surfaces. The perimeter of the facility would be enclosed with fencing to provide site security. More details including a conceptual site plan for Alternative 1 is included in the **Identify the Best Options** report.

Alternative 2: Alternative 2 would include all the components identified in Alternative 1. The only proposed change would be the inclusion of the operational ability to utilize several of the unloading bays for citizen waste and or recyclables drop off. An additional 20-foot storage area outside the proposed building would be included to accommodate the storage of recyclables prior to transfer for processing elsewhere. No cost differential was identified to accommodate this alternative beyond the costs identified for Alternative 1. More details including a conceptual site plan for Alternative 2 is included in the **Identify the Best Options** report.

Alternative 3: Alternative 3 would include all of the components identified in Alternative 1. A separate convenience and recycling drop-off area that consists of a 2,000 square foot concrete slab with walls and associated driveway approaches would be installed between the transfer station building and the scale house. This configuration would provide a separate drop off location that would allow for the separation of citizens delivering waste and recyclables from large collection vehicles accessing the transfer station. This operation would include the utilization of 20 cubic yard roll off boxes and a roll off truck capable of moving the

waste and recyclables collected in them to the transfer station for transport to the landfill, or the direct hauling of recyclables for further processing. More details including a conceptual site plan for Alternative 3 is included in the **Identify the Best Options** report.

For the purpose of the financial analysis related to a potential second transfer station, the project team evaluated Alternative 1, which has the same costs associated with it as Alternative 2. Alternative 3 was not included in the cost evaluation, as it is assumed that adding a convenience center outside of the proposed transfer station would only occur if the City deemed it necessary in the long term due to collection vehicle traffic increases at the transfer station bays. As shown in Table 9, the estimated cost per ton for the proposed second transfer station would be \$10.98.



TRANSFER STATION TRUCK

Table 9: Transfer Station Estimated Cost per Ton

Operating Costs ¹	
Staffing	\$604,032
Equipment Operations	74,880
Facility Costs	24,000
Total Operating Costs	\$702,912
Capital Costs	
Principal – Construction ²	\$162,607
Interest – Construction ²	268,613
Principal – Equipment ³	102,451
Interest – Equipment ³	41,237
Total Debt Service	\$574,908
Annual Transfer Station Costs	\$1,277,820
Estimated Tons ⁴	116,370
Cost per Ton	\$10.98

1. Cost estimates per Alternative 1 Associated Cost Estimate Transfer Station Facility (New).
2. Assumes an interest rate of 5.00% over a 20 year period. Issuance fees are 2.00%.
3. Assumes an interest rate of 3.50% over a 10 year period. Issuance fees are 2.00%.
4. The estimated tons are based on seven current and near future residential routes delivering to this transfer station, commercial/industrial roll off loads delivering to this transfer station, and an assumed 50% of tons generated elsewhere in Kaufman County delivering to this transfer station.

Table 10 shows the total cost per ton for operating the proposed transfer station as well as hauling costs associated with hauling the material to the three landfill options evaluated.

Table 10: Transfer Station Cost per Ton for Alternative Landfills

	Skyline Landfill	McCommas Bluff	Charles Hinton
Operational Cost	\$10.98	\$10.98	\$10.98
Estimated Hauling Cost ¹	4.00	4.00	7.00
Total Cost per Ton	\$14.98	\$14.98	\$17.98

1. Hauling cost estimate per Alternative 1 Associated Cost Estimate Transfer Station Facility (New).

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.

PROCESSING

The City contracts for the processing of recyclables collected from residents. The City sells appliances collected in the City directly to a scrap metal recycler, and contracts with a vendor to process electronics collected in the City. The City runs the Compost Facility to turn yard waste collected in the City or delivered to the Compost Facility into mulch and compost.

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

Analysis of Recycling Markets

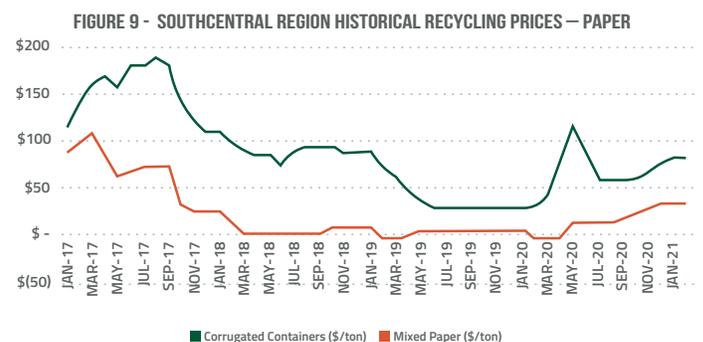
The markets for recyclable materials are undergoing a noticeable change in the United States (U.S.) and around the world. To a large extent, the decline in revenues experienced can be attributed to policy changes in China. Since 2013, and more intensely in the past 4 years, China has imposed bans and stringent contamination restrictions on importing recyclable materials, which has resulted in turmoil in the U.S. recycling industry. This shift has occurred across all export-based recyclable materials (i.e., paper, plastics, metals, some textiles). China was the largest export market for recyclables generated in the U.S., previously importing approximately 13 million tons of paper and 776,000 tons of plastic from the U.S. annually.

As the export markets and domestic reclamation capacity continue to recover from the effects of China's import bans, commodity pricing is starting to show signs of recovery. Mesquite is in the Southcentral U.S. market region, as reported by RecyclingMarkets.net. As shown in Figure 9, corrugated containers experienced a significant drop in price per ton in 2017 that continued through 2018 and 2019 before spiking in May of 2020, believed to be related to COVID-19 shutdowns that caused more people to have things delivered to their homes in cardboard boxes, increasing demand for corrugated containers. Corrugated container prices have fallen off since the spike in May 2020 but are still stronger than they were throughout the second half of 2019.



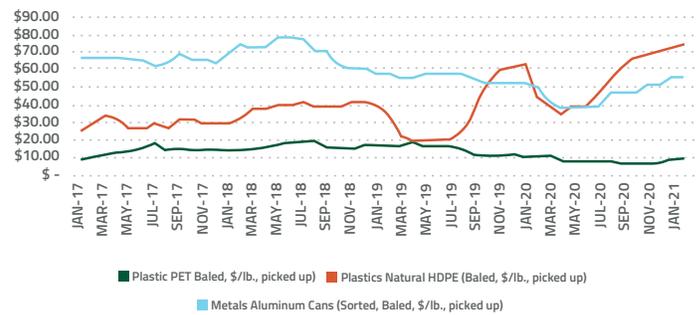
KEY RECOMMENDATIONS FOR POTENTIAL SECOND TRANSFER STATION:

- Determine whether the City will take over commercial collection.
- Conduct further research regarding tons from Kaufman County that would be likely to use the potential second transfer station.
- If ample usage of the potential transfer station is confirmed, begin process to construct a second transfer station.



As shown in Figure 10, PET plastic prices have remained consistently low over recent years and has seen a drop in 2020, likely due to lower virgin PET prices. Similarly, aluminum cans experienced a drop in prices in 2020, which may in part have been due to less demand during the COVID-19 shutdowns, but aluminum cans prices have begun to recover in 2021. Natural HDPE has been experiencing price increases consistently since mid-2019, largely due to lessening supply of natural HDPE as milk jugs and similar items, a common source of recycled natural HDPE, continue to trend toward other forms of packaging while demand for natural HDPE remains high since it can be used in products of any color.

FIGURE 10 - SOUTHCENTRAL REGION HISTORICAL RECYCLING PRICES - CONTAINERS



The City’s processing agreement with FCC is set to expire in February 2022. As a result, the project team evaluated the locations of other Materials Recovery Facilities (MRF’s) in the region. Because the Texas Commission on Environmental Quality (TCEQ) does not permit these facilities, a regional inventory of their locations is not tracked at the statewide level. Because the recyclables collected by City collection vehicles are directly hauled to the processing facility, proximity is an important consideration. Our research showed the following two privately owned and operated MRF’s in the region that appear to be in the closest proximity to Mesquite:

- FCC (current processor), approximately 15 miles from the City
- Republic Services - Plano Recycling Facility, approximately 26 miles from the City

The City could seek another 1-year extension for its current agreement with FCC and wait to see if commodity markets improve, or the City could issue a Request for Proposals (RFP) for processing capacity to obtain competitive pricing from MRF’s in the region. Because processing costs remain relatively high, an RFP process could be helpful to know the City is getting the best possible price and it appears there could be competition in the region. 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 should also be explored to reduce the impacts of contamination on recycling program costs.

KEY RECOMMENDATIONS FOR RECYCLING PROCESSING:

- ▶ Issue an RFP for recyclables processing capacity.

Potential Long Term Operational Changes for the Citizens Convenience and Recycling Center and Compost Facility

The City of Mesquite’s Compost Facility is co-located with a Citizens Convenience and Recycling Center at 3550 Lawson Road. Members of the project team conducted a site visit of the Citizens Convenience and Recycling Center and Compost Facility.

The project team evaluated current operations resulting in the following observations and recommendations:

- Composting materials at the facility are placed into “static piles” for 9 to 12 months prior to further processing. The facility currently has more than twenty composting piles with varying age ranges from 1 to 3 years.
- Net available area for composting operation from 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. Net existing volume currently in use at the facility is approximately 280,000 cubic yards.
- Stockpiles located at the facility meet the 2018 International Fire Code (IFC) which specifies the maximum size of the compost stockpiles as 250’x150’ with a maximum height of 25 feet. The code also requires each stockpile to be separated from adjacent piles with a minimum 20-foot-wide access road for fire apparatus.
- Additional smaller composting stockpiles at the northeast of the facility have the capacity to add 10 more years at the existing facility based on projected growth within the City and the associated increased amounts of yard waste. In anticipation of the loss of property to the Wastewater Treatment Plant expansion which would absorb approximately 2 acres of the current Compost Facility, it was determined that sufficient land, approximately 7 acres, is potentially available across the road.
- The City should periodically complete safety audits of the operations focusing on slip, trip and fall hazards associated with the citizen unloading area at the Citizens Convenience and Recycling Center area, and the commercial bulk loading ramp. Green waste unloading practices and traffic patterns where heavy equipment and customer vehicles interact at the Compost Facility should also be evaluated for safety.



CITIZENS CONVENIENCE AND RECYCLING CENTER AND COMPOST FACILITY



KEY RECOMMENDATIONS FOR OPERATIONAL CHANGES AT CITIZENS CONVENIENCE AND RECYCLING CENTER AND COMPOST FACILITY:

- ▶ Reorganize the composting stockpiles as necessary.
- ▶ Once current site is at capacity, determine whether to stop accepting from commercial landscapers, or how to increase throughput, or identify an alternative site.
- ▶ Perform periodic safety audits.

DISPOSAL

The current contract with Waste Management for disposal of the City’s residential waste at Skyline Landfill expires in September 2022. It is anticipated that the City, prior to that date, will release a Request for Proposals (RFP) to secure disposal capacity at a landfill effective October 1, 2022. The current (as of October 1, 2020) disposal rate paid by the City for residential solid waste is \$16.88 per ton.

Based on the preliminary assessments of the City’s current system and discussions with City staff, the long term landfill disposal options have been further evaluated.

Long Term Landfill Options

The efforts in this task included identifying geographically feasible alternative landfill options, both with and without the use of a second transfer station, and analyzing the estimated costs associated with hauling garbage to a landfill other than the one currently used by the City.

The project team modeled the following three scenarios:

Scenario 1 – This scenario assumes that the City will not build an additional transfer station or take over commercial collection. In this scenario, only the residential tonnage was included when comparing the alternative landfill options.

Scenario 2 – This scenario assumes that the City will not build a second transfer station, but the City will take over commercial collection. In this scenario, the project team evaluated the impact the commercial tonnage would have (in addition to residential tons) when comparing the alternative landfill options.

Scenario 3 – This scenario assumes that the City would operate a second transfer station generally situated in the vicinity of IH-20 East and Malloy Bridge Road (FM740). The City would operate a second transfer station and take over commercial collection. In this scenario, 14,560 tons of residential garbage would be diverted from the current Transfer Station and 24,300 tons of commercial garbage would be delivered to the second transfer station.

Three landfill options within a 30-mile radius of the City were identified, which includes the Skyline Landfill (owned and operated by Waste Management), the McCommas Bluff Landfill (owned and operated by the City of Dallas), and the Charles Hinton Landfill (owned and operated by the City of Garland). For purposes of this analysis, the project team assumed that the Skyline Landfill and Charles Hinton Landfill would provide similar discount rates (as a percentage of their gate rate) as the McCommas Bluff Landfill. Therefore, the McCommas Bluff discount rate percentage was used to analyze the rates at Skyline and Charles Hinton. Disposal cost comparisons are provided for each of the three Scenarios in Tables 11, 12, and 13, respectively.

Table 11: Disposal Cost Comparison – Scenario 1: Current City Tonnage

Landfill	1-2 Year Contract	3-4 Year Contract	5-6 Year Contract
Skyline Landfill			
Current gate Rate \$28.00			
Cost per Ton (discounted) ¹	\$22.22	\$21.40	\$19.80
Tons	62,974	62,974	62,974
Total Disposal Costs	\$1,399,149	\$1,348,015	\$1,247,861
McCommas Bluff Landfill			
Current gate Rate \$34.20			
Cost per Ton (discounted) ¹	\$27.14	\$26.15	\$24.20
Tons	62,974	62,974	62,974
Total Disposal Costs	\$1,708,961	\$1,646,504	\$1,524,173
Charles Hinton Landfill			
Current gate Rate \$42.00			
Cost per Ton (discounted) ¹	\$33.33	\$32.11	\$29.72
Tons	62,974	62,974	62,974
Total Disposal Costs	\$2,098,724	\$2,022,022	\$1,871,792

1. Discounted rate calculated using the discount structure provided by McCommas Bluff Landfill.

Table 12: Disposal Cost Comparison – Scenario 2: Current City Tonnage and Commercial Tonnage

Landfill	1-2 Year Contract	3-4 Year Contract	5-6 Year Contract
Skyline Landfill			
Current gate Rate \$28.00			
Cost per Ton (discounted) ¹	\$21.60	\$20.22	\$17.40
Tons ²	129,383	129,383	129,383
Total Disposal Costs	\$2,794,383	\$2,616,331	\$2,250,798
McCommas Bluff Landfill			
Current gate Rate \$34.20			
Cost per Ton (discounted) ¹	\$26.39	\$24.70	\$21.25
Tons ²	129,383	129,383	129,383
Total Disposal Costs	\$3,413,809	\$3,195,662	\$2,749,190
Charles Hinton Landfill			
Current gate Rate \$42.00			
Cost per Ton (discounted) ¹	\$32.40	\$30.33	\$26.09
Tons ²	129,383	129,383	129,383
Total Disposal Costs	\$4,192,397	\$3,924,497	\$3,376,198

1. Discounted rate calculated using the discount structure provided by McCommas Bluff Landfill.

2. Total tons are the residential tons plus the commercial tons (62,974 + 66,409 = 129,383).



Table 13: Disposal Cost Comparison – Scenario 3: Current City Tonnage, Commercial Tonnage, and Potential Tonnage at Proposed Second Transfer Station

Landfill	1-2 Year Contract	3-4 Year Contract	5-6 Year Contract
Skyline Landfill			
Current gate Rate \$28.00			
Cost per Ton (discounted) ¹	\$21.50	\$19.98	\$16.97
Tons ²	206,893	206,893	206,893
Total Disposal Costs	\$4,449,024	\$4,133,306	\$3,511,717
McCommas Bluff Landfill			
Current gate Rate \$34.20			
Cost per Ton (discounted) ¹	\$26.27	\$24.40	\$20.73
Tons ²	206,893	206,893	206,893
Total Disposal Costs	\$5,434,166	\$5,048,538	\$4,289,311
Charles Hinton Landfill			
Current gate Rate \$42.00			
Cost per Ton (discounted) ¹	\$32.26	\$29.97	\$25.46
Tons ²	206,893	206,893	206,893
Total Disposal Costs	\$6,673,537	\$6,199,959	\$5,267,575

1. Discounted rate calculated using the discount structure provided by McCommas Bluff Landfill.
2. Total tons are the residential tons, commercial tons, and potential tons at the proposed transfer station. It is important to note that 14,560 residential tons and 24,300 roll off tons will be diverted to the proposed transfer station, so the project team subtracted these amounts from the total proposed transfer station tons to avoid double counting (62,794 + 66,409 + (116,370 – 14,560 – 24,300) = 206,893).

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



KEY RECOMMENDATIONS FOR LONG TERM LANDFILL OPTIONS:

- ▶ Issue an RFP for disposal capacity by February 2022 to have a new disposal contract in place prior to expiration of the current contract in September 2022.

OTHER CITY FACILITIES/INFRASTRUCTURE



The Solid Waste Division office and equipment yard is located at a shared location with several other City functions at the Municipal Service Center. Based on the preliminary assessments of the City’s current system and discussions with City staff, the future needs of the Solid Waste Operations Center have been evaluated.

Solid Waste Operations Center – Future Needs

The project team evaluated the City’s current Solid Waste Division office and equipment yard that is conveniently located adjacent to the City’s Transfer Station at 1101 E Main St.

The project team evaluated the following relative to this location and the City’s ability to continue to effectively support their operations from this 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 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.



FIELD OFFICE

- 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 analysis of the City taking over commercial collection. It is the project team's opinion that the Solid Waste Operations Center will require an expansion to incorporate the approximately 20 individuals that could be potentially involved with a commercial collection operation.



KEY RECOMMENDATIONS FOR THE SOLID WASTE OPERATIONS CENTER FUTURE NEEDS:

- ▶ If the City decides to take over commercial collection, begin expansion efforts at the Solid Waste Operations Center.



COST OF SERVICE & RATE DESIGN STUDY

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 Solid Waste Division's operating costs. 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.

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 and pay \$1.5 million to the General Fund each year for support services, and use Pay-As-You-Go (PAYG) cash funding to pay for all vehicle purchases.

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 they were all cash financed, as shown in Table 15.

Residential Cost of Service

The total residential cost of service for the 5-year forecast is shown in Table 14. 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. If the Solid Waste Division continues to operate as part of the General Fund, the Solid Waste Division will target to transfer \$2.5 million to the General Fund each year of the forecast. Based on this, Table 14 shows the total monthly cost of service to operate the Solid Waste Division with and without the \$2.5 million transfer to the General Fund.



Table 14: 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
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 Requirement ²	\$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	\$10,562,674	\$11,221,533	\$11,630,071	\$12,013,327	\$12,562,274
Total Monthly Cost of Service ²	\$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.



Table 15: General Fund versus Enterprise Fund

Service Category	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
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
Subtotal	\$2,588,576	\$2,747,095	\$2,871,949	\$3,017,988	\$3,173,360
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
Subtotal	\$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



KEY RECOMMENDATION FOR GENERAL FUND VS. ENTERPRISE FUND:

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



Residential Rates

Based on whether the City elects to keep the Division in the General Fund or transitions to an Enterprise Fund, the project team recommends the following residential rate increases for the two scenarios, shown in Table 16.

Table 16: Proposed Residential Rates Increases

Service Category	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 (General Fund)	-	\$1.00	\$0.75	\$0.50	\$0.50
Increase per HH per Month (Enterprise Fund)	-	\$1.00	\$1.00	\$0.75	-

Table 17 shows the impact of the monthly residential rate increase for each of the two scenarios.

Table 17: Proposed Monthly Residential Rates

Service Category	Year 1 FY 2021	Year 2 FY 2022	Year 3 FY 2023	Year 4 FY 2024	Year 5 FY 2025
General Fund					
Single Family Resident	\$22.25	\$23.25	\$24.00	\$24.50	\$25.00
Enterprise Fund					
Single Family Resident	\$22.25	\$23.25	\$24.25	\$25.00	\$25.00



STRATEGIES RECOMMENDED FOR IMPLEMENTATION



The following summarizes the areas of opportunities and corresponding strategies that are recommended for implementation to meet the future solid waste system needs of the City in the short term, midterm, and long term. The summary generally follows the full solid waste loop described in Section 4.



GENERATION (INCLUDING EDUCATION & OUTREACH)

AREA OF OPPORTUNITY

- ▶ Promote recycling participation, reduce contamination

RECOMMENDED STRATEGY

- ▶ Continue the City's involvement with the NCTCOG, aiming to improve education and outreach efforts to increase tons recycled and decrease contamination in the recycling stream.



COLLECTION

AREA OF OPPORTUNITY

- ▶ Residential Collection Services (garbage, recycling, yard waste)

RECOMMENDED STRATEGY

- ▶ Document which alleys in the City are wide enough and otherwise acceptable to continue providing collection services in the alleys.
- ▶ Take a phased approach to moving homes from alley to curbside starting with homes that have driveways to the street on the most challenging alleys (i.e., broken concrete, very narrow).



COLLECTION (CONTINUED)

AREA OF OPPORTUNITY

RECOMMENDED STRATEGY

-
- | | |
|--|--|
| <p>▶ Residential Collection Services for the City of Talty</p> | <p>▶ Determine Talty's current interest in Mesquite providing collection services, which collection services, and with what frequency.</p> <ul style="list-style-type: none">■ If Talty is interested, determine cost to provide the service and billing mechanism to charge Talty residents for collection service. |
|--|--|
-
- | | |
|------------------------------|---|
| <p>▶ Residential Garbage</p> | <p>▶ The City should conduct:</p> <ul style="list-style-type: none">■ Customer outreach to determine acceptability of carts and other service level changes.■ Further research to determine feasibility of areas of the City where carts could be collected with fully automated collection and where semi-automated would be necessary.■ Further research to determine impacts on other collection services (i.e., yard waste and bulky items collection). |
|------------------------------|---|
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- | | |
|----------------------------------|--|
| <p>▶ Residential Recyclables</p> | <p>▶ Continue to offer curbside/alley recycling collection service.</p> <p>▶ Determine feasibility of cart collection in conjunction with garbage collection.</p> <p>▶ Determine customer acceptance of change in frequency of collection.</p> |
|----------------------------------|--|
-
- | | |
|--|---|
| <p>▶ Residential Large Brush and Bulky Items</p> | <p>▶ Implement a phased approach to changes to large brush and bulky items collection by:</p> <ul style="list-style-type: none">■ First, enforcing the new 8 cubic yard limit on bulky items and assessing fees for more than 8 cubic yards.■ Then, determine customer acceptability of once per month large brush and bulky items collection.■ If acceptable, implement once per month collection. |
|--|---|
-
- | | |
|--------------------------------|---|
| <p>▶ Commercial Collection</p> | <p>▶ Determine whether the City will take over commercial collection and if so, how long of an extension in the current service agreement would be necessary to begin providing commercial collection services.</p> <p>▶ If the City determines to take over commercial collection:</p> <ul style="list-style-type: none">■ Acquire personnel and equipment.■ Set up agreements with commercial customers.■ Make the expansions at the Solid Waste Operations Center to accommodate personnel and vehicles. |
|--------------------------------|---|
-



TRANSFER

AREA OF OPPORTUNITY

- ▶ Current Transfer Station

RECOMMENDED STRATEGY

- ▶ Begin succession planning for staffing at the current Transfer Station.
- ▶ Continue to maintain critical equipment parts inventory.
- ▶ Periodically conduct safety audits.

- ▶ Potential Second Transfer Station

- ▶ Determine whether the City will take over commercial collection.
- ▶ Conduct further research regarding tons from Kaufman County that would be likely to use the potential second transfer station.
- ▶ If ample usage of the potential transfer station is confirmed, begin process to construct a second transfer station.



PROCESSING

AREA OF OPPORTUNITY

- ▶ Recycling Processing

RECOMMENDED STRATEGY

- ▶ Issue an RFP for recyclables processing capacity.

- ▶ Citizens Convenience and Recycling Center and Compost Facility

- ▶ Continue to offer curbside/alley recycling collection service.
- ▶ Determine feasibility of cart collection in conjunction with garbage collection.
- ▶ Determine customer acceptance of change in frequency of collection.



DISPOSAL

AREA OF OPPORTUNITY

- ▶ Landfill Options

RECOMMENDED STRATEGY

- ▶ Issue an RFP for disposal capacity.



OTHER FACILITIES/ INFRASTRUCTURE

AREA OF OPPORTUNITY

- ▶ Solid Waste Operations Center

RECOMMENDED STRATEGY

- ▶ If the City decides to take over commercial collection, begin expansion efforts at the Solid Waste Operations Center.



FINANCIAL

AREA OF OPPORTUNITY

- ▶ Cost of Service and Rate Design

RECOMMENDED STRATEGY

- ▶ Decide whether the City wants to operate the Solid Waste Division in the General Fund or as an Enterprise Fund.
- ▶ Based on whether the Solid Waste Division remains in the General Fund or transitions to an Enterprise Fund, the City should implement the recommended rate increases shown in Section 5, Table 16 above.



REGULATORY

AREA OF OPPORTUNITY

- ▶ Federal, State, Regional, Local Solid Waste Related Regulations and Policies

RECOMMENDED STRATEGY

- ▶ Continue to monitor Federal regulations.
- ▶ Continue to monitor State regulations.
- ▶ Continue the City's involvement in regional solid waste management planning, including expanding organic waste diversion.
- ▶ Continue to update the City's Ordinance, as necessary



REGULATORY (CONTINUED)

AREA OF OPPORTUNITY

▶ Enhanced Code Enforcement

RECOMMENDED STRATEGY

- ▶ Take a phased approach to enhancing code enforcement for residential collection:
 - In the short term, 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 recent ordinance changes (June 2021) include administrative fees for violations associated with collection services. Once these administrative fees take effect (October 1, 2021), solid waste supervisors should assess administrative fees to residents for violations observed at residences.
 - Because the solid waste supervisors have additional responsibilities, consider hiring code enforcement officers dedicated to solid waste to solely focus on enforcement issues to enhance the City's "Clean City Initiative" already underway.

IMPLEMENTATION STEPS BY STRATEGY

Because the specific year in which a strategy may be implemented could vary, implementation timing has been characterized in general terms as the short term (through 2025), midterm (2026 through 2030) or long term (2031 through 2040). In some cases, a strategy is an ongoing effort and spans across multiple terms; in other cases, a strategy may have a specific timing need. Strategies with specific timing requirements are typically needed in the short term. The following figure depicts the anticipated timing of the recommended strategies; timing-specific strategies are indicated by darker coloring, whereas ongoing activities are indicated by lighter coloring.

	Recommended Strategy	Short Term (through 2024)	Midterm (2025 - 2033)	Long Term (2034 - 2040)
 <p>GENERATION (Education & Outreach)</p>	Continue the City's involvement with the NCTCOG to improve education and outreach efforts to increase tons recycled and decrease contamination in the recycling stream.			
		Ongoing involvement		

	Recommended Strategy	Short Term (through 2024)	Midterm (2025 - 2033)	Long Term (2034 - 2040)
 COLLECTION	Document which alleys in the City are wide enough and otherwise acceptable to continue providing collection services in the alleys.	Document		
	Take a phased approach to moving homes from alley to curbside	Challenging alleys	Other areas, as necessary	
	Determine Talty's current interest in Mesquite providing collection services; determine cost and billing mechanism	Determine interest & impacts, begin service (if acceptable)		
	For residential garbage collection, conduct customer outreach to determine acceptability of carts and other service level changes; determine feasibility of fully automated versus semi-automated; determine impacts on other collection services (i.e., yard waste and bulky items collection).	Determine changes, implement, if acceptable	Reassess, as necessary	
	For residential recycling collection, continue to offer curbside/alley recycling; determine feasibility of carts in conjunction with garbage collection; determine customer acceptance of change in frequency of collection.	Coordinate with garbage collection	Reassess, as necessary	
	For residential large brush and bulky items collection , implement a phased approach: first, enforce new 8 cubic yard limit on bulky items and assess fees; then, determine customer acceptability of once per month large brush and bulky items collection; if acceptable, implement once per month collection	Enforce Set Out Restriction	Change frequency, if acceptable	
	Determine whether City will take over commercial collection; extend the current service agreement; prep for taking over commercial collection.	Determine acceptability, extend contract; begin service		

	Recommended Strategy	Short Term (through 2024)	Midterm (2025 - 2033)	Long Term (2034 - 2040)
 TRANSFER	At the current Transfer Station, begin succession planning for staffing; continue to maintain critical equipment parts inventory; periodically conduct safety audits.	Succession plan	Ongoing inventory and safety audits	
	For a potential second transfer station, determine whether taking over commercial collection; conduct further research on potential tons from Kaufman County; if ample usage of the potential transfer station is confirmed, begin process to construct a second transfer station.	Determine feasibility	Construct, if advisable	
 PROCESSING	Issue an RFP for recyclables processing capacity	Award by Jan/Feb 2022		
	At the Compost Facility , reorganize the composting stockpiles as necessary; once at capacity, determine whether to stop accepting from commercial landscapers, how to increase throughput, or identify an alternative site; perform periodic safety audits at the Citizens Convenience and Recycling Center and Compost Facility .	Ongoing, as necessary		
 DISPOSAL	Issue an RFP for disposal capacity	Award by June 2022		
 OTHER FACILITIES/ INFRASTRUCTURE	If the City decides to take over commercial collection, begin expansion efforts at the Solid Waste Operations Center	Expand, if necessary		

	Recommended Strategy	Short Term (through 2024)	Midterm (2025 - 2033)	Long Term (2034 - 2040)
 FINANCIAL	Decide whether the City wants to operate the Solid Waste Division in the General Fund or as an Enterprise Fund; implement the appropriate recommended rate increases.	Implement rate increases, as appropriate		
 REGULATORY	Continue to monitor Federal and State regulations	Ongoing		
	Enhance Code Enforcement for residential collection, using a phased approach: short term focus on education and outreach, then assessing administrative fees; long term, consider hiring code enforcement officers dedicated to solid waste.	Educate, Administrative Fees	Administrative Fees	Hire Dedicated Code Enforcement
	Continue the City's involvement with the NCTCOG exploring the feasibility of additional organics waste diversion.	Ongoing		
	Continue to update the City's Ordinance, as necessary.	Ongoing		

POTENTIAL TIMING OF STRATEGIES

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

Generation

Continue the City’s involvement with the NCTCOG to improve education and outreach efforts.

This strategy does not require implementation steps as it is already occurring through the City’s Sustainability Program Coordinator’s continued involvement with the NCTCOG.

Collection

Move from alley collection to curbside collection, where necessary.

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

Determine Talty’s interest in Mesquite providing collection services; determine cost and billing mechanism; provide service.

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 to 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

Further investigate the advisability of using carts for garbage collection.

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 and/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

Keep alley/curbside recycling collection; further investigate changes to style and frequency.

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.

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

Enforce set out restrictions for bulky items collection; further investigate changes in frequency of large brush and bulky items collection.

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.) Acceptability of changing the frequency of collection to once per month should be further investigated.

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

The City to provide commercial collection services.

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.

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)
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



Maintain operations at the current Transfer Station.

The efforts associated with 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

Further investigate the feasibility and advisability of building and operating a second transfer station.

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 completed 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 completed 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

Processing



Issue an RFP for recyclables processing capacity.

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

Reorganize compost stockpiles as necessary; perform periodic safety audits at the Citizens Convenience and Recycling Center and the Compost Facility.

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

Disposal



Issue an RFP for disposal capacity.

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
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

Other City Facilities/Infrastructure



Expand the Solid Waste Operations Center to accommodate future expected growth if the City takes over commercial collection services.

Note that this option is primarily tied to whether the City will take over commercial collection.

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)

Financial



Decide whether the City wants to operate the Solid Waste Division in the General Fund or as an Enterprise Fund; implement the appropriate recommended rate increases.

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)
Rates should be increased as shown in the Cost of Service and Rate Design Study report	City Manager's Office and City Council	To be implemented prior to each fiscal year, as needed

Continue to monitor Federal and State regulations.

This strategy does not require implementation steps as it is already occurring.

Enhance Code Enforcement for residential collection.

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

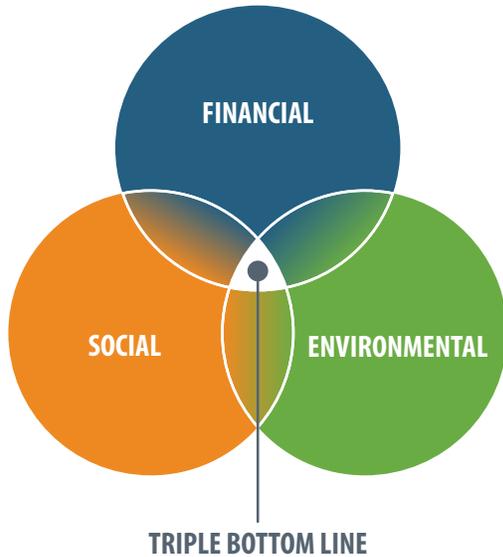
Continue the City’s involvement with the NCTCOG exploring the feasibility of expanded organic waste diversion.

This strategy does not require implementation steps as it is already occurring through the City’s Sustainability Program Coordinator’s involvement with the NCTCOG.

Continue to update the City’s Ordinance, as necessary.

This strategy does not require implementation steps as it should continue to occur as necessary to better reflect the current system (i.e., update definitions and reorganize sections) as well as to reflect future changes in the solid waste system as strategies are implemented that could require a change in current regulations (i.e., style or frequency of collection).

POTENTIAL IMPACTS OF RECOMMENDED STRATEGIES



The triple bottom line approach to evaluating potential impacts of recommended strategies provides an overview of anticipated financial, environmental, and social costs and benefits when the strategies are implemented.

Triple Bottom Line

	Financial	Environmental	Social
GENERATION STRATEGY	<ul style="list-style-type: none"> ■ No additional cost to the City 	<ul style="list-style-type: none"> ■ Increase and improve tons recycled ■ Reduce tons landfilled 	<ul style="list-style-type: none"> ■ Improve recycling habits
COLLECTION STRATEGIES	<ul style="list-style-type: none"> ■ Potential cost savings on alley repairs and with efficiencies ■ Potential cost of new equipment ■ Potential revenue with expanded collection services 	<ul style="list-style-type: none"> ■ More efficient routes mean: <ul style="list-style-type: none"> • Less miles traveled • Less fuel consumed • Less carbon emissions ■ Potential additional capacity for recycling in carts 	<ul style="list-style-type: none"> ■ Continued and improved high-level of services ■ Neighborhood aesthetics ■ Continued convenience of recycling ■ Potential need for behavior changes due to changes in style and frequency of service

Triple Bottom Line (cont.)

	Financial	Environmental	Social
TRANSFER STRATEGIES	<ul style="list-style-type: none"> Cost avoidance of direct haul to landfill Cost of potential second transfer station 	<ul style="list-style-type: none"> Reduced need to direct haul to landfill means: <ul style="list-style-type: none"> Less miles traveled Less fuel consumed Less carbon emissions 	<ul style="list-style-type: none"> Continued improvements in safety as protocols evolve
RECYCLABLES PROCESSING STRATEGIES	<ul style="list-style-type: none"> Processing cost volatility 	<ul style="list-style-type: none"> Reduce tons landfilled 	<ul style="list-style-type: none"> Cost volatility potential impacts on rates paid by customers
CITIZENS CONVENIENCE AND RECYCLING CENTER AND COMPOST FACILITY STRATEGIES	<ul style="list-style-type: none"> Currently unknown 	<ul style="list-style-type: none"> Currently unknown 	<ul style="list-style-type: none"> Continued customer access to drop off items and pick up free mulch Continued improvements in safety as protocols evolve
DISPOSAL STRATEGY	<ul style="list-style-type: none"> Tipping fees Transfer costs 	<ul style="list-style-type: none"> Transfer distance and wait times at landfill can impact carbon emissions of vehicles 	<ul style="list-style-type: none"> Tipping fees and transfer costs impact rates paid by customers
OTHER CITY FACILITIES STRATEGY	<ul style="list-style-type: none"> Potential cost of expansion at the Solid Waste Operations Facility 	<ul style="list-style-type: none"> Nonapplicable 	<ul style="list-style-type: none"> Nonapplicable
FINANCIAL STRATEGIES	<ul style="list-style-type: none"> Potential impact to General Fund Potential interest expense savings on capital purchases 	<ul style="list-style-type: none"> Nonapplicable 	<ul style="list-style-type: none"> Potential impact to rates paid by customers
REGULATORY STRATEGIES	<ul style="list-style-type: none"> No additional cost to the City unless/until additional code enforcement officers hired 	<ul style="list-style-type: none"> Nonapplicable 	<ul style="list-style-type: none"> Community aesthetics with enhanced code enforcement

*For detailed strategies, please refer to the Strategies Recommended for Implementation section of the Plan and the supporting detailed reports.

MESQUITE

T E X A S
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OUR VISION

The City of Mesquite Solid Waste Division is committed to continuing to provide high-quality solid waste services to the community. To ensure the City's continued ability to provide these services, City leadership had the foresight to embark upon a planning process to assess the solid waste system, which began in 2020. The purpose of the planning process was to provide recommendations to improve efficiencies regarding current services, propose potential alternatives for the future of the solid waste system, and ultimately to develop a Solid Waste Master Plan to prepare the City's system for the future. The City will continue to be well-positioned to contribute to the Federal, State and Regional efforts of moving beyond responsibly managing waste, into managing waste as a resource.

