SANTA FE SOLID WASTE MANAGEMENT AGENCY
CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study

FINAL REPORT | December 2014

NewGen Strategies & Solutions

Louis Berger

NewGen Strategies & Solutions
Louis Berger

3409 Executive Center Drive
Suite 128
Austin, TX 78731
Phone: (512) 479-7900
Fax: (512) 479-7905

December 12, 2014
via FedEx

Mr. Randall Kippenbrock, P.E.
Executive Director
Santa Fe Solid Waste Management Agency
149 Wildlife Way
Santa Fe, NM 87505-8342

Subject: **Solid Waste Assessment & Management Study (for the Santa Fe Solid Waste Management Agency, City of Santa Fe, and Santa Fe County) – Final Report**

Dear Mr. Kippenbrock:

Louis Berger Group, Inc. (Louis Berger) and NewGen Strategies and Solutions, LLC (NewGen) are pleased to present the Final Report regarding the Solid Waste Assessment & Management Study (Study) completed for the Santa Fe Solid Waste Management Agency, City of Santa Fe, and Santa Fe County.

Louis Berger and NewGen were retained (as SAIC) to conduct this Study in March 2013 with the purpose of providing each of the governmental entities with a financial and operational assessment of their respective solid waste operations. We believe this Study will assist each of these governmental entities in continuing to strive to provide a high level of service in as cost effective manner as possible.

Louis Berger and NewGen would like to express their appreciation to the many people who contributed to the development of this Study. We appreciate the time and effort taken by these individuals to provide valuable information, input and feedback over the 18 month period this Study was undertaken.

If there are any questions or comments concerning the Final Report please feel free to contact either myself or Mr. David Gregory.

Sincerely,

Dave Yanke
Director

NewGen Strategies and Solutions, LLC

512-773-5494
dyanke@newgenstrategies.net

David Gregory
Senior Project Manager

Louis Berger Group, Inc.

813-513-9296
dgregory@louisberger.com

Solid Waste Assessment & Management Study

Santa Fe Solid Waste Management Agency
City of Santa Fe and Santa Fe County

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For a complete listing of appendices, please refer to the separate table of contents for each governmental entity's section.

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SANTA FE SOLID WASTE MANAGEMENT AGENCY
CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study

Executive Summary

FINAL REPORT | December 2014

NewGen Strategies & Solutions

Louis Berger

EXECUTIVE SUMMARY

Introduction

In March 2013 the Santa Fe Solid Waste Management Agency (Agency) retained the services of Science Applications International Corporation (SAIC) to conduct a Solid Waste Assessment and Management Study (Study) of the solid waste operations managed by the Santa Fe Solid Waste Management Agency (Agency), City of Santa Fe (City) and Santa Fe County (County).[1] Each section of the Final Report provides a detailed financial and operational assessment of all solid waste services provided by each of these respective governmental entities. The final section of the report addresses a series of systemwide issues that impact the solid waste services provided by all three entities - the Agency, City and County.

The Executive Summary provides a brief overview of the format for each section of the Final Report as well as a summary of some of the key recommendations. At the end of the Executive Summary is a comprehensive table that provides a listing of all recommendations, the associated benefit, priority, and implementation time frame. If an annual cost savings or "one-time" savings can be quantified with regard to the recommendation, that is provided as well.[2] The report is organized as follows:

- Section 1 – Santa Fe Solid Waste Management Agency Section;
- Section 2 – City of Santa Fe Section;
- Section 3 – Santa Fe County Section; and
- Section 4 – Systemwide Section;

Santa Fe Solid Waste Management Agency

Section 1 Cost of Service and Funding Options

A detailed cost of service is provided for all services provided at the Caja del Rio Landfill (Landfill) as well as at the Buckman Road Recycling and Transfer Station (BuRRT). A series of rate recommendations are provided as well.

Section 2 Operational Assessment of the Caja Del Rio Landfill

An operational review of all activities at the Landfill were addressed in this section of the report.

[1] Due to a corporate divestiture by SAIC of their solid waste consulting practice, the final report was completed by the same staff that started on the project, however they were at different companies when the Final Report was issued. Mr. Dave Yanke, the project manager, is now at NewGen Strategies & Solutions and Mr. David Gregory is at Louis Berger.

[2] These recommendations are broken out by Agency, City and County.

Section 3 Operational Assessment of Buckman Road Recycling and Transfer Station

An operational review of all recycling (glass, brush, e-waste, MRF) and solid waste operations taking place at BuRRT were reviewed. A key recommendation was to consider a potential Public-Private-Partnership (P3) venture to have the recyclables hauled off-site to be processed. It is conservatively estimated that a minimum of $200,000 per year savings could be realized through such a venture, while expanding the types of materials that could be recycled by the residents of the City and County.

Section 4 Operational Assessment Other Agency Operations

A number of staffing and educational topics were addressed in this section.

Section 5 Evaluate Alternative Options

A number of services provided by the Agency were evaluated in this section, as well as several potentially new services. Topics addressed in this section included mulching operations, composting, food waste composting and glass recycling. A key recommendation was the consideration of contracting out of mulching operations which could potentially realize a $40,000 per year cost savings.

Section 6 Summary of Key Recommendations

A detailed table summarizing these recommendations and the associated cost savings is provided at the end of the Executive Summary.

City of Santa Fe

Section 1 Cost of Service and Funding Options

A detailed cost of service is provided for all services provided by the City. These services include all residential collection services (garbage, recycling and large item collection), commercial collection services (garbage – front load, rear load and roll-off containers) as well as commercial cardboard and commingled recyclables. A series of rate recommendations are provided as well.

Section 2 Review of Residential Collection Operations

The review of residential collection services addressed all garbage and recycling services. The review included “ride alongs” by the consultants on all types of residential collection routes. A key recommendation was the City should move forward with the implementation of automated residential recycling using carts (similar to how garbage is collected). This recommendation would require that glass be collected at citizen drop-offs located throughout the City, and/or a subscription based program.

Section 3 Review of Commercial Collection Operations

The review of commercial collection operations included "ride-alongs" on all types of commercial routes. Key recommendations included the expansion of the City's commercial cardboard collection program as well as changes to some of the operational and pricing practices used to collect the large roll-off containers.

Section 4 Review of Fleet Management Operations

The review of all fleet maintenance activities included a tour of the existing facilities and interview of staff, as well as a benchmarking of other municipal solid waste utilities. Key recommendations were that the current facility is too small, does not have sufficient equipment, and staffing is inadequate. A CNG trained mechanic is also necessary, as the City is purchasing trucks that operate on compressed natural gas.

Section 5 Review of Non-Collection Activities

This section provided certain recommendations with regard to container maintenance policy, the need to audit the number of containers and carts collected versus "billed", as well as pay-as-you-throw pricing. Louis Berger recommends variable rates be implemented by January 2016.

Section 6 Summary of Key Recommendations

A detailed table summarizing these recommendations and the associated cost savings is provided at the end of the Executive Summary.

Santa Fe County

Section 1 Cost of Service and Funding Options

A detailed cost of service is provided for all services provided by the County at its citizen convenience centers. A series of rate recommendations were provided as well.

Section 2 Operational Assessment of County CCCs

An operational assessment of all eight citizen convenience centers (CCCs) was completed. All of the facilities were toured in person by the project manager, Mr. Dave Yanke. Facilities, equipment, staffing, safety and signage were some of the key items evaluated during this assessment.

Section 3 Wasteshed Analysis (County Service Levels and Material Flow)

A detailed analysis was conducted to identify where solid waste and recyclables are moving in/out of the County. Movement of waste was tracked for residential as well as commercial customers.

Section 4 Solid Waste Management System

This section of the report provides a detailed description of how a franchised solid waste collection system is operated – guidelines, examples, implementation, etc. It

was recommended that a franchise system be incorporated for the SDA-1 and SDA-2 areas as designated in the County's Growth Management Plan.

Section 5 Summary of Recommendations

A detailed table summarizing these recommendations and the associated cost savings is provided at the end of the Executive Summary.

Systemwide

The Systemwide Section addresses a number of issues that impact all three entities. These issues include:

- Education and outreach programs
- Flow control
- Consolidation opportunities
- Recycling goals
- Out-of-County waste
- BuRRT and who should control it
- Pay-as-you-throw-rates

Conclusion

Listed on the following pages is a summary of the cost savings (one-time cost savings as well as annual savings). It is important to note that Louis Berger was very conservative in its assumptions with regard to the potential cost savings associated with its various recommendations. However, with that said, it is estimated that the one-time cost savings for all three entities totaled $735,000 to $820,000 and the annual cost savings ranged from $556,364 to $850,514 if all the recommendations were implemented. It is important to recognize that the cost of this study under this comparison (cost versus savings) would have a payback, if only 50 percent of the recommendations were implemented, of less than eight (8) months.

Summary of Recommendations for the Solid Waste Assessment and Management Study

The tables below outline the comprehensive summary of recommendations for the entire solid waste assessment and management study.

Santa Fe Solid Waste Management Agency

Section 1: Cost of Service and Funding Options			
Recommendation	Benefit/Purpose	Priority Level	Implementation Time Frame
Maintain Rates at the Caja del Rio Landfill.	Rates are sufficiently recovering costs and will ensure the financial integrity of the Landfill.	High	Status quo
Maintain Rates at the Buckman Road Recycling & Transfer Station (BuRRT) for now.	If the Agency does not pursue the MRF recommendations detailed in Section 3: Operational Assessment of BuRRT, rates will need to be revisited at the Landfill in 12 months and potentially increased.	High	Now–1 year
Consider Entering into a Public-Private-Partnership (P3) for MRF, green waste mulching/composting.	Savings are shown in Section 3: Operational Assessment of BuRRT.	High	Now–1 year

Section 2: Operational Assessment of the Caja del Rio Landfill			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Utilize the recently implemented RTA Fleet Management software.	Allows the Agency to track fuel, operating, and repair costs for equipment on a unit basis.	High	Now
Continue to operate the existing Landfill.	Operating the existing Landfill is the most cost effective option compared to an offsite landfill.	High	Status quo
Consider replacing scraper pans with dump trucks and excavators.	Better prepares for future equipment replacement needs.	Medium	In next 12 months
Encourage the sale of basalt products produced at the Landfill.	Eliminate the stockpile as soon as possible.	Medium	Immediately, and then ongoing
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

Section 3: Operational Assessment of Buckman Road Recycling & Transfer Station			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Replace or outsource certain key equipment (e.g., rolling stock, beast horizontal grinder, glass pulverizer).	Reduces capital and maintenance costs.	High	Now–1 year
Address contamination rate at MRF: -Inspect incoming recyclable loads and reject those with a significant portion of garbage -Develop consistent recycling messaging -Inspect MRF operations	Increases value of recyclable commodities.	High	Now–1 year
Solicit P3 proposals for the off-site transportation and recycling of its recyclables.	Annual Cost Savings: $70,000 - $390,000[3] Conservatively: $200,000	High	In next 12 months
Potential Cost Savings: Annual: $200,000			

Section 4: Operational Assessment of Other Agency Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Agency should lead in the development of solid waste and recycling messaging for all participants.	Increases consistent communication on solid waste management issues.	High	Immediately, and then ongoing
Evaluate staffing as the Agency implements recommendations in this report.	This will ensure adequate staffing within the Agency.	Medium	Ongoing
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

[3] A large range is provided due to various scenarios developed concerning the value of recyclables and variability in fuel costs. It is conservatively estimated that $200,000 per year could be saved.

Section 5: Evaluate Alternative Options			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Contract grinding of green waste.	One Time Cost Savings: $500,000 Annual Cost Savings: $40,000	High	Now–1 year
Consider partnering for composting.	Facilitates development of composting in the region.	High	Now–1 year
Allow limited amounts of out-of-county waste to be delivered to the Landfill on a contingency basis.	Incremental revenues.	High	Now–1 year
Continue to research markets for recycling glass.	Increases reuse and revenues.	Medium	Now–1 year
Potential Cost Savings: One Time: $500,000 Annual: $40,000			

Agency - Overall Potential Cost Savings
One Time: $500,000
Annual: $240,000

City of Santa Fe

Section 1: Cost of Service and Funding Options	
Recommendation	Benefit/Purpose
Increase residential user fees for FY 2015 – FY 2018 per Table 1-18 in the Cost of Service and Funding Options section. Increase commercial rates for FY 2015 – FY 2016 per the Ordinance; remain unchanged for FY 2017 – FY 2018.	These proposed rate changes for the residential and commercial customers will ensure the financial integrity of the utility.
Audit the Commercial Recycling Service.	This will allow the City to verify the accuracy of the accounts being collected, by the type of container, in addition to accurately forecasting the growth of the program for future years.
Implement operational recommendations (see Section 4) related to the roll-off program and impose a $25 - $35 surcharge for compactor vs. open-top roll-off pulls.	Compactor roll-offs require more time to service than an open-top; this additional time should be reflected in an increased rate for compactors.
Increase the fee residential customers pay for an additional cart, to $8 per month for a 32-gallon cart, and $10 for a 96-gallon cart.	It is common industry practice to charge for a second cart, which will generate additional revenue for the City.
Implement Pay-As-You-Throw rates.	Louis Berger would recommend the City begin considering the topic of variable rates and how to implement a Pay-As-You-Throw price structure no later than January 2016.

Section 2: Review of Residential Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Evaluate distribution of drivers and workers.	Increases overall efficiency of the ESD.	High	Now–1 year
Eliminate 1-2 redundant rear-loader back-up vehicles.	Annual Cost Savings: $4,150 - $8,300 One Time Cost Savings: $25,000 - $75,000 [4]	High	Now–1 year
Monitor annual maintenance cost and fuel usage of vehicles over their useful life.	Allows the City to determine when it is cost effective to transition vehicles from front-line to back-up.	High	Now–1 year
Increase the recycling setout rate from 56% to 70% - 80%.	Increases participation and setout rate for the City's recycling program.	Medium	In next 12 months
Transition to automated recycling collection operation.	Annual Cost Savings: $70,000 - $100,000	High	In next 2 years

[4] One time sale of back-up rear-loaders.

Section 2: Review of Residential Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Remove glass from collection operation and transition to glass drop-off program.	The recycling collection operation would be less challenging to collect, and a drop-off program would still allow residents the opportunity to recycle glass.	High	In conjunction with the movement to automated recycling.
Evaluate residential and commercial customer interest in glass subscription program.	Provides glass recycling collection for residents and businesses interested in paying for this service.	Medium	In next 2 years
Invest in industry software and data management: -Customer billing software -GPS units and vehicle tracking software -Tonnage and trip tracking software -Route optimization software	Improves ESD's operational data.	High	Now–1 year
	Potential Cost Savings: One Time: $25,000 to $75,000 Annual: $74,150 to $108,300		

Section 3: Review of Commercial Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Expand current commercial cardboard operation to 3 days per week.	Increases the City's recycling rate.	High	In next 2 years
Increase front-load commercial lifts to 100-110 per route. Purchase a routing software.	Minimizes weekly routing by 3 to 5 routes per week. Annual Cost Savings: $20,000 to $120,000	High	In next 12 months
Reduce roll-off weekly routes from 3 to 2, per recommendations.	Annual Cost Savings: $30,000 to $40,000 One Time Cost Savings: $25,000	High	In next 12 months
Evaluate commercial customer container sizing versus the container capacity utilized.	Decreases the amount of "air" the ESD is currently picking up. Operational efficiencies to be gained may have some "adverse" revenue impact.	Medium	In next 12 months
Monitor annual maintenance cost and fuel usage of vehicles over their useful life.	Allows the City to determine when it is cost effective to transition vehicles from front-line to back-up.	High	Now–1 year

Section 3: Review of Commercial Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Purchase an automated side-loader and rear-load vehicle.	Ensures sufficient front-load and back-up equipment to maintain consistent daily operations.[5]	High	Now–1 year
Eliminate excess front-load back-up vehicles.	Annual Cost Savings: $10,000 to $20,000 One Cost Time Savings: $35,000 to $70,000	Medium	In next 12 months
If the City decides to collect and divert commercial food waste, Louis Berger would recommend the City develop the collection program and outsource the processing & end product market development.	Allows City to engage in a food waste collection programing without expending the resources required to process and/or sell food waste.	Low	TBD
Invest in industry software and data management: -Customer billing software -GPS units and vehicle tracking software -Tonnage and trip tracking software -Route optimization software	Improves ESD's operational data.	High	Now–1 year
Potential Cost Savings: One Time: $60,000 to $95,000 Annual: $60,000 to $180,000			

Section 4: Operational Assessment of Fleet Maintenance			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Upgrade fleet management facility to match the work effort and equipment being operated.	Improves safety and provides proper support for vehicle maintenance.	High	Now–1 year
Provide training to staff to work on equipment, particularly CNG vehicles.	Allows personnel to be adequately educated on new vehicle technologies.	Medium	In next 18 months
Invest in data tracking systems to monitor and manage the performance of fleet.	Allows tracking of use and costs on a per vehicle basis, which is needed to make proactive maintenance and vehicle replacement decisions.	High	Now–1 year

[5] May be able to transfer an "excess" rear-loader from the residential collection operation.

Section 4: Operational Assessment of Fleet Maintenance			
Enforce use of fuel key system.	Assures mileage and miles per gallon are effectively tracked.	High	Now–1 year
Develop written operating procedures.	Creates accountability and ensures that maintenance is performed in accordance with each manufacturers' requirements.	Low	In next 18–24 months
Reduce back-up equipment. (Addressed in Section 2 & 3)	Realize cost savings.	High	In next 12 months
Review staffing levels	Ensures appropriate staffing and back-up are commensurate with work levels.	High	Now–1 year
Review practice of mobilizing two mechanics to field repairs.	Allows a second mechanic to continue working in the shop and/or respond to additional repair calls.	High	Immediately
Increase integration of fleet maintenance operations with City's other fleet maintenance activities, if possible.	Improves efficiency.	Medium	In next 12 months
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

Section 5: Review of Non-Collection Activities			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Container Maintenance (i-v)			
Utilize bar codes for all containers.	Enables container tracking.	Medium	In next 18 months
Report damaged containers.	Maintains attractive appearance of the City.	Medium	In next 18 months
Periodically review containers.	Ensures that containers are maximized for their entire useful life.	Medium	In next 18 months
Container maintenance shop layout should reflect Figure 5-1 in Section 5.	Creates an efficient use of space that allows containers to flow through shop.	Medium	In next 24 months
Track when containers are brought in for repair.	Improves ESD's operational data.	Medium	In next 18 months

Section 5: Review of Non-Collection Activities			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Share vehicles & personnel where practical among residential & commercial operations.	Increases efficiency.	Medium	In next 12 months
Develop 3-5 key daily, weekly, and monthly reports: -Number of customers by route -Tonnage by route -Overtime -Vehicle repair, fuel costs, etc.	Ensures that the utility is operating as efficiently as possible.	High	Now–1 year
Review City Ordinance and implement the following recommendations: -Mandate the use of crushed glass in paving projects -Implement "equal space" amendment	Encourages recycling services at both residential and commercial level.	High	Now–1 year
Audit solid waste accounts	Ensures that the City is capturing all accounts in their billing system. Annual Cost Savings: $50,000 to $150,000	High	Now–1 year
Expand City's recycling program to include additional materials (i.e., cereal boxes, plastics #3-7, etc.)	Increases City recycling rate.	Low	In next 12-18 months
Implement Pay-As-You-Throw rates.	Louis Berger would recommend the City begin discussing the topic of variable rates with its elected officials.	High	By January 2016
Consolidate Education/Outreach programs.	Increases awareness without inundating targeted audience.	Medium	In next 6–12 months
Potential Cost Savings: One Time: N/A Annual: $50,000 to $150,000			

City - Overall Potential Cost Savings	
One Time:	$85,000 to $170,000
Annual:	$184,150 to $438,300

County of Santa Fe

Section 1: Cost of Service and Funding Options	
Recommendation	Benefit/Purpose
Create rate parity between senior and low income rates	There is no basis to have a variance between senior citizen rates and low income rates.
Eliminate the $.03 per pound rate	The elimination of this rate will not in any manner adversely impact the refuse services provided by the County. No one uses this rate.
Educate citizens about the County's CCC program	It is important for the long-term success of the County's rural CCC system to be viewed by County citizens as a valuable service, and one that must be paid for in an equitable manner.
Monitor monthly the purchase of permits, by type	This will allow the County to track its revenue and better understand the types of permits being purchased by its citizens.
Recommend a 30% recovery of costs through permit fees (see Attachment A)	Implementation of the rates in Attachment A will generate an additional $450,000 in permit revenue by FY 2018 and more equitably distribute the costs of the CCC system among users and non-users.

Section 2: Operational Assessment of County CCCs				
Recommendation	Location	Benefit	Priority Level	Implementation Time Frame
Develop and implement operational metrics to measure efficiency.	All CCCs	Improved operation	High	Now – 6 months
Improve customer accessibility to drop-off areas.	All CCCs	Improved operation, improved site safety	High	Now – 1 year
Optimize payloads to meet or exceed industry standard.	All CCCs	Increased efficiency	High	Now – 1 year
Modify rate structure.	All CCCs	Improved clarity, equality and cost recovery	High	Now – 1 year
Cancel purchase of one walking floor transfer trailer and one transfer trailer cab.	Eldorado and Jacona	Save $150,000	High	Now
Consider reducing days or hours of operation.	San Marcos	Save $10,000 - $30,000	High	Now – 1 year
Consider reducing days or hours of operation.	Stanley	Save $10,000 - $30,000	High	Now – 1 year
Close or relocate all CCCs currently on Pueblo land.	Jacona and Tesuque	Improved operation	High	Now – 2 years
Relocate current center to new site.	Jacona	Increased capacity and improved operation	High	Now – 2 years

Improve CCC signage.	All CCCs	Improved operation, less contamination	Medium	Now – 1 year
Expand HHW materials collected at specific CCC locations.	Eldorado and Jacona	Added service, capture more material	Medium	6 months – 1 year
Consider closure of center.	Nambe	Save $46,598	Medium	After opening of new Jacona center
Consider closure of center.	Tesuque	Save $65,616	Medium	After opening of new Jacona center
Paint all containers. Refuse – one color Recycling – one color	All CCCs	Improved perception, less contamination	Medium	In next 12 months
Potential Cost Savings: One Time: $150,000 Annual: $132,214 - $172,214				

Section 3: Wasteshed Analysis (County Service Levels and Material Flow)	
Recommendation	Benefit/Purpose
Consider implementing a solid waste management system in the unincorporated County.	Such a system will enhance the County's ability to gather data concerning solid waste management in the unincorporated County.
Develop a comprehensive data management system.	Such a system could be based on a comprehensive, web-based system, that would allow all three entities to seamlessly access and monitor information on the generation, flow, and disposal of refuse and recyclables in Santa Fe County.
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.	

Section 4: Solid Waste Management System	
Recommendation	Benefit/Purpose
If the implementation of a solid waste management system (i.e. contract, franchising) is approved by the BCC, the County should immediately move forward with planning the development of such a system.	The benefits of such a system are numerous: • Elimination of multiple vendors serving the same area (i.e. reduced wear and tear on County roads, reduced air emissions) • Provision of curbside recycling • Increased diversion rate • Increase pricing competition
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.	

County - Overall Potential Cost Savings	
One Time:	$150,000
Annual:	$132,000 to $172,000

If all recommendations for the Agency, City, and County are implemented the total savings would be:

Comprehensive - Overall Potential Cost Savings	
One Time:	$735,000 to $820,000
Annual:	$556,000 to $850,514

Attachment A

Table 1-9
Proposed Rates to Achieve 30% Recovery of the Cost of Service by FY 2018 through Permit Revenue (Option B)

	Current Rate	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2106	Year 4 FY 2017	Year 5 FY 2018	Cost Per Trip Year 5
1 Trip Permit	$15.00	$15.00	$16.00	$17.00	$18.00	$19.00	$19.00
6 Trip Permit	n/a	30.00	40.00	53.00	71.00	95.00	15.83
12 Trip Permit	n/a	50.00	65.00	85.00	111.00	145.00	12.08
24 Trip Permit	75.00	80.00	98.00	120.00	147.00	180.00	7.50
24 Trip Senior Citizen/Low Income	70.00	70.00	88.00	110.00	137.00	170.00	7.08
5 Bag Tags	5.00	5.00	6.00	7.00	8.00	9.00	1.80

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CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study

Santa Fe Solid Waste Management Agency Section

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Section 1
COST OF SERVICE AND FUNDING OPTIONS

1.1 Introduction

The Santa Fe Solid Waste Management Agency (Agency) retained Louis Berger Engineering, LLC to conduct a cost of service and rate design study. The Agency was created by means of a duly approved Joint Powers Agreement between the City of Santa Fe and Santa Fe County. The governing body of the Agency is a Board of Directors designated in accordance with the Joint Powers Agreement.

The goal of a cost of service and rate design study is to determine solid waste fees that adequately recover the costs of providing services. The total cost of providing service includes costs associated with operations and maintenance (O&M) and cash capital outlays. The organizational structure of this report is described below:

- Current Solid Waste Services
- Project Approach
- Methodology Overview
- Development of the "Test Year"
- Allocation of Costs to Service Categories
- Determination of Billing Units
- Calculation of the Cost of Service
- Current Rate Recovery
- Recommendations

1.2 Current Solid Waste Services

Solid waste services provided by the Agency include the following:

1.2.1 Landfill Services and Fees

The Caja del Rio Landfill (Landfill) is owned and operated by the Santa Fe Solid Waste Management Agency. The Landfill currently operates between 7:00 am and 5:00 pm, Monday through Saturday. Based on data provided by Agency staff, Louis Berger estimates that the Landfill received approximately 152,000 tons of refuse in FY 2014. Approximately 65 percent of disposal at this site is from residential and commercial collection services; 21 percent of disposal comes from construction and demolition waste; 11 percent of disposal is diverted from the Buckman Road Recycling & Transfer Station (BuRRT); the remaining 3 percent of disposal is related

to miscellaneous waste (i.e. dead animals, sweeper, sludge, etc.). The current tipping fee ranges between $40.00 and $80.00 per ton, depending upon the type of customer and/or material being disposed.

- Landfill Service Fees:
  - Vehicles 12,500 – 18,000 lbs GVW: $50.00 per ton
  - Vehicles 18,000 lbs GVW and over: $40.00 per ton
  - Immediate Burial: $80.00 per ton
  - Petroleum Contaminated Soil (>1,000 ppm TPH): $60.00 per ton
  - Use of Scale for Weighing Only: $15.00 per use
  - Minimum Load Charge: $5.00 per load
  - Uncovered Load Surcharge: $25.00 per load

1.2.2 Buckman Road Recycling & Transfer Station (BuRRT)

The Agency also owns and operates the Buckman Road Recycling & Transfer Station (BuRRT). BuRRT currently operates between 8:00 am and 4:45 pm, Monday through Sunday, and includes both a material recovery facility (MRF) and a transfer station on site. The transfer station received approximately 16,353 tons of waste in FY 2014. Approximately 74 percent of incoming waste came from residential and commercial customers, and the remaining 26 percent of waste was attributed to construction and demolition waste.

Approximately 6,809 tons of conventional recycling material was processed at BuRRT in FY 2014, with the vast majority of material coming from inside Santa Fe County. Additionally, approximately 2,285 tons of glass and 7,375 tons of green waste were disposed of at the facility in FY 2014. The current tipping fees vary between customer and material type, which is outlined below.

- BuRRT Trash and Recycling Fees:
  - Transfer (Refuse) Service:
    - Vehicles less than 4,500 lbs: $6.00 per load
    - Vehicles 4,500 – 5,500 lbs GVW: $9.00 per load
    - Vehicles 5,500 – 6,500 lbs GVW: $12.00 per load
    - Vehicles over 6,500 lbs GVW: $50.00 per ton
    - Vehicles with Trailers: $50.00 per ton
    - Minimum Load Charge: $6.00 per load
    - Uncovered Load Surcharge: $15.00 per load
  - Recycling Service
    - Conventional Recycling excluding Glass (inside County): – no charge

    - Conventional Recycling excluding Glass (out of County): $20.00 per ton
- Green Waste: $20.00 per ton
- Contaminated Green Waste: $60.00 per ton
- Minimum Load Charge: $5.00 per load
- Scrap Tires: $160.00 per ton
- Passenger Car Tire: $2.00 per tire
- Commercial Truck Tire: $6.00 per tire
- Scrap Metal: $15.00 per ton
- Freon Bearing Appliance (contains CFC's): $10.00 per unit
- Non-Freon Bearing Appliance (White Goods): $5.00 per unit
- Household Hazardous Waste: $50.00 per ton
- Electronic Waste: $50.00 per ton
- Mercury Containing Lamps: No Charge
- Uncovered Load Surcharge: $15.00 per load

1.3 Project Approach

Louis Berger developed a series of key tasks that provided the foundation for the conduct of the cost of service study. Louis Berger utilized the following sources of information regarding the Agency's current system and financial requirements.

1.3.1 Data Request

Louis Berger submitted detailed data requests to the Agency to collect historical financial and operational information regarding the Agency's solid waste operations. The information requested included:

- Detailed financial reports and budgets
- Solid waste policies and ordinances
- Personnel rosters
- Solid waste and recycling tonnage reports
- Fleet inventory and operating/capital costs

1.3.2 Cost Allocation Meetings

Louis Berger held meetings with Agency staff to initiate the cost of service study and allocate solid waste operational costs (both labor and capital) to the appropriate solid waste and recycling services. These meetings served as a forum to confirm the scope of services, discuss the data collected by Louis Berger and finalize the cost centers to be used.

1.3.3 On-going Staff Communications

During the course of the cost of service study, Louis Berger conducted several conference calls with Agency staff. These conference calls provided the opportunity for Louis Berger to review project progress, verify assumptions and receive input from the Agency.

1.4 Methodology Overview

The items listed below provide the background necessary to understand how data compiled in each task provides the information required to determine the cost of service and fees that will adequately recover the cost of service.

- **Development of the "Test Year":** The first task in conducting the cost of service analysis is the development of an annual revenue requirement for a "Test Year". The revenue requirement represents the total revenue that an entity will need to recover during a year in order to fund all expenses associated with the provision of solid waste services. Louis Berger worked with Agency staff to select a historical period that reflected the typical operation of the Agency's system.

  Louis Berger then reviewed the financial data and worked with Agency staff to make any adjustments to costs to make them representative of a typical year. The resulting "Test Year" was used as the basis for forecasting expenses from the fiscal year beginning July 1, 2014 (FY 2015) through FY 2018.

- **Development of the Revenue Requirement Forecast:** After developing the revenue requirement for the "Test Year", Louis Berger worked with Agency staff to project changes in costs due to inflation, salary increases, new equipment, etc. This resulted in the four-year revenue requirement forecast.

- **Allocation of Costs to Service Categories:** Next, Louis Berger worked with Agency staff to assign and allocate costs to various service categories. The service categories represent the primary solid waste and recycling services provided by the Agency and were determined with the assistance of Agency staff. The annual revenue requirement was allocated to the appropriate service categories based on Louis Berger's extensive experience with solid waste cost of service studies and input from Agency staff.

- **Allocation to Customer Classes:** Louis Berger grouped the service categories based on the customer classes that will recover each category's costs. The two primary classes include the Caja del Rio Landfill and the Buckman Road Recycling & Transfer Station.

- **Determination of Billing Units:** Louis Berger identified the appropriate billing units for each customer class. For example, the projected tonnage figures for FY 2015 – FY 2018 were used to calculate the cost per ton at the Caja del Rio Landfill.

- **Calculation of the Cost of Service:** Louis Berger distributed the costs for each customer class across the appropriate billing units to determine the cost of service for each customer class.

  It is important to note that the assumptions underlying the cost of service analysis may change over time (i.e., from one year to the next). Thus, periodic updates to the analysis, whether conducted internally by Agency staff or by a consultant, are important to recognize changes in operations, obligations, inflation, growth, etc.

1.5 Development of the "Test Year"

1.5.1 Selection of the Test Year

The revenue requirement is defined as the amount of revenue required to recover all costs associated with O&M, debt service, and cash capital outlays. In developing the revenue requirement for solid waste services, Louis Berger used the Agency's FY 2015 projected budget as the basis for the "Test Year". The FY 2015 budget was compared to financials from FY 2011 - FY 2014. Through this comparison, and with input from Agency staff, Louis Berger made adjustments to ensure that the "Test Year" would reflect expenses that occur on a regular basis. Louis Berger would mention that these types of adjustments are customary when conducting a detailed cost of service and rate design study.

All adjustments to the FY 2015 budget necessary to develop the "Test Year" are detailed in Appendix A, Schedule 1. Key components of the "Test Year" evaluated by Louis Berger include the annualized cost of replacement vehicles and additional capital improvement projects, which are further detailed in Appendix A, Schedule 2.

The Agency revenue requirement is the net of revenue offsets, such as the sales of recyclable materials at the material recovery facility and transfer station. Total expenses for the Agency for the "Test Year" were $7,743,248 and revenue offsets totaled $1,531,129.[1] The resulting "Test Year" revenue requirement nets approximately $6,212,119.[2]

1.5.2 Development of the Revenue Requirement Forecast

In addition to developing the "Test Year" revenue requirement, Louis Berger forecasted the annual revenue requirement for FY 2015 – FY 2018. In order to develop this forecast, Louis Berger projected how costs would change over the years due to factors such as inflation. To be conservative, the revenue offsets were assumed to remain flat throughout the four-year forecast.

The assumptions used to develop the forecast include the annual increases shown in Table 1-1 on the following page.

[1] These include all revenues other than the tip fees at the Landfill. For instance: recycling revenues, tip fees at BuRRT, sale of scrap metal, etc.

[2] This is the amount that needs to be recovered through the tip fee at the Caja del Rio Landfill.

Table 1-1
Inflation Factors

Inflation Factor	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Salaries	0.00%	3.00%	3.00%	3.00%
Benefits	0.00%	3.00%	3.00%	3.00%
Overtime	0.0%	0.0%	0.0%	0.0%
Fuel	0.00%	3.00%	3.00%	3.00%
Maintenance	0.00%	2.00%	2.00%	2.00%
Supplies	0.00%	2.00%	2.00%	2.00%
Capital Equipment	0.00%	3.00%	3.00%	3.00%
Professional Services	0.00%	2.00%	2.00%	2.00%
General	0.00%	2.00%	2.00%	2.00%

In addition to forecasting cost increases due to inflation, Louis Berger also included the costs associated with the following: vehicle and equipment replacement, cell development, permitting renewals, and other miscellaneous projects. Landfill capital outlays will cost approximately $1.4 million annually for FY 2015 – FY 2017; this cost is expected to increase by approximately $420,000 for FY 2018 due to an increase in cell development costs. Capital improvement projects at BuRRT are expected to cost approximately $448,000 annually for FY 2015 – FY 2018.

Approximately $1.3 million in cell development costs for Cell 5B were originally budgeted in FY 2014, however per the Agency, costs for this cell will actually be incurred in FY 2015. It is important to note that costs for this cell will need to be recovered over the next four years, which is the estimated life of the cell. In FY 2018, cell development costs for Cell 6B are estimated to begin and are projected to provide airspace for five years, thus those costs are amortized over five years.

Table 1-2 shows the cost of service for the four-year forecasted period. The detailed composition of the forecast is provided in Appendix A, Schedule 3.

Table 1-2
Revenue Requirement

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Revenue Requirement[1]	$ 6,212,119	$ 6,364,012	$ 6,519,992	$ 7,100,174

1. Please note that this is net of all revenue offsets.

1.6 Allocation of Costs to Service Categories

The Agency provides a variety of solid waste services to its customers. To determine the cost for each service, there is a need to allocate costs to service categories that represent the primary solid waste services provided. These categories were determined through a series of discussions with Agency staff and are shown below.

- Caja del Rio Landfill
  - Disposal
  - Cell Development
  - Composting
  - Administration
  - Operation & Maintenance
- Buckman Road Recycling & Transfer Station (BuRRT)
  - Transfer Station
  - Material Recovery Facility
  - HHW Collection
  - Green Waste Processing
  - White Goods
  - Tires
  - E-Waste
  - Administration
  - Operation & Maintenance

Identification of the total cost of each service category was a critical step in determining adequate rates that reflect the cost of providing service. These costs were isolated by service category in order to fully capture the total cost by matching the tonnage associated with each service with the actual costs for that service. It should be noted that costs identified as "administration" include expenses that directly support administrative functions (i.e., office supplies, postage, bank charges, dues, advertising, etc.), and additionally include legal contract expenses. Costs identified as "operation and maintenance" include other indirect expenses directly related to the operational functions at BuRRT and the Landfill (i.e., water/electric, grounds maintenance, operating and safety supplies, etc.). Table 1-3 identifies the cost of providing each service for FY 2015 – FY 2018.

Table 1-3
Revenue Requirement, by Service Category

Service Category	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Disposal	$ 1,503,841	$ 1,532,999	$ 1,562,966	$ 1,593,764
Cell Development	537,888	538,720	539,575	960,455
Composting	99,481	100,315	101,172	102,052
Administration	807,733	822,391	837,457	852,943
Operation & Maintenance	1,361,012	1,388,014	1,415,635	1,443,891

Service Category	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Subtotal	$ 4,309,955	$ 4,382,439	$ 4,456,805	$ 4,953,105
Buckman Road Recycling & Transfer Station (BuRRT)				
Transfer Station	$ 942,371	$ 962,148	$ 982,507	$ 1,003,465
Material Recovery Facility	535,516	549,595	564,074	578,966
HHW Collection	213,895	218,434	223,079	227,833
Green Waste Processing	312,826	319,569	326,511	333,656
Glass Recycling	147,907	149,854	151,857	153,917
White Goods	7,666	7,891	8,124	8,363
Tires	29,181	29,806	30,445	31,099
E-Waste	30,691	31,594	32,525	33,483
Administration	559,626	575,112	591,044	607,438
Operation & Maintenance	653,616	668,699	684,150	699,978
Subtotal	$ 3,433,293	$ 3,512,702	$ 3,594,316	$ 3,678,198
Revenue Requirement	$ 7,743,248	$ 7,895,141	$ 8,051,121	$ 8,631,302

The Agency generates revenue from various sources that are allocated to the services in Table 1-3. These revenue sources include tip fees at BuRRT, the sale of recyclables (i.e. glass, mulch, scrap metal), dirt sales, and revenues from other miscellaneous fees. Table 1-4 outlines the revenue offsets for each major service.

Table 1-4
Revenue Offsets[1]

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Dirt Sales	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Miscellaneous Fees (Uncovered Loads)	1,129	1,129	1,129	1,129
Subtotal	$ 151,129	$ 151,129	$ 151,129	$ 151,129
Buckman Road Recycling & Transfer Station (BuRRT)				
Transfer Station				
Transfer Station Tip Fees[3]	$ 615,860	$ 615,860	$ 615,860	$ 615,860
Miscellaneous Fees (Uncovered Loads)	5,056	5,056	5,056	5,056
Scrap Metal Material Sales	41,169	41,169	41,169	41,169
Material Recovery Facility				
Sale of Recyclables[4]	420,819	420,819	420,819	420,819

[3] Refer to Schedule 1 for an explanation of this revenue source.

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
MRF Tip Fees (Outside Recycling)	1,600	1,600	1,600	1,600
Household Hazardous Waste	-	-	-	-
Green Waste Processing				
Green Waste Tip Fees	190,610	190,610	190,610	190,610
Mulch Sales	24,656	24,656	24,656	24,656
Glass Recycling				
Glass Tip Fees	31,967	31,967	31,967	31,967
Glass Material Sales	13,356	13,356	13,356	13,356
White Goods	-	-	-	-
Tires	31,640	31,640	31,640	31,640
E-Waste	3,267	3,267	3,267	3,267
Subtotal	$ 1,380,000	$ 1,380,000	$ 1,380,000	$ 1,380,000

1. To be conservative, all revenue offsets were held constant for all four years.

Table 1-5 illustrates the revenue requirement after the revenue offsets have been applied to the appropriate cost categories in Table 1-3.

Table 1-5
Net Revenue Requirement, by Service Category (Less Revenue Offsets)

Service Category	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Disposal	$ 1,503,841	$ 1,532,999	$ 1,562,966	$ 1,593,764
Cell Development	537,888	538,720	539,575	960,455
Composting	99,481	100,315	101,172	102,052
Administration	656,604	671,262	686,328	701,814
Operation & Maintenance	1,361,012	1,388,014	1,415,635	1,443,891
Subtotal	$ 4,158,826	$ 4,231,310	$ 4,305,676	$ 4,801,976
Buckman Road Recycling & Transfer Station (BuRRT)				
Transfer Station	$ 280,286	$ 300,063	320,422	$ 341,380
Material Recovery Facility	113,097	127,176	141,655	156,547
HHW Collection	213,895	218,434	223,079	227,833
Green Waste Processing	97,560	104,303	111,245	118,390
Glass Recycling	102,584	104,531	106,534	108,594
White Goods	7,666	7,891	8,124	8,363
Tires	(2,459)	(1,834)	(1,195)	(541)

[4] Refer to Schedule 1 for an explanation of this revenue source.

Service Category	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
E-Waste	27,424	28,327	29,258	30,216
Administration	559,626	575,112	591,044	607,438
Operation & Maintenance	653,616	668,699	684,150	699,978
Subtotal	$ 2,053,293	$ 2,132,702	$ 2,214,316	$ 2,298,198
Revenue Requirement	$ 6,212,119	$ 6,364,012	$ 6,519,992	$ 7,100,174

1.7 Allocation to Customer Classes

After calculating the costs for each service category over the four-year forecast period, the service categories costs were then allocated by customer class. This assists in identifying the appropriate customers to be charged for each service provided.

The following table identifies how the service categories were grouped and the recovery basis for each service category.

Table 1-6
Service Category Allocations

Service Category	Recovery Basis
Caja del Rio Landfill	
Disposal	Allocated to Caja del Rio Landfill
Cell Development	Allocated to Caja del Rio Landfill
Composting	Allocated to Caja del Rio Landfill
Administration	Allocated to Caja del Rio Landfill
Operation & Maintenance	Allocated to Caja del Rio Landfill
Buckman Road Recycling & Transfer Station (BuRRT)	
Transfer Station	Allocated to Transfer Station
Material Recovery Facility	Allocated to Material Recovery Facility
HHW Collection	Allocated to Household Hazardous Waste Collection
Green Waste Processing	Allocated to Green Waste Processing
Glass Recycling	Allocated to Glass Recycling
White Goods	Allocated to White Goods Collection
Tires	Allocated to Tires Collection
E-Waste	Allocated to E-Waste Collection
Administration	Redistributed Based on Percent of Revenue Requirement
Operation & Maintenance	Redistributed Based on Vehicle Maintenance Allocations

1.8 Determination of Billing Units

In order to calculate the appropriate user fees, it was necessary to determine the proper number of annual billing units, which includes the tonnage from disposal and

recycling. Louis Berger received billing unit data from Agency staff. These numbers were then used to determine the cost of service based user fees by dividing the revenue requirement by the appropriate billing units.

1.8.1 Caja del Rio Landfill

Based on historical data provided by Agency staff, Louis Berger estimates that in the "Test Year", the Agency Landfill will receive approximately 152,000 tons of solid waste for disposal. To be conservative, Louis Berger assumed no growth in the tonnage received at the landfill throughout the four-year forecast. Table 1-7 presents Louis Berger's tonnage forecast for FY 2015 through FY 2018.

Table 1-7
Projected Tonnage by Year

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Billing Units				
BuRRT[1]	16,353	16,353	16,353	16,353
Construction & Demolition	32,753	32,753	32,753	32,753
Commercial	48,606	48,606	48,606	48,606
Residential	50,165	50,165	50,165	50,165
Miscellaneous (Dead Animals, Sweeper, Immediate Burial)	2,785	2,785	2,785	2,785
WWTP & WTP Sludge	1,338	1,338	1,338	1,338
Total	152,000	152,000	152,000	152,000

1. Includes solid waste collected at the transfer station and contaminated recyclables from the MRF.

1.8.2 Buckman Road Recycling & Transfer Station

Based on historical data provided by Agency staff, Louis Berger estimated that in the "Test Year", the Agency will receive approximately 33,015 total tons of solid waste and recyclables at BuRRT. To be conservative, Louis Berger assumed no growth in the tonnage received at BuRRT throughout the four-year forecast. Table 1-8 presents Louis Berger's tonnage forecast for FY 2015 through FY 2018.

Table 1-8
Projected Tonnage by Year

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Billing Units				
Disposal Waste at Transfer Station	16,353	16,353	16,353	16,353
Recycling Tonnage at MRF[1]	6,809	6,809	6,809	6,809
Glass Recycling	2,285	2,285	2,285	2,285
Green Waste	7,375	7,375	7,375	7,375

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
E-Waste	135	135	135	135
HHW	58	58	58	58
Total	33,015	33,015	33,015	33,015

1. Includes recycling inside & outside Santa Fe County; excludes glass recycling.

BuRRT also collects tires and white goods at the facility. Table 1-9 presents Louis Berger's forecast for these materials for FY 2015 through FY 2018.

Table 1-9
Projected Units by Year

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Billing Units				
Tires	18,006	18,006	18,006	18,006
White Goods	625	625	625	625

1.9 Calculation of the Cost of Service

Based on the data discussed in this section, Louis Berger determined the cost of service for the various services provided at the Caja del Rio Landfill and BuRRT. As is typical during these types of cost of service studies, Louis Berger found differences between the rates charged to the various customer classes and the actual cost of providing the associated service.

1.9.1 Caja del Rio Landfill

Louis Berger determined the cost of service associated with the disposal tipping fee at the Landfill, which is presented in Table 1-10. The revenue requirement includes the costs of disposal, cell development, and composting, in addition to the indirect costs associated with administration and operation and maintenance. A detailed examination of the cost of service for disposal in each year of the forecast is provided in Appendix A, Schedule 5.

Table 1-10
Disposal Cost of Service and Tipping Fee

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Disposal	$ 1,503,841	$ 1,532,999	$ 1,562,966	$ 1,593,764
Cell Development	537,888	538,720	539,575	960,455
Composting	99,481	100,315	101,172	102,052

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Subtotal - Direct	$ 2,141,210	$ 2,172,034	$ 2,203,713	$ 2,656,271
Overhead/Indirect				
Administration	$ 807,733	$ 822,391	$ 837,457	$ 852,943
Operation & Maintenance	1,361,012	1,388,014	1,415,635	1,443,891
Subtotal-Indirect/OH	$ 2,168,745	$ 2,210,405	$ 2,253,092	$ 2,296,834
Subtotal Costs	$ 4,309,955	$ 4,382,439	$ 4,456,805	$ 4,953,105
Miscellaneous Revenues				
Dirt Sales	($150,000)	($150,000)	($150,000)	($150,000)
Uncovered Loads	(1,129)	(1,129)	(1,129)	(1,129)
Total	($151,129)	($151,129)	($151,129)	($151,129)
Total Costs	$ 4,158,826	$ 4,231,310	$ 4,305,676	$ 4,801,976
Billing Units (Annual Tonnage)				
BuRRT	16,353	16,353	16,353	16,353
Commercial & Demolition	32,753	32,753	32,753	32,753
Commercial Waste	48,606	48,606	48,606	48,606
Residential Waste	50,165	50,165	50,165	50,165
Miscellaneous[1]	2,785	2,785	2,785	2,785
WWTP & WTP Sludge	1,338	1,338	1,338	1,338
Total	152,000	152,000	152,000	152,000
Cost per Ton[2]	$ 30.66	$ 31.19	$ 31.74	$ 35.40

1. Miscellaneous tonnage includes dead animals, immediate burial, and sweeper.
2. Excludes tonnage from BuRRT as this is not charged a tip fee at the Landfill.

Although the Landfill is, on average, over-recovering $9.34 per ton, it is important to note that any over-recovery from the Landfill has been used to support the cost of diversion programs at BuRRT. The overall over/under-recovery is detailed in Section 1.10.[5]

1.9.2 Buckman Road Recycling & Transfer Station

Louis Berger determined the cost of service associated with the transfer station and material recovery facility at BuRRT, in addition to calculating the cost of service for various miscellaneous programs.

[5] It should be noted that operation of a "small to medium" Landfill, such as the Caja del Rio Landfill, at a cost per ton in the low $30's for a cost of service is reasonable.

1.9.2.1 Transfer Station

Table 1-11 lists the projected cost of service for the transfer station at BuRRT over the four-year forecast. The revenue requirement includes the direct cost of operating the transfer station, and a proportional share of the indirect costs (i.e., administration, operation and maintenance.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 6.

Table 1-11
Transfer Station Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Transfer Station	$ 942,371	$ 962,148	$ 982,507	$ 1,003,465
Indirect Allocation				
Administration	217,032	223,301	229,756	236,405
Operation & Maintenance	191,695	196,118	200,650	205,292
Total Costs	$ 1,351,097	$ 1,381,567	$ 1,412,914	$ 1,445,162
Billing Units				
Annual Tonnage[1]	16,353	16,353	16,353	16,353
Cost per Ton	$ 82.62	$ 84.48	$ 86.40	$ 88.37

1. Includes solid waste tonnage from construction and demolition, commercial, and residential sources.

Currently, BuRRT charges $50.00 per ton of solid waste for all vehicles over 6,500 pounds (or those with trailers). The cost of service, at $82.62 per ton, is approximately $32.62 per ton higher than the current rate, for the largest vehicle accepted, at the facility. The transfer station is projected to under-recover its costs by approximately $689,000 in FY 2015 after subtracting tip fee revenues received for waste disposal at BuRRT.

1.9.2.2 Material Recovery Facility

Table 1-12 lists the projected cost of service for the material recovery facility at BuRRT over the four-year forecast. The revenue requirement includes the direct cost of operating the material recovery facility, and a proportional share of the indirect costs (i.e., administration, operation and maintenance.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 6.

Table 1-12
Material Recovery Facility Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Material Recovery Facility	$ 535,516	$ 549,595	$ 564,074	$ 578,966
Indirect Allocation				
Administration	161,439	165,902	170,495	175,221
Operation & Maintenance	348,138	356,172	364,402	372,833
Total Costs	$ 1,045,093	$ 1,071,669	$ 1,098,971	$ 1,127,019
Billing Units				
Annual Recycling Tonnage[1]	6,809	6,809	6,809	6,809
Cost per Ton	$ 153.50	$ 157.40	$ 161.41	$ 165.53

1. Excludes glass recycling

The MRF does not currently charge customers in Santa Fe County for conventional recycling, and assesses a $20.00 per ton fee for conventional recycling on customers outside of Santa Fe County. Compared to the cost of service rate, the MRF is projected to significantly under-recover costs by approximately $622,000 in FY 2015 after subtracting off revenues received from the sales of recyclables.

1.9.2.3 Miscellaneous Services at Buckman Road Recycling & Transfer Station (BuRRT)

The tables below list the projected cost of service for the disposal and/or recycling for the following services at the Buckman Road Recycling & Transfer Station: household hazardous waste (HHW), electronic waste (E-Waste), tire disposal, white goods, green waste processing, glass recycling. The revenue requirement includes the direct cost of providing these services, and a proportional share of the indirect costs (i.e., administration, operation and maintenance.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 7.

Table 1-13 lists the cost of service for household hazardous waste. The Agency provides the HHW service at a rate of $50.00 per ton, or $0.50 per every 20 pounds of HHW. It is not uncommon across the industry for the cost of service for household hazardous waste to exceed the fee charged to the customer insofar that this service is designed to encourage proper disposal of this material.

Table 1-13
Household Hazardous Waste Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
HHW	$ 213,895	$ 218,434	$ 223,079	$ 227,833
Indirect Allocation				
Administration	63,691	65,132	66,608	68,119
Operation & Maintenance	-	-	-	-
Total Costs	$ 277,586	$ 283,566	$ 289,687	$ 295,951
Billing Units				
Annual Pounds	116,360	116,360	116,360	116,360
Cost per Pound	$ 2.39	$ 2.44	$ 2.49	$ 2.54

Table 1-14 lists the cost of service for tire recycling over the four-year period. Please note that the cost of service is in line with current gate rate fees, which range between $2.00 and $6.00 per tire for this service.

Table 1-14
Tire Recycling Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Tire Recycling	$ 29,181	$ 29,806	$ 30,445	$ 31,099
Indirect Allocation				
Administration	9,189	9,387	9,590	9,798
Operation & Maintenance	-	-	-	-
Total Costs	$ 38,369	$ 39,193	$ 40,036	$ 40,897
Billing Units				
Annual Number of Tires	18,006	18,006	18,006	18,006
Cost per Tire	$ 2.13	$ 2.18	$ 2.22	$ 2.27

Table 1-15 indicates the cost of service for E-Waste recycling. It is important to note that while E-Waste is currently charged a fee of $50.00 per ton ($0.50 per 20 pounds) to the customer, it will cost BuRRT approximately $298.04 per ton to properly recycle. Although the Agency will under-recover approximately $248.04 per ton in FY 2015, Louis Berger would recommend the Agency keep current rates in place in order to encourage the proper disposal of these hazardous materials.

Table 1-15
E-Waste Recycling Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
E-Waste	$ 30,691	$ 31,594	$ 32,525	$ 33,483
Indirect Allocation				
Administration	9,664	9,950	10,246	10,550
Operation & Maintenance	-	-	-	-
Total Costs	$ 40,355	$ 41,545	$ 42,770	$ 44,033
Billing Units				
Annual Tons	135	135	135	135
Cost per Ton	$ 298.04	$ 306.83	$ 315.88	$ 325.21

Table 1-16 lists the cost of service for white goods recycling. The Agency is projected to under-recover approximately $5 to $10 per white good collected in FY 2015.

Table 1-16
White Good Recycling Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
White Goods	$ 7,666	$ 7,891	$ 8,124	$ 8,363
Indirect Allocation				
Administration	2,414	2,485	2,559	2,635
Operation & Maintenance	-	-	-	-
Total Costs	$ 10,080	$ 10,377	$ 10,683	$ 10,999
Billing Units				
Annual Number of White Goods	625	625	625	625
Cost per White Good	$ 16.13	$ 16.60	$ 17.09	$ 17.60

Table 1-17 indicates the cost of service for green waste processing. The Agency is projected to under-recover approximately $246,000 after receipt of tip fees received for yard waste, and revenues from the sale of mulch in FY 2015.

Table 1-17
Green Waste Processing Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Green Waste	$ 312,826	$ 319,569	$ 326,511	$ 333,656
Indirect Allocation				
Administration	74,186	76,323	78,525	80,791
Operation & Maintenance	74,771	76,494	78,264	80,074
Total Costs	$ 461,782	$ 472,389	$ 483,299	$ 494,521
Billing Units				
Annual Tons	7,375	7,375	7,375	7,375
Cost per Ton	$ 62.61	$ 64.05	$ 65.53	$ 67.05

Table 1-18 lists the cost of service for glass recycling. It is projected the Agency will under-recover, after subtracting glass-related revenues received, approximately $160,000 in FY 2015 from the glass recycling operation.

Table 1-18
Glass Recycling Cost of Service

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Annual Revenue Requirement				
Direct Allocation				
Glass	$ 147,907	$ 149,854	$ 151,857	$ 153,917
Indirect Allocation				
Administration	22,013	22,630	23,265	23,919
Operation & Maintenance	39,012	39,912	40,835	41,779
Total Costs	$ 208,932	$ 212,396	$ 215,956	$ 219,615
Billing Units				
Annual Tons	2,285	2,285	2,285	2,285
Cost per Ton	$ 91.43	$ 92.94	$ 94.50	$ 96.10

1.10 Current Rate Recovery

This section of the report forecasts the projected revenue recovered using current rates for all Agency related services. The projected revenues for the Agency will lead to an overall under-recovery of costs if rates are left unadjusted, or if current operational practices remain unchanged. This is largely due to the under-recovery of costs with

regards to the material recovery facility, in addition to the operations associated with glass recycling and green waste processing at BuRRT.

Table 1-19 provides a summary of total expected revenues and over/under-recovery of costs at the Caja del Rio Landfill and BuRRT. To be conservative, the forecasted revenues were assumed to remain flat throughout the four-year forecast. It is important to note that while the Landfill is expected to over-recover costs during FY 2015 – FY 2018, BuRRT is expected to under-recover costs over the same period. The net result is a cumulative under-recovery of approximately $3,828,812.

Table 1-19
Revenue Projections Based on Current Rates

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Caja del Rio Landfill Revenues[1]	$ 5,743,000	$ 5,743,000	$ 5,743,000	$ 5,743,000
Revenue Requirement	4,309,955	4,382,439	4,456,805	4,953,105
Annual Over-Recovery	$ 1,433,045	$ 1,360,561	$ 1,286,195	$ 789,895
BuRRT				
BuRRT Revenues[2]	$ 1,380,000	$ 1,380,000	$ 1,380,000	$ 1,380,000
Revenue Requirement	3,433,293	3,512,702	3,594,316	3,678,198
Annual Under-Recovery	($2,053,293)	($2,132,702)	($2,214,316)	($2,298,198)
Total Revenue	$ 7,123,000	$ 7,123,000	$ 7,123,000	$ 7,123,000
Total Costs	$ 7,743,248	$ 7,895,141	$ 8,051,121	$ 8,631,302
Total Under-Recovery	($620,248)	($772,141)	($928,121)	($1,508,302)
Cumulative Under-Recovery	($620,248)	($1,392,389)	($2,320,510)	($3,828,812)

1. Includes revenues from City, County, and other miscellaneous revenues (i.e. rock sales, uncovered loads, etc.)
2. Includes tip fees from various materials, in addition to the revenues associated with the sale of recyclables

1.11 Findings and Recommendations

Based on Louis Berger's experience, and in particular, the project manager's extensive experience in the conduct of solid waste cost of service studies, we would propose the following recommendations:

1. **Maintain Rates at Caja del Rio Landfill :** At present, the Agency's tip fees at the Landfill are sufficiently recovering costs. Louis Berger would recommend the Agency maintain current rates at the Landfill for FY 2015 – FY 2018. If the Agency is eventually able to achieve an over-recovery on a system-wide basis, for both the Landfill and BuRRT, Louis Berger would recommend the Agency consider issuing a rebate to the City and County, once volumes in excess of

175,000 tons per year at the Landfill are achieved. This is further discussed in Section 5: Evaluate Alternative Options (5.6).

2. **Maintain Rates at Buckman Road Recycling & Transfer Station:** Louis Berger would recommend the Agency maintain current rates at BuRRT for FY 2015 – FY 2018.

3. **Consider Entering into a Public-Private-Partnership (P3) for MRF, Glass Recycling, and Green Waste Processing:** Given that costs are not sufficiently recovered at BuRRT, Louis Berger would recommend the Agency consider options to contract out services for the MRF, glass recycling, and/or green waste processing by entering into a public-private-partnership (P3). For instance, if the Agency is able to enter into a P3 relationship for the MRF operation, and/or the direct-haul of recyclables to a larger MRF, significant cost savings will most likely be realized in excess of $200,000 per year. This recommendation is further discussed in Section 3: BuRRT Operations Review.

   If the Agency is unable to secure a public-private-partnership for the MRF, glass recycling, and/or green waste services, Louis Berger would recommend the Agency revisit the cost of service in 12 months; rates at the Landfill may need to be increased to recover the costs.

Appendix A
SCHEDULES

The following schedules are included as part of Appendix A:

Schedule 1: Budget
Schedule 2: Capital Improvement Plan
Schedule 3: Four Year Forecast
Schedule 4: Revenue Requirement Summary
Schedule 5: Caja del Rio Landfill
Schedule 6: Buckman Road Recycling and Transfer Station
Schedule 7: Miscellaneous Services

Landfill Budget (52501)

	Object Account	Description	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Budget Proposed	FY 2014/2015 Budget Proposed	Adjustments	Test Year	Comment
1	500110	Salaries			$ 13,587					
2	500200	Exempt Full Time	107,616	6,597	-	110,427	112,736		112,736	
3	500350	Classified Full Time	789,427	711,237	730,403	810,211	896,459		896,459	
4	500800	Temporary Part Time				80,000	80,000		80,000	
5	501400	Overtime	13,737	11,123	26,662	25,000	25,000		25,000	
6	501510	Worked Holiday @ 1.5	5,880	7,881	7,093				-	
7	502000	Annual Leave	-	87,403	92,529				-	
8	502010	Personal Day		3,227	4,016				-	
9	502015	Miscellaneous Leave	-	9,836	7,046				-	
10	502050	Comp-time	-	10,017	8,701				-	
11	502100	Sick Leave	882	27,137	42,121				-	
12	502115	Union Business		279	784				-	
13	502200	Incentives	1,133	2,514	3,239	4,200	4,200		4,200	
14	503100	FICA	65,466	62,463	66,355	72,663	85,557		85,557	
15	503150	Retirement	166,742	154,653	153,708	175,036	208,126		208,126	
16	503200	Employee Health Ins	178,101	151,183	180,635	245,214	259,938		259,938	
17	503250	Retiree Health Care				18,413	20,268		20,268	
18	503250	Unemployment	14,688	15,205	16,304	3,839	3,839		3,839	
19	503300	Unemployment Insurance	-	-	3,515				-	
20	503350	Workers' Comp	20,000	19,965	19,986	21,895	26,852		26,852	
21	503400	City Share Dental Insurance	9,108	8,049	7,827	11,005	12,000		12,000	
22		COLA 2.1%				24,874	18,337		18,337	
23		MERIT 2%				24,188	26,563		26,563	
24		Retirement (PERA)							-	
25		Expansion Position				107,352	-		-	
26	510200	Legal Contract	28,678	25,331	29,025	35,300	35,300	(17,650)	17,650	A
27	510250	Compliance Contracts	1,277	2,346	2,300	2,300	3,243	(1,622)	1,621	A
28	510300	Professional Contracts	522,557	432,303	434,454	567,875	525,875		525,875	
29	510600	Reim Share of Sales		42,099	75,809	51,750	95,000		95,000	
30	513950	Gas	10,464	18,079	19,005	25,000	20,000	(15,684)	4,316	A
31	514000	Water	19,635	25,241	12,223	25,000	18,000	4,574	22,574	A
32	514050	Electric	80,939	62,549	80,763	80,000	80,000	(68,800)	11,200	A
33	514100	Communication	26,514	27,288	25,407	30,000	30,000	(5,710)	24,290	A
34	520100	Rep and Maint Build/Struct	14,759	13,369	9,927	15,000	30,000		30,000	
35	520200	Rep & Maint Frounds/Rd	16,534	7,367	7,916	10,000	10,000		10,000	
36	520300	Rep & Maint Furn/Fix/Equip	3,098	2,967	616	4,000	24,000		24,000	
37	520400	Rep & Maint Machin & Equipment	208,311	189,609	232,683	300,000	300,000		300,000	
38	520500	Rep & Maint Vehicles	5,646	12,040	4,570	11,000	10,000		10,000	
39	530100	Office Supplies	9,900	8,614	8,406	15,000	12,000		12,000	
40	530200	Operating Supplies	18,402	24,239	14,748	30,000	26,000		26,000	
41	530300	Safety Supplies	4,315	4,850	5,345	14,000	15,000		15,000	
42	530400	Food	405	337	519	1,000	1,000		1,000	
43	530500	Uniform, Clothing, Linen	10,149	8,761	10,518	13,000	13,000		13,000	
44	530600	Software	5,538	1,703	1,497	5,000	5,000		5,000	
45	530700	Books/Subscrpts/Periodicals	603	-	245	500	500		500	
46	530750	Book Acquisition	-	-	64				-	
47	530850	Auto Parts	8,607	11,944	8,986	12,000	10,000		10,000	
48	530900	Tires	4,946	7,129	-	8,000	20,000		20,000	
49	531000	Gasoline	21,162	20,159	21,213	30,000	20,000		20,000	
50	531050	Diesel	136,072	215,019	250,555	320,000	300,000	(39,000)	261,000	A
51	540010	Depreciation Expense	-	(25,206)	-				-	
52	545010	Bad Debt Expense	297,221	34	(34)				-	
53	555250	Gen Liab Dept Assessment	22,225	22,225	31,976	31,976	31,976		31,976	
54	555260	Benefits Dept. Assess	9,348	7,980	10,374	10,374	15,949		15,949	
55	555300	Gen Liability	-	53,415	37,088	65,000	65,000		65,000	
56	555400	Bond Expense	150	100	-	1,000	1,000		1,000	
57	560200	Out of State	276	-	580	2,000	2,000		2,000	

	Object Account	Description	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Budget Proposed	FY 2014/2015 Budget Proposed	Adjustments	Test Year	Comment
58	560250	In State	3,553	-	753	2,000	2,000		2,000	
59	560450	Local	72	-	-				-	
60	560500	Out of State	208	-	221	2,000	2,000		2,000	
61	560550	In State	317	43	138	2,000	2,000		2,000	
62	560700	Registration	3,010	769	1,653	3,000	3,000		3,000	
63	561000	Postage and Mail Service	360	942	481	2,000	2,000		2,000	
64	561200	Employee Training/Tuition	1,739	4,625	12,968	5,000	25,000		25,000	
65	561400	Gross Receipt Taxes	271,357	336,760	293,398	315,000	315,000		315,000	
66	561545	Recording Fees		4,560	-				-	
67	561750	Bank Charges & Fees	2,743	2,126	8,035	7,600	7,600		7,600	
68	561800	Print/Publish	851	6,456	2,314	8,000	8,000		8,000	
69	561850	Advertising	-	5,257	1,066	5,500	6,000		6,000	
70	561900	Dues	4,174	4,635	8,656	5,000	5,000		5,000	
71	562600	Equipment/Machinery Rental	5,876	2,024	4,231	5,000	5,000		5,000	
72	563100	Services of other City Depts	81,624	81,624	108,640	108,640	126,274	(42,091)	84,183	B
73	570500	Equipment & Machinery	30,309	-	-				-	
74	570800	Data Processing	5,638	5,115	-				-	
75	570850	Software	12,399	-	-				-	
76	570950	Vehicles < 1.5	4,850	-	-				-	
77	572400	Inventory Exempt	21,593	12,025	11,271				-	
		Subtotal	$ 3,311,183	$ 2,977,622	$ 3,175,114	$ 3,921,132	$ 4,008,592		$ 3,822,609	
78	590100	Debt Service Principal	$ 567,761	$ 584,334	$ 601,863	$ 402,078	$ -		-	
79	590200	Debt Service Interest	64,475	47,902	30,372	12,062	-		-	
		Subtotal	$ 632,236	$ 632,236	$ 632,236	$ 414,140	$ -		$ -	
80	**Intra-Fund Transfers Out**									
81	52502	Vehicle/Equipment Replacement				$ 500,000	$ 500,000	$ 38,999	$ 538,999	C
82	52503	Gas Collection System				150,000	125,000	(1,500)	123,500	C
83	52507	Cell Development				129,747	560,000	(135,000)	425,000	C
84	52509	Closure Post Closure				-	-		-	
85	52521	Landfill Permitting				290,000	200,000	(137,500)	62,500	C
86		Asphalt Overlay						250,000	250,000	C
		Subtotal	$ -	$ -	$ -	$ 1,069,747	$ 1,385,000		$ 1,399,999	
		Total Landfill Operations Budget	**$ 3,943,419**	**$ 3,609,857**	**$ 3,807,350**	**$ 5,405,019**	**$ 5,393,592**		**$ 5,222,608**	
	Recycling Budget (52504)									
87	500110	Salaries			$ 9,986				$ -	
88	500200	Exempt Full Time							-	
89	500350	Classified Full Time	643,583	592,282	571,042	725,192	769,537		769,537	
90	500400	Classified Part-Time	10,411	-	-				-	
91	500750	Temporary Full-Time	2,158	-	-	10,920	11,066		11,066	
92	500800	Temporary Part Time							-	
93	501400	Overtime	7,924	10,466	21,422	25,000	25,000		25,000	
94	501510	Worked Holiday @ 1.5	5,462	5,686	4,113				-	
95	502000	Annual Leave	-	55,081	58,810				-	
96	502010	Personal Day		1,581	2,854				-	
97	502015	Miscellaneous Leave	-	4,237	5,131				-	
98	502050	Comp-time	-	4,706	11,283				-	
99	502100	Sick Leave	457	16,711	41,631				-	
100	502115	Union Business							-	
101	502200	Incentives	1,121	3,160	919	4,200	4,200		4,200	
102	503100	FICA	49,265	50,968	52,297	58,547	61,950		61,950	
103	503150	Retirement	117,205	126,633	129,943	141,520	158,842		158,842	
104	503200	Employee Health Ins	109,189	118,055	130,884	206,881	200,329		200,329	
105	503250	Retiree Health Care				14,504	15,445		15,445	
106	503250	Unemployment	10,323	12,215	13,647				-	
107	503300	Unemployment Insurance							-	

	Object Account	Description	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Budget Proposed	FY 2014/2015 Budget Proposed	Adjustments	Test Year	Comment
108	503350	Workers' Comp	32,898	22,510	22,513	22,308	41,576		41,576	
109	503400	City Share Dental Insurance	4,519	4,647	4,842	7,522	10,181		10,181	
110		COLA 2.1%				20,243	14,836		14,836	
111		MERIT 2%				19,684	21,108		21,108	
112		Retirement (PERA)							-	
113		Expansion Position							-	
114	510200	Legal Contract						17,650	17,650	A
115	510250	Compliance Contracts						1,622	1,622	A
116	510300	Professional Contracts							-	
117	510600	Reim Share of Sales							-	
118	513950	Gas						15,689	15,689	A
119	514000	Water						2,368	2,368	A
120	514050	Electric						68,800	68,800	A
121	514100	Communication						5,771	5,771	A
122	520100	Rep and Maint Build/Struct	50,241	31,962	51,374	50,000	50,000		50,000	
123	520200	Rep & Maint Frounds/Rd	5,371	-	642	5,000	5,000		5,000	
124	520300	Rep & Maint Furn/Fix/Equip				3,000	3,000		3,000	
125	520400	Rep & Maint Machin & Equipment	87,261	122,154	172,459	175,000	175,000		175,000	
126	520500	Rep & Maint Vehicles	-	7,314	661	5,000	5,000		5,000	
127	530100	Office Supplies							-	
128	530200	Operating Supplies	39,599	29,646	35,416	40,000	40,000		40,000	
129	530300	Safety Supplies	7,644	16,116	14,292	25,000	25,000		25,000	
130	530400	Food	-	-	32				-	
131	530500	Uniform, Clothing, Linen	10,170	10,920	11,370	15,000	15,000		15,000	
132	530600	Software				1,500	1,500		1,500	
133	530700	Books/Subscrpts/Periodicals	119	894	54	500	500		500	
134	530750	Book Acquisition							-	
135	530850	Auto Parts	-	144	-	4,000	4,000		4,000	
136	530900	Tires	17,619	11,192	6,029	15,000	20,000		20,000	
137	531000	Gasoline	-	51	-		5,000		5,000	
138	531050	Diesel	93,631	72,270	53,599	100,000	100,000	39,000	139,000	D
139	540010	Depreciation Expense							-	
140	545010	Bad Debt Expense							-	
141	555250	Gen Liab Dept Assessment							-	
142	555260	Benefits Dept. Assess							-	
143	555300	Gen Liability							-	
144	555400	Bond Expense							-	
145	560200	Out of State				1,000	1,000		1,000	
146	560250	In State	695	442	879	2,000	2,000		2,000	
147	560450	Local							-	
148	560500	Out of State				1,000	1,000		1,000	
149	560550	In State	97	60	40	1,000	1,000		1,000	
150	560700	Registration	635	1,360	120	1,000	1,000		1,000	
151	561000	Postage and Mail Service							-	
152	561200	Employee Training/Tuition	838	5,400	4,003	5,000	5,000		5,000	
153	561400	Gross Receipt Taxes							-	
154	561545	Recording Fees							-	
155	561750	Bank Charges & Fees							-	
156	561800	Print/Publish	-	63	4,041	10,000	10,000		10,000	
157	561850	Advertising	7,733	117	2,334	10,000	10,000		10,000	
158	561900	Dues	-	400	640	500	500		500	
159	562550	Land/Building	64,108	65,055	56,882	60,000	60,000		60,000	
160	562600	Equipment/Machinery Rental	8,909	1,923	-	5,000	5,000		5,000	
161	563100	Services of other City Depts						42,091	42,091	B
162	570500	Equipment & Machinery	-	333,549	-				-	
163	570800	Data Processing							-	
164	570850	Software							-	
165	570950	Vehicles < 1.5							-	
166	572400	Inventory Exempt	11,724	831	954				-	
167	572960	WIP Design	123,839	49,903	7,039				-	

		Object Account	Description	FY 2011 Actual	FY 2012 Actual	FY 2013 Actual	FY 2014 Budget Proposed	FY 2014/2015 Budget Proposed	Adjustments	Test Year	Comment
168		572970	WIP Construction		781,931	1,416				-	
			Total Recycling Budget	$ 1,524,751	$ 2,572,636	$ 1,505,593	$ 1,792,021	$ 1,879,570		$ 2,072,561	
	BuRRT CIP										
169			BuRRT Transfer Station Water Line Rehab/Mister						50,000	$ 50,000	C
170			BuRRT Permitting Renewal						50,000	50,000	C
171			Vehicle/Equipment Replacement						348,079	348,079	C
										$ 448,079	
			Total Recycling Operations Budget	**$ 1,524,751**	**$ 2,572,636**	**$ 1,505,593**	**$ 1,792,021**	**$ 1,879,570**		**$ 2,520,640**	
	REVENUES										
172		438615	Recycle-Miscellanous MRF Sales	$ (1,072,470)	$ (1,084,968)	$ (802,133)	$ (773,500)		$ (420,819)	$ (420,819)	E
173		438710	Transfer Station	(816,956)	(821,214)	(829,706)	(882,000)		(615,860)	(615,860)	F
174		438750	Landfill-City	(2,496,032)	(2,986,955)	(2,842,826)	(2,600,000)	(2,762,386)	2,762,386	-	G
175		438760	Landfill-County	(442,931)	(511,000)	(511,410)	(505,400)	(536,965)	536,965	-	G
176		438770	Landfill-Other	(2,005,656)	(2,135,147)	(2,445,984)	(2,300,000)	(2,443,649)	2,443,649	-	G
177		470400	Reimbursements/Refunds	(35,379)	(6,671)	(19,000)	-			-	
178		470510	Sales- Dirt (Caja)	(1,484)	(90,398)	(141,085)	(112,500)		(150,000)	(150,000)	D
179		470600	Sales of Capital Assets	-	(41,565)	-	-			-	
180		470900	Gain on Sale - Fixed Assets	-	30,066	-	-			-	
181		480020	Interest on Investments	(41,850)	(26,426)	(28,057)				-	
182		480022	Interest (Amort of Prem & Disc	15,525	2,804	2,652				-	
183			Caja Misc Sales - Uncovered Loads						(1,129)	(1,129)	H
184			BuRRT Misc Sales - Uncovered Loads						(5,056)	(5,056)	A
185			MRF Tip Fees (Outside Recycling)						(1,600)	(1,600)	A
186			Glass Tip Fees						(31,967)	(31,967)	A
187			Green Waste Tip Fees (Mulch)						(190,610)	(190,610)	A
188			Tires Tip Fees						(31,640)	(31,640)	A
189			E-Waste Tip Fees						(3,267)	(3,267)	A
190			Transfer Station Material Sales for Scrap Metal						(41,169)	(41,169)	A
191			Glass Material Sales						(13,356)	(13,356)	A
192			Mulch Sales						(24,656)	(24,656)	A
			Total Revenues	**(6,897,234)**	**(7,671,475)**	**(7,617,551)**	**(7,173,400)**	**(5,743,000)**		**(1,531,129)**	
			Revenue Requirement	**$ (1,429,064)**	**$ (1,488,982)**	**$ (2,304,609)**	**$ 23,640**	**$ 1,530,162**		**$ 6,212,119**	

Comment Legend

193	A	A portion of costs allocated to BuRRT budget from Caja del Rio budget per Agency.
194	B	Per Agency, internal fund transfer expense allocated 67% to Landfill and 33% to Transfer Station.
195	C	Per CIP and equipment replacement costs noted in Schedule 2.
196	D	Adjusted per Agency
197	E	Per Agency, the sale of recyclables should total approximately $500,000 less the sales of the following materials: scrap metal, glass material, and mulch.
198	F	Per Agency, the tip fees associated with putrescible waste/ C&D should total $880,000 less the tip fee revenues in lines 184-189.
199	G	To be determined based on the cost of service analysis and resulting proposed rates.
200	H	Uncovered load revenue per FY 2013 Material Tonnage report provided by Agency.

Average Year (FY 2015 - FY2017)	Total
Caja del Rio Landfill	
Vehicle Replacement	$ 538,999
Landfill Gas	123,500
Cell Development - Cell 5B & 6B/Wedge Liner Installation	325,000
Cell Development - Site Development/Improvements	100,000
Asphalt Overlay - Wildlife Way 1.6 miles	250,000
Landfill Permitting	62,500
	$ 1,399,999
Buckman Road Recycling & Transfer Station (BuRRT)	
Vehicle Replacement	$ 348,079
BuRRT Transfer Station Water Line Rehab/Mister	50,000
BuRRT Permitting Renewal	50,000
	$ 448,079

1. Detail on the following pages.

FY 2018	Total
Caja del Rio Landfill	
Vehicle Replacement	$ 538,999
Landfill Gas	123,500
Cell Development - Cell 5B & 6B/Wedge Liner Installation	745,000
Cell Development - Site Development/Improvements	100,000
Asphalt Overlay - Wildlife Way 1.6 miles	250,000
Landfill Permitting	62,500
	$ 1,819,999
Buckman Road Recycling & Transfer Station (BuRRT)	
Vehicle Replacement	$ 348,079
BuRRT Transfer Station Water Line Rehab/Mister	50,000
BuRRT Permitting Renewal	50,000
	$ 448,079

Santa Fe Solid Waste Management Agency
Vehicle Replacement Schedule

Capital Replacement Schedule per Agency

		Acquired Date	Asset Number and Description	Unit Number	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
	Caja del Rio Landfill								
1	Gas	04/14/2004	47 - 2004 Dodge Durango	1337		30,000			
2	Gas	9/20/2013	2014 Ford Escape	1351					
3	Gas	9/30/2013	2014 Ford Explorer	1352					
4	Diesel	07/11/2007	53909 - 1985 Street Broom T20	1346	36,400				
5	Diesel	03/11/2004	51637 - Compactor 836G	1327	1,040,000				
6	Diesel	12/20/2007	53 - Caterpillar Model 826H Compact	1344					
7	Diesel	04/11/1997	25875 - Caterpillar Bulldozer D8	1309					
8	Diesel	10/29/2013	2014 Komatsu Bulldozer D155AX	1356					
9	Gas	03/13/1997	25763 - 1997 Ford F250 Pickup (Disposal)	1301			34,729		
10	Gas	04/02/1997	25789 - 1997 Ford F250 (Lube)	1303			34,729		
11	Gas	08/10/2006	53322 - 1998 Dodge Truck Randy	1338				36,465	
12	Gas	05/17/2007	48 - 1998 Dodge Truck Chris	1340				36,465	
13	Gas	05/17/2007	51 - 2001 Chevrolet Silverado Truck	1341					
14	Gas	03/14/2011	54267 - 1993 Ford F350 Crew Cab 4x4	1350					
15	Gas	9/6/2013	2014 Chevrolet Crew Cab 4x4	1353					
16	Gas	9/6/2013	2014 Chevrolet Crew Cab 4x4 Flatbed	1354					
17	Diesel	8/3/2010	1990 Hyster Forklift	1349	47,840				
18	Diesel	01/20/1998	27 - 1992 Caterpillar -Motor Grader	1308					
19	Diesel	10/21/2003	29661 - 140 Vhp Motor Grader	1326					
20	Diesel	04/11/1997	25876 - Wheel Loader Caterpillar	1310					417,162
21	Diesel	10/3/2013	2004 International 4200 Flatbed	1358					
22	Diesel	02/26/2003	50651 - 623 Cat Scraper	1324				981,203	
23	Diesel	2/14/2005	623 Cat Scraper	1334					
24	Diesel	03/12/2003	2003 Ford F250 4x4	1322					
25	Diesel	9/20/2013	2014 Ford F-550 Regular Cab Utility Bed	1355					
26	Diesel	06/05/2001	28759 - 1987 Case Tractor	1315					
27	Diesel	04/11/1997	25807 - 1988 Ford MHV Portable H20 Truck	1304					
28	Diesel	05/13/2002	50148 - Water Wagon Model 613C 5,000-gal	1328					
29	Diesel	01/12/2009	29840 - Caterpillar 613 (Leachate) 5,000-gal	1345					
30	Diesel	9/25/2013	2003 Caterpillar Water Wagon 621G 8,000-gal	1357					
31	Diesel	9/25/2013	Tarpomatic	N/A					
					$ 1,124,240	$ 30,000	$ 69,458	$ 1,054,133	$ 417,162

Santa Fe Solid Waste Management Agency
Vehicle Replacement Schedule

Capital Replacement Schedule per Agency

		Acquired Date	Asset Number and Description	Unit Number	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
	BuRRT Transfer Station								
32	Diesel	12/01/2005	53365 - 1992 Lubrication Truck	1401					
33	Diesel	05/02/1997	25902 - 1992 Ford Water Truck	1402					
34	Diesel	03/12/2003	45 - 2003 Ford F250 4x4 (ext cab)	1404					
35	Gas	08/10/2006	53321 - 2000 Ford Explorer	1405	26,250				
36	Diesel	03/29/2002	41 - 2002 Ford Truck 4x4 Crew Cab	1406					
37	Diesel	12/01/2005	53353 - 1997 Freightliner	1411			171,990		
38	Diesel	12/01/2005	53350 - 1997 Freightliner	1412			171,990		
39	Diesel	12/01/2005	53352 - 1997 Freightliner	1413			171,990		
40	Diesel	12/01/2005	53361 - 1996 John Deer Excavator	1431		131,040			
41	Diesel	11/30/2003	29748 - 950GII Wheel Loader	1433		360,360			
42	Diesel	02/24/2006	52963 - Cat Skid Steer Loader	1434		49,140			
43	N/A	12/01/2005	53363 - 2003 Glass Pulverizer	1435	390,000				
44	Diesel	12/17/2003	29705 - 3680 Tri-Axle Beast Recycler	1436					
45	Diesel	10/07/2007	53914 - Mini Excavator 307 Cat	1437				144,472	
46	Propane	11/09/2007	54 - Toyota Forklift 5053T (Baler Room)	1438				65,012	
47	Gas	12/17/2008	53978 - 1997 Ford Utility	1440					
48	Diesel	06/15/2005	52795 - Eagle Tire Baler	1442					
49	N/A	06/15/2005	52796 - Eagle Tire Cutter Tuff Cut	1443					
50	Diesel	06/15/2005	52792 - Eagle Tire De-rimmer	1444					
51	Diesel	05/01/2009	29866 - 2009 International 7600	1450					
52	Diesel	5/20/2011	1994 Hyster Forklift (HHW Bldg)	1451					58,150
53	Diesel	02/01/2012	54475 - Volvo L35 Wheel Loader (MRF)	1452					
54	Diesel	06/22/2012	54518 - 2012 Volvo L110G Wheel Loader (TS)	1453					
55	Diesel	10/18/2013	2014 Freightliner	1454					
56	N/A	12/01/2005	53354 - 1997 Steco Trailer	0564					
57	N/A	12/01/2005	53355 - 1997 Steco Trailer	0566					
58	N/A	12/01/2005	53357 - 1997 Steco Trailer	0567					
59	N/A	10/18/2013	2014 End Dump Trailer (Rock)	1455					
					$ 416,250	$ 540,540	$ 515,970	$ 209,484	$ 58,150

Santa Fe Solid Waste Management Agency
Vehicle Replacement Schedule

		Acquired Date	Asset Number and Description	Unit Number	Capital Replacement - Average over 5 Years FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
	Caja del Rio Landfill								
1	Gas	04/14/2004	47 - 2004 Dodge Durango	1337	6,000	6,000	6,000	6,000	6,000
2	Gas	9/20/2013	2014 Ford Escape	1351	-	-	-	-	-
3	Gas	9/30/2013	2014 Ford Explorer	1352	-	-	-	-	-
4	Diesel	07/11/2007	53909 - 1985 Street Broom T20	1346	7,280	7,280	7,280	7,280	7,280
5	Diesel	03/11/2004	51637 - Compactor 836G	1327	208,000	208,000	208,000	208,000	208,000
6	Diesel	12/20/2007	53 - Caterpillar Model 826H Compact	1344	-	-	-	-	-
7	Diesel	04/11/1997	25875 - Caterpillar Bulldozer D8	1309	-	-	-	-	-
8	Diesel	10/29/2013	2014 Komatsu Bulldozer D155AX	1356	-	-	-	-	-
9	Gas	03/13/1997	25763 - 1997 Ford F250 Pickup (Disposal)	1301	6,946	6,946	6,946	6,946	6,946
10	Gas	04/02/1997	25789 - 1997 Ford F250 (Lube)	1303	6,946	6,946	6,946	6,946	6,946
11	Gas	08/10/2006	53322 - 1998 Dodge Truck Randy	1338	7,293	7,293	7,293	7,293	7,293
12	Gas	05/17/2007	48 - 1998 Dodge Truck Chris	1340	7,293	7,293	7,293	7,293	7,293
13	Gas	05/17/2007	51 - 2001 Chevrolet Silverado Truck	1341	-	-	-	-	-
14	Gas	03/14/2011	54267 - 1993 Ford F350 Crew Cab 4x4	1350	-	-	-	-	-
15	Gas	9/6/2013	2014 Chevrolet Crew Cab 4x4	1353	-	-	-	-	-
16	Gas	9/6/2013	2014 Chevrolet Crew Cab 4x4 Flatbed	1354	-	-	-	-	-
17	Diesel	8/3/2010	1990 Hyster Forklift	1349	9,568	9,568	9,568	9,568	9,568
18	Diesel	01/20/1998	27 - 1992 Caterpillar -Motor Grader	1308	-	-	-	-	-
19	Diesel	10/21/2003	29661 - 140 Vhp Motor Grader	1326	-	-	-	-	-
20	Diesel	04/11/1997	25876 - Wheel Loader Caterpillar	1310	83,432	83,432	83,432	83,432	83,432
21	Diesel	10/3/2013	2004 International 4200 Flatbed	1358	-	-	-	-	-
22	Diesel	02/26/2003	50651 - 623 Cat Scraper	1324	196,241	196,241	196,241	196,241	196,241
23	Diesel	2/14/2005	623 Cat Scraper	1334	-	-	-	-	-
24	Diesel	03/12/2003	2003 Ford F250 4x4	1322	-	-	-	-	-
25	Diesel	9/20/2013	2014 Ford F-550 Regular Cab Utility Bed	1355	-	-	-	-	-
26	Diesel	06/05/2001	28759 - 1987 Case Tractor	1315	-	-	-	-	-
27	Diesel	04/11/1997	25807 - 1988 Ford MHV Portable H20 Truck	1304	-	-	-	-	-
28	Diesel	05/13/2002	50148 - Water Wagon Model 613C 5,000-gal	1328	-	-	-	-	-
29	Diesel	01/12/2009	29840 - Caterpillar 613 (Leachate) 5,000-gal	1345	-	-	-	-	-
30	Diesel	9/25/2013	2003 Caterpillar Water Wagon 621G 8,000-gal	1357	-	-	-	-	-
31	Diesel	9/25/2013	Tarpomatic	N/A	-	-	-	-	-
					538,999	538,999	538,999	538,999	538,999

Santa Fe Solid Waste Management Agency
Vehicle Replacement Schedule

Capital Replacement - Average over 5 Years

		Acquired Date	Asset Number and Description	Unit Number	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
	BuRRT Transfer Station								
32	Diesel	12/01/2005	53365 - 1992 Lubrication Truck	1401	-	-	-	-	-
33	Diesel	05/02/1997	25902 - 1992 Ford Water Truck	1402	-	-	-	-	-
34	Diesel	03/12/2003	45 - 2003 Ford F250 4x4 (ext cab)	1404	-	-	-	-	-
35	Gas	08/10/2006	53321 - 2000 Ford Explorer	1405	5,250	5,250	5,250	5,250	5,250
36	Diesel	03/29/2002	41 - 2002 Ford Truck 4x4 Crew Cab	1406	-	-	-	-	-
37	Diesel	12/01/2005	53353 - 1997 Freightliner	1411	34,398	34,398	34,398	34,398	34,398
38	Diesel	12/01/2005	53350 - 1997 Freightliner	1412	34,398	34,398	34,398	34,398	34,398
39	Diesel	12/01/2005	53352 - 1997 Freightliner	1413	34,398	34,398	34,398	34,398	34,398
40	Diesel	12/01/2005	53361 - 1996 John Deer Excavator	1431	26,208	26,208	26,208	26,208	26,208
41	Diesel	11/30/2003	29748 - 950GII Wheel Loader	1433	72,072	72,072	72,072	72,072	72,072
42	Diesel	02/24/2006	52963 - Cat Skid Steer Loader	1434	9,828	9,828	9,828	9,828	9,828
43	N/A	12/01/2005	53363 - 2003 Glass Pulverizer	1435	78,000	78,000	78,000	78,000	78,000
44	Diesel	12/17/2003	29705 - 3680 Tri-Axle Beast Recycler	1436	-	-	-	-	-
45	Diesel	10/07/2007	53914 - Mini Excavator 307 Cat	1437	28,894	28,894	28,894	28,894	28,894
46	Propane	11/09/2007	54 - Toyota Forklift 5053T (Baler Room)	1438	13,002	13,002	13,002	13,002	13,002
47	Gas	12/17/2008	53978 - 1997 Ford Utility	1440	-	-	-	-	-
48	Diesel	06/15/2005	52795 - Eagle Tire Baler	1442	-	-	-	-	-
49	N/A	06/15/2005	52796 - Eagle Tire Cutter Tuff Cut	1443	-	-	-	-	-
50	Diesel	06/15/2005	52792 - Eagle Tire De-rimmer	1444	-	-	-	-	-
51	Diesel	05/01/2009	29866 - 2009 International 7600	1450	-	-	-	-	-
52	Diesel	5/20/2011	1994 Hyster Forklift (HHW Bldg)	1451	11,630	11,630	11,630	11,630	11,630
53	Diesel	02/01/2012	54475 - Volvo L35 Wheel Loader (MRF)	1452	-	-	-	-	-
54	Diesel	06/22/2012	54518 - 2012 Volvo L110G Wheel Loader (TS)	1453	-	-	-	-	-
55	Diesel	10/18/2013	2014 Freightliner	1454	-	-	-	-	-
56	N/A	12/01/2005	53354 - 1997 Steco Trailer	0564	-	-	-	-	-
57	N/A	12/01/2005	53355 - 1997 Steco Trailer	0566	-	-	-	-	-
58	N/A	12/01/2005	53357 - 1997 Steco Trailer	0567	-	-	-	-	-
59	N/A	10/18/2013	2014 End Dump Trailer (Rock)	1455	-	-	-	-	-
					348,079	348,079	348,079	348,079	348,079

	CIP Per Agency			
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**
Caja del Rio				
Landfill Gas	$ 118,000	$ 122,000	$ 125,000	$ 129,000
Cell Development - Cell 5B & 6B/Wedge Liner Installation[1]	1,300,000			2,100,000
Cell Development - Site Development/Improvements	100,000	100,000	100,000	100,000
Asphalt Overlay - Wildlife Way 1.6 miles	1,000,000			
Landfill Permitting	250,000			
	$ 2,768,000	$ 222,000	$ 225,000	$ 2,329,000
BuRRT				
BuRRT Transfer Station Water Line Rehab/Mister	$ 200,000			
BuRRT Permitting Renewal	200,000			
	$ 400,000	$ -	$ -	$ -
Total Caja del Rio & BuRRT	**$ 3,168,000**	**$ 222,000**	**$ 225,000**	**$ 2,329,000**

1. Please note that the approximately $1.3 million cost for Cell 5B will be recovered over 4 years (FY 2015 - FY 2018).
The approximately $2.1 million cost for cell 6B will be amortized over 5 years, with costs initially recovered in FY 2018.

	CIP - Average over Five Years			
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**
Caja del Rio				
Landfill Gas	$ 123,500	$ 123,500	$ 123,500	$ 123,500
Cell Development - Cell 5B & 6B/Wedge Liner Installation[1]	325,000	325,000	325,000	745,000
Cell Development - Site Development/Improvements	100,000	100,000	100,000	100,000
Asphalt Overlay - Wildlife Way 1.6 miles	250,000	250,000	250,000	250,000
Landfill Permitting	62,500	62,500	62,500	62,500
	$ 861,000	$ 861,000	$ 861,000	$ 1,281,000
BuRRT				
BuRRT Transfer Station Water Line Rehab/Mister	$ 50,000	$ 50,000	$ 50,000	$ 50,000
BuRRT Permitting Renewal	50,000	50,000	50,000	50,000
	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Total Caja del Rio & BuRRT	**$ 961,000**	**$ 961,000**	**$ 961,000**	**$ 1,381,000**

1. Please note that the approximately $1.3 million cost for Cell 5B will be recovered over 4 years (FY 2015 - FY 2018).
The approximately $2.1 million cost for cell 6B will be amortized over 5 years, with costs initially recovered in FY 2018.

Landfill Budget (52501)

	Object Account	Description	Year 1- 2015	Year 2- 2016	Year 3- 2017	Year 4- 2018
1	500110	Salaries	$ -	$ -	$ -	$ -
2	500200	Exempt Full Time	112,736	116,118	119,602	123,190
3	500350	Classified Full Time	896,459	923,353	951,053	979,585
4	500800	Temporary Part Time	80,000	82,400	84,872	87,418
5	501400	Overtime	25,000	25,000	25,000	25,000
6	501510	Worked Holiday @ 1.5	-	-	-	-
7	502000	Annual Leave	-	-	-	-
8	502010	Personal Day	-	-	-	-
9	502015	Miscellaneous Leave	-	-	-	-
10	502050	Comp-time	-	-	-	-
11	502100	Sick Leave	-	-	-	-
12	502115	Union Business	-	-	-	-
13	502200	Incentives	4,200	4,326	4,456	4,589
14	503100	FICA	85,557	88,124	90,767	93,490
15	503150	Retirement	208,126	214,370	220,801	227,425
16	503200	Employee Health Ins	259,938	267,736	275,768	284,041
17	503250	Retiree Health Care	20,268	20,876	21,502	22,147
18	503250	Unemployment	3,839	3,954	4,073	4,195
19	503300	Unemployment Insurance	-	-	-	-
20	503350	Workers' Comp	26,852	27,658	28,487	29,342
21	503400	City Share Dental Insurance	12,000	12,360	12,731	13,113
22		COLA 2.1%	18,337	18,887	19,454	20,037
23		MERIT 2%	26,563	27,360	28,181	29,026
24		Retirement (PERA)	-	-	-	-
25		Expansion Position	-	-	-	-
26	510200	Legal Contract	17,650	18,003	18,363	18,730
27	510250	Compliance Contracts	1,621	1,653	1,686	1,720
28	510300	Professional Contracts	525,875	536,393	547,120	558,063
29	510600	Reim Share of Sales	95,000	96,900	98,838	100,815
30	513950	Gas	4,316	4,402	4,490	4,580
31	514000	Water	22,574	23,026	23,486	23,956
32	514050	Electric	11,200	11,424	11,652	11,886
33	514100	Communication	24,290	24,776	25,272	25,777
34	520100	Rep and Maint Build/Struct	30,000	30,600	31,212	31,836
35	520200	Rep & Maint Frounds/Rd	10,000	10,200	10,404	10,612
36	520300	Rep & Maint Furn/Fix/Equip	24,000	24,480	24,970	25,469
37	520400	Rep & Maint Machin & Equipment	300,000	306,000	312,120	318,362
38	520500	Rep & Maint Vehicles	10,000	10,200	10,404	10,612
39	530100	Office Supplies	12,000	12,240	12,485	12,734
40	530200	Operating Supplies	26,000	26,520	27,050	27,591
41	530300	Safety Supplies	15,000	15,300	15,606	15,918
42	530400	Food	1,000	1,020	1,040	1,061
43	530500	Uniform, Clothing, Linen	13,000	13,260	13,525	13,796
44	530600	Software	5,000	5,100	5,202	5,306
45	530700	Books/Subscrpts/Periodicals	500	510	520	531
46	530750	Book Acquisition	-	-	-	-
47	530850	Auto Parts	10,000	10,200	10,404	10,612
48	530900	Tires	20,000	20,400	20,808	21,224
49	531000	Gasoline	20,000	20,600	21,218	21,855
50	531050	Diesel	261,000	268,830	276,895	285,202
51	540010	Depreciation Expense	-	-	-	-
52	545010	Bad Debt Expense	-	-	-	-
53	555250	Gen Liab Dept Assessment	31,976	32,616	33,268	33,933
54	555260	Benefits Dept. Assess	15,949	16,268	16,593	16,925

		Object Account	Description	Year 1- 2015	Year 2- 2016	Year 3- 2017	Year 4- 2018
55		555300	Gen Liability	65,000	66,300	67,626	68,979
56		555400	Bond Expense	1,000	1,020	1,040	1,061
57		560200	Out of State	2,000	2,040	2,081	2,122
58		560250	In State	2,000	2,040	2,081	2,122
59		560450	Local	-	-	-	-
60		560500	Out of State	2,000	2,040	2,081	2,122
61		560550	In State	2,000	2,040	2,081	2,122
62		560700	Registration	3,000	3,060	3,121	3,184
63		561000	Postage and Mail Service	2,000	2,040	2,081	2,122
64		561200	Employee Training/Tuition	25,000	25,500	26,010	26,530
65		561400	Gross Receipt Taxes	315,000	321,300	327,726	334,281
66		561545	Recording Fees	-	-	-	-
67		561750	Bank Charges & Fees	7,600	7,752	7,907	8,065
68		561800	Print/Publish	8,000	8,160	8,323	8,490
69		561850	Advertising	6,000	6,120	6,242	6,367
70		561900	Dues	5,000	5,100	5,202	5,306
71		562600	Equipment/Machinery Rental	5,000	5,150	5,305	5,464
72		563100	Services of other City Depts	84,183	85,866	87,584	89,335
73		570500	Equipment & Machinery	-	-	-	-
74		570800	Data Processing	-	-	-	-
75		570850	Software	-	-	-	-
76		570950	Vehicles < 1.5	-	-	-	-
77		572400	Inventory Exempt	-	-	-	-
			Subtotal	$ 3,822,609	$ 3,918,970	$ 4,017,870	$ 4,119,380
78		590100	Debt Service Principal	$ -	$ -	$ -	$ -
79		590200	Debt Service Interest	-	-	-	-
			Subtotal	$ -	$ -	$ -	$ -
80		**Intra-Fund Transfers Out**					
81		52502	Vehicle/Equipment Replacement	$ 538,999	$ 538,999	$ 538,999	$ 538,999
82		52503	Gas Collection System	123,500	123,500	123,500	123,500
83		52507	Cell Development	425,000	425,000	425,000	845,000
84		52509	Closure Post Closure				
85		52521	Landfill Permitting	62,500	62,500	62,500	62,500
			Asphalt Overlay	250,000	250,000	250,000	250,000
			Subtotal	$ 1,399,999	$ 1,399,999	$ 1,399,999	$ 1,819,999
			Total Landfill Operations Budget	**$ 5,222,608**	**$ 5,318,969**	**$ 5,417,869**	**$ 5,939,378**
	Recycling Budget (52504)						
86		500110	Salaries	$ -	$ -	$ -	$ -
87		500200	Exempt Full Time	-	-	-	-
88		500350	Classified Full Time	769,537	792,623	816,402	840,894
89		500400	Classified Part-Time	-	-	-	-
90		500750	Temporary Full-Time	11,066	11,398	11,740	12,092
91		500800	Temporary Part Time	-	-	-	-
92		501400	Overtime	25,000	25,000	25,000	25,000
93		501510	Worked Holiday @ 1.5	-	-	-	-
94		502000	Annual Leave	-	-	-	-
95		502010	Personal Day	-	-	-	-
96		502015	Miscellaneous Leave	-	-	-	-
97		502050	Comp-time	-	-	-	-
98		502100	Sick Leave	-	-	-	-
99		502115	Union Business	-	-	-	-

	Object Account	Description	Year 1- 2015	Year 2- 2016	Year 3- 2017	Year 4- 2018
100	502200	Incentives	4,200	4,326	4,456	4,589
101	503100	FICA	61,950	63,809	65,723	67,694
102	503150	Retirement	158,842	163,607	168,515	173,571
103	503200	Employee Health Ins	200,329	206,339	212,529	218,905
104	503250	Retiree Health Care	15,445	15,908	16,386	16,877
105	503250	Unemployment	-	-	-	-
106	503300	Unemployment Insurance	-	-	-	-
107	503350	Workers' Comp	41,576	42,823	44,108	45,431
108	503400	City Share Dental Insurance	10,181	10,486	10,801	11,125
109		COLA 2.1%	14,836	15,281	15,740	16,212
110		MERIT 2%	21,108	21,741	22,393	23,065
111		Retirement (PERA)	-	-	-	-
112		Expansion Position	-	-	-	-
113	510200	Legal Contract	17,650	18,003	18,363	18,730
114	510250	Compliance Contracts	1,622	1,654	1,688	1,721
115	510300	Professional Contracts	-	-	-	-
116	510600	Reim Share of Sales	-	-	-	-
117	513950	Gas	15,689	16,003	16,323	16,649
118	514000	Water	2,368	2,415	2,464	2,513
119	514050	Electric	68,800	70,176	71,580	73,011
120	514100	Communication	5,771	5,887	6,004	6,125
121	520100	Rep and Maint Build/Struct	50,000	51,000	52,020	53,060
122	520200	Rep & Maint Frounds/Rd	5,000	5,100	5,202	5,306
123	520300	Rep & Maint Furn/Fix/Equip	3,000	3,060	3,121	3,184
124	520400	Rep & Maint Machin & Equipment	175,000	178,500	182,070	185,711
125	520500	Rep & Maint Vehicles	5,000	5,100	5,202	5,306
126	530100	Office Supplies	-	-	-	-
127	530200	Operating Supplies	40,000	40,800	41,616	42,448
128	530300	Safety Supplies	25,000	25,500	26,010	26,530
129	530400	Food	-	-	-	-
130	530500	Uniform, Clothing, Linen	15,000	15,300	15,606	15,918
131	530600	Software	1,500	1,530	1,561	1,592
132	530700	Books/Subscrpts/Periodicals	500	510	520	531
133	530750	Book Acquisition	-	-	-	-
134	530850	Auto Parts	4,000	4,080	4,162	4,245
135	530900	Tires	20,000	20,400	20,808	21,224
136	531000	Gasoline	5,000	5,150	5,305	5,464
137	531050	Diesel	139,000	143,170	147,465	151,889
138	540010	Depreciation Expense	-	-	-	-
139	545010	Bad Debt Expense	-	-	-	-
140	555250	Gen Liab Dept Assessment	-	-	-	-
141	555260	Benefits Dept. Assess	-	-	-	-
142	555300	Gen Liability	-	-	-	-
143	555400	Bond Expense	-	-	-	-
144	560200	Out of State	1,000	1,020	1,040	1,061
145	560250	In State	2,000	2,040	2,081	2,122
146	560450	Local	-	-	-	-
147	560500	Out of State	1,000	1,020	1,040	1,061
148	560550	In State	1,000	1,020	1,040	1,061
149	560700	Registration	1,000	1,020	1,040	1,061
150	561000	Postage and Mail Service	-	-	-	-
151	561200	Employee Training/Tuition	5,000	5,100	5,202	5,306
152	561400	Gross Receipt Taxes	-	-	-	-
153	561545	Recording Fees	-	-	-	-
154	561750	Bank Charges & Fees	-	-	-	-
155	561800	Print/Publish	10,000	10,200	10,404	10,612

		Object Account	Description	Year 1- 2015	Year 2- 2016	Year 3- 2017	Year 4- 2018
156		561850	Advertising	10,000	10,200	10,404	10,612
157		561900	Dues	500	510	520	531
158		562550	Land/Building	60,000	61,200	62,424	63,672
159		562600	Equipment/Machinery Rental	5,000	5,150	5,305	5,464
160		563100	Services of other City Depts	42,091	42,933	43,792	44,668
161		570500	Equipment & Machinery	-	-	-	-
162		570800	Data Processing	-	-	-	-
163		570850	Software	-	-	-	-
164		570950	Vehicles < 1.5	-	-	-	-
165		572400	Inventory Exempt	-	-	-	-
166		572960	WIP Design	-	-	-	-
167		572970	WIP Construction	-	-	-	-
			Total Recycling Budget	$ 2,072,561	$ 2,128,093	$ 2,185,173	$ 2,243,845
	BuRRT CIP						
168			BuRRT Transfer Station Water Line Rehab/Mister	$ 50,000	$ 50,000	$ 50,000	$ 50,000
169			BuRRT Permitting Renewal	50,000	50,000	50,000	50,000
170			Vehicle/Equipment Replacement	348,079	348,079	348,079	348,079
				$ 448,079	$ 448,079	$ 448,079	$ 448,079
			Total Recycling Operations Budget	**$ 2,520,640**	**$ 2,576,172**	**$ 2,633,252**	**$ 2,691,924**
				$ 7,743,248	$ 7,895,141	$ 8,051,121	$ 8,631,302
	REVENUES						
171		438615	Recycle-Miscellanous MRF Sales	$ (420,819)	$ (420,819)	$ (420,819)	$ (420,819)
172		438710	Transfer Station	(615,860)	(615,860)	(615,860)	(615,860)
173		438750	Landfill-City	-	-	-	-
174		438760	Landfill-County	-	-	-	-
175		438770	Landfill-Other	-	-	-	-
176		470400	Reimbursements/Refunds	-	-	-	-
177		470510	Sales- Dirt (Caja)	(150,000)	(150,000)	(150,000)	(150,000)
178		470600	Sales of Capital Assets	-	-	-	-
179		470900	Gain on Sale - Fixed Assets	-	-	-	-
				-	-	-	-
180		480020	Interest on Investments	-	-	-	-
181		480022	Interest (Amort of Prem & Disc	-	-	-	-
182		0	Caja Misc Sales - Uncovered Loads	(1,129)	(1,129)	(1,129)	(1,129)
183		0	BuRRT Misc Sales - Uncovered Loads	(5,056)	(5,056)	(5,056)	(5,056)
184		0	MRF Tip Fees (Outside Recycling)	(1,600)	(1,600)	(1,600)	(1,600)
185		0	Glass Tip Fees	(31,967)	(31,967)	(31,967)	(31,967)
186		0	Green Waste Tip Fees (Mulch)	(190,610)	(190,610)	(190,610)	(190,610)
187		0	Tires Tip Fees	(31,640)	(31,640)	(31,640)	(31,640)
188		0	E-Waste Tip Fees	(3,267)	(3,267)	(3,267)	(3,267)
189		0	Transfer Station Material Sales for Scrap Metal	(41,169)	(41,169)	(41,169)	(41,169)
190		0	Glass Material Sales	(13,356)	(13,356)	(13,356)	(13,356)
191		0	Mulch Sales	(24,656)	(24,656)	(24,656)	(24,656)
				-	-	-	-
				-	-	-	-
			Total Revenues	**$ (1,531,129)**	**$ (1,531,129)**	**$ (1,531,129)**	**$ (1,531,129)**
			Total Budget	**$ 6,212,119**	**$ 6,364,012**	**$ 6,519,992**	**$ 7,100,174**

Santa Fe Solid Waste Management Agency
Revenue Requirement Summary

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Disposal	$ 1,503,841	$ 1,532,999	$ 1,562,966	$ 1,593,764
Cell Development	537,888	538,720	539,575	960,455
Composting	99,481	100,315	101,172	102,052
Administration	656,604	671,262	686,328	701,814
Operation & Maintenance	1,361,012	1,388,014	1,415,635	1,443,891
	$ 4,158,826	$ 4,231,310	$ 4,305,676	$ 4,801,976
Buckman Road Recycling and Transfer Station (BuRRT)				
Transfer Station	$ 280,286	$ 300,063	$ 320,422	$ 341,380
Material Recovery facility	113,097	127,176	141,655	156,547
HHW Collection	213,895	218,434	223,079	227,833
Green waste processing	97,560	104,303	111,245	118,390
Glass recycling	102,584	104,531	106,534	108,594
White goods	7,666	7,891	8,124	8,363
Tires	(2,459)	(1,834)	(1,195)	(541)
E-waste	27,424	28,327	29,258	30,216
Administration	559,626	575,112	591,044	607,438
Operation & Maintenance	653,616	668,699	684,150	699,978
	$ 2,053,293	$ 2,132,702	$ 2,214,316	$ 2,298,198
Total	**$ 6,212,119**	**$ 6,364,012**	**$ 6,519,992**	**$ 7,100,174**

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Caja del Rio Landfill				
Disposal Cost Allocation				
Disposal	$ 1,503,841	$ 1,532,999	$ 1,562,966	$ 1,593,764
Cell Development	537,888	538,720	539,575	960,455
Composting	99,481	100,315	101,172	102,052
Administration	807,733	822,391	837,457	852,943
Operation & Maintenance	1,361,012	1,388,014	1,415,635	1,443,891
	$ 4,309,955	$ 4,382,439	$ 4,456,805	$ 4,953,105
Caja del Rio Miscellaneous Revenues				
Dirt Sales	($150,000)	($150,000)	($150,000)	($150,000)
Uncovered Loads	(1,129)	(1,129)	(1,129)	(1,129)
	($151,129)	($151,129)	($151,129)	($151,129)
Total	**$ 4,158,826**	**$ 4,231,310**	**$ 4,305,676**	**$ 4,801,976**
Caja del Rio Landfill Tonnage				
BuRRT	16,353	16,353	16,353	16,353
C&D	32,753	32,753	32,753	32,753
Commercial	48,606	48,606	48,606	48,606
Residential	50,165	50,165	50,165	50,165
Misc (Dead Animals, IB, Sweeper)	2,785	2,785	2,785	2,785
WWTP & WTP Sludge	1,338	1,338	1,338	1,338
Total	152,000	152,000	152,000	152,000
Cost per Ton (Excluding BuRRT Tonnage)	**$ 30.66**	**$ 31.19**	**$ 31.74**	**$ 35.40**
Cost per Ton (Including BuRRT Tonnage)	**$ 27.36**	**$ 27.84**	**$ 28.33**	**$ 31.59**

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
Buckman Road Recycling and Transfer Station (BuRRT)				
Transfer Station Disposal Cost Allocation				
Direct Transfer Station Cost	$ 942,371	$ 962,148	$ 982,507	$ 1,003,465
Administration	217,032	223,301	229,756	236,405
Operation & Maintenance	191,695	196,118	200,650	205,292
Total	**$ 1,351,097**	**$ 1,381,567**	**$ 1,412,914**	**$ 1,445,162**
Revenue Offsets	($662,085)	($662,085)	($662,085)	($662,085)
Under-Recovery[1]	**$ 689,012**	**$ 719,482**	**$ 750,829**	**$ 783,077**
Tonnage Accepted at Transfer Station				
Total Tonnage (Includes C&D, Commercial, Residential)	16,353	16,353	16,353	16,353
Cost per Ton[2]	**$ 82.62**	**$ 84.48**	**$ 86.40**	**$ 88.37**
Material Recovery Facility (MRF) Disposal Cost Allocation				
Direct MRF Cost	$535,516	$549,595	$564,074	$578,966
Administration	161,439	165,902	170,495	$175,221
Operation & Maintenance	348,138	356,172	364,402	$372,833
Total	**$1,045,093**	**$1,071,669**	**$1,098,971**	**$1,127,019**
Revenue Offsets	($422,419)	($422,419)	($422,419)	($422,419)
Under-Recovery[3]	**$ 622,674**	**$ 649,250**	**$ 676,552**	**$ 704,600**
Recycling Tonnage (Includes Recycling Inside & Outside City)[4]	6,809	6,809	6,809	6,809
Cost per Ton[5]	**$ 153.50**	**$ 157.40**	**$ 161.41**	**$ 165.53**

1. Shortfall after tip fees and sale of scrap metal.
2. Cost per ton based on total indirect and direct costs for transfer station, and does not include the subtraction of revenue offsets.
3. Shortfall after tip fees, sale of recyclables, and miscellaneous revenues.
4. Excludes glass recycling.
5. Cost per ton based on total indirect and direct costs for MRF, and does not include the subtraction of revenue offsets.

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
HHW Collection Cost of Service				
Direct Cost	$ 213,895	$ 218,434	$ 223,079	$ 227,833
Indirect Cost				
Administration	63,691	65,132	66,608	68,119
Operation & Maintenance	-	-	-	-
Subtotal	$ 277,586	$ 283,566	$ 289,687	$ 295,951
Revenue Offsets	$ -	$ -	$ -	$ -
HHW Pounds	116,360	116,360	116,360	116,360
Cost per Pound	**$ 2.39**	**$ 2.44**	**$ 2.49**	**$ 2.54**
Tires Cost of Service				
Direct Cost	$ 29,181	$ 29,806	$ 30,445	$ 31,099
Indirect Cost				
Administration	9,189	9,387	9,590	9,798
Operation & Maintenance	-	-	-	-
Subtotal	$ 38,369	$ 39,193	$ 40,036	$ 40,897
Revenue Offsets	(31,640)	(31,640)	(31,640)	(31,640)
Under-Recovery[1]	**$6,729**	**$7,553**	**$8,396**	**$9,257**
Total Number of Tires	18,006	18,006	18,006	18,006
Cost per Tire	**$2.13**	**$2.18**	**$2.22**	**$2.27**
E-Waste Cost of Service				
Direct Cost	$ 30,691	$ 31,594	$ 32,525	$ 33,483
Indirect Cost				
Administration	9,664	9,950	10,246	10,550
Operation & Maintenance	-	-	-	-
Subtotal	$ 40,355	$ 41,545	$ 42,770	$ 44,033
Revenue Offsets	(3,267)	(3,267)	(3,267)	(3,267)
Under-Recovery[1]	**$ 37,088**	**$ 38,278**	**$ 39,503**	**$ 40,766**
E-Waste Tonnage	135	135	135	135
Cost per Ton[2]	**$ 298.04**	**$ 306.83**	**$ 315.88**	**$ 325.21**

1. Shortfall after tire fees.

1. Shortfall after tip fees.
2. Cost per ton based on total indirect and direct costs for e-waste, and does not include the subtraction of revenue offsets.

	Year 1 FY 2015	Year 2 FY 2016	Year 3 FY 2017	Year 4 FY 2018
White Goods Cost of Service				
Direct Cost	$ 7,666	$ 7,891	$ 8,124	$ 8,363
Indirect Cost				
Administration	2,414	2,485	2,559	2,635
Operation & Maintenance	-	-	-	-
Subtotal	**$ 10,080**	**$ 10,377**	**$ 10,683**	**$ 10,999**
Revenue Offsets[1]	$0	$0	$0	$0
Annual Number of White Goods Collected	625	625	625	625
Cost per Collection	**$ 16.13**	**$ 16.60**	**$ 17.09**	**$ 17.60**

1. Scrap metal tip fees and revenues from sales are included in the transfer station revenue offsets.

Green Waste Processing Cost of Service				
Direct Cost	$ 312,826	$ 319,569	$ 326,511	$ 333,656
Indirect Cost				
Administration	74,186	76,323	78,525	80,791
Operation & Maintenance	74,771	76,496	78,264	80,074
Subtotal	**$ 461,782**	**$ 472,389**	**$ 483,299**	**$ 494,521**
Revenue Offsets	(215,266)	(215,266)	(215,266)	(215,266)
Under-Recovery[1]	**$ 246,516**	**$ 257,123**	**$ 268,033**	**$ 279,255**
Green Waste Tonnage	7,375	7,375	7,375	7,375
Cost per Ton[2]	**$ 62.61**	**$ 64.05**	**$ 65.53**	**$ 67.05**

1. Shortfall after tip fees and sales of mulch.
2. Cost per ton based on total indirect and direct costs for green waste, and does not include the subtraction of revenue offsets.

Glass Recycling Cost of Service				
Direct Cost	$ 147,907	$ 149,854	$ 151,857	$ 153,917
Indirect Cost				
Administration	22,013	22,630	23,265	23,919
Operation & Maintenance	39,012	39,912	40,835	41,779
Subtotal	**$ 208,932**	**$ 212,396**	**$ 215,956**	**$ 219,615**
Revenue Offsets	(45,323)	(45,323)	(45,323)	(45,323)
Under-Recovery[1]	**$ 163,609**	**$ 167,073**	**$ 170,633**	**$ 174,292**
Glass Tonnage	2,285	2,285	2,285	2,285
Cost per Ton[2]	**$ 91.43**	**$ 92.94**	**$ 94.50**	**$ 96.10**

1. Shortfall after tip fees and sales of recyclables.
2. Cost per ton based on total indirect and direct costs for glass recycling, and does not include the subtraction of revenue offsets.

Section 2
OPERATIONAL ASSESSMENT OF THE CAJA DEL RIO LANDFILL

2.1 Facility Overview

The Caja del Rio Landfill (Landfill) is a solid waste disposal facility located northwest of the City of Santa Fe, New Mexico, operated by the Santa Fe Solid Waste Management Agency (Agency). The principal feature of the facility is the permitted solid waste disposal area (or landfill), which serves as the primary disposal site for waste materials generated in Santa Fe County. The facility is open to the public from 7:00 am to 5:00 pm, Monday through Saturday, and closed certain holidays.

The site is approximately 640 acres in size. The principal features and activities conducted at the Landfill are:

- Scale Facility
- Administration Building
- Fleet Maintenance
- Landfill Operations
- Compost Area
- Landfill Gas Flare
- Rock Blasting and Crushing
- Environmental Protection

The principal purpose of the Landfill is to provide secure solid waste disposal services for materials that are collected by the waste management operations of the City of Santa Fe (City), Santa Fe County (County), and private solid waste collection companies in the Santa Fe area.

2.1.1 Scale Facility

The scale facility consists of inbound and outbound scales and a scale house that is staffed by scalemasters who are responsible for weighing loads, assessing charges, and using the scale management system to track tonnages and charges. The scale facility controls access to the Landfill, and provides important accounting services.

The scalemasters assess charges based on the fee schedule adopted by the Agency's governing board.

Figure 2-1. Landfill Scale House

2.1.2 Administration Building

The administration building houses the principal offices for the Agency including administration, accounting and Landfill management offices.

2.1.3 Fleet Maintenance Building

The Fleet Maintenance Building provides facilities for fleet maintenance and Landfill operations activities. The building is outfitted with office space, locker and shower facilities, and a break room for operations staff. The building also houses storage and work areas for fleet maintenance including two drive-through maintenance bays large enough to support maintenance activities on heavy equipment and over-the-road waste transfer equipment. On-site storage tanks support fueling activities.

Figure 2-2. Fleet Maintenance Building

Figure 2-3. On-Site Fuel Storage

2.1.4 Landfill Operations

Landfill operations are a cornerstone service provided by the Agency. The currently permitted area, Cells 1 through 6, encompasses an area of approximately 87 acres. The Agency employs certified landfill operators to manage the incoming waste and assure it is properly placed and compacted in the disposal cells.

Most of the waste delivered to the Landfill is hauled by large solid waste collection vehicles or Agency transfer vehicles. Smaller vehicles that must be hand-unloaded are directed to the Buckman Road Recycing and Transfer Station (BuRRT). Limiting deliveries to the Landfill to large commercial vehicles assures safer operations on the work face.

Figure 2-4. Landfill Compactor Operating on Work Face

Figure 2-5. Garbage Truck Delivering to Landfill Work Face

2.1.5 Compost Area

The compost area is an approximately 11 acre area on the Landfill site that is permitted to accept green waste and other similar organic materials for composting. The compost area provides a large flat area that can support material placement, turning, and storage activities. The compost area is adjacent to a water source supplied by treated wastewater effluent. The Agency is currently only minimally operating the compost area. Potential composting options will be considered in Section 5.

Figure 2-6. Compost Area.

2.1.6 Landfill Gas Flare

As solid waste decays, it breaks down to create methane, carbon dioxide, and trace organic gasses. The Landfill has in place a sophisticated system to ensure landfill gas does not adversely impact the environment around the Landfill. Fifteen (15) landfill gas extraction wells are installed into the waste, and the collected gas is delivered to the enclosed fare, where harmful gasses are combusted.

Figure 2-7. Landfill Gas Flare

2.1.7 Rock Blasting and Crushing

Much of the Landfill site is located on top of a basalt layer. This geologic formation is typically not encountered at landfill sites. This means the Agency has to undertake the unique activity of blasting the basalt so that disposal cells can be constructed. While the basalt blasting adds to the Landfill's construction cost, it allows valuable airspace to be gained. The blasted basalt is hauled to a processing area by a contract operator who is responsible for the processing and sale of the rock. The processor pays the

Agency a revenue share for the rock that it sells. If approved, the new permit renewal shows no basalt blasting will be needed for the next 70 years.

Figure 2-8. Drill Rig Preparing Bore Hole for Blasting in Front of Blasted Rock

2.1.8 Environmental Protection

The entire Landfill site and the individual disposal cells are all designed, constructed, and operated with the intent of protecting the environment. Important environmental protection features at the Landfill include:

- Landfill cell construction – liners and leachate collection
- Environmental monitoring
- Stormwater management
- Landfill gas control and monitoring

Landfill Cell Construction – Liners and Leachate Collection

The landfill disposal area is constructed in discrete engineered units called cells (or disposal cells). Any water that filters through solid waste is called leachate. As the leachate percolates through the placed solid waste, it may pick up contaminants, so it must be kept from entering the ground water. Each cell is constructed with a liner system that includes a 60 mil high density polyethylene (HDPE) which is placed over low-permeability, geosynthetic clay (GCL) liner, and the two liners serve as a barrier to leachate flow. Just on top of the liners is a leachate collection system. Without the leachate collection system, the lined cells would fill up like bathtubs full of the accumulated leachate. The leachate collection system consists of a drainage layer and pipes that convey the leachate to sumps so that it may pumped out from under the cells and managed properly.

The Agency pumps the leachate sumps out at least monthly to assure no more than one foot of leachate accumulates on the liner. Leachate is primarily applied within the disposal cells to provide dust control.

Environmental Monitoring

The depth to the water table below the landfill is more than 300 feet. The Agency annually conducts chemical analyses on the groundwater to assure that the disposal operations have no impact on it. Three wells for monitoring groundwater quality under the site have been installed, and no contaminants have been detected under the site.[1]

Stormwater Management

The Landfill is constructed in a manner so that any rainwater that falls outside of the disposal cells is directed away from the cells. The Landfill has a stormwater management system to safely manage any rainwater that falls on the site.

Landfill Gas Control and Monitoring

The site has a Title V Operating Permit that prescribes how landfill gas is managed on the site. Landfill gas is collected from wells drilled into the waste and directed to an enclosed flare where methane and other trace organic materials are combusted.

Ten locations around the site have been established for monitoring for methane that could migrate from the Landfill. The Agency reports that no migrating methane has been detected at the property boundary or in onsite buildings.[2]

Figure 2-9. Groundwater Monitoring Well

[1] Source: Agency website
[2] Source: Agency website

2.2 Operations Review

2.2.1 Material Types and Quantity Managed

In FY 2013, 27,592 inbound transactions (loads) were recorded at the Landfill totaling 148,145 tons. The types of materials managed and number of transactions are shown in Table 2-1.

Table 2-1
Material Received at the Landfill, Fiscal Year 2013

	Tons	Transactions
BuRRT Transfer Waste	16,353	1,013
C&D	32,753	8,817
Residential Solid Waste	48,606	9,189
Commercial Solid Waste	46,273	7,844
Other Waste	4,160	729
Total	148,145	27,592

Source: Agency Landfill Transaction Data

Table 2-2 shows that in FY 2013, the Landfill received approximately 100 deliveries on most weekdays (Monday through Friday). On Saturday the Landfill only received about one-quarter of the traffic compared to weekdays. While the daily count of deliveries was fairly consistent during the week, the most tonnage per day was received on Mondays.

Table 2-2
Average Daily Deliveries to Landfill, FY 2013

	Tons per Day	Loads per Day
Monday	608	107
Tuesday	522	100
Wednesday	507	97
Thursday	537	104
Friday	531	100
Saturday	146	24

Source: Agency Landfill Transaction Data

Table 2-3 shows all customers that individually delivered more than 4 percent of the incoming tonnage to the Landfill in FY 2013. Five customers (note that the City is indicated twice on the table), plus tonnage received from the Buckman Road Recycling and Transfer Station (BuRRT), represent 78 percent of incoming tonnage to the Landfill.

Table 2-3
Top Customers Delivering Waste to Landfill

Customer	Tons	Transactions	Tons	Transaction
BURRT Transfer	16,353	1,011	11.0%	3.7%
City of Santa Fe Solid Waste Division	48,824	6,416	33.0%	23.3%
City of Santa Fe Third Party	9,602	2,984	6.5%	10.8%
Santa Fe County Public Works	11,384	1,759	7.7%	6.4%
MCT Waste, LLC	6,537	1,267	4.4%	4.6%
Santa Fe Waste Service	6,449	1,582	4.4%	5.7%
Waste Management of New Mexico	16,523	3,204	11.2%	11.6%
Total	148,145	27,592	78.1%	66.0%

Source: Agency Landfill Transaction Data

2.2.2 Staffing

The staffing assigned to the Landfill is shown in Table 2-4. It should be noted that administrative personnel whose offices are located at the Landfill are indicated on the list below.

Table 2-4
Landfill Staffing

Position	Current Operation	General Description
Accounts Coordinator	1	Agency accounting
Admin. Assistant/ HR Officer	1	Administration
Equip. Maintenance Supervisor	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic I	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic II	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic III	1	Equipment maintenance at Landfill and BuRRT
Executive Director	1	Overall Agency management
Health, Safety and Training Administrator	1	Safety
Heavy Equipment Operator I	3	Primarily landfill operations
Heavy Equipment Operator II	1	Primarily landfill operations
Heavy Equipment Operator III	1	Primarily landfill operations
Landfill Manager	1	Overall management of Landfill and associated activities
Landfill Superintendent	1	Supervision of landfill activities
Maintenance Coordinator	1	Site maintenance activities at Landfill and BuRRT
Maintenance Worker	1	Site maintenance activities at Landfill and BuRRT
Scale Supervisor	1	Supervision of Landfill and BuRRT scale operations
Scalemaster	2	Manage and account for incoming and outgoing loads using the scale management system
Temporary - Scalemaster	1	Sale operations at Landfill and BuRRT
Temporary Laborer- Caja	4	Site maintenance activities at Landfill and BuRRT

Source: The Agency

Principal personnel responsible for performing waste disposal operations activities are those designated Landfill Superintendent, Heavy Equipment Operator I, Heavy Equipment Operator II, and Heavy Equipment Operator III. The Landfill Manager generally performs in a technical and oversight role.

The Maintenance Coordinator, Maintenance Worker, and Temporary Laborers are responsible for performing site maintenance activities, including litter pick-up at the Landfill and BuRRT.

The Equipment Maintenance Supervisor and three Equipment Mechanics (as designated) are responsible for maintaining equipment at both the Landfill and BuRRT.

Similar to their function at BuRRT, the Scalemasters manage traffic access to the facility and perform important accounting duties.

Generally, it appears that the Agency maintains a relatively lean staff for operating the Landfill and those duties are performed in a competent manner.

2.2.3 Equipment

The equipment assigned to the Landfill is listed in Table 2-4. The principal equipment used in landfill operations are:

- **Dozer** – used to spread waste at the disposal cells so that it may optimally compacted by the compactor, also used to manage soil stockpiles.
- **Compactor** – compact waste to achieve optimum densities for waste placed in the disposal cells, also used to spread waste on the work face.
- **Scraper/Pan** – self-loading and unloading dirt-hauling machine used for moving soil around the site and placing daily and intermediate cover.
- **Grader** – road maintenance equipment used to smooth and construct dirt roadways and to smooth landfill cover.
- **Water Wagon** – self-propelled water tanker used for dust suppression, cell development, and composting.
- **Tarpomatic** – machine for deploying a tarp as alternate daily cover on the compacted waste. The use of alternate daily cover helps reduce the quantity of soil used for daily cover which saves airspace and reduces costs associated with hauling soil on the site.

Table 2-5
Landfill Equipment

04/14/2004	47 - 2004 Dodge Durango	Agency Vehicle	
9/20/2013	2014 Ford Escape	Agency Vehicle	
9/30/2013	2014 Ford Explorer	Agency Vehicle	
07/11/2007	53909 - 1985 Street Broom T20	Broom	
03/11/2004	51637 - Compactor 836G	Compactor	Front Line
12/20/2007	53 - Caterpillar Model 826H Compact	Compactor	Back-Up
04/11/1997	25875 - Caterpillar Bulldozer D8	Dozer	Back-Up
10/29/2013	2014 Komatsu Bulldozer D155AX	Dozer	Front Line
03/13/1997	25763 - 1997 Ford F250 Pickup (Disposal)	Field Pickup	
04/02/1997	25789 - 1997 Ford F250 (Lube)	Field Pickup	
08/10/2006	53322 - 1998 Dodge Truck Randy	Field Pickup	
05/17/2007	48 - 1998 Dodge Truck Chris	Field Pickup	
05/17/2007	51 - 2001 Chevrolet Silverado Truck	Field Pickup	

03/14/2011	54267 - 1993 Ford F350 Crew Cab 4x4	Field Pickup	
9/6/2013	2014 Chevrolet Crew Cab 4x4	Field Pickup	
9/6/2013	2014 Chevrolet Crew Cab 4x4 Flatbed	Field Pickup	
8/3/2010	1990 Hyster Forklift	Forklift	
01/20/1998	27 - 1992 Caterpillar -Motor Grader	Grader	Back-Up
10/21/2003	29661 - 140 Vhp Motor Grader	Grader	Front Line
04/11/1997	25876 - Wheel Loader Caterpillar	Loader	
10/3/2013	2004 International 4200 Flatbed	Lube Truck	
02/26/2003	50651 - 623 Cat Scraper	Scraper/Pan	Back-Up
2/14/2005	623 Cat Scraper	Scraper/Pan	Front Line
03/12/2003	2003 Ford F250 4x4	Service Truck	
9/20/2013	2014 Ford F-550 Regular Cab Utility Bed	Service Truck	
06/05/2001	28759 - 1987 Case Tractor	Tractor	
04/11/1997	25807 - 1988 Ford MHV Portable H20 Truck	Water Truck	
05/13/2002	50148 - Water Wagon Model 613C 5,000-gal	Water Wagon	Back-Up
01/12/2009	29840 - Caterpillar 613 (Leachate) 5,000-gal	Water Wagon	
9/25/2013	2003 Caterpillar Water Wagon 621G 8,000-gal	Water Wagon	Front Line
9/25/2013	Tarpomatic	Misc.	

Source: The Agency

At the time of the initial site visit, the Agency did not maintain detailed repair and maintenance cost records by individual piece of equipment. At the time this report was prepared, the Agency has purchased RTA Fleet Management Software and is initiating the use of this automated system. Having maintenance data by piece of equipment will allow Agency staff to monitor the useful life of equipment based on wear and repair costs.

The Agency has one front-line and one backup for each key piece of equipment. This appears prudent because most Landfill equipment is specialized (e.g., large dozers or compactors) and equipment vendors usually do not have replacements readily available, so the Landfill must have backup equipment on hand in case of unanticipated equipment downtime.

To place soil on the work face the Agency makes use of scraper pans. These pieces of equipment are efficient in excavating and placing soil, because one operator can self-load and self-spread soil on the work face. Louis Berger is aware of landfills that have transitioned from using scraper pans to using excavators to load off-road dump trucks to transport soil. The benefits of this approach are: 1) The excavator and dump truck are more versatile pieces of equipment that are able to perform multiple services compared to the scraper pan and 2) These two pieces of equipment generally have lower owning, operating, and repair costs compared to scraper pans. Alternatively, the excavator-dump truck combination may require more labor effort for moving and

placing soil, which could be a detriment in light of the Agency's lean approach to staffing. Louis Berger recommends that the Agency further evaluate the replacement of the scraper pans with excavators and dump trucks when it prepares to replace one of the scraper pans. Agncy looking at

2.2.4 Airspace Utilization

Table 2-6 shows the average landfill airspace utilization factor (AUF) presented as the pounds (lbs) of solid waste placed in the disposal cells per cubic yard (CY) of airspace consumed. The AUF is a measure of how effectively the solid waste is compacted as it is placed in the disposal cells.

Table 2-6
Landfill Tonnage and Airspace Consumed through FY 2013

Year	Tons Received [1]	Airspace Used (CY) [2]	AUF (lbs/CY)
FY 1997 to 2007	1,795,988	2,911,923	1,234
FY 2008	205,375	315,732	1,301
FY 2009	178,215	271,822	1,311
FY 2010	154,768	296,194	1,045
FY 2011	146,929	259,148	1,134
FY 2012	155,816	251,052	1,241
FY 2013	148,145	260,886	1,136
Total		4,566,757	
Average			1,220

1. Agency Report - Volume and Site Life Calcs
2. Agency GASB Remaining Airspace Capacity June 2013

The amount of tonnage and the quantity of moisture (or rainfall) that a landfill receives have a direct impact on the AUF that it can achieve. The average AUF of 1,220 lbs/CY is in the range of other similar landfills that Louis Berger has worked with, and considering the arid environment of the Santa Fe area, achieving this AUF reflects positively on Landfill operations.

2.2.5 Landfill Cell Development

Waste is currently being placed into Cell 4B, with cell development and construction areas being conducted on Cells 5B and 6B. Cell 5B will have a surface area of approximately 10 acres with a disposal capacity of 4 years. Estimated cost of building the new cell is $3.6 million with $1.6 million of this for the blasting and removal of basalt.[3]

[3] Source: Agency website

2.2.6 Traffic

Approximately 100 trucks per day (25 per day on the weekend) deliver material to the Landfill. At the Landfill, permanent paved roads are constructed leading to the disposal cells and the basalt crushing operation. Temporary dirt roads are constructed leading onto the disposal cells. During several visits to the Landfill, including trips made in City collection vehicles, it appeared that the roads were well maintained. Dust control is maintained by operation of water wagons to spray down the dirt roads. During Louis Berger's visits, the water wagons were observed in service effectively suppressing dust on the roads.

2.2.7 Litter

Windblown litter is very often associated with landfill operations. It is a continuing challenge to contain and collect litter at landfill sites. At the Landfill, windblown litter is controlled by temporary and permanent fencing. Permanent and temporary Agency employees are assigned to pick up litter at the Landfill and BuRRT, and on roadways approaching both facilities. At Louis Berger's first site visit to the Landfill, which occurred during a particularly windy Spring day, litter was observed blowing on the Landfill and accumulated at the litter fences. On subsequent visits, only de minimus amounts of litter were observed at the facility, meaning that the Agency has an effective litter control program.

2.2.8 Waste Placement in the Landfill Cells

Waste is delivered by collection vehicles or Agency tractor trailers and dumped at the work face. Agency personnel monitor work face operations and effectively direct traffic to the appropriate area. The large dozers are used to spread waste and the compactors are used to compact the waste. As demonstrated by the AUF, compaction is efficiently maintained. The work face was observed to be appropriately compact. During multiple visits to the Landfill, it appeared that the work face was efficiently moved around the disposal cell to effectively build the cell while safely managing traffic. The Agency uses tarps as alternative daily cover. Tarp use can positively affect AUF and is a good management tool. The soil available for cover at the Landfill is particularly fine, and the Agency staff appeared to diligently apply water as dust control. Acceptance of waste water treatment plant (WWTP) sludge may not be compatible with the use of tarps as ADC.

2.3 Blasting Contract

The Agency contracts with Delhur Industries, Inc. (Delhur) to operate a commercial aggregate quarry and to support cell development at the Landfill. In 2006, the Agency entered into the original agreement, which was subsequently amended, most recently in June 2013. In May 2014, the Agency entered into a new eight-year agreement with Delhur with similar terms and conditions. The first agreement made Delhur responsible for blasting, excavating, and removing basalt rock, and preparing the rough subgrade for cell development.

Under the terms of the second agreement, Delhur is contractually required to produce and offer aggregate for sale to local markets. Delhur is required to use its best efforts to sell the basalt rock from Cells 4B, 5B, and 6B and all previously excavated rock on site, and it is required to pay the Agency $1.50 per ton for the rock it sells,[4] and the Agency is required to pay a portion of this as royalty payments to the Bureau of Land Management.

From October 2013 to February 2014, a total of 25 successful blast events occurred at the Landfill. The blasting and excavation of 279,000 cubic yards of basalt rock is complete.[5]

In FY 2013, Delhur sold 94,051 tons of aggregate materials according to Landfill scale records, as shown in Table 2-7. In 2014, Delhur secured a four-year supply agreement with Associated Asphalt for 110,000 tons per year.

Table 2-7
Sales of Basalt Rock, FY 2013

Material	Tons	Loads
2x4 Rip Rap	94.21	6
Aggregate Base	59,806.96	2900
Boulder	9.1	2
Crushed Rock	5,957.56	298
Crusher Fines	10,815.56	539
Engineered Fill	6,848.07	370
24 inch Rip Rap	10,519.05	481
Total	94,050.51	4,596

Source: Agency Landfill Scale Data

The Agency has indicated that additional basalt could be sold if such material was utilized more by the City and County in roadway projects. Louis Berger recommends that the Agency continue to pursue additional markets with its member local governments to support this activity.

2.4 Options for the Landfill

The scope of work directs Louis Berger to evaluate the feasibility of long hauling solid waste to an alternative landfill and closing the current site. In this Section, Louis Berger offers an analysis of issues associated with an alternative facility, including:

- Issues related to long hauling waste to an alternative facility
- Issues related to closing the current facility

[4] Santa Fe Solid Waste Management Agency Amendment No. 2, Agreement between Owner and Contractor, Development and Operation of a Commercial Aggregate Quarry and Cell Construction at the Santa Fe Solid Waste Management Agency Caja del Rio Landfill, Dated May 4, 2006, as amended.
[5] Agency website

- Planned future activities at the current facility

2.4.1 Issues Related to Long Hauling Waste

No current alternative landfill has been identified. The closest commercial landfills exist in the Albuquerque area, approximately 75 miles away from the Santa Fe Area. To transport waste to an alternative facility, Louis Berger estimates that the Agency would need to add 15 tractor trailers plus 20 trailers and hire an additional 17 people to meet the transportation requirement associated with moving this much waste to an alternative facility. The initial capital outlay would be more than $2.9 million, just for tractors and trailers. Assuming that the cost of new equipment was financed over seven years, the additional financing and operating cost would add approximately $3 million or $20 per ton more to Agency's annual budget.

Additionally, the Agency's lease with the City for BuRRT does not allow commercial loads of solid waste to be managed through the transfer station. So, the Agency could be faced with constructing a new transfer station, which could cost $5 million to $10 million, adding more than $600,000 annually to the Agency budget in debt service payments, or at least another $4 per ton.

2.4.2 Issues Related to Closing the Current Landfill

The Agency has taken a conservative approach and has closure/post closure care reserve necessary to close the current Landfill, assuming that the facility is filled to its final design elevations. If the Landfill is shut-down early, then solid waste regulations require that the final cover installation and other closure activities would need to be undertaken. In such a case, the closure design would need to be reevaluated, and it is possible that additional cost beyond the current closure reserve would be incurred to re-grade the waste that has been placed in the disposal cells for proper closure. Such cost would need to be covered by the future revenues of the Agency, as would any post-closure costs of environmental monitoring, site maintenance, operation and maintenance of the landfill gas system, and other similar costs.

2.4.3 Planned Future Activities At the Landfill

The Landfill was originally permitted in 1995, and its 20 year New Mexico solid waste permit is in the process of being renewed. The Agency is pursuing the re-permitting to allow lateral and vertical expansion that is expected to increase the site life by 70 to 90 years.[6] The planned lateral expansion will be into an area without a basalt layer underneath, so, cost of new cell development may be less than the cost incurred for the existing portions of the Landfill where blasting was necessary. The vertical expansion will allow placing additional waste over the existing permitted areas. Placing more waste on top of exiting cells reduces costs by eliminating the cost of constructing new cells.

[6] Source: The Agency

2.4.4 Conclusion

It appears that closing the Landfill and shipping waste off site would add unreasonable costs to the current operation. Additionally, the Agency is undertaking a number of steps in re-permitting the Landfill that should allow it to cost effectively add capacity in the future. Considering the issues associated with shipping waste to an off-site facility, Louis Berger does not recommend considering this option.

2.5 Findings and Recommendations

1. **The Agency operates certain high cost pieces of equipment.**

   The Agency operates scraper pans. In preparing its future equipment replacement needs, Louis Berger recommends that it evaluate replacing the scraper pans with dump trucks and excavators.

2. **The Agency did not track equipment costs on a unit basis.**

   Louis Berger acknowledges that the Agency has purchased and is implementing the Use of RTA Fleet Management software. Louis Berger recommends that the Agency continue to implement and use this system to track fuel, operating, and repair costs for equipment on a unit basis.

3. **There does not appear to be a compelling reason to consider closing the Landfill.**

   Louis Berger recommends the Agency continue to operate the existing Landfill as the most cost effective option compared to an offsite landfill.

4. **The basalt operation produces rock that may be suitable for use by local governments in road building operations.**

   Louis Berger recommends the Agency continue to work with local governments to encourage the use of the basalt products produced at the Landfill to increase revenues that could off-set tipping fees. Delhur has secured a four-year supply agreement with Associated Asphalt for 110,000 tons per year.

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Section 3
OPERATIONAL ASSESSMENT OF BUCKMAN ROAD RECYCLING AND TRANSFER STATION

3.1 Facility Overview

The Buckman Road Recycling and Transfer Station (BuRRT) is a multi-function facility operated by the Santa Fe Solid Waste Management Agency (Agency) that provides an array of solid waste and recycling services to citizens and businesses in the Santa Fe area. BuRRT is open to the public from 8:00 am to 4:45 pm seven days per week, and is closed certain holidays. BuRRT, which opened in 1997, was constructed and initially operated by the City of Santa Fe (City). In 2006, the Agency initiated its lease of BuRRT from the City and began operating the facility. In 2007, the Agency completed construction of the Materials Recycling Facility (MRF) for processing mixed recyclables.

The site is approximately 12 acres in size. The principal features and activities conducted at BuRRT are:

- Citizen Recycling Drop-off
- Scale Facility
- Household Hazardous Waste (HHW) Collection Facility
- Administrative Building
- Transfer Station Building
- Small Vehicle Unloading Operations
- Tipping Floor Operations
- Transfer Operations
- Green Waste Processing
- Glass Crushing
- MRF

The principal purposes of BuRRT are to provide a convenient and safe location for residents and small business operators operating smaller vehicles (e.g., personal vehicles, pick-up trucks, and trailers) to deliver waste for disposal. BuRRT also receives and processes loads of recyclable materials that are collected by the waste management operations of the City of Santa Fe (City), Santa Fe County (County), and private solid waste collection companies in the Santa Fe area.

3.1.1 Citizen Recycling Drop-off

The Citizens Recycling Drop-off Area is located outside of the Scale Facility at the entrance to BuRRT. The drop-off consists of a number of roll-off type containers with lids that provide a convenient location for residents and small businesses that do not have recycling collection service to drop materials off without having to enter BuRRT.

Figure 3-1. Instructional Sign at BuRRT Citizen Recycling Drop-off

3.1.2 Scale Facility

The scale facility consists of inbound and outbound scales and a scale house that is staffed by scalemasters who are responsible for weighing loads, assessing charges, and using the scale management system to track tonnages and charges. The scale facility controls access to BuRRT, and provides important accounting services.

The scalemasters assess charges based on the fee schedule adopted by the Agency's governing board.

Figure 3-2. Scale Facility

3.1.3 Household Hazardous Waste Collection Facility

The HHW Facility provides a safe location for residents to deliver chemical wastes where it is consolidated and shipped to off-site locations for proper recycling or disposal. The types of materials collected at the facility include antifreeze, batteries, cleaners, bug killers, fluorescent lights, motor oil, and paints. The facility has a reuse area where good reusable materials are made available for residents to take and use properly for their own benefit. The facility is open to the public on Fridays and Saturdays throughout the year.

Figure 3-3. HHW Facility

3.1.4 Administration Building

The administration building is adjacent to the Transfer Station building and contains offices, locker rooms, meeting rooms, and other areas necessary to support active solid waste management operations.

Figure 3-4. Transfer Station Building with Administration Building

3.1.5 Transfer Station Building

The transfer station building is the main structure at BuRRT. The approximately 44,000 square foot building houses the small vehicle drop-off, the main tipping floor for receiving waste and recyclables, the MRF equipment, and transfer operations.

Figure 3-5. Transfer Station Building

3.1.6 Small Vehicle Unloading

In the transfer station building, personal vehicles, pickup trucks, and trailers are kept segregated from the truck traffic on the main tipping floor. The customers that use the small vehicle area includes residential customers in personal vehicles and small "handy man" contractors who hand-unload their trucks or trailers. The small vehicle unloading area is elevated approximately 2.5 feet above the main tipping floor. This segregated area provides a convenient area where time-consuming hand unloading can be accomplished safely away from heavy truck traffic.

It is the policy of the Agency to direct small vehicles to the transfer station, and not to allow them to deliver to the landfill. This policy assures that smaller vehicles can use the safe arrangement at the transfer station, and not interfere with truck and heavy equipment operations at the landfill.

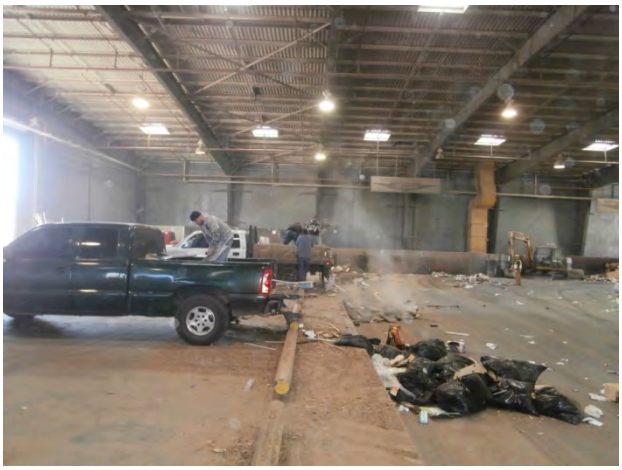

Figure 3-6. Small Vehicle Unloading

3.1.7 Tipping Floor Operations

The tipping floor is an expansive area available to receive loads of waste or recyclables. Waste is placed on the main tipping floor by facility customers using the small vehicle unloading area. Waste may also be delivered to the tipping floor by a limited number of City of Santa Fe's small garbage collection vehicles.

Recyclable materials are delivered by various collection trucks to the tipping floor. Loads of recyclables are dumped on the floor, and pushed into discrete piles where they are stored before being processed at the MRF. Corrugated cardboard (and other similar recyclable materials) that are received in discrete loads may be maintained in separate piles so that individual material types may be separately processed at the MRF.

Equipment used on the tipping floor includes front-end loaders and skid steers to move materials around the floor and excavators to pack out the transfer trailers.

Figure 3-7. Excavator Used to Pack Transfer Trailers

3.1.8 Transfer Operations

Waste is removed from the tipping floor by front-end loaders pushing it through load-out hoppers where it falls into top–load trailers located in a tunnel below the tipping floor. Small excavators are used to pack and distribute waste in the transfer trailers. The tipping floor was originally constructed with two hoppers for loading trailers. When the MRF was constructed, it took up part of the tipping floor, and a temporary cover and push wall was constructed over one of the hoppers. The tipping floor now only has one load-out hopper, but the second hopper could be placed back into service with a minimal amount of effort.

Once waste is placed in the open-top trailers, the trailers are hauled to the landfill for disposal. The hauling operation is conducted by Agency employees.

In FY 2013, Agency records indicate that 1,013 loads totaling 16,353 tons were transferred from BuRRT to the landfill for disposal.

Figure 3-8. Transfer Station (Note Tractor-Trailer Entering Lower-Level Tunnel)

3.1.9 Green Waste Processing

Green waste processing is conducted outside of the transfer station building in a designated area on BuRRT property. Clean loads of green waste are directed to the processing area where the material is stockpiled. The green waste is periodically ground into mulch by the Agency using a Bandit Industries Beast Recycler horizontal grinder. The mulch product produced by the Agency is given away to residents, supplied to the City for use in its composting operation, and sold on an ad hoc basis to larger users.

Processing green waste has proven to be problematic for the Agency. It has experienced high operating costs for grinding green waste, primarily because the horizontal grinder is nearing the end of its useful life and is expensive to maintain. Also, the Agency has not established consistent markets for the mulch product it produces. This matter will be discussed further in Section 5 of the report.

Figure3-9. Beast Horizontal Grinder

3.1.10 Glass Crushing

Glass beverage and food containers are separately collected as part of the City's residential collection program and the County's drop-off program. Glass is delivered to a designated area on BuRRT site where it is stockpiled for processing. The glass is processed through a glass pulverizer to yield two separate materials, a fine sand-type material which has been sold for manufacturing uses (to the company Growstone, Inc.), and a coarser cullet which can be used for manufacturing purposes and also is stored at BuRRT for use at the landfill as the drainage layer for new cell construction.

Processing glass has proven to be problematic for the Agency. Glass is highly abrasive and causes significant wear on the glass pulverizer. The Agency has experienced high operating costs for grinding glass, and this condition is compounded because the glass pulverizer is reaching the end of its useful life. This matter will be discussed further in Section 5 of the report.

Figure 3-10. Glass Crushing Operation

3.1.11 MRF

The MRF is a sophisticated combination of equipment designed to separate recyclable materials into individual commodities. The MRF uses both mechanical and manual means to separate materials. The principal equipment was procured from CP Manufacturing in 2006 and operations were initiated in 2007.

The equipment appears to be relatively robust and satisfactorily serves the purpose for which it was designed. This study did not include a mechanical inspection of the MRF. The MRF was initially sized to serve the Santa Fe area. It is relatively small compared to many newer super MRFs that serve larger regions.

Recyclable materials are delivered to the MRF in a commingled stream where containers (e.g., cans and plastic bottles) are combined with paper (e.g., newspaper, junk mail, cardboard) for collection. These materials all need to be separated so that individual commodities can be shipped out and marketed for recycling at off-site mills. The MRF was designed to sequentially process paper and containers, so it is operated to first process paper with containers shunted to a storage area. Then the sorting line is reversed and containers are processed through the system.

Glass is delivered to BuRRT separately from commingled recyclables, and glass is not processed through the MRF.

Figure 3-11. Manual Sorting of Recyclable Materials

The principal processing equipment and processes at the MRF are:

1. Pit conveyor – where recyclables are initially fed into the MRF
2. Metering drum – assures a constant amount of recyclables are fed into the system
3. Single-deck old corrugated cardboard (OCC) screen – separates cardboard from the commingled stream
4. CP paper disk screen – separates the containers from the paper stream. The containers are shunted to a storage area for later processing, and the paper continues on the line for further sorting.

5. Enclosed and elevated picking station – where employees stand as material moves along a conveyor belt. Employees manually sort out individual commodities and drop them into chutes where the commodities fall into storage bunkers below the elevated picking station.
    a. On the "first pass" of materials, paper is directed to the picking station and containers are directed to a storage area.
    b. Once all of the paper has been processed, the direction of the conveyor is reversed, and containers are fed onto the conveyor and sorted by the employees.
6. Magnetic separator – mechanically separates steel beverage and food cans.
7. Eddy-current separator – mechanically separates aluminum cans.
8. Storage bunkers – As described in steps 5, 6 and 7, different materials are directed into storage bunkers below the elevated picking station. The MRF has five storage bunkers. There is no cost-effective opportunity to expand or add to the storage bunkers because of the size constraints of the Transfer Station Building.
9. In floor conveyor - Once a storage bunker is full, materials are pushed onto an in-floor conveyor and materials are subsequently directed to the baler. Materials can be directed onto the conveyor from multiple points, which provides a high degree of flexibility for plant operations.
10. Baler – The baler is housed in a building adjacent to the transfer station building. In the baler, materials are compacted and wrapped with wire in preparation for shipment.

Nine personnel are assigned to operate the MRF, with the following responsibilities:

1 – Small bobcat/small loader operator

1 – Baler room

2 – Presort

5 – Sort line

Personnel generally rotate through assignments at the MRF. All personnel are full-time Agency employees. The MRF is operated five days per week, net of start-up, shut down, two-fifteen minute breaks and lunch breaks. Agency management reports that the MRF typically runs 5.5 hours per day.

3.2 Operations Review

3.2.1 Material Types and Quantity Managed

In FY 2013, 76,000 in-bound transactions (loads) were recorded at BuRRT, totaling 35,197.66 tons. In FY 2014, 81,291 transactions totaling 36,252.87 tons were

recorded. The types of materials managed and number of transactions are shown in Table 3-1 and Table 3-2.

Table 3-1
Materials Managed at BuRRT, Fiscal Year 2013

Material Type	Tons	Transactions
Commercial Solid Waste	1,103.39	1,826
Residential Solid Waste	12,135.57	38,562
Construction & Demolition Debris	4,599.72	6,938
Green Waste	6,714.92	19,351
Recyclables	9,699.08	6,373
Household Hazardous Waste	44.44	748
E-Waste	30.47	448
Other (e.g., Tires, Litter, etc.)	870.07	1,754
Total	35,197.66	76,000

Source: Agency Scale Data

Table 3-2
Materials Managed at BuRRT, Fiscal Year 2014

Material Type	Tons	Transactions
Commercial Solid Waste	1,121.61	2,046
Residential Solid Waste	12,755.33	39,769
Construction & Demolition Debris	5,170.55	7,397
Green Waste	7,408.34	20,764
Recyclables	9,093.74	7,244
Household Hazardous Waste	43.17	1,055
E-Waste	62.07	833
Other (e.g., Tires, Litter, etc.)	598.06	2,183
Total	36,252.87	81,291

Source: Agency Scale Data

Considering only recyclable materials received at BuRRT, material received from curbside and drop-off recycling activities are shown in Table 3-3 and 3-4 for FY 2013 and 2014, respectively.

Table 3-3
Tons of Recyclables Managed by Source, FY 2013

Source	Recyclables from In County	Recyclables from Out of County	Glass	Total	Percent Glass
City of Santa Fe	4,006.92	0.00	1,317.25	5,324.17	25%
Santa Fe County	830.82	0.00	462.18	1,293.00	36%
Other[1, 2]	1,207.15	1,695.07	179.69	3,081.91	6%
Total	6,044.89	1,695.07	1,959.12	9,699.08	20%

Source Agency Scale Data
1. Other In-County includes private haulers, self-hauled material, and drop-off
2. Other Out-of-County includes deliveries from other jurisdictions (e.g., Los Alamos)

Table 3-4
Tons of Recyclables Managed by Source, FY 2014

Source	Recyclables from In County	Recyclables from Out of County	Glass	Total	Percent Glass
City of Santa Fe	3,928.58	0.00	1,493.94	5,422.52	28%
Santa Fe County	841.30	0.00	455.62	1,296.92	35%
Other[1, 2]	1,932.70	105.96	335.64	2,374.30	14%
Total	6,702.58	105.96	2,285.20	9,093.74	25%

Source: Agency Scale Data
1. Other from In-County includes private haulers, self-hauled material, and drop-off
2. Other from Out-of-County includes deliveries from other jurisdictions

In FY 2014, glass represented more than 20 percent of the total recyclables received at BuRRT. For City delivered material, glass represents 28 percent of recyclable materials delivered, and for the County it represents 35 percent of the material delivered. Glass is a significant recyclable material accepted at BuRRT, which is consistent with the prior year. Issues associated with continued glass management will be discussed in Section 5.

Table 3-5 shows the quantities of recyclable materials shipped from BuRRT in FY 2013, and Table 3-6 shows the quantities of materials shipped in FY 2014.

Table 3-5
Recyclable Materials Shipped from BuRRT, FY 2013

Material	Tons	Bales	Loads	Revenue	Revenue per Ton
MRF Operations					
Comingled	467.54	742	21	$6,412.89	$13.72
Curbside Recycling	89.21	139	4	$1,338.15	$15.00
High Density Polyethylene-Colored (HDPE-C)	45.97	103	2	$22,530.80	$490.12
High Density Polyethylene-Natural (HDPE-N)	67.85	158	2	$39,923.05	$588.40
Cardboard (OCC)	2,076.19	3,777	80	$228,049.11	$109.84
Newspaper (ONP)	2,785.20	4,322.5	118	$243,926.81	$87.58
Telephone Books (OTD)	64.12	122	3	$3,845.30	$59.97
Polyethylene Terephthalate (PET)	124.39	358	4	$52,305.44	$420.50
Office Paper – SOP	82.01	146	4	$13,215.59	$161.15
Tin Cans (TIN)	107.34	180	5	$16,619.90	$154.83
Aluminum Cans (UBC)	49.90	179	2	$73,303.60	$1,469.01
Subtotal, MRF Operations	5,959.72	10,226.5	245	$701,470.64	$117.70
Non- MRF Recycling					
Non-Ferrous Metal	6.15	N/A	4	$6,150.00	$1,000.00
Scrap Metal (Ferrous)	149.63	N/A	47	$28,217.75	$188.58
HHW	16.80	N/A	3	$0.00	$0.00
E-Waste	47.28	59	2	$0.00	$0.00
Subtotal, Non-MRF Recycling	219.86	59	56	$34,367.75	$156.32
Total	6,179.58	10,285.5	301	$735,838.39	119.08

Source: Agency BuRRT Materials Sales Data

Table 3-6
Recyclable Materials Shipped from BuRRT, FY 2014

	Tons	Bales	Loads	Revenue	Revenue per Ton
MRF Operations					
High Density Polyethylene (HDPE) (Mixed)	21.09	62.0	1	$10,967	$520.00
High Density Polyethylene -Colored HDPE -C	22.34	54.0	1	$8,936	$400.00
High Density Polyethylene - Natural HDPE-N	42.96	115.0	2	$29,866	$695.21
Loose Comingled Containers	513.21	0.0	39	$10,850	$21.14
Loose Cardboard (OCC)	125.48	0.0	15	$15,863	$126.42
Cardboard, baled (OCC)	1,602.26	3,155.5	73	$209,625	$130.83
Newspaper (ONP)	2,050.48	3,302.0	96	$156,883	$76.51
Polyethylene Terephthalate (PET)	72.22	241.0	4	$24,475	$338.90
Tin Cans (Tin)	89.85	154.0	4	$15,522	$172.76
Aluminum Cans (UBC)	18.69	61.0	1	$24,484	$1,310.00
Subtotal, MRF Operations	4,558.58	7,144.5	236	$507,472	$111.32
Non-MRF Recycling					
Non-Ferrous	3.50	0.0	3	$3,500	$1,000.00
SM	199.67	0.0	65	$37,669	$188.65
E Waste	73.33	135.0	6	$440	$5.99
Mercury	3.58	17.0	2	$0	$0.00
HHW Out	11.80	0.0	2	$0	$0.00
Subtotal, Non-MRF Recycling	291.88	152.00	78.00	41,608.30	$142.55
Total	4,850.46	7,296.50	314.00	549,079.82	$113.20

Source: Agency BuRRT Materials Sales Data

Table 3-7
Comparison of Recyclables Received to Commodities Shipped

	FY 2013	FY 2014
Tons Recyclables Received[1]	7,739.96	6,808.54
Tons Recyclables Sold[2]	5,959.72	4,558.58
Tons Residue/Unrecovered	1,780.24	2,249.96
Percent Residue/Unrecovered	23%	33%

1. From Agency Scale Data, does not include glass
2. From Agency BuRRT Material Sales Data

Table 3-7 compares the quantity of recyclables reported as received at BuRRT for processing in the MRF operation to the quantity of recyclables reported as shipped from the facility. In FY 2013, it appears that 23 percent of received recyclables were not shipped as recycled commodities. In FY 2014, 33 percent of received recyclables were not shipped out as commodities. This value appears to be anomalously high

compared to prior year recycling activities. Upon further investigation, the Agency reported a large amount of material in storage at the end of the fiscal year. A large quantity of material in storage can skew the apparent effectiveness of MRF operations. The MRF does appear to have a high residue/reject rate for a MRF that does not process glass. Typical residue rates for commingled recyclables should be in the 10 to 20[1] percent residue range. Some single-stream facilities that process glass report higher residue rates.

The high percentage of non-recycled materials has several very important implications to Agency operations:

1. The MRF operators may not be diligent in separating materials appropriately, or the MRF equipment may not be operating properly. Facility operations should be inspected to assure activities are occurring properly. In addition, the amount of residues or rejects should be periodically inspected to determine is excessive amounts of recyclables are being managed as waste by the MRF operation.
2. The Agency could be losing revenue because solid waste that should be paying a tipping is being delivered in the recycling stream at no (or minimal) charge. Louis Berger recommend the Agency inspect incoming loads and reject those that contain a significant portion of garbage. Agency staff reports that certain recyclable collection vehicles malfunction allowing glass to commingle with recycling, then the entire load is contaminated and must be managed as garbage. In this case, Louis Berger recommends that such loads be assessed disposal charges. The Agency reports that it has implemented this change.
3. Residents and businesses delivering recyclables may not understand which materials are acceptable and which are not. The Agency, along with the City and County should assure that consistent messages concerning what is recyclable, along with the importance of producing a clean recycling stream are delivered to customers.

[1] Based on Louis Berger interviews with private MRF operators.

3.3 Staffing

The staff assigned to BuRRT is shown in Table 3-8. Personnel fill a variety of roles in support of BuRRT activities, and in some cases, personnel may work in different capacities depending on daily needs at the facility.

Table 3-8
BuRRT Staffing

Position	Current Operation	General Description
BuRRT Site Manager	1	Overall facility management
BuRRT Superintendent	1	BuRRT operations management
BuRRT MRF Technician	6	Principally MRF operations and some site support (5 staff), Principally glass crusher operation (1 staff)
BuRRT MRF Technician II	3	Primarily MRF operations and some other site support
BuRRT Spotter	1	Green waste processing
BuRRT Transfer Operator	4	Primarily green waste processing (1 staff), primarily transfer operations (3 staff), and other site activities (all)
BuRRT Transfer Specialist	1	Primarily green waste processing and other site activities
Educ. & Outreach Coordinator	1	Education, outreach, and recycling support
HHW Handler	1	Collect and process HHW and E-waste
Scalemaster II	1	Manage and account for incoming and outgoing loads using the scale management system
Scalemaster	2	Manage and account for incoming and outgoing loads using the scale management system

3.4 Equipment

Approximately 28 pieces of equipment are assigned to perform duties at BuRRT. Table 3-9 lists the principal equipment operated at BuRRT.

- Road tractors and walking floor trailers are used to transport materials from BuRRT to the Caja del Rio Landfill.
- Loaders and skid steers are used to move recyclables and solid waste on the tipping floor, during MRF operations, and in other support roles.
- Tire processing equipment is used to process tires into smaller pieces or into bales for shipment for off-site disposal or recycling.
- Wood grinding equipment is used to process green waste into mulch.
- Glass crushing equipment processes glass containers into glass cullet or fines, which can be reused.
- Other equipment, as listed, supports overall BuRRT activities.

Table 3-9
BuRRT Assigned Equipment

Asset Number and Description	Acquired Date	General
53365 - 1992 Lubrication Truck	12/1/2005	Lube Truck
25902 - 1992 Ford Water Truck	05/02/1997	Water Truck
45 - 2003 Ford F250 4x4 (extended cab)	03/12/2003	Field Pickup
53321 - 2000 Ford Explorer	08/10/2006	Agency Vehicle
41 - 2002 Ford Truck 4x4 Crew Cab	03/29/2002	Field Pickup
53353 - 1997 Freightliner	12/01/2005	Road Tractor, Waste Transfer
53350 - 1997 Freightliner	12/01/2005	Road Tractor, Waste Transfer
53352 - 1997 Freightliner	12/01/2005	Road Tractor, Waste Transfer
53361 - 1996 John Deer Excavator	12/01/2005	Excavator
29748 - 950GII Wheel Loader	11/30/2003	Loader
52963 - Cat Skid Steer Loader	02/24/2006	Skid Steer
53363 - 2003 Glass Pulverizer	12/01/2005	Glass Crusher
29705 - 3680 Tri-Axle Beast Recycler	12/17/2003	Wood Grinder
53914 - Mini Excavator 307 Cat	10/07/2007	Excavator
54 - Toyota Forklift 5053T (Baler Room)	11/09/2007	Forklift
53978 - 1997 Ford Utility	12/17/2008	Service Truck
52795 - Eagle Tire Baler	06/15/2005	Tire Processing
52796 - Eagle Tire Cutter Tuff Cut	06/15/2005	Tire Processing
52792 - Eagle Tire De-rimmer	06/15/2005	Tire Processing
29866 - 2009 International 7600	05/01/2009	Roll-Off Truck
1994 Hyster Forklift (HHW Bldg)	5/20/2011	Forklift
54475 - Volvo L35 Wheel Loader (MRF)	02/01/2012	Loader
54518 - 2012 Volvo L110G Wheel Loader (TS)	06/22/2012	Loader
2014 Freightliner	10/18/2013	Road Tractor, Waste Transfer
53354 - 1997 Steco Trailer	12/01/2005	Walking Floor, Waste Transfer
53355 - 1997 Steco Trailer	12/01/2005	Walking Floor, Waste Transfer
53357 - 1997 Steco Trailer	12/01/2005	Walking Floor, Waste Transfer
2014 End Dump Trailer (Rock)	10/18/2013	End Dump, Glass Hauling

Some of the BuRRT equipment is nearing the end of its useful life, and it appears that staff spends a significant amount of effort keeping this equipment operating. The Agency will need to consider replacing and upgrading certain equipment (e.g., the glass pulverizer) and in some cases alternatives to replacement should be considered (e.g., in the case of the Beast horizontal grinder, outsourcing the service provided by this equipment should be considered). Outsourcing and/or upgrading this equipment will be discussed in Section 5.

At the time of the initial inspection, the Agency did not maintain detailed repair and maintenance cost records by individual pieces of equipment. Since that time, the Agency has acquired and is implementing the RTA Fleet Management Software. Having maintenance data by piece of equipment will allow Agency staff to monitor the useful life of equipment based on wear and repair costs.

3.5 MRF

As described in Section 3.1.11, the Agency uses the MRF to process the incoming stream of commingled recyclables into discrete commodities for subsequent sale. The MRF has performed satisfactorily for many years, but the facility faces several challenges as a going concern.

The MRF was designed to fit into the existing Transfer Station Building. Compared to newer, regional MRFs, the facility is relatively small, and its design limits the types and quantity of material it can manage. While the MRF makes use of screens to sort paper and cardboard and automated sorters for ferrous and aluminum containers, it is dependent upon manual sorting for many commodities. Larger regional facilities often make use of more technology including additional screens and optical sorters to improve the speed and quality of their sorting processes, allowing more material to be processed at a lower unit cost.

This section analyzes the following issues related to the MRF:

- Effect of various flow rates of materials through the MRF
- Ability of the MRF to attract additional tonnages
- Ability to process additional material types through the MRF
- Hauling materials for off-site processing versus operating the MRF
- Other MRF outsourcing considerations including processing paper on-site and shipping containers for off-site processing, or contracting the operation of the MRF

3.5.1 Effect of Various Flow Rates through the MRF

It is expected that as more materials are put through the MRF, lower operating cost per ton would be expected. The MRF cost information presented in Section 1 – Cost of Service was used as the basis for this analysis. In Table 3-10, it is assumed that the costs for processing 6,500 tons per year would be similar to those for processing 6,809 tons per year as modeled in the Cost of Service section. If additional tonnage is put through the MRF, it is expected that some of the Cost of Service elements of Direct MRF Cost and Operation & Maintenance would increase while others would remain constant; and Administration costs would remain the same, as well. Table 3-11 shows the effect of higher quantities on MRF costs.

Table 3-10
MRF Cost for 6,500 Tons per Year Managed

	Total Cost[1]	Cost per Ton[1]	Total Cost	Cost per Ton
Recycling Tonnage	6,809	6,809	6,500	6,500
Cost				
Direct MRF Cost	$535,516	$78.65	$535,516	$82.39
Administration	$161,439	$23.71	$161,439	$24.84
Operation & Maintenance	$348,138	$51.13	$348,138	$53.56
Total	$1,045,093	$153.49	$1,045,093	$160.78
Revenue Offset	($422,419)		($403,249)	
Under Recovery	$622,674		$641,844	

Source: From Cost of Service - Section 1

As shown in Table 3-10, if costs remain the same and tonnage processed by the MRF drops slightly, the total costs remain the same, the cost per ton increases, but revenue declines because fewer recyclable commodities are produced for sale. In this case, the under recovery (or net cost) for MRF operations to the Agency would be $641,844.

In FY 2013, the MRF operations received 7,740 tons of incoming recyclables, so for this example we assume that this quantity of recyclables could be processed at a similar cost to those shown in the Cost of Service analysis. To account for the additional cost associated with an increase to 10,000 tons per year, in Table 3-11 the Direct MRF Costs and Operations Costs are increased by 29 percent (the percentage increase from 7,740 tons received in FY 2013 to the assumed 10,000 tons per year being modeled). Administrative overhead costs are expected to remain the same.

Table 3-11
MRF Cost for 10,000 Tons per Year Managed

	Total Cost	Cost per Ton
Recycling Tonnage	10,000	10,000
Cost		
Direct MRF Cost (Increase 29%)	$691,885	$69.19
Administration (No Increase)	$161,439	$16.14
Operation & Maintenance (increase 29%)	$449,793	$44.98
Total	$1,303,117	$130.31
Revenue Off Set (increased 29%)	($544,921)	
Under Recovery	$758,196	

Table 3-11 shows that as tonnage processed increases, the per ton cost of processing goes down. As more materials are processed on the MRF, revenues are not expected to increase as fast as costs. In this scenario, the overall under recovery (or cost) associated with MRF operations increases as more tons are managed.

If tonnage through the MRF drops below 6,500 tons, the cost is expected to be more than $160 per ton. If the Agency could increase tonnage through the MRF to 10,000

tons per year, the costs for MRF operations would be expected to be in the $130 per ton range. The overall economic performance of the MRF could be improved if the recovery rate at the MRF is improved and more recyclables are recovered per ton of incoming material.

Managing different quantities of materials through the MRF presents management challenges to the Agency. To some degree, it may be possible to modify staffing the MRF, but generally a majority of the personnel and operating costs will likely continue to be incurred by the Agency regardless of the tonnage processed. For example, it is not likely that the Agency will be able to operate the MRF for one-half of the time and incur only one-half of the cost. A minimum number of people are still needed to operate the loading, sorting, and baling operations of the MRF. Operating costs such as electricity and fuel are likely to be somewhat variable with amount of material processed, but personnel costs would need to be drastically reduced if operations were cutback to realize any significant savings from operating the MRF on a part-time basis. In general, as fewer tons are processed by the MRF operations, the per unit operating costs increase.

3.5.2 Ability of the MRF to Attract Additional Tonnage

The Agency has limited opportunity to attract additional material to the facility. First, the Agency already receives the recyclables collected by the biggest customers in the region – Santa Fe County and the City of Santa Fe. Second, as a unit of local government, the Agency cannot readily compete with regional MRFs that have teams of sales professionals that actively market and solicit additional tonnages for their facilities. Third, as a public entity, the Agency must make all of its business activities public, which can put it at a strategic disadvantage to private firms which may be able to make "special deals" to attract customers to their facilities.

Additional materials may be delivered to the MRF as more citizens and businesses in the Santa Fe area recycle. Louis Berger makes certain recommendations for changes to the City's residential recycling collection program and its commercial cardboard collection program. The changes to the residential recycling program are expected to increase the quantity of residential mixed recycling by up to 1,600 tons annually. Changes to commercial cardboard collection program could add approximately 3,700 tons annually.[2] It is expected that the Agency's recycling program could manage the expected increase in tonnage.

3.5.3 Ability to Process Additional Material Types through the MRF

The MRF is constrained by the size of the building in which it is located. The facility currently has five bunkers into which commodities can be sorted. Adding additional materials to the incoming material stream requires that additional storage bunkers be

[2] Louis Berger estimates that an additional 624 to 6,240 tons of additional cardboard could be collected by the City. The mid-point of Louis Berger's analysis is 3,744 tons annually.

added to the facility and additional capacity be added to the sorting line. The existing structure cannot easily accommodate additional storage bunkers or additional sorting capacity. Agency staff reports that they have received cost estimates at over $1 million to modify the MRF to add processing capacity. Because of constraints and prohibitive costs, adding new materials to the recycling mix handled by the MRF is not recommended at this time.

3.5.4 Hauling Materials for Off-Site Processing versus Operating the MRF

Private facilities do exist within a feasible range for shipping materials for off-site processing. The potential costs and revenues associates with off-site processing of recyclables excluding glass will depend on a number of important factors:

1. The price charged by the processing facility
2. The revenue share offered by the processing facility
3. The transportation cost for shipping recyclables to the processing facility. Transportation costs can be influenced by a number of factors including the distance to the processing facility, fuel costs, and the tonnage payload that can be loaded onto a trailer.
4. The commodity makeup of the Agency's recyclables shipped to the processing facility. Often a facility bases its revenue share on the average market value of the commodities that make up the recycling stream. For instance, aluminum and plastics while very light both have high commodity values, so a recycling stream with many of these materials could have a high average market value. Conversely, non-processible garbage included in the recycling stream costs a lot of money to dispose, so large quantities of residue and rejects drive down the average market value. As shown in tables 3-5 and 3-6, the Agency has sold its recyclable commodities for an average price of $111.32 to $117.70 over the past two years. It is important to note that these prices do not include the cost that should be associated with any garbage included in the recycling stream. Additionally, the prices paid for recyclable materials like all commodities vary over time as the demand for commodities and the available supply of source materials vary.

Because of the variety of factors affecting the economic viability of shipping recyclables to an off-site facility for processing Louis Berger prepared a sensitivity analysis that looks at multiple factors. Friedman Recycling has contracted with the City of Albuquerque for processing recyclables (Friedman Contract) and constructed a MRF in the city. The Friedman Contract offers the city a range of tipping fees (charges) or rebates (payments) depending on the average market value of the recyclables received from the city. Key elements of the Friedman Contract are:

1. A per ton tipping fee up to $7 per ton is charged or a rebate payment of up to $10 per ton is provided depending on the average market value of the recycling stream.
2. A revenue share is provided based on 70 percent of the average market value minus $85, when the average market value is over $85 per ton.

3. For our analysis, a range of transportation prices ranging from $17 per ton to $30 per ton is considered and the assumed number of tons is 7,000 per year.

Friedman Recycling provided an estimate that transportation could be provided from BuRRT to its Albuquerque MRF for $230 per load. In FY 2014, the Agency shipped 29 loads of "loose commingle" to the Friedman MRF for processing. The loads ranged in size from 9.95 to 16.59 tons, with an average of 13.12 tons per load. This equates to a transportation cost of $13.56 to $23.12 per ton with an average of $17.54 per ton.

In Tables 3-12 to 3-13, a range of average market values and a range of transportation costs are considered. So that we can compare the results of this analysis with the Cost of Service study, the quantity of tonnage of 6,809 is used in this analysis. Table 3-12 presents the per ton revenue or cost for processing when the average market value of the recycling stream ranges from $80 to $110 per ton. Table 3-13 shows the combined processing and shipping revenue (or cost) per ton for the range of average market values when the shipping price ranges from $12 to $25 per ton, and Table 3-14 shows the total revenue (or cost) for each average market value and transportation cost combination.

Table 3-12
Potential per Ton Rebate or Fee for Off Site Recycling Depending on Average Market Value, at 6,809 Tons per Year

Average Market Value per Ton	$80	$90	$95	$100	$110
Tip Fee or Rebate per Ton for Processing	($7.00)	($4.00)	$0.00	$5.00	$10.00
Revenue Share per Ton	$0.00	$3.50	$7.00	$10.50	$17.50
Per Ton Tip fee plus Revenue Share for Processing	($7.00)	($0.50)	$7.00	$15.50	$27.50

Source: Based on Friedman Contract

Table 3-13
Per ton Revenue (Cost) for Processing and Transportation, at 6,809 Tons per Year

Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $12/ton	($19.00)	($12.50)	($5.00)	$3.50	$15.50
Transportation Cost = $15/ton	($22.00)	($15.50)	($8.00)	$0.50	$12.50
Transportation Cost = $17/ton	($24.00)	($17.50)	($10.00)	($1.50)	$10.50
Transportation Cost = $20/ton	($27.00)	($20.50)	($13.00)	($4.50)	$7.50
Transportation Cost = $25/ton	($32.00)	($25.50)	($18.00)	($9.50)	$2.50

Source: Based on estimate provided.

Table 3-14
Revenue (Cost) for Processing and Transportation, at 6,809 Tons per Year

Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $12/ton	($129,371)	($85,113)	($34,045)	$23,832	$105,540
Transportation Cost = $15/ton	($149,798)	($105,540)	($54,472)	$3,405	$85,113
Transportation Cost = $17/ton	($163,416)	($119,158)	($68,090)	($10,214)	$71,495
Transportation Cost = $20/ton	($183,843)	($139,585)	($88,517)	($30,641)	$51,068
Transportation Cost = $25/ton	($217,888)	($173,630)	($122,562)	($64,686)	$17,023

1. Example calculation, ($129,371) = ($19.00) per ton from Table 3-13 times 6,809 tons

Tables 3-13 and 3-14 show the extent to which the average commodity value and transportation costs will affect the economic analysis of shipping recyclables for off-site processing. When the lowest average market value of $80 per ton is combined with the highest transportation cost of $25 per ton, the Agency could expect to see a per ton cost of $32 and a total annual cost of $217,888 when 6,809 tons per year are managed. When the highest average market value of $110 per ton and lowest transportation cost of $12 per ton is modeled, the Agency would realize positive net revenue of $15.50 per ton or $105,540 assuming 6,809 tons per year.

It appears that, adequate floor space exists for managing solid waste and recyclables on the BuRRT tipping floor. Assuming that 6,809 tons per year would be managed and the average trailer of mixed recyclables will weigh approximately 13 tons, Table 3-15 shows that slightly more than two additional trailers will need to be loaded every day at the transfer station. Assuming that the processing facility provides the trailers, and that they are managed in a dump-and hook operation, this level of effort could be accommodated by current tipping floor staff, particularly if the temporary cover over the second load-out hopper on the tipping floor is removed.

Table 3-15
Additional Trailers per Day for Recycling

Tons per Year	6,809
Tons per Trailer Load	13
Work Days per Year	250
Additional Trailers per Day	2.10(1)

1. 6,809 tons ÷ 250 days = 27.2 tons ÷ 13 tons per load = 2.10 additional trailers per day.

To effectively compare the range of revenue (or costs) shown in Table 3-14 to those presented in the Cost of Service study, it will be necessary to add back in the Administrative overhead allocation and a portion of the Operations and Maintenance costs. If operations are outsourced, the Direct MRF Cost and one-half of the associated Repair & Maintenance costs are expected to be eliminated (while the percentage of Operations and Maintenance costs that can be eliminated are not precisely known at this time, Louis Berger has conservatively estimated the remaining costs at one-half the total Operations and Maintenance costs for this analysis). Costs

associated with managing the solid waste system and the recycling program – or the Administration overhead allocation – will continue to be incurred. In Table 3-16, 100 percent of Administrative overhead and 50 percent of Operations and Maintenance costs are added to the revenue and costs shown in Table 3-14 to provide the total cost the Agency would expect to incur when shipping recyclables off-site for processing.

Table 3-16
Total Processing, Transportation, and Overhead Costs, at 6,809 Tons per Year, plus 100 percent of Overhead Allocation[1] and 50 Percent of Operations and Maintenance Costs[2]

Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $12/ton	($464,879)[3]	($420,621)	($369,553)	($311,677)	($229,969)
Transportation Cost = $15/ton	($485,306)	($441,048)	($389,980)	($332,104)	($250,396)
Transportation Cost = $17/ton	($498,924)	($454,666)	($403,598)	($345,722)	($264,014)
Transportation Cost = $20/ton	($519,351)	($475,093)	($424,025)	($366,149)	($284,441)
Transportation Cost = $25/ton	($553,396)	($509,138)	($458,070)	($400,194)	($318,486)

1. Overhead Allocation is $161,439 for FY 2014 (Cost of Service)
2. Operations and Maintenance Allocation is $348,138 for FY 2014 (Cost of Service), so 50 percent is $174,069
3. Example Calculation: ($464,879) equals($129,371) from Table 3-14 plus ($161,439)[1] plus ($174,069)[2]

Table 3-10 shows that MRF operations under-recovers $622,674 per year. This cost includes Direct MRF Costs, Operations & Maintenance, and Administration overhead, and accounts for the revenue received from sale of recyclables produced by the MRF. Table 3-16 shows that the Agency could expect to spend as little as $229,969 per year and up to $553,396 per year if it shipped materials to an off-site facility for processing. Comparing these costs shows that the Agency could save between $69,278 and $392,705 annually by sending its materials to an off-site facility for processing managing current tonnages.

Louis Berger also performed the same analysis as shown in Tables 3-12 to 3-16 considering 10,000 tons per year. In this case, slightly more than three trailers (3.08) would need to be loaded from the tipping floor. This number should be able to be loaded by existing transfer station staff. Table 3-17 shows the total annual cost that could be incurred by the Agency in managing 10,000 tons per year.

Table 3-17
Total Processing, Transportation, and Overhead Costs, at 10,000 Tons per Year, plus 100 percent of Overhead Allocation[1] and 50 Percent of Operations and Maintenance Costs[2]

Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $12/ton	($525,508)	($460,508)	($385,508)	($300,508)	($180,508)
Transportation Cost = $15/ton	($555,508)	($490,508)	($415,508)	($330,508)	($210,508)
Transportation Cost = $17/ton	($575,508)	($510,508)	($435,508)	($350,508)	($230,508)
Transportation Cost = $20/ton	($605,508)	($540,508)	($465,508)	($380,508)	($260,508)
Transportation Cost = $25/ton		($590,508)	($515,508)	($430,508)	($310,508)

1. Overhead Allocation is $161,439 for FY 2014 (Cost of Service)
2. Operations and Maintenance Allocation is $348,138 for FY 2014 (Cost of Service), so 50 percent is $174,069

Table 3-11 shows that processing 10,000 tons through the MRF would cost $758,196. Comparing this cost with the values in Table 3-17, it appears that the Agency would save between $129,688 and $604,688 per year by hauling recyclables to an off-site facility for processing if 10,000 tons per year were managed. This example shows that even with increased annual tonnage, the off-site process offers positive cost benefit compared to the MRF operation.

3.5.5 Other MRF Outsourcing Considerations

In addition to the long-haul analysis for outsourcing of recyclables processing, two additional scenarios were considered: 1) Processing only fiber at the MRF and shipping containers off-site for processing, and 2) Contracting for MRF operations.

Process Fiber On-Site and Ship Containers Off-Site for Processing

In this scenario, the Agency would operate the MRF to process paper and be responsible for marketing the paper products. The containers would be separately shipped for off-site processing. By maintaining the paper processing, the Agency would keep the revenue associated with paper processing. The challenge with this scenario is that the Agency would continue to incur operating costs with processing paper. Also, because the remaining container stream would be very light, high per ton transportation and higher processing costs would likely be incurred. In table 3-18 the potential cost of processing paper only and shipping containers for off-site processing is modeled.

Assumptions:

- Tons managed = 6,809, based on FY 2014 data
- Paper recovered and paper revenue FY 2014 = 3,778.22 tons and $382,371 (from Table 3-5)
- Remaining material = 3,080.78
- Tons other recyclables shipped FY2014 = 780.36 (from Table 3-5)
- Since the MRF is setup to process paper on the first pass and containers on the second pass, it is assumed that operating costs will be 50 percent of Direct MRF

Costs. In the example of completely closing down the MRF, Louis Berger assumed that one-half of the allocated Operations and Maintenance could be reduced. Since entirely closing the MRF results in a 50 percent reduction in the allocated costs, the allocated Operations and Maintenance costs for operating part-time are assumed to be 75 percent. In the analysis, 100 percent of Administration overhead continues to be incurred for this operation.

- Because the unprocessed material equaled 33 percent of incoming tonnage in FY 2014, the amount of material shipped for off-site processing will be modeled between 800 and 3,000 tons.
- Once the paper fraction is removed from the recycling stream, the remaining containers are expected to be very light. The Agency may operate the MRF to remove aluminum and ferrous containers, but this activity will further lighten the load and possibly reduce the value of the resulting recycling stream.
- The processing fees for the Freidman Contract are modeled, but it is unknown whether a firm will be willing to provide such a price for the subject recycling stream.
- The resultant recycle stream is expected to be very light. Payloads between four tons per load and 8 tons per load (approximately $30 per ton to $60 per ton based on data earlier in the Section) are modeled.

Table 3-18 shows the assumed MRF operating cost less the revenue offset of the paper sales.

Table 3-18
MRF Operating Cost for Processing Paper Only

Direct MRF Cost (50%)	$267,758
Administration (100%)	$161,439
Operation & Maintenance (75%)	$261,104
Total	$690,301
Paper Sales, Revenue Off-Set	($382,371)
Under Recovery	$307,929

Table 3-19 shows the assumed processing fees or rebate depending on the average market value of the material shipped. As discussed above, the incoming recycling stream may contain up to 33 percent unrecyclable materials. If this is truly the case, the loads shipped would weigh more, have high contamination rates, and low market value. Therefore, a range of weights and market rates are modeled.

Table 3-19
Potential per Ton Rebate or Fee for Off Site Recycling of Containers Only
Depending on Average Market Value

Recycling Tonnage	3,000	2,500	2,000	1,500	1,000
Average Market Value per Ton	$80	$90	$95	$100	$110
Tip Fee or Rebate per Ton	($7.00)	($4.00)	$0.00	$5.00	$10.00
Revenue Share per Ton	$0.00	$3.50	$7.00	$10.50	$17.50
Tip fee plus Revenue Share	($7.00)	($0.50)	$7.00	$15.50	$27.50

Source: Based on Friedman Contract

Table 3-20
Cost per Ton for Processing and Transportation of Containers Only
at Various Average Market Value Rates

Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $30/ton	($37.00)	($30.50)	($23.00)	($14.50)	($2.50)
Transportation Cost = $40/ton	($47.00)	($40.50)	($33.00)	($24.50)	($12.50)
Transportation Cost = $50/ton	($57.00)	($50.50)	($43.00)	($34.50)	($22.50)
Transportation Cost = $60/ton	($67.00)	($60.50)	($53.00)	($44.50)	($32.50)

Source: Based on Transportation Estimate Provided

Table 3-21
Total Containers Only Processing and Transportation Costs
at Various Average Market Value and Various Tons per Year

Recycling Tonnage	3,000	2,500	2,000	1,500	1,000
Average Market Value per Ton	$80	$90	$95	$100	$110
Transportation Cost = $12/ton	($111,000)[1]	($76,250)	($46,000)	($21,750)	($2,500)
Transportation Cost = $15/ton	($141,000)	($101,250)	($66,000)	($36,750)	($12,500)
Transportation Cost = $17/ton	($171,000)	($126,250)	($86,000)	($51,750)	($22,500)
Transportation Cost = $20/ton	($201,000)	($151,250)	($106,000)	($66,750)	($32,500)

1. Example Calculation: ($111.000) equals ($37.00) per ton from Table 3-20 times 3,000 tons (in column heading)

To estimate the total cost of operating the MRF to process paper and ship the containers off-site for processing the results of Table 3-18 (for paper) and Table 3-21 (for containers) are combined. Table 3-18 shows that the cost to operate the MRF to process paper only is $220,895 per year, while Table 3-21 shows the cost to ship containers for off-site processing could range from $2,500 to $201,000 per year[3], so

[3] Note that the very wide range of costs are reflective of uncertainty in the material quantity (from 1,000 to 3,000 tons per year) or quality (poor quality material may require payments to the processor while high quality material may result in rebates paid to the Agency).

the total cost for this approach ranges from $310,429 to $508,929 as modeled. It should be noted that a number of assumptions were made in this analysis, and the final cost for this approach will depend on the actual cost to operate the MRF to process paper only, the percent contamination and average market value of the container stream, and assuring that an off-site recycling facility will accept a container-only recycling stream that would be produced by the Agency.

Contracting for MRF Operations

It could be possible for the Agency to hire a firm to come in and operate the existing MRF under contract. While this option is feasible, it presents a number of challenges:

- It may not be economically viable for a private firm to operate the MRF because of the limited quantity of recyclablesrecyclables processed.
- With a private operator, a large number of issues would need to be identified and memorialized in a contract. Issues include responsibility for repairs and maintenance, how will major repairs be paid for, who will be responsible for managing materials on the tipping floor, etc.
- Having a private MRF operator performing work in close proximity to tipping floor operations conducted by Agency personnel will require coordination issues to be identified, including how will conflicts between the two operations be managed.
- Security issues, personnel concerns for the use of the office and locker facilities, need to be determined.
- Will contractors be allowed to operate when Agency personnel are not on site? If so, how will the site be secured to assure unauthorized waste is not delivered? In addition, what if property damage is found and the responsible party is not identified?

Because of the number of challenges associated with a private operator and the Agency operating in close proximity at BuRRT, Louis Berger does not recommend this option.

3.5.6 Comparison of MRF Options

Table 3-22 presents the options considered in this Section. It appears that off-site processing of all recyclable materials offers the lowest cost option to the Agency and the lowest risk. Additionally, with a properly structured request for proposal (RFP) the Agency may be able to gain better control of its costs while expanding the range of materials accepted in the recycling program.

Table 3-22
Comparison of Options

	Tons	Net Cost[1]	Cost per Ton
Current MRF Operating Cost	6,809	$622,674	$91.45
Current MRF, Manage Less Tonnage	6,500	$641,844	$98.75
Current MRF, Manage More Tons	10,000	$758,196	$75.82
Process Paper On-Site and Process Containers Off-Site, Low Cost	6,809	$310,429	$45.59
Process Paper On-Site and Process Containers Off-Site, High Cost	6,809	$508,929	$74.74
Off-site Processing, Low Cost	6,809	$229,969	$33.77
Off-site Processing, High Cost	6,809	$553,396	$81.27

1. "Net Cost" means the cost of the Agency to operate the MRF minus revenue received.

3.6 Lease Agreement between City and Agency

The Agency operates BuRRT and leases the facility from the City. The initial lease agreement (Lease) was entered into on September 22, 2005 and contains the following provisions:

1. The facility will be used for the following purposes: transfer station, MRF, green waste processing, scrap tire processing, and scrap metal collection. The facility is not allowed to transfer solid waste from commercial vehicles.
2. Operating hours are limited to 8:00 am to 6:00 pm, daily.
3. Lease term is for 10 years unless terminated sooner (with 365 days' notice) and can be extended for 10 more years.
4. The Agency pays the City annual rent of $24,000 plus quarterly payments of 2 percent of gross revenue, excluding processing fee paid by the City.
5. The Agency is responsible for litter cleanup on certain roads leading to BuRRT.
6. The Agency is responsible for utilities and repair and maintenance of BuRRT, and any facility alterations must be approved by the City.
7. The Lease includes a number of additional operating and legal requirements.

In December 2005, the Lease was amended to address and clarify certain issues including repairs and maintenance. Additionally, this amendment allowed BuRRT to be used for the emergency transfer of solid waste if the Caja del Rio Landfill is unable to accept waste. In December 2010, the Lease was further amended changing the description of the property being leased.

3.7 Findings and Recommendations

1. **Certain key equipment is nearing the end of its useful life and options for replacement or outsourcing should be investigated.**

   Rolling Stock – The transfer trailers and road-tractors operated by the Agency are nearing 20 years old. One of the aluminum transfer trailers has steel plate welded on the side to repair damage. The Agency should look to replace and upgrade its transfer fleet.

   Beast Horizontal Grinder – This piece of equipment has proven problematic to maintain in operation because of age and wear. The Agency should consider outsourcing this function as described in Section 5.

   Glass Pulverizer – This piece of equipment is near the end of its useful life and should be replaced or its function outsourced as described in Section 5.

2. **A high percentage of recyclable materials received for MRF processing are not shipped out as recyclable commodities. To address this issue Louis Berger recommends that:**

   The Agency should look to inspect incoming loads and reject those that contain a significant portion of garbage. If loads contain a significant amount of solid waste they should be charged the solid waste tipping fee.

   The Agency, along with the City and County, should assure that consistent messages concerning what is recyclable, along with the importance of producing a clean recycling stream, are delivered to customers.

   MRF operations should be inspected to assure all equipment and separation activities are occurring properly. Also, the amount of residues or rejects should be periodically inspected to determine if an excessive amount of recyclables are being managed as waste by the MRF operation.

   The Agency should conduct a recycling composition study to determine the percentage of each type of recycling commodity along with the percentage of recycling in the incoming recycle stream. A recycling stream composition study will help determine if on-going activities are separating recyclables appropriately. In addition, if the Agency out-sources its recycling processing, a recycling composition study will allow it to document the average market value of its recyclables.

3. **The Agency incurs high operating costs and achieves a relatively low recycling rate at BuRRT. BuRRT has limited space to allow for additional storage bunkers at the MRF, so the Agency cannot cost-effectively add additional materials to the recycling stream.**

   Louis Berger recommends that the Agency solicit proposals for the off-site transportation and recycling of its recyclables. Based on proposals received, the Agency can assess the economic viability of off-site processing using the actual

prices offered by potential processors. Based on our analysis we would estimate that the annual cost savings would range from ***$70,000 to $390,000***.[4] Conservatively, we would estimate that $200,000 per year in savings would be realized.

4. Glass is a large percentage of incoming recyclables. The Agency will need to continue glass recycling operations into the future.

Glass is further addressed in Section 5.

[4] A large range is provided due to various scenarios developed concerning the value of recyclables and variability in fuel costs.

Section 4
OPERATIONAL ASSESSMENT OTHER AGENCY OPERATIONS

4.1 Organization and Staffing

A number of organization and staffing issues were addressed in Section 2 for the Caja del Rio Landfill (Landfill) and Section 3 for the Buckman Road Recycling and Transfer Station (BuRRT), individually. This Section presents a general review of staffing for the Santa Fe Solid Waste Management Agency (Agency). Table 4-1 presents a list of personnel and responsibilities for BuRRT and Table 4-2 presents a list of personnel for the Landfill.

Table 4-1
BuRRT Staffing

Position	Current Operation	General Description
BuRRT Site Manager	1	Overall facility management
BuRRT Superintendent	1	BuRRT operations management
BuRRT MRF Technician	6	Principally MRF operations and some site support (5 staff), Principally glass crusher operation (1 staff)
BuRRT MRF Technician II	3	Primarily MRF operations and some other site support
BuRRT Spotter	1	Green waste processing
BuRRT Transfer Operator	4	Primarily green waste processing (1 staff), primarily transfer operations (3 staff), and other site activities (all)
BuRRT Transfer Specialist	1	Primarily green waste processing and other site activities
Educ. & Outreach Coordinator	1	Education, outreach, and recycling support
HHW Handler	1	Collect and process HHW and E-waste
Scalemaster II	1	Manage and account for incoming and outgoing loads using the scale management system
Scalemaster	2	Manage and account for incoming and outgoing loads using the scale management system

Source: The Agency

Table 4-2
Landfill Staffing

Position	Current Operation	General Description
Accounts Coordinator	1	Agency accounting
Admin. Assistant/ HR Officer	1	Administration
Equip. Maintenance Supervisor	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic I	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic II	1	Equipment maintenance at Landfill and BuRRT
Equipment Mechanic III	1	Equipment maintenance at Landfill and BuRRT
Executive Director	1	Overall Agency management
Health, Safety and Training Administrator	1	Safety
Heavy Equipment Operator I	3	Primarily landfill operations
Heavy Equipment Operator II	1	Primarily landfill operations
Heavy Equipment Operator III	1	Primarily landfill operations
Landfill Manager	1	Overall management of Landfill and associated activities
Landfill Superintendent	1	Supervision of Landfill activities
Maintenance Coordinator	1	Site maintenance activities at Landfill and BuRRT
Maintenance Worker	1	Site maintenance activities at Landfill and BuRRT
Scale Supervisor	1	Supervision of Landfill and BuRRT scale operations
Scalemaster	2	Manage and account for incoming and outgoing loads using the scale management system
Temporary - Scalemaster	1	Scale operations at Landfill and BuRRT
Temporary Laborer- Caja	4	Site maintenance activities at Landfill and BuRRT

Source: The Agency

In reviewing site activities, it appears that the Agency maintains a relatively lean operation.

General Agency management activities are conducted by the executive director who is supported by one administrative assistant who also serves as the human resources coordinator and one accounts coordinator. While certain accounting services are provided by the City of Santa Fe (City), it seems reasonable that Agency staff is needed to support required activities.

Both the BuRRT and Landfill have personnel designated as Manager and Superintendent. Considering the technical, operational, and compliance activities necessary to maintain a solid waste management facility, having individual managers supported by superintendents (or working supervisors) is a reasonable division of labor.

The Agency has a number of site personnel designated to operating the BuRRT and Landfill. Under current conditions, the staffing appears appropriate, but if the Agency

should undertake recommendations addressed in other Sections for the recycling operation and green waste processing, the necessary staffing for these activities should be evaluated.

4.2 Education and Outreach

In the Santa Fe Area, Santa Fe County (County), the City, and the Agency each serve a different role in providing solid waste management to residents and businesses. The City and County provide collection services and deliver material to the Agency for final processing or disposal. Additionally, the County is investigating contracting for collection service in certain portions of the unincorporated County, so private haulers will take on a more important role in waste management if this option proves viable.

Each local government – City, County, and Agency – interacts differently with its constituents. The City and County provide direct collection services to their customers, while the Agency's customers are the City, County, private haulers, and BuRRT users. Currently, all of the entities do not appear to be effectively communicating one solid waste management message to area citizens and businesses.

The planning and messaging for solid waste management and recycling could be improved with better communication between the local governments. It would be appropriate for the Agency to lead this effort because it is responsible for the final disposal or recycling activities. The Agency's Solid Waste Advisory Committee (SWAC) has representation from the City and County along with the New Mexico Environment Department and large waste generators in the area. The SWAC can serve as an important partner for promoting a consistent message across the various local governments and private waste companies.

Upon completion of the solid waste management assessment being documented in this report, Louis Berger recommends directing the appropriate recommendation through the SWAC to develop a consistent message to the residents and businesses in the Santa Fe region.

4.3 Findings and Recommendations

1. **Agency staffing is currently adequate.**

   Louis Berger recommends that the Agency evaluate its staffing as it implements the recommendations in this report (e.g., if the MRF operations are contracted, the Agency will need to reduce staff) .

2. **Current communication on solid waste management issues is inconsistent in the region.**

   Louis Berger recommends that the Agency lead in the development of solid waste and recycling messaging for all participants and that the SWAC serve as a partner for promoting a consistent solid waste and recycling message in the region.

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Section 5
EVALUATE ALTERNATIVE OPTIONS

In this Section, Louis Berger evaluates a number of important Santa Fe Solid Waste Management Agency (Agency) programs. These programs are evaluated to determine if changes could improve the function of the Agency. The programs being considered are:

- Mulching of green waste
- Composting
- Food waste composting
- Glass
- Reuse
- Evaluate out-of-county waste
- Construction and Demolition Debris (C&D) Recycling

5.1 Mulching of Green Waste

In FY 2014, the Agency received 7,408 tons of green waste. Currently, it uses a Beast horizontal grinder (Beast) to process the green waste into mulch, which it then sells or gives away. Based on analysis Louis Berger performed for the Cost of Service study in Section 1, the Agency assigned three personnel primarily to manage green waste (among some other duties). One spotter to manage the green waste area, one BuRRT[1] Transfer Operator to operate the front-end loader to manage the piles of green waste and piles of mulch when the Beast was operating, and one BuRRT Transfer Specialist to operate the Beast. The cost of processing green waste is shown in Table 5-1.

Table 5-1
Green Waste Processing Cost

Cost	Amount
Direct Cost	$312,826
Operation & Maintenance (O&M)	$74,771
Subtotal Direct and O&M Cost	$387,597
Administration	$74,186
Total Cost	$461,782

Source: Cost of Service Study

[1] "BuRRT" is the Buckman Road Recycling and Transfer Station

Considering only the direct cost and operations and maintenance cost, green waste processing cost $387,597 or $52.32 per ton (for 7,408 tons).

In many solid waste operations that Louis Berger has worked with, the organization chooses to outsource the grinding of green waste. Outsourcing is conducted for many reasons including:

- The operation does not need to invest capital in an expensive grinder. A new grinder may cost approximately $550,000, or more.
- A contract grinder is responsible for repairs and maintenance, which can cost in excess of $50,000 per year. Also, a contract grinder will have the resources necessary to maintain spare parts and to conduct specialized repairs and maintenance necessary to maintain continuous operation.
- A contract grinder typically has more than one machine, so in the event of equipment downtime, a replacement can be brought in without interrupting normal operations.

Of course, a contract grinder must be paid for the service it provides. Also, a contract grinder will require that a certain amount of green waste be accumulated on site, so that processing charges cover its mobilization costs. Louis Berger contacted contract grinders that indicated approximately 1,500 to 2,000 tons of green waste would need to be accumulated for grinding to be provided at the most economical cost. In other areas of the country, Louis Berger has worked with contract grinders that provide such service in the range of $10 to $30 per ton. Prices generally are determined by: 1) The distance equipment must travel, 2) The type of material processed, and 3) The quantity of material processed.

Assuming 50 percent of the Direct and O&M Costs shown in Table 5-1 are attributable to direct grinding operations[2], the Agency spent about $193,800 to process 7,408 tons. For example, if a contract grinder can provide grinding service to the Agency at $20 per ton, the Agency would pay $148,160 to process the same amount of material, a savings of more than $40,000, annually.

Based on the potential savings associated with contract grinding of green waste, Louis Berger recommends the Agency solicit proposals for this service, particularly before it invests in a new grinder.

5.2 Composting

The Agency has a permitted compost area at the Caja del Rio Landfill (Landfill) that it is currently minimally operating. The compost area offers a number of important benefits to a potential compost operator including a nearby water source, limited access to the facility, controlled access across certified scales, and a limited number of neighbors who could be impacted by compost operations.

[2] 50 percent of O&M costs are used because green waste management includes acceptance of materials, grinding mulch and managing mulch produced. 50 percent of O&M costs is considered conservative for this analysis.

The skill sets for personnel operating a compost facility are generally different from those of personnel operating landfills. Making compost is often described as much art as it is science, meaning operators must understand the compost process, continually monitor the operation, and make continual adjustments in the compost process (e.g., turn piles, add water, add bulking agents).

It is Louis Berger's experience that many compost operations fail not because of incoming material streams, but because of the inability of the composter to find end-users for its product. End-markets for compost include farmers, other horticultural users, and the Department of Transportation. To effectively market compost to end-users, composters must be willing and able to spend the time to research and out-reach to potential end users. The Agency does not employ salespeople, and so it has limited ability to reach out to end-users. A private operator would have the ability and resources to reach out to end-users and would have a higher probability of success.

Unless the Agency is willing to commit personnel resources to closely monitoring and managing a compost operation and to market the produced product, Louis Berger does not recommend that it undertake operating a compost program itself. However, the Agency could choose to partner with another entity to undertake the composting operation. The advantage of partnering with a private firm or non-profit entity include:

- The Agency has a permitted composting location with suitable area and water source.
- Locating a composting operation at the Landfill puts the operation on the Agency's "side of the scale house." This means the Agency could work to set alternative tipping fees for incoming feedstock that could be less than landfill tipping fees to encourage diversion, but set at a rate that allow it to recover some revenue, if appropriate (e.g., the current green waste rate is less than the solid waste rate).
- A private operator would have composting skills that Agency personnel do not possess. Also, a private operator could dedicate time and resources to activities that are not part of the Agency's core mission.

The Agency could create a request for proposal (RFP) that would: 1) Describe the resources available to the composter, 2) Describe insurance requirements and clarify responsibilities, 3) Require proposers to describe their approach and identify end markets, 4) Describe economic terms such as expected feed stock payment or revenue share, and 5) Define other important criteria as necessary.

5.3 Food Waste Composting

A natural extension of the Agency's approach to composting would be the inclusion of food waste in the composting process. The Environmental Protection Agency (EPA) estimates that food waste represents 21.1 percent of waste discarded annually in the

United States.[3] If 10 percent of the food waste disposed in the Landfill were diverted to composting, the Agency could compost approximately 3,000 tons of food waste per year (148,145 tons disposed times 21.1 percent food waste times 10 percent equals 3,216 tons). The precise amount of food waste that could be diverted from the landfill will depend on the actual composting operation conducted.

Since the Agency does not perform collection, it can best support a food waste composting operation through a partnership approach similar to that described in Section 5.2. To accommodate food waste processing, the Agency may need to modify its permit. Currently, the Agency is renewing its Landfill permit with the New Mexico Environmental Department. Louis Berger recommends that the Agency pursue incorporating food waste composting into its permit renewal process.

5.4 Glass

As described in Section 3 – Operational Assessment of BuRRT, glass is a significant incoming material to BuRRT. Residents and businesses in the area have come to depend on glass being a recyclable commodity. Currently, there is limited opportunity for actual recycling of glass to take place. The Agency has developed markets for certain amounts of the ground material to be used in consumer products. In many areas, glass recycling is hampered because glass is very heavy and has high transportation costs. The nearest glass beneficator (a company that processes glass in preparation for processing into new glass containers, fiberglass or other products) is generally considered to be outside of the feasible transportation distance from BuRRT.

The Agency has developed a strong glass market with Growstone, Inc. (Growstone), a company that makes advanced substrates for commercial and retail hydroponics. Growstone has been able to take much of the glass product produced at BuRRT. The glass product produced at BuRRT can also be used as a component of the drainage layer in new landfill cell development. Additionally, glass is often used as either roadway material or cover at landfills. It is likely that the Agency will be compelled to continue to provide glass processing as a service to its customers. Processing glass is a cost to the operation, and the Agency cannot practically expect to generate positive net revenue from the processing and sale of glass. A proven use of glass cullet is as part of the aggregate mix for asphalt. The Agency should work with the City and County for these local governments to incorporate recycled glass into their specifications for asphalt mixes used in area projects.

The current glass pulverizer operated by the Agency is nearing the end of its useful life, and the machine appears undersized for the quantity of glass managed by the Agency. Louis Berger recommends that the Agency continue to attempt to identify and cultivate markets for glass products. Glass beneficiators generally prefer to receive glass product that has not been processed into cullet or small pieces (i.e., they prefer larger pieces of glass that can be separated by their processing equipment).

[3] EPA. Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012

Unless it is able to obtain an agreement for glass processing with a glass beneficiator, Louis Berger recommends that the Agency procure and put into service a larger replacement glass pulverizer.

5.5 Reuse

Some solid waste management programs have chosen to set up reuse areas where materials may be "swapped" rather than disposed. It is Louis Berger's experience that this activity works best where there is a high degree of supervision and management and a limited amount of traffic. For example, at a remote solid waste citizen convenience center an attendant may have enough time to interact with a resident delivering an item that is still useable. In this case, the attendant can supervise the acceptance of the material and assure it is safely placed into storage. Then, when another resident arriving at the center wants to take the item, the attendant can see that it is safely transferred to the receiving resident. Often the resident must sign a release form acknowledging that the solid waste department is not responsible for the reused item.

At busier facilities, or facilities that have limited direct supervision of the reuse area, the free "swap area" can become a dumping ground for unscrupulous individuals looking to avoid tipping fees or individuals that do not understand the proper use of the area. In such cases, the sponsoring agency may end up with solid waste or hazardous waste being dropped off. Alternatively, individuals may pick up a broken item that they do not know how to fix, and they become responsible for disposing of the item.

Louis Berger does not recommend that the Agency establish a "reuse" program. Rather we recommend that the Agency partner with charitable organizations, such as Goodwill or the St. Vincent DePaul Society located in the Santa Fe area. The Agency could prepare a list of such agencies for residents or businesses to refer to. The Agency could then direct residents interested in recycling usable items to one of these organization that operate supervised drop-off programs.

5.6 Evaluate Out of County Waste

The acceptance of out-of-county waste has been presented to the Joint Powers Board in 1999, 2003, 2008, and most recently on August 15, 2013. Because the cost structure of a landfill is characterized by high fixed costs (e.g., cell development costs, expensive equipment, and personnel) and low variable costs (e.g., incremental fuel costs, operations and maintenance costs, and incremental personnel costs), some landfills desire to accept tonnage from outside their local markets. The benefit to this approach is that it can raise revenues by incurring limited increased costs. The downside to accepting out-of-county tonnage is that the revenue benefit occurs because most fixed costs have been covered by existing customers, so existing customers may believe that they are "paying too much" if the out-of-county waste is offered a reduced tipping fee.

5.6.1 Markets

Identified markets for potential out-of-county waste for the Landfill includes:[4]

- The North Central Solid Waste Agency (NCSWA) – members are Rio Arriba County, City of Espanola, San Juan Pueblo, and Santa Clara Pueblo. The NCSWA generates approximately 30,000 tons per year.
- Los Alamos County generates approximately 20,000 tons per year.
- Unincorporated San Miguel County generates approximately 6,400 tons per year. The City of Las Vegas generates approximately 12,000 tons per year, for a combined total of approximately 18,400 tons per year.

5.6.2 Pricing

When considering pricing comparison with competing facilities, both the prices offered by competing facilities and the transportation costs incurred by the waste generators must be considered.

Los Alamos County indicates that its full cost of transportation and disposal is approximately $45 per ton. The landfill tipping fees it pays at the Los Lunas (Waste Management) Landfill is $15.96 per ton, and the price it pays at Rio Rancho (Waste Management) Landfill is $25.11 per ton. NCSWMA indicates that it piggybacks off Los Alamos County's contracts, and pays a higher transportation fee because of the further distance.

Private landfill have a distinct advantage over public landfills in attracting tonnage in that a public landfill generally has to post its rates or otherwise make them public, but a private landfill can negotiate deals and does not need to make its pricing public.

The distance from Los Alamos to the subject landfills is shown in Table 5-2. The estimated cost to transport solid waste from Los Alamos to the Landfill is $10 to $15 per ton based on the prices Los Alamos pays.

Table 5-2
Distance from Los Alamos to Landfills

Landfill	Distance	Tipping Fee per Ton	Estimated Shipping Cost per Ton
Caja del Rio	44	N/A	$10 to 15
Rio Rancho	85	$25.11	$20 to 25
Los Lunas	125	$15.96	$25 to 30

Source: Estimated from August 15, 2013 Joint Powers Board meeting minutes

[4] Tonnage quantities and prices indicated in this section come from Solid Waste Management Agency Joint Powers Board, August 15, 2013 meeting minutes.

Based on the information shown in Table 5-2, the Agency would have to offer a price of $30 to $35 to be reasonably competitive with private landfills in the area. Of course, the ability of the Agency to attract this tonnage would depend on how aggressively the competing private landfill would price its services to retain the subject waste and the transportation pricing that could actually be obtained. Louis Berger conservatively estimates that the Agency would need to offer pricing at $30 per ton or below to compete for the subject tonnage. Louis Berger does not recommend that the Agency accept out-of-county waste at a lower tipping fee.

5.6.3 Incremental Revenues

Assuming that the Agency could charge a price of $40 per ton for 50,000 tons per year of additional waste, it could realize additional income of $2 million per year. This tonnage equates to approximately 200 tons per day. Currently the Landfill receives between 500 and 600 tons per day, so this increased tonnage would be expected to have a marked impact on current operations. Increasing the rate of incoming tonnage by approximately one-third means that the currently permitted landfill cell life, which is expected to be exhausted by 2022, could be used up by 2019. In this case, capital construction costs would be incurred sooner.

5.6.4 Incremental Tonnages

As described above, the Agency is not likely to attract out-of-county waste on a long-term basis, but at certain times, out-of-county customers contact the Agency with a request to deliver waste to the Landfill. Often these requests come from other area governments faced with operational issues related to high wind days, bad weather days, equipment down time, or similar problems. If the Agency was to charge current tip fees to such out-of-county customers, it could secure limited additional revenues without impacting current operations.

5.7 C&D Recycling

Recycling C&D materials can provide an opportunity to increase waste diversion in the local area. There are generally two possible approaches to C&D recycling. The first is for recyclable materials to be sorted out of the waste stream at the point of generation. The second is for mixed C&D to be delivered to a professing facility where it is sorted into its component parts (C&D Processing Facility).

While conducting research for this study, Louis Berger was advised that some C&D recycling does occur at certain job sites. In this process, the construction/demolition company is responsible for assuring recyclables are kept separate from general waste as the job progresses. C&D processing requires a substantial investment in capital equipment and labor. Acquisition of sorting lines, grinders, and other equipment can cost hundreds of thousands of dollars and should only be undertaken with a thorough analysis of the C&D composition and markets for sorted materials. Based on Louis Berger's understanding of the quantities of C&D currently managed by the Agency, we do not believe that sufficient quantities or consistent quantities of C&D are

available to justify the Agency making the capital investment in a C&D processing facility.

Louis Berger does recommend that the Agency's education and outreach efforts include encouraging C&D recycling at the job site. Job site separation assures higher quality recyclables are produced compared to those produced at a C&D processing facility. Additionally if flow control for C&D is implemented in the City of Santa Fe, material that is separated for recycling at the job site will not need to be delivered to the landfill. Job site recycling will help construction/demolition firms reduce their disposal costs if C&D flow control is implemented.

5.8 Findings and Recommendations

1. **Contract grinding of green waste could cost less than continued operation of the Agency's grinder.**

   Contracting green waste grinding could cost less than the current operation, and by contracting the Agency will not spend $500,000 or more on a new grinder. Louis Berger recommends that the Agency solicit a competitive proposal for the grinding of green waste either through the development of a bid or request for proposals (RFP).

2. **The designated compost area at the Landfill offers an opportunity for a partnership for composting.**

   It is not likely that the Agency can successfully develop a composting program on its own, but by partnering with a firm competent in the production and marketing of compost, the Agency can facilitate development of composting in the region. Additionally, having the composting operation within its facility allows the Agency to exert some control over pricing and revenue considerations. Louis Berger recommends that the Agency investigate a partnership for composting on its site, through the development of an RFP and a competitive procurement.

3. **Customers in the Santa Fe area will continue to deliver glass for recycling, but glass has limited value and will likely continue to be costly to manage by the Agency.**

   The Agency should continue to research markets for recycling glass, including working with the City and County for these local governments to develop specifications that include recycled glass in the aggregate used in asphalt mixes. In the absence of established markets, the Agency should evaluate a replacement glass pulverizer and continue to produce glass product for its own use at the landfill.

4. **Limited incremental tonnage could provide additional revenues to the Agency.**

   By allowing out-of-county waste to be delivered to the landfill on a limited basis by other local governments, the Agency could realize some increased revenues. Louis Berger recommends that the Agency allow such deliveries on an ad hoc

basis in response to operational conditions faced by out-of-county customers, and that such customers be required to pay the posted tipping fees.

5. **Sorting recyclables from C&D at construction/demolition job sites can increase waste diversion and help construction/demolition firms save money on their disposal bills.**

   The Agency should encourage recycling at construction/demolition job sites. The Agency should incorporate additional promotion of C&D recycling into its education programs and share information on local companies able to accept sorted C&D for recycling with companies performing construction/demolition work. Implementation of C&D flow control complements C&D recycling, because a company does not have to pay landfill tipping fees on materials diverted for recycling.

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Section 6
SUMMARY OF KEY RECOMMENDATIONS

Listed below is a summary of our key recommendations, summarized by section. Where applicable, we have provided a conservative estimate of the potential "Annual Cost Savings" and/or "One Time Cost Savings". For more information on a particular recommendation, refer back to the appropriate section.

Section 1: Cost of Service and Funding Options			
Recommendation	Benefit/Purpose	Priority Level	Implementation Time Frame
Maintain Rates at the Caja del Rio Landfill.	Rates are sufficiently recovering costs and will ensure the financial integrity of the Landfill.	High	Status quo
Maintain Rates at the Buckman Road Recycling & Transfer Station (BuRRT) for now.	If the Agency does not pursue the MRF recommendations detailed in Section 3: Operational Assessment of BuRRT, rates will need to be revisited at the Landfill in 12 months and potentially increased.	High	Now–1 year
Consider Entering into a Public-Private-Partnership (P3) for MRF, green waste mulching/composting.	Savings are shown in Section 3: Operational Assessment of BuRRT.	High	Now–1 year

Section 2: Operational Assessment of the Caja del Rio Landfill			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Utilize the recently implemented RTA Fleet Management software.	Allows the Agency to track fuel, operating, and repair costs for equipment on a unit basis.	High	Now
Continue to operate the existing Landfill.	Operating the existing Landfill is the most cost effective option compared to an offsite landfill.	High	Status quo
Consider replacing scraper pans with dump trucks and excavators.	Better prepares for future equipment replacement needs.	Medium	In next 12 months
Encourage the sale of basalt products produced at the Landfill.	Eliminate the stockpile as soon as possible.	Medium	Immediately, and then ongoing
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

Section 3: Operational Assessment of Buckman Road Recycling & Transfer Station			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Replace or outsource certain key equipment (e.g., rolling stock, beast horizontal grinder, glass pulverizer).	Reduces capital and maintenance costs.	High	Now–1 year
Address contamination rate at MRF: -Inspect incoming recyclable loads and reject those with a significant portion of garbage -Develop consistent recycling messaging -Inspect MRF operations	Increases value of recyclable commodities.	High	Now–1 year
Solicit P3 proposals for the off-site transportation and recycling of its recyclables.	Annual Cost Savings: $70,000 - $390,000[1] Conservatively: $200,000	High	In next 12 months
Potential Cost Savings: Annual: $200,000			

Section 4: Operational Assessment of Other Agency Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Agency should lead in the development of solid waste and recycling messaging for all participants.	Increases consistent communication on solid waste management issues.	High	Immediately, and then ongoing
Evaluate staffing as the Agency implements recommendations in this report.	This will ensure adequate staffing within the Agency.	Medium	Ongoing
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

[1] A large range is provided due to various scenarios developed concerning the value of recyclables and variability in fuel costs. It is conservatively estimated that $200,000 per year could be saved.

Section 5: Evaluate Alternative Options			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Contract grinding of green waste.	One Time Cost Savings: $500,000 Annual Cost Savings: $40,000	High	Now–1 year
Consider partnering for composting.	Facilitates development of composting in the region.	High	Now–1 year
Allow limited amounts of out-of-county waste to be delivered to the Landfill on a contingency basis.	Incremental revenues.	High	Now–1 year
Continue to research markets for recycling glass.	Increases reuse and revenues.	Medium	Now–1 year
Potential Cost Savings: One Time: $500,000 Annual: $40,000			

Agency - Overall Potential Cost Savings
One Time: $500,000
Annual: $240,000

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SANTA FE SOLID WASTE MANAGEMENT AGENCY
CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study
City Section

FINAL REPORT | December 2014

NewGen Strategies & Solutions

Louis Berger

Solid Waste Assessment & Management Study

Santa Fe Solid Waste Management Agency
City of Santa Fe and Santa Fe County

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Section 1
COST OF SERVICE AND FUNDING OPTIONS

1.1 Introduction

The City of Santa Fe (City) retained Louis Berger Group, Inc. (Louis Berger) to conduct a cost of service and rate design study for the Environmental Services Division (ESD). The purpose of a cost of service study is to determine the total cost of providing solid waste services utilizing a full cost accounting methodology which equitably distributes the costs to each customer class while fully recovering, through user fees, the total cost of providing the services. The total cost of providing service includes costs associated with operations and maintenance (O&M), debt service, and cash capital outlays. The organizational structure of this report is described below:

- Current Solid Waste Services
- Project Approach
- Methodology Overview
- Development of the "Test Year"
- Allocation of Costs to Service Categories
- Allocation to Customer Classes
- Determination of Billing Units
- Calculation of the Cost of Service
- Current Rate Recovery
- Proposed Solid Waste Rates for Consideration
- Recommendations

1.2 Current Solid Waste Services

Solid waste services provided by the City include the following:

1.2.1 Residential Services

The City currently serves approximately 27,413[1] residential customers, which is expected to increase by approximately 2,100 residents in FY 2015. This is attributed to

[1] Please note that this reflects the addition of approximately 2,100 residents in FY 2014 due to population increases from annexation.

the expected growth that will occur with the newly annexed area in the City of Santa Fe. Residential services provided by the City's solid waste utility are included below:

- **Residential refuse collection:** Weekly residential refuse collection is serviced via automated side-load trucks. One 96- or 32-gallon container is provided to all households, and a monthly charge of $13.37 is currently assessed for each residential household.
- **Curbside recycling collection:** The City's recycling program is provided to residents via a curbside program every week utilizing 14-gallon bins. The cost of residential recycling is included in the residential monthly fee.
- **Special assistance for people living with disabilities:** elderly persons or persons with restricted mobility which renders them unable to place trash and recyclables at the curbside may be eligible for special assistance from the ESD.
- **Large item pickup:** The ESD offers large-item pick-up service for items that do not fit into the regular 96-gallon container (i.e., large appliances and furniture). This is an on-call service that is typically scheduled on Wednesdays. The current service fee for large item pick up is $28.30.
- **Bag Tags:** Purchased bag tags must be used when placing additional bags out for collection. Bag tags may be purchased from either Utility Billing or the Cashier's Office at City Hall. Tags are sold in sheets of 5 for $7.50 per sheet.
- **Household Hazardous Waste (HHW):** HHW consists of leftover household product that has a label or ingredients that contain any of the following warnings: flammable, ignitable, corrosive, reactive, or toxic. These warnings are typically found in the following substances: drain cleaners, motor oil, pesticides, etc. HHW can be properly disposed of at the Household Hazardous Waste Collection Center, which is located at the Buckman Road Recycling and Transfer Station (BuRRT), on Fridays and Saturdays.
- **Trash and Recycling Drop-Off:** Refuse, brush and recycling may be taken to the Buckman Road Recycling & Transfer Station (BuRRT) from 8:00 am to 4:45 pm, Monday through Sunday.
  - Transfer (Refuse) Service:
    - Vehicles less than 4,500 lbs - $6.00 per load
    - Vehicles with Trailers - $50.00 per ton
    - Minimum Load Charge - $6.00 per load
  - Recycling Service
    - Conventional Recycling - No charge
    - Green Waste - $20.00 per ton
    - Contaminated Green Waste - $60.00 per ton
    - Minimum Load Charge - $5.00 per load
    - Passenger Car Tire - $2.00 per tire

  - Scrap Metal - $15.00 per ton
  - Freon Bearing Appliance - $10.00 per unit
  - Non-Freon Bearing Appliance (White Goods) - $5.00 per unit
  - Household Hazardous Waste - $50.00 per ton
  - Electronic Waste - $50.00 per ton
  - Mercury Containing Lamps - No Charge

- **Keep Santa Fe Beautiful:** This nonprofit volunteer program is dedicated to environmental education, litter awareness and prevention and beautification programs. The City of Santa Fe and Keep Santa Fe Beautiful work together to sponsor the annual Great American Cleanup in Spring and Toss No Mas Fall Cleanup days, the Adopt-a-Median program to landscape City street medians, the Keep Santa Fe Beautiful Wine Tasting and Silent Auction, and the Otra Vez Trash to Treasures program.

1.2.2 Commercial Services

The City of Santa Fe provides trash and recycling services to businesses, institutions, and construction sites in the City of Santa Fe. Available services include front load refuse, rear load refuse and recycling, and roll-off collection. With the exception of roll-off services, the City bills these commercial customers a flat monthly fee based upon the size of the containers collected and the frequency of collection. Please note that commercial accounts are currently charged a per dumpster/cart rental rate (with the exception of compactors), in addition to the flat monthly fee described above.

For roll-offs, the City bills the commercial customer a per pull fee for either a scheduled or non-scheduled pick-up. These customers are billed separately for the cost of disposal, which is charged on a per ton basis.

The various types of services offered to commercial customers are outlined below:

- **Front Load Dumpster:** The majority of commercial accounts are serviced via front load dumpsters. At present, 3, 4, 6, or 8 cubic yard dumpsters are available and may be emptied up to six days per week (Monday through Saturday) between 7 am and 3 pm. Approximately 1,374 front load dumpsters are currently collected in the field.
- **Rear Load Dumpsters & Carts:** Typically rear load dumpsters and carts are utilized to service trash collection in the downtown commercial area where access is limited. Commercial entities serviced via rear load trucks may select either dumpsters (3, 4, or 6 cubic yards) or carts (64- or 96-gallons). Trash dumpsters/carts may be emptied up to six (6) days per week (Monday through Saturday) between 4 am and 8 am. Approximately 203 rear load dumpsters and 1,604 rear load carts are serviced for refuse collection on a weekly basis.

  An additional 184 dumpsters and 760 carts are used to collect commercial recycling per week. This includes both commingled recyclables and “cardboard only” accounts.

- **Roll-Off:** Typically used for construction waste, remodeling waste, residential cleanups, carpet and wood working companies, and green waste. 20 or 30 cubic yard roll-off containers are available to the customer. Roll-offs may be scheduled and emptied up to 5 days per week (Monday through Friday), or emptied on call with a 48 hour notice. It should be noted that the fee for an on call service is higher than the fee for a scheduled service, which is a common industry practice.
- **Compactor**: Customer owned compactors can be scheduled for service up to five (5) days per week or emptied on call with a 48 hour notice.

  No large items, furniture or construction waste is accepted in front and rear load dumpsters as the City of Santa Fe offers roll-off container service for these types of materials. Apartment complexes may choose to request roll-off services at the end of each month when tenants are in the process of moving to handle these types of materials. Overloaded containers may be serviced when possible and additional fees charged. In the event that the container cannot be serviced due to overloading, the customer will be notified to remove excess material.

1.3 Project Approach

The goal of a cost of service study is to determine the solid waste fees required to adequately recover the cost of providing services. Louis Berger developed a series of key tasks that provided the foundation for the conduct of the cost of service study. Louis Berger utilized the following sources of information regarding the City's current system and financial requirements.

1.3.1 Data Request

Louis Berger submitted detailed data requests to the City to collect historical financial and operational information regarding the City's solid waste operations. The information requested included:

- Detailed financial reports and budgets
- Solid waste policies and ordinances
- Personnel rosters
- Solid waste and recycling tonnage reports
- Fleet inventory and operating/capital costs

1.3.2 Cost Allocation Meetings

Louis Berger held meetings with City staff to initiate the cost of service study and allocate solid waste operational costs (both labor and capital) to the appropriate solid waste services. These meetings served as a forum to confirm the scope of services, discuss the data collected by Louis Berger and finalize the cost centers to be used.

1.3.3 On-going Staff Communications

During the course of the cost of service study, Louis Berger conducted several conference calls with City staff. These conference calls provided the opportunity for Louis Berger to review project progress, verify assumptions and receive input from City staff.

1.4 Methodology Overview

The items listed below provide the background necessary to understand how data compiled in each task provides the information required to determine the cost of service and fees that will adequately recover the cost of service.

- **Development of the "Test Year":** The first task in conducting the cost of service analysis is the development of an annual revenue requirement for a "Test Year". The revenue requirement represents the total revenue that a solid waste utility will need to recover during a year in order to fund all expenses associated with the provision of solid waste services. Louis Berger worked with City staff to select a historical period that reflected the typical operation of the City system.

  Louis Berger then reviewed the financial data and worked with City staff to make any adjustments to costs to make them representative of a typical year. The resulting "Test Year" was used as the basis for forecasting expenses from the fiscal year beginning July 1, 2013 (FY 2014) through FY 2018.

- **Development of the Revenue Requirement Forecast:** After developing the revenue requirement for the "Test Year", Louis Berger worked with City staff to project changes in costs due to inflation, salary increases, new equipment, new customers, etc. This resulted in the five-year revenue requirement forecast.

- **Allocation of Costs to Service Categories:** Next, Louis Berger worked with City staff to assign and allocate costs to various service categories. The service categories represent the primary solid waste services provided by the City. The service categories were determined with the assistance of City staff. The annual revenue requirement was allocated to the appropriate service categories based on Louis Berger's extensive experience with solid waste cost of service studies and input from City staff.

- **Allocation to Customer Classes:** Louis Berger grouped the service categories based on the customer classes that will recover each category's costs. The customer classes include residential refuse and recycling collection; front load refuse collection; rear load refuse collection; roll-off collection; commingled and cardboard recycling collection.

- **Determination of Billing Units:** Louis Berger identified the appropriate billing units for each customer class. For example, the residential rate is charged per customer, so the number of residential customers was utilized as the billing unit for this customer class.

- **Calculation of the Cost of Service:** Louis Berger distributed the costs for each customer class across the appropriate billing units to determine the cost of service for each customer class.

  It is important to note that the assumptions underlying the cost of service analysis change over time (i.e., from one year to the next). Thus, periodic updates to the analysis, whether conducted internally by City staff or by a consultant, are important to recognize changes in operations, obligations, inflation, growth, etc.

1.5 Development of the "Test Year"

1.5.1 Selection of the Test Year

The revenue requirement is defined as the amount of revenue required to recover all costs associated with O&M, debt service, and cash capital outlays. In developing the revenue requirement for solid waste services, Louis Berger used the City's FY 2014 projected budget as the basis for the "Test Year". The FY 2014 budget was compared to financials from FY 2011, FY 2012, and FY 2013. Through this comparison, and with input from City staff, Louis Berger made adjustments to ensure that the "Test Year" would reflect expenses that occur on a regular basis. Louis Berger would mention that these types of adjustments are customary when conducting a detailed cost of service and rate design study.

All adjustments to the FY 2014 budget necessary to develop the "Test Year" are detailed in Appendix A, Schedule 1. Key components of the "Test Year" evaluated by Louis Berger include the annualized cost of replacement vehicles and additional capital improvement projects.

The City revenue requirement is the net of revenue offsets, such as interest income, penalties, and miscellaneous fees, since these amounts reduce the revenue needed to be recovered in the calculated user fees. Total expenses for the City for the "Test Year" were $14,559,543 and revenue offsets totaled $1,902,325. The resulting "Test Year" revenue requirement totaled $12,657,218 for the City.

1.5.2 Development of the Revenue Requirement Forecast

In addition to developing the "Test Year" revenue requirement, Louis Berger forecasted the annual revenue requirement for FY 2014 – FY 2018. In order to develop this forecast, Louis Berger projected how costs would change over the years due to factors such as inflation. To be conservative, the revenue offsets were assumed to remain flat throughout the five-year forecast.

The assumptions used to develop the forecast include the annual increases shown in Table 1-1 on the following page.

Table 1-1
Inflation Factors

Inflation Factor	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Salaries	0.0%	3.00%	3.00%	3.00%	3.00%
Benefits	0.0%	3.00%	3.00%	3.00%	3.00%
Overtime	0.0%	0.0%	0.0%	0.0%	0.0%
Fuel	0.0%	3.00%	3.00%	3.00%	3.00%
Maintenance	0.0%	2.00%	2.00%	2.00%	2.00%
Supplies	0.0%	3.00%	3.00%	3.00%	3.00%
Capital Equipment	0.0%	2.00%	2.00%	2.00%	2.00%
Professional Services	0.0%	2.00%	2.00%	2.00%	2.00%
General	0.0%	2.00%	2.00%	2.00%	2.00%
Disposal	0.0%	6.00%	2.00%	2.00%	2.00%

In addition to forecasting cost increases due to inflation, Louis Berger included the cost of replacing vehicles, equipment, and refuse/recycling dumpsters and carts in the analysis. Louis Berger also included the landfill care costs associated with the Frank Ortiz Landfill, which are expected to cost approximately $100,000 per year. Capital replacements and improvements will cost approximately $1.6 million per year in asset additions, of which approximately $1.2 million should be allocated to vehicle and equipment replacement. Appendix A, Schedule 2 outlines the utility's capital needs for FY 2014 – FY 2018.

Table 1-2 shows the cost of service for the five-year forecasted period. The detailed composition of the forecast is provided in Appendix A, Schedule 4.

Table 1-2
Revenue Requirement

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Revenue Requirement	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826

1.6 Allocation of Costs to Service Categories

The City provides a variety of solid waste services to its residential customers. To determine the costs for each service, there is a need to allocate costs to service categories that represent the primary solid waste services provided. These categories were determined through a series of discussions with City staff and are shown below.

- Residential Refuse Collection
  - Garbage Collection
  - Large Item Collection

- Commercial Refuse Collection
  - Front Load Garbage Collection
  - Rear Load Garbage Collection
  - Roll-Off Garbage Collection
- Recycling Collection
  - Residential Recycling Collection
  - Commercial Commingled Recycling Collection
  - Commercial Cardboard Collection
- Container Maintenance
- Education and outreach
  - Keep Santa Fe Beautiful
  - Sustainable Santa Fe
  - City Activities
- Other Services
  - Fleet Maintenance
  - Administration
  - Special Events
- Disposal
  - Refuse
  - Recycling Processing Cost

Identification of the total cost of each service category was a critical step in determining adequate rates that reflect the cost of providing service. These costs were isolated by service category in order to fully capture the total cost by matching the customers that utilize the service with the actual costs for that service. Table 1-3 identifies the cost of providing each service for FY 2014 – FY 2018.

Table 1-3
Revenue Requirement, by Service Category

Service Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Residential Collection					
Refuse	$ 2,220,056	$ 2,271,199	$ 2,323,827	$ 2,377,984	$ 2,433,714
Large Item	73,843	74,790	75,765	76,768	77,801
Commercial Collection					
Front Load Refuse	1,455,982	1,489,620	1,524,227	1,559,832	1,596,465
Rear Load Refuse	751,490	770,677	790,433	810,775	831,720

Service Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Roll-Off Refuse	651,563	666,554	681,985	697,871	714,224
Recycling					
Residential Recycling	1,307,239	1,338,929	1,371,553	1,405,139	1,439,716
Commercial Recycling	319,112	325,852	332,789	339,929	347,279
Commercial Cardboard Recycling	147,433	150,438	153,530	156,713	159,988
Landfill Closure/Post Closure					
Paseo de Vista Landfill	6,248	6,434	6,626	6,824	7,028
Frank Ortiz Landfill	106,248	106,434	106,626	106,824	107,028
Container Maintenance Program	318,120	324,542	331,093	337,778	344,598
Education and outreach					
Keep Santa Fe Beautiful	24,154	25,342	26,575	27,855	29,183
Sustainable Santa Fe	109,784	113,059	116,432	119,907	123,485
City Activities	83,017	85,468	87,991	90,591	93,268
Other Services					
Fleet Maintenance	214,390	220,688	227,174	233,854	240,735
Administration	2,332,206	2,388,748	2,611,472	2,671,724	2,732,684
Special Events	84,355	86,796	89,310	91,899	94,565
Disposal					
Recycling Processing Cost	27,004	27,221	27,443	27,673	27,909
Refuse	2,477,974	2,617,904	2,670,356	2,723,860	2,778,438
Revenue Requirement	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826

The City of Santa Fe obtains miscellaneous revenue from various sources that are allocated to various services in Table 1-3. These revenue sources include interest on investments, the Keep Santa Fe Beautiful Grant, Infrastructure Gross Revenue Tax, and residential bag tag sales. Table 1-4 outlines each of these revenue offsets in detail.

Table 1-4
Revenue Offsets

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Infrastructure GRT	$ 1,737,859	$ 1,737,859	$ 1,737,859	$ 1,737,859	$ 1,737,859
Interest on Investment	62,716	62,716	62,716	62,716	62,716
Keep Santa Fe Beautiful Grant	48,000	48,000	48,000	48,000	48,000
Residential Bag Tag Sales	750	750	750	750	750
Total	$ 1,849,325	$ 1,849,325	$ 1,849,325	$ 1,849,325	$ 1,849,325

1.7 Allocation to Customer Classes

After calculating the costs for each service category over the five-year forecast period, the service categories costs were then allocated by customer class. This assists in identifying the appropriate customers to be charged for each service provided.

The following table identifies how the service categories were grouped and the recovery basis for each service category.

Table 1-5
Service Category Allocations

Service Category	Recovery Basis
Residential Refuse Collection	
Refuse	Residential Refuse & Recycling Rate
Large Item	Large Item Refuse Rate
Commercial Refuse Collection	
Front Load Refuse	Commercial Front Load Rate
Rear Load Refuse	Commercial Rear Load Rate
Roll-Off Refuse	Commercial Roll-Off Rate
Recycling Collection	
Residential	Residential Refuse & Recycling Rate
Commercial Commingled	Commercial Commingled Recycling Rate
Commercial Cardboard	Commercial Cardboard Recycling Rate
Landfill Closure/Post-Closure	
Paseo de Vista Landfill	Allocated to Residential and Commercial Collection Service Categories Based on Estimated Tonnage
Frank Ortiz Landfill	Allocated to Residential and Commercial Collection Service Categories Based on Estimated Tonnage
Container Maintenance Program	Allocated to Residential and Commercial Collection Service Categories Based on Estimated Cubic Yards of Capacity
Education and Outreach	
Keep Santa Fe Beautiful	Redistributed Based on Percent of Revenue Requirement
Sustainable Santa Fe	Redistributed Based on Percent of Revenue Requirement
City Activities	Redistributed Based on Percent of Revenue Requirement
Other Services	
Fleet Maintenance	Allocated to Residential and Commercial Collection Service Categories Based on Equipment Maintenance Allocations provided by the City
Administration	Redistributed Based on Percent of Revenue Requirement
Special Events	Redistributed Based on Percent of Revenue Requirement
Disposal	
Recycling Processing Cost	Allocated to Residential and Commercial Comingled Collection Service Categories Based on Estimated Cubic Yards of Capacity
Refuse	Allocated to Residential and Commercial Collection Service Categories Based on Estimated Tonnage

1.8 Determination of Billing Units

In order to calculate the cost of service on a customer basis, Louis Berger determined the number of annual billing units for various customers classes. Louis Berger received billing data for each customer class from City staff and determined the cost of service by dividing the cost of service by the appropriate billing units. It should be noted that this cost of service study takes into account the growth due to annexation, which results in the addition of approximately 4,200 residential accounts. For the purposes of the cost of service analysis, approximately 2,100 accounts were phased in for FY 2014, and the remaining 2,100 accounts were added in for FY 2015. For commercial accounts, approximately 50 four cubic yard (CY) front load accounts were added in FY 2014; in FY 2015, commercial counts were increased by another 50 four cubic yard (CY) front load accounts.

Louis Berger proportionally increased disposal costs consistent with the residential and commercial account increases as a result of annexation.

1.8.1 Residential Collection

At present, the City charges a flat monthly fee for refuse and recycling to each residential household served by the City. Table 1-6 provides the billing unit forecast for the residential customer class. These growth projections were developed utilizing an approximately 8% growth rate in FY 2014 & FY 2015, which is consistent with the growth attributed to annexation. It is important to note that in FY 2014 the number of residential households totaled 27,413, of which approximately 95 percent have 96-gallon carts and 5 percent have 32-gallon carts. The study additionally takes into account residents with extra carts; it was estimated that approximately 5 percent of all residential households have a second cart.

Table 1-6
Residential Billing Units

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Billing Units					
96-Gallon Accounts	26,042	28,037	28,037	28,037	28,037
32-Gallon Accounts	1,371	1,476	1,476	1,476	1,476
Total Residential Households	27,413	29,513	29,513	29,513	29,513
Additional Accounts[1]	1,371	1,476	1,476	1,476	1,476

1. Additional accounts are assumed to be 96-gallon container accounts.

The City also provides large item curbside collection on an on-call basis. The City estimates that approximately 252 large items will be collected annually.

1.8.2 Commercial Collection

The City provides commercial front load and rear load customers with refuse collection via containers ranging in the following sizes: 3, 4, or 6 cubic yard

dumpsters, or 64- or 96-gallon carts for rear load customers; 3, 4, 6, or 8 cubic yard dumpsters for front load customers. At present, commercial customers are charged a monthly flat rate, and for all non-compacting containers, a bin rental fee is added for each city-owned and maintained bin. The billing units for commercial collection, then, consist of the following components:

- **Annual Number of Collections**: Used to recover the cost of collection operations and indirect costs.
- **Annual Cubic Yards of Disposal Capacity:** Measured in cubic yards and used to allocate disposal costs to each cubic yard of container capacity.

Table 1-7 shows the projected billing units for commercial front load and rear load refuse customers. The projections were developed using a modest 1% growth rate for front load customers on 4-CY dumpsters in FY 2014 and FY 2015. As stated previously, this assumption reflects the slight increase in commercial customers projected to occur with annexation. Louis Berger assumed a zero percent growth rate for rear load customers to maintain a conservative analysis.

Table 1-7
Commercial Refuse Billing Units

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Front Load Dumpsters					
Number of Containers	1,374	1,424	1,424	1,424	1,424
Annual Collections	140,036	142,636	142,636	142,636	142,636
Annual Disposal Capacity (CY)	870,740	881,140	881,140	881,140	881,140
Rear Load Dumpsters					
Number of Containers	203	203	203	203	203
Annual Collections	22,360	22,360	22,360	22,360	22,360
Annual Disposal Capacity (CY)	81,120	81,120	81,120	81,120	81,120
Rear Load Carts					
Number of Carts	1,604	1,604	1,604	1,604	1,604
Annual Collections	132,340	132,340	132,340	132,340	132,340
Annual Disposal Capacity (CY)	66,147	66,147	66,147	66,147	66,147

The City also provides commercial customers with recycling collection via containers ranging in the following sizes: 3, 4, or 6 cubic yard dumpsters, or 64-or 96-gallon carts. A rental fee is added to the monthly rate for each city-owned and maintained container, and an additional per cart charge is assessed for customers with carts. It is important to note that commingled recycling is serviced via 64- or 96-gallon carts, however cardboard recycling may be serviced by carts or dumpsters.

Additionally, if a cart contains more than 10 percent of non-recyclable materials, an additional $56.00/$79.00 per cart/dumpster per service will be charged. The billing units for commercial recycling collection consist of the same components outlined above (annual collections and annual disposal capacity). Table 1-8 shows the projected billing units for commercial recycling customers. The projections were

developed using zero percent growth in the recycling market in order to keep the rate analysis conservative.

Table 1-8
Commercial Recycling Billing Units

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Commercial Recycling					
Cardboard Dumpsters					
Number of Containers	224	224	224	224	224
Annual Collections	11,648	11,648	11,648	11,648	11,648
Annual Disposal Capacity	51,064	51,064	51,064	51,064	51,064
Cardboard Carts					
Number of Carts	337	337	337	337	337
Annual Collections	17,524	17,524	17,524	17,524	17,524
Annual Disposal Capacity	8,762	8,762	8,762	8,762	8,762
Commingled Carts					
Number of Carts	489	489	489	489	489
Annual Collections	25,428	25,428	25,428	25,428	25,428
Annual Disposal Capacity	12,714	12,714	12,714	12,714	12,714

1.8.3 Commercial Roll-Off Collection

Table 1-9 shows the projected billing units for commercial roll-off customers. The projections were developed utilizing a zero percent growth rate for all five years of the forecast. These growth projections were developed by the Louis Berger Project Team and City staff in order to keep the rate analysis conservative. Please note that compactor and non-compactor pulls are currently charged the same rate.

Table 1-9
Commercial Roll-Off Billing Units

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Commercial Roll-Off Pulls					
Non-Compactors	2,083	2,083	2,083	2,083	2,083
Compactors	1,040	1,040	1,040	1,040	1,040
	3,123	3,123	3,123	3,123	3,123

1.9 Calculation of the Cost of Service

Based on the data discussed in this section, Louis Berger determined the cost of service for the various ESD programs. As is typical during these types of cost of service studies, Louis Berger found differences between the rates charged to the various customer classes and the actual cost of providing the associated service. Our

proposed rate recommendations in Section 1.11 would move the City's various solid waste and recycling rates toward a more "equitable" and "cost of service" based rate structure.

1.9.1 Residential

Table 1-10 lists the projected cost of service for residential refuse and recycling collection for the five-year forecast. The revenue requirement includes the curbside collection of refuse, recycling, cart maintenance & replacement, recycling processing fees, and a proportional share of the indirect costs (i.e., administration, education and outreach services, etc.). A detailed examination of the residential cost of service for refuse and recycling collection in each year of the forecast is provided in Appendix A, Schedule 5.

Table 1-10
Residential Revenue Requirement

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Refuse	$ 2,220,056	$ 2,271,199	$ 2,323,827	$ 2,377,984	$ 2,433,714
Recycling	1,307,239	1,338,929	1,371,553	1,405,139	1,439,716
Cart Maintenance	164,635	168,092	171,490	174,957	178,494
Recycling Processing Fees	26,531	26,777	26,996	27,222	27,454
Subtotal - Direct	$ 3,718,461	$ 3,804,997	$ 3,893,866	$ 3,985,301	$ 4,079,378
Overhead/Indirect					
Administration	$ 1,200,427	$ 1,229,625	$ 1,344,374	$ 1,375,493	$ 1,406,980
Keep Santa Fe Beautiful	12,433	13,045	13,681	14,341	15,026
Sustainable Santa Fe	56,508	58,198	59,939	61,732	63,579
City Activities	42,730	43,995	45,298	46,639	48,021
Fleet Maintenance	92,937	95,667	98,479	101,375	104,358
Special Events	43,419	44,679	45,977	47,313	48,689
Subtotal-Indirect/OH	$ 1,448,454	$ 1,485,209	$ 1,607,747	$ 1,646,893	$ 1,686,652
Total Collection Costs	$ 5,166,915	$ 5,290,206	$ 5,501,614	$ 5,632,194	$ 5,766,029
Disposal	1,071,990	1,173,682	1,196,253	1,219,278	1,242,768
Total	$ 6,238,905	$ 6,463,888	$ 6,697,867	$ 6,851,473	$ 7,008,797
Billing Units[2]					
96-gallon Accounts	26,042	28,037	28,037	28,037	28,037
32-gallon Accounts	1,371	1,476	1,476	1,476	1,476
Extra Carts[3]	1,371	1,476	1,476	1,476	1,476

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Monthly COS					
96-gallon Accounts	$ 18.52	$ 17.83	$ 18.48	$ 18.90	$ 19.34
32-gallon Accounts	17.46	16.75	17.39	17.79	18.20
Extra Carts	10.06	9.55	9.76	9.97	10.19

1. Any minor arithmetic deviation is due to rounding.
2. Billing units reflect growth from annexation.
3. Based on number of households with 96- and 32-gallon containers. Assumed 5% of households have extra carts, per City staff. Please note that extra carts are assumed to be 96-gallon containers.

The revenue requirement for the City's residential large item collection is identified in Table 1-11. The revenue requirement includes the curbside collection of large items, and a proportional share of the fleet maintenance costs. A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 6.

Table 1-11
Residential (Large Item) Revenue Requirement

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Collection	$ 73,843	$ 74,790	$ 75,765	$ 76,768	$ 77,801
Indirect Allocation					
Fleet Maintenance	631	649	668	688	708
Total	$ 74,474	$ 75,439	$ 76,433	$ 77,456	$ 78,509
Billing Units					
Annual Collections	252	252	252	252	252
Average Cost per Collection	$ 295.53	$ 299.36	$ 303.31	$ 307.37	$ 311.55

1. Any minor arithmetic deviation is due to rounding.

1.9.2 Commercial Collection

The commercial collection operation includes refuse and recycling service via front load or rear load trucks, and roll-off collection. The sections below outline the cost of service for each major commercial collection service.

1.9.2.1 Front Load Collection

Table 1-12 lists the projected cost of service for front load commercial customers for the five-year forecast. The revenue requirement includes the collection of refuse, dumpster maintenance & replacement, and a proportional share of the indirect costs (i.e., administration, education and outreach services, etc.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 7.

Table 1-12
Annual Commercial Front Load Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Refuse	$ 1,455,982	$ 1,489,620	$ 1,524,227	$ 1,559,832	$ 1,596,465
Dumpster Maintenance	77,783	79,261	80,866	82,504	84,176
Subtotal – Direct	$ 1,533,765	$ 1,568,880	$ 1,605,093	$ 1,642,336	$ 1,680,461
Indirect Allocation					
Administration	$ 495,507	$ 507,371	$ 554,512	$ 567,134	$ 579,898
Keep Santa Fe Beautiful	5,132	5,383	5,643	5,913	6,193
Sustainable Santa Fe	23,325	24,014	24,723	25,453	26,205
City Activities	17,638	18,153	18,684	19,230	19,792
Fleet Maintenance	74,083	76,259	78,500	80,809	83,186
Special Events	17,922	18,436	18,964	19,508	20,067
Subtotal – Indirect	$ 633,608	$ 649,615	$ 701,025	$ 718,046	$ 735,342
Total Collection Costs	$ 2,167,373	$ 2,218,495	$ 2,306,118	$ 2,360,383	$ 2,415,982
Disposal Costs	963,758	991,807	1,010,881	1,030,338	1,050,187
Total	$ 3,131,131	$ 3,210,303	$ 3,316,999	$ 3,390,721	$ 3,466,170
Billing Units					
Collections per Year	140,036	142,636	142,636	142,636	142,636
Capacity[2]	870,740	881,140	881,140	881,140	881,140
Cost per Collection	$ 15.48	$ 15.55	$ 16.17	$ 16.55	$ 16.94
Cost per Cubic Yard[3]	$ 1.11	$ 1.13	$ 1.15	$ 1.17	$ 1.19

1. Any minor arithmetic deviation is due to rounding.
2. Cubic yards per year.
3. Charge for disposal services are based on the cubic yards of container capacity.

To identify the monthly rate to be charged based on the cost of service, the different component costs should be calculated as follows:

- Cost per Collection ($15.48 in FY 2014) times the number of collections per month, PLUS
- Cost per Cubic Yard of Capacity ($1.11 in FY 2014) times the capacity of the container times the number of collections per month.

For example, in FY 2014 a six-cubic yard front load container collected three times per week (13 collections per month[2]) would result in a monthly rate of:

- $15.48*13 +
- $1.11*6*13 =
- $287.82 per month [3]

1.9.2.2 Rear Load Collection

Table 1-13 lists the projected cost of service for rear load commercial customers for the five-year forecast. The revenue requirement includes the collection of refuse, cart maintenance & replacement, and a proportional share of the indirect costs (i.e., administration, education and outreach services, etc.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 8.

Table 1-13
Annual Commercial Rear Load Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Refuse	$ 751,490	$ 770,677	$ 790,433	$ 810,775	$ 831,720
Cart Maintenance	40,471	41,261	42,090	42,935	43,798
Subtotal – Direct	$ 791,961	$ 811,939	$ 832,523	$ 853,710	$ 875,518
Indirect Allocation					
Administration	$ 255,751	$ 262,496	$ 287,559	$ 294,787	$ 302,113
Keep Santa Fe Beautiful	2,649	2,785	2,926	3,073	3,226
Sustainable Santa Fe	12,039	12,424	12,821	13,230	13,652
City Activities	9,104	9,392	9,689	9,995	10,311
Fleet Maintenance	13,323	13,714	14,118	14,533	14,960
Special Events	9,250	9,538	9,834	10,140	10,455
Subtotal – Indirect	$ 302,116	$ 310,349	$ 336,947	$ 345,758	$ 354,718
Total Collection Costs	$ 1,094,077	$ 1,122,288	$ 1,169,470	$ 1,199,469	$ 1,230,235
Disposal Costs	162,999	165,763	168,950	172,202	175,520
Total	$ 1,257,076	$ 1,288,050	$ 1,338,420	$ 1,371,671	$ 1,405,755
Billing Units					
Collections per Year[2]	199,420	199,420	199,420	199,420	199,420
Capacity[3]	147,267	147,267	147,267	147,267	147,267

[2] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]
[3] The value of this level of service is listed as $287.54 due to minor rounding of the cost components.

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Cost per Collection	$ 5.49	$ 5.63	$ 5.86	$ 6.01	$ 6.17
Cost per Cubic Yard[4]	$ 1.11	$ 1.13	$ 1.15	$ 1.17	$ 1.19

1. Any minor arithmetic deviation is due to rounding.
2. Louis Berger assumed a 3:1 cart to dumpster ratio to account for the additional time & resources it takes to service a dumpster. Therefore, the total dumpster count in Table 1-7 was multiplied by a factor of 3 and added to the total number of carts.
3. Cubic yards per year.
4. Charge for disposal services are based on the cubic yards of container capacity.

It is important to note that because rear load collection services a combination of dumpsters and carts, Louis Berger developed a 3:1 cart to dumpster ratio. In other words, dumpsters are weighted three times as much as carts because they require more time and resources to maintain. This 3:1 factor is also utilized in the calculation of the collection cost.

To identify the monthly rate to be charged based on the cost of service *for dumpsters*, the different component costs should be developed as follows:

- Cost per Collection ($5.49 in FY 2014) times the number of collections per month times the collection factor, PLUS
- Cost per Cubic Yard of Capacity ($1.11 in FY 2014) times the capacity of the container times the number of collections per month.

For example, in FY 2014 a six-cubic yard rear load container collected three times per week (13 collections per month[4]) would result in a monthly rate of:

- $5.49*13*3 +
- $1.11*6*13 =
- $300.69 per month[5]

To identify the monthly rate to be charged based on the cost of service *for carts*, the different component costs should be developed as follows:

- Cost per Collection ($5.49 in FY 2014) times the number of collections per month, PLUS
- Cost per Cubic Yard of Capacity ($1.11 in FY 2014) times the capacity of the container times the number of collections per month. [6]

For example, in FY 2014 a 96-gallon rear load container collected three times per week (13 collections per month[7]) would result in a monthly rate of:

- $5.49*13 +

[4] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]
[5] The value of this level of service is listed as $300.30 due to minor rounding of the cost components.
[6] Louis Berger assumed that a 96-gallon container is approximately 0.5 cubic yards of capacity & a 64-gallon container is approximately 0.35 cubic yards of capacity.
[7] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]

- $1.11*13*0.5 =
- $78.59 per month [8]

1.9.2.3 Cardboard Recycling

Table 1-14 lists the projected cost of service for the cardboard commercial customers for the five-year forecast. The revenue requirement includes the collection of cardboard recycling, cart maintenance, and a proportional share of the indirect costs (i.e., administration, education and outreach services, etc.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 9.

Table 1-14
Annual Commercial Cardboard Recycling Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Recycling	$ 147,433	$ 150,438	$ 153,530	$ 156,713	$ 159,988
Cart Maintenance	220	215	221	227	234
Subtotal – Direct	$ 147,652	$ 150,653	$ 153,752	$ 156,940	$ 160,221
Indirect Allocation					
Administration	$ 50,175	$ 51,240	$ 55,854	$ 56,979	$ 58,114
Keep Santa Fe Beautiful	520	544	568	594	621
Sustainable Santa Fe	2,362	2,425	2,490	2,557	2,626
City Activities	1,786	1,833	1,882	1,932	1,983
Fleet Maintenance	5,567	5,730	5,899	6,072	6,251
Special Events	1,815	1,862	1,910	1,960	2,011
Subtotal – Indirect	$ 62,224	$ 63,634	$ 68,604	$ 70,094	$ 71,606
Total Collection Costs	$ 209,877	$ 214,287	$ 222,355	$ 227,034	$ 231,827
Billing Units					
Collections per Year[2]	52,468	52,468	52,468	52,468	52,468
Capacity[3]	59,826	59,826	59,826	59,826	59,826
Cost per Collection	$ 4.00	$ 4.08	$ 4.24	$ 4.33	$ 4.42
Cost per Cubic Yard[4]	$ -	$ -	$ -	$ -	$ -

1. Any minor arithmetic deviation is due to rounding.
2. Louis Berger assumed a 3:1 cart to dumpster ratio to account for the additional resources it takes to service a dumpster. Therefore, the total dumpster count in Table 1-8 was multiplied by a factor of 3 and added to the total number of carts.
3. Louis Berger did not allocate recycling processing to cardboard recycling as processing costs are specific to glass recycling (i.e., tip fee charged at BuRRT).
4. Charge for disposal services are based on the cubic yards of container capacity.

[8] The value of this level of service is listed as $78.52 due to minor rounding of the cost components.

Louis Berger also included a 3:1 cart to dumpster ratio to account for the combination of dumpster and cart service in the cardboard recycling cost of service analysis. It should also be noted that there is not a recycling processing cost recognized for cardboard recycling, as this is a component of glass recycling. Therefore, the only factor that differentiates rates for cardboard recycling is the frequency of pickup. For example, a 3 cubic yard dumpster picked up 3 times per week is charged the same rate as a 6 cubic yard dumpster picked up 3 times per week.[9]

To identify the monthly rate to be charged based on the cost of service *for dumpsters*, the different component costs should be developed as follows:

- Cost per Collection ($4.00 in FY 2014) times the number of collections per month times the collection factor

For example, in FY 2014 a six-cubic yard rear load container collected three times per week (13 collections per month[10]) would result in a monthly rate of:

- $4.00*13*3 = $156.00 per month [11]

To identify the monthly rate to be charged based on the cost of service *for carts*, the different component costs should be developed as follows:

- Cost per Collection ($4.00 in FY 2014) times the number of collections per month.

For example, in FY 2014 a 96-gallon rear load container collected three times per week (13 collections per month[12]) would result in a monthly rate of:

- $4.00*13 = $52.00 per month [13]

1.9.2.4 Commingled Recycling

Table 1-15 lists the projected cost of service for the commingled commercial customers for the five-year forecast. The revenue requirement includes the collection of commingled recycling, cart maintenance, and a proportional share of the indirect costs (i.e., administration, education and outreach services, etc.). A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 10.

[9] There is no cost associated with this service that varies with the size of the container, unlike refuse rates, which include a disposal cost that varies with the cubic yard capacity of the container.
[10] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]
[11] The value of this level of service is listed as $156.00.
[12] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]
[13] The value of this level of service is listed as $52.00.

Table 1-15
Annual Commercial Commingled Recycling Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Recycling	$ 319,112	$ 325,852	$ 332,789	$ 339,929	$ 347,279
Cart Maintenance	12.03	11.79	12.11	12.45	12.79
Subtotal – Direct	$ 319,124	$ 325,864	$ 332,801	$ 339,942	$ 347,291
Indirect Allocation					
Administration	$ 108,602	$ 110,986	$ 121,068	$ 123,594	$ 126,145
Keep Santa Fe Beautiful	1,125	1,177	1,232	1,289	1,347
Sustainable Santa Fe	5,112	5,253	5,398	5,547	5,700
City Activities	3,866	3,971	4,079	4,191	4,305
Fleet Maintenance	9,688	9,972	10,265	10,567	10,878
Special Events	3,928	4,033	4,140	4,251	4,365
Subtotal – Indirect	$ 132,320	$ 135,393	$ 146,183	$ 149,438	$ 152,741
Total Collection Costs	$ 451,444	$ 461,256	$ 478,984	$ 489,380	$ 500,033
Recycling Processing Costs	473	444	447	451	455
Total	$ 451,917	$ 461,700	$ 479,432	$ 489,831	$ 500,488
Billing Units					
Collections per Year	25,428	25,428	25,428	25,428	25,428
Capacity[2]	12,714	12,714	12,714	12,714	12,714
Cost per Collection	$ 17.75	$ 18.14	$ 18.84	$ 19.25	$ 19.66
Cost per Cubic Yard[3]	$ 0.04	$ 0.03	$ 0.04	$ 0.04	$ 0.04

1. Any minor arithmetic deviation is due to rounding.
2. Cubic yards per year.
3. Charge for disposal services are based on the cubic yards of container capacity.

To identify the monthly rate to be charged based on the cost of service, the different component costs should be developed as follows:

- Cost per Collection ($17.75 in FY 2014) times the number of collections per month, PLUS
- Cost per Cubic Yard of Capacity ($0.04 in FY 2014) times the capacity of the container times the number of collections per month. [14]

For example, in FY 2014 a 96-gallon rear load container collected three times per week (13 collections per month[15]) would result in a monthly rate of:

[14] Louis Berger assumed that a 96-gallon container is approximately 0.5 cubic yards of capacity & a 64-gallon container is approximately 0.35 cubic yards of capacity.
[15] Three collections per week times 52 weeks in a year divided by 12 months in a year [3 * 52 / 12 = 13]

- $17.75*13 + $0.04*13*0.5 = $231.01 per month [16]

1.9.2.5 Roll-Off

Table 1-16 lists the projected cost of service for commercial roll-off customers for the five-year forecast. The cost of service includes the revenue requirement for the roll-off collection, as well as the redistributed share of the indirect solid waste costs (i.e. administration, education and outreach services, etc.). The cost of service for roll-off customers does not include disposal because roll-off customers pay for disposal based on the weight of the load at the landfill and is billed separately for the disposal cost. This is a standard industry practice. A detailed examination of the cost of service and the corresponding cost components for each year of the forecast is provided in Appendix A, Schedule 11.

Table 1-16
Annual Commercial Roll-Off Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Annual Revenue Requirement[1]					
Direct Allocation					
Refuse	$ 651,563	$ 666,554	$ 681,985	$ 697,871	$ 714,224
Cart Maintenance	35,000	35,700	36,414	37,142	37,885
Subtotal – Direct	$ 686,563	$ 702,254	$ 718,399	$ 735,013	$ 752,109
Indirect Allocation					
Administration	$ 221,743	$ 227,031	$ 248,105	$ 253,737	$ 259,434
Keep Santa Fe Beautiful	2,297	2,409	2,525	2,645	2,771
Sustainable Santa Fe	10,438	10,745	11,062	11,388	11,723
City Activities	7,893	8,123	8,360	8,603	8,855
Fleet Maintenance	18,162	18,695	19,244	19,810	20,393
Special Events	8,020	8,249	8,485	8,728	8,978
Subtotal – Indirect	$ 268,553	$ 275,252	$ 297,781	$ 304,911	$ 312,153
Total Collection Costs	$ 955,116	$ 977,506	$ 1,016,181	$ 1,039,925	$ 1,064,262
Billing Units					
Number of Pulls	3,123	3,123	3,123	3,123	3,123
Cost per Pull[2]	$ 305.83	$ 313.00	$ 325.39	$ 332.99	$ 340.78

1. Any minor arithmetic deviation is due to rounding.
2. Roll-off customers pay for disposal fees separately at the landfill.

[16] The value of this level of service is listed as $231.04 due to minor rounding of the cost components.

1.10 Current Rate Recovery

This section of the report forecasts the projected revenue recovered using current rates. The current rate schedule outlined in the City's solid waste ordinance will lead to an under-recovery of costs if left unadjusted. This is largely due to the residential rate schedule specified for FY 2014 – FY 2018. Residential rates are expected to under-recover over $4.50 per month per household for FY 2014.

Table 1-17 provides a summary of the under-recovery which may be expected if the current rates remain unchanged. A detailed examination of the revenue projections for each year of the forecast is provided in Appendix A, Schedule 11.

Table 1-17
Revenue Projections Based on Current Rates

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Revenue					
Residential Operations[1]	$ 4,411,065	$ 4,898,599	$ 5,055,308	$ 5,055,308	$ 5,055,308
Commercial Refuse Operations[2]	$ 7,024,559	$ 7,363,885	$ 7,583,263	$ 7,583,263	$ 7,583,263
Commercial Recycling Operations[3]	$ 466,258	$ 466,258	$ 466,258	$ 466,258	$ 466,258
	$ 11,901,881	$ 12,728,742	$ 13,104,829	$ 13,104,829	$ 13,104,829
Revenue Requirement[4]	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826
Over / (Under) Recovery					
Annual	N/A[5]	($ 361,951)	($ 450,381)	($ 758,971)	($ 1,074,997)
Cumulative	N/A	($ 361,951)	($ 812,333)	($ 1,571,304)	($ 2,646,301)

1. Includes revenues from residential refuse and recycling.
2. Includes revenues from the roll-off operation (disposal & pull rates)
3. Includes revenues from commercial cardboard and commingled recycling.
4. As developed in Section 1.5.2 of this report
5. The over / (under) recovery for FY 2014 was excluded from this report since at the time of this writing, this fiscal year is nearly over. As a result, Louis Berger would not be able to recommend rates during this time frame.

1.11 Findings and Recommendations

Based on Louis Berger's experience, and in particular, the project manager's extensive experience in the conduct of solid waste cost of service studies, as well as operational reviews, we would propose the following recommendations:

1. **Increase Residential User Fees:** At present, the City's residential fee of $13.37 for FY 2015, which escalates annually at 3.2 percent, is not sufficient to recover costs for residential refuse and recycling services. Louis Berger would thus recommend that the City implement the rates shown in Table 1-18 for FY 2015 – FY 2018.

Table 1-18
Proposed Residential Rates

	Rate per Ordinance (Includes 3.2% Adjustment)	Additional Consultant Recommended Rate Increase[1]	Total	Annual Percent Change
FY 2014	$ 12.96	-	$ 12.96	-
FY 2015	13.37	1.00	14.37	10.9%
FY 2016	13.80	-	14.80	3.0%
FY 2017	-	1.25	16.05	8.4%
FY 2018	-	1.25	17.30	7.8%

1. The consultant recommended rate increase is in addition to the rate increase authorized by ordinance for FY 2014 – FY 2016.

2. **Increase commercial rates for FY 2015 – FY 2016, per the Ordinance, and then remain unchanged for FY 2017 and FY 2018:** The current commercial rate structure charges an escalating fee based on the size of the container collected, in addition to collection frequency which ranges from one to six times per week. The current rate structure also adds a rental fee for carts and dumpsters and a separate cart service fee for 64- or 96-gallon carts. All commercial rates are escalated at a 3.2 percent rate annually for FY 2014 – FY 2016 per City ordinance; this, however, excludes all recycling rates which are held constant for FY 2014 – FY 2016.

   Louis Berger does not recommend adjusting the commercial rates listed in the City ordinance (other than the 3.2 percent annual adjustment for FY 2014 – FY 2016) as they are sufficiently recovering their costs. Louis Berger, however, would recommend consolidating the rental and service charges into a singular monthly bill rate. This would improve the efficiency of billing operations. We would also recommend a minimum fee for customer's that have a container that is not collected more than once per month. The minimum fee should be the cost of one collection per month.

3. **Conduct an Audit for the Commercial Recycling Service:** While Louis Berger would not recommend an increase in the commercial recycling rates, Louis Berger would recommend the City audit its number of cardboard and commingled customers to verify the accuracy of the account being collected versus billed. This will also help with measuring the growth of the City's commercial recycling program in future years.

4. **Roll-off Service & Rates:** The City ordinance currently outlines monthly roll-off rates for scheduled service, non-service, and call-in service. Louis Berger would recommend the City consider implementing our recommendations outlined in the Review of Commercial Collection Operations Section, one of which indicates that the City do away with the grandfathered "double-handled" compactors. By implementing these recommendations, the City should see a decrease in the overall cost of the roll-off collection service. Additionally, Louis Berger would

recommend a $25-$50 surcharge for compactors due to the increased time it takes to service a compactor versus an open top.

Once these changes, and the recommendations in "Section 3, Review of Commercial Collection Operations" are implemented with regard to the City's roll-off operations, we would recommend that the City revisit what its costs are to operate the roll-off program and determine whether any rate changes are required.

5. **Charge for Second Residential Cart:** The City charges residents for having a second garbage cart, which is a standard industry practice. We would recommend that the City charge be increased to $8 per month for a second 32-gallon cart and $10 for a 96-gallon cart. This will also require the City to track who has second carts, which is not currently being done.
6. **Implement Pay-As-You-Throw Rates:** We would recommend the topic of variable rates (i.e. Pay-As-You-Throw rates) start being discussed amongst City staff and elected officials. To increase recycling rates, it is critical to have a pricing mechanism which will drive customer behavior to increase their diversion rate. We would recommend a Pay-As-You-Throw price structure be implemented no later than January 2016.

1.12 Projected Revenue Recovery with Residential Rate Increase

The rates proposed in this section of the report are projected to generate the revenue listed in Table 1-19 over the five-year forecast. The detailed revenue recovery forecast is listed in Appendix A, Schedule 13. The revenue projection assumes the proposed rates are effective at the beginning of each fiscal year.

Table 1-19
Proposed Rate Revenue Recovery Forecast

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Revenue					
Residential Operations					
Refuse	$ 4,263,270	$ 5,089,222	$ 5,241,509	$ 5,684,204	$ 6,126,899
Additional Carts	140,135	155,652	160,610	160,610	160,610
Large Item	6,910	7,132	7,361	7,361	7,361
Bag Tags	750	750	750	750	750
	$ 4,411,065	$ 5,252,755	$ 5,410,229	$ 5,852,924	$ 6,295,619
Commercial Collection					
Refuse (Rear Load)					
Dumpsters	$ 591,966	$ 610,908	$ 630,458	$ 630,458	$ 630,458
Carts[1]	1,711,320	1,765,996	1,811,026	1,811,026	1,811,026
Refuse (Front Load)					

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Non-Compactor	3,679,492	3,916,595	4,041,933	4,041,933	4,041,933
Compactor	73,980	76,348	78,791	78,791	78,791
Roll-Off[2]	967,800	994,038	1,021,054	1,021,054	1,021,054
	$ 7,024,559	$ 7,363,885	$ 7,583,263	$ 7,583,263	$ 7,583,263
Recycling Collection					
Residential	Included Above	Included Above	Included Above	Included Above	Included Above
Commercial					
Dumpsters	$ 138,269	$ 138,269	$ 138,269	$ 138,269	$ 138,269
Carts	327,990	327,990	327,990	327,990	327,990
	$ 466,258	$ 466,258	$ 466,258	$ 466,258	$ 466,258
Total Revenue at Projected Rates	$ 11,901,881	$ 13,082,898	$ 13,459,750	$ 13,902,445	$ 14,345,140
Revenue Requirement	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826
Over / (Under) Recovery					
Annual	N/A[3]	($ 7,795)	($ 95,460)	$ 38,645	$ 165,314
Cumulative	N/A[3]	($ 7,795)	($ 103,256)	($ 64,611)	$ 100,703

1. 1X per week service was calculated using the light commercial rear-loading rate.
2. Roll-off revenues were calculated using a combination of scheduled & non-scheduled rates. Revenue from disposal is also included.
3. The over / (under) recovery for FY 2014 was excluded from this report since this fiscal year is nearing its end. As a result, Louis Berger would not be able to recommend rates during this time frame.

Appendix A
SCHEDULES

The following schedules are included as part of Appendix A:

Schedule 1: Budget
Schedule 2: Capital Improvement Plan
Schedule 3: Debt Service
Schedule 4: Five Year Forecast
Schedule 5: Residential Cost of Service
Schedule 6: Large Item Collection Cost of Service
Schedule 7: Commercial Front Load Cost of Service
Schedule 8: Commercial Rear Load Cost of Service
Schedule 9: Commercial Cardboard Recycling Cost of Service
Schedule 10: Commercial Commingled Recycling Cost of Service
Schedule 11: Roll-Off Cost of Service
Schedule 12: Revenue Projections Based on Current Rates
Schedule 13: Revenue Projections Based on Recommended Rates

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		ADMINISTRATION								
1	500100	**Salaries**								
2	500110	Salaries	$ -	$ -	$ -	$ 552,143	$ (88,655)	$ 463,488	A	Salary
3	500200	Exempt Full-Time	143,447	9,933	99,840	-		-		Salary
4	500350	Classified Full-Time	200,692	331,063	468,260	-		-		Salary
5	500750	Temporary Full-Time	6,763	1,001	-	-	3,882	3,882	B	Salary
6	501050	Term Full-time	(168)	-	-	-		-		Salary
7	501400	Overtime	2,252	3,646	2,500	3,500		3,500		Overtime
8	501500	Worked Holiday				-		-		Overtime
9	501510	Worked Holiday @ 1.5	-	243	-	-		-		Overtime
10	501512	Worked Holiday @ 2.5	-	51	-	-		-		Overtime
11	502000	Annual Leave	(68,674)	54,494	-	-		-		Salary
12	502010	Personal Day				-		-		
13	502015	Miscellaneous Leave	1,417	3,175	-	-		-		Salary
14	502050	Comp-time	(3,629)	6,310	-	-		-		Salary
15	502100	Sick Leave	(6,323)	12,325	-	-		-		Salary
16	502200	Incentives	-	1,456	-	-		-		Benefits
17	503000	**Employee Benefits(FICA - City Share Insurance)**								
18	503100	FICA	19,166	30,476	42,103	33,958		33,958		Benefits
19	503150	Retirement (PERA)	65,347	74,834	111,601	114,779		114,779		Benefits
20	503200	Employee Health Insurance	53,884	68,550	129,483	133,405		133,405		Benefits
21	503250	Retiree Health Care	5,764	7,219	11,487	11,168		11,168		Benefits
22	503300	Unemployment Insurance	8,482	8,482	8,482	8,482		8,482		Benefits
23	503350	Workers' Comp	3,880	5,385	7,016	8,070		8,070		Benefits
24	503400	City Share Dental Insurance	2,489	3,150	5,536	5,643		5,643		Benefits
25	510100	Contractual Services	-	-		-	-	-		Prof. Services
26	510250	Compliance Contracts	3,554	5,449	10,896	10,896		10,896		Prof. Services
27	510300	Professional Contracts	29,879	82,080	271,327	412,422	(356,443)	55,979	B	Prof. Services
28	510400	Grants and Services	-	707,520	718,563	688,312		688,312		Prof. Services
29	513950	Gas	3,366	1,224	6,200	1,500		1,500		General
30	514000	Water	-	610	3,000	-		-		General
31	514050	Electric	6,258	6,483	8,000	8,000		8,000		General
32	514100	Communication	4,591	5,379	8,470	5,000		5,000		General
33	514150	Landfill Tip Fees	1,907,597	2,565,936	3,069,468	2,700,000	(231,324)	2,468,676	A	Disposal
34	520010	Repairs and Maintenance	-		-	-		-		
35	520100	Rep and Maint Build/Structure	11,925	2,205	11,114	5,700		5,700		Maintenance
36	520300	Rep & Maint Furn/Fix/Equipment	5,246	919	4,600	2,500		2,500		Maintenance
37	520400	Rep & Maint Machine & Equipment	9	1,145	2,000	3,000		3,000		Maintenance
38	520500	Rep & Maint Vehicles	185	-	-	-	1,450	1,450	C	Maintenance
39	530010	**Supplies**	-					-		
40	530100	Office Supplies	4,984	5,117	5,500	5,500		5,500		Supplies
41	530200	Operating Supplies	1,260	6,956	6,000	6,868		6,868		Supplies
42	530300	Safety Supplies	-	3,942	7,975	6,527		6,527		Supplies
43	530400	Food	246	44	550	100		100		Supplies
44	530500	Uniform, Clothing, Linen	41,463	38,837	42,036	42,869		42,869		Supplies
45	530600	Software-Purchased	-	4,612	6,000	3,000		3,000		Supplies
46	530800	**Vehicles**						-		
47	530850	Auto Parts	537	144	2,250	500		500		Supplies
48	530900	Tires	532	762	1,200	750		750		Supplies
49	530950	Fuel						-		
50	531000	Gasoline	8,780	3,598	5,500	7,000		7,000		Fuel
51	531050	Diesel	-	562	2,200	1,000		1,000		Fuel

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
52	540000	**Depreciation/Amortization**				-		-		
53	540010	Depreciation Expense	798,514	759,255	-	-		-		General
54	540020	Amortization Expense	21,163	21,163	-	-		-		General
55	545010	**Bad Debt Expense**	486,594	64	-	-		-		General
56	555100	**Premiums**						-		
57	555250	Gen Liab Dept. Assessment	127,644	127,644	188,057	284,596		284,596		General
58	555260	Benefits Dept. Assessment	14,592	14,592	13,832	13,832		13,832		General
59	560010	**Other Operating Costs**						-		
60	560050	Travel				1,836		1,836		General
61	560100	Per Diem				-		-		General
62	560200	Out of State	-	-	432	-		-		General
63	560250	In State	537	-	2,000	-		-		General
64	560500	Out of State	648	-	-	836		836		General
65	560550	In State	100	-	-	-		-		General
66	560700	Registration	1,525	1,144	2,000	1,000		1,000		General
67	561000	Postage and Mail Service	-	-	1,500	1,539		1,539		General
68	561200	Employee Training/Tuition	192	2,125	11,000	4,164	(2,004)	2,160	B	General
69	561300	Fees and Taxes						-		
70	561700	Credit Card Fees	58	-	-	-		-		General
71	561750	Bank Charges & Fees	1,266	968	1,410	241		241		General
72	561800	Print/Publish	24,067	18,619	62,514	66,667	(30,216)	36,451	B	General
73	561850	Advertising	-	-	15,000	69,324		69,324		General
74	561900	Dues	-	573	1,000	500		500		General
75	563100	Svcs of other City Depts.	775,872	804,589	534,935	680,508	73,148	753,656	B	General
76	570100	Capital Outlay	-	-	-	-		-		General
77	570400	Building & Structures	-	-	-	-		-		General
78	570500	Equipment & Machinery	-	-	-	-		-		General
79	570850	Software	-	-	6,000	-		-		General
80	570950	Vehicles < 1.5	-	-	-	-		-		Capital Equip
81	572400	Inventory Exempt	48,962	6,251	20,000	14,370	(14,370)	-	A	General
82	572500	Remodeling & Replacement	8,205	8,969	40,826	21,986	(8,933)	13,053	B	General
83	590100	Debt Service Principal	-	-	785,000	830,000		830,000		General
84	590200	Debt Service Interest	581,963	547,681	516,073	478,823		478,823		General
85	590250	DS Interest-Amort Premium	(18,110)	(18,110)	-	-		-		General
86	700000	**OTHER FINANCING USES**				-		-		
87	700100	Operating Transfers Out	75,000	75,000	-	275,868	75,000	350,868	B	General
88	700150	Interfund Transfers Out	45,000	-	-	-		-		General
89	500003	**Personnel Budget Vacancy**	-	-	-			-		General
90	500004	Vacancy Credit-Budget Wages	-	-	-	(11,043)	11,043	-	A	General
91	500005	Vacancy Credit-Budget Benefits	-	-	-	(3,467)	3,467	-	A	General
92	700400	Transfer Fixed Assets	-	-	-			-		General
93		Glass Processing Costs	-	-	-	19,759		19,759		General
94		***Subtotal***	$ 5,458,994	$ 6,435,844	$ 7,280,736	$ 7,533,931		$ 6,969,977		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		SUSTAINABLE SANTA FE								
95	500100	**Salaries**								
96	500110	Salaries	$ -	$ -	$ -	$ 27,539	$ 41,948	$ 69,487	A	Salary
97	500350	Classified Full-Time	-	87,519	25,887	-		-		Salary
98	501400	Overtime	-	55	1,000	1,000		1,000		Overtime
99	501900	Shift Differential	-	-	160	160		160		Salary
100	502000	Annual Leave	-	(8,784)	-	-		-		Salary
101	502010	Personal Day				-		-		
102	502015	Miscellaneous Leave	-	1,068	-	-		-		Salary
103	502050	Comp-time	-	58	-	-		-		Salary
104	502100	Sick Leave	-	4,824	-	-		-		Salary
105	502200	Incentives	-	146	-	-	146	146	B	Benefits
106	503100	FICA	-	6,116	2,195	2,153		2,153		Benefits
107	503150	Retirement (PERA)	-	20,534	5,266	5,576		5,576		Benefits
108	503200	Employee Health Insuranc	-	14,406	14,656	12,844		12,844		Benefits
109	503250	Retiree Health Care	-	1,981	553	553		553		Benefits
110	503350	Workers' Comp	-	113	92	92		92		Benefits
111	503400	City Share Dental Insurance	-	593	649	649		649		Benefits
112	510010	Contractual Svs & Utilities						-		
113	510300	Professional Contracts	-	10,768	17,000	17,000		17,000		Prof. Services
114	514100	Communication	-	-	1,200	750		750		Prof. Services
115	520400	Rep & Maint Machin & Equipment	-	47	-	-		-		Maintenance
116	530400	Food	-	-	250	100		100		Supplies
117	530700	Books/Subscrpts/Periodicals	-	104	300	100		100		General
118	530850	Auto Parts	-	-	-	-		-		Supplies
119	560010	Other Operating Costs	-	-	22,443	23,430		23,430		General
120	560500	Out of State	-	-	-	-		-		General
121	560550	In State	-	-	75	75		75		General
122	561800	Print/Publish	-	11,809	10,725	14,380		14,380		General
123	561850	Advertising	-	1,503	6,668	4,000		4,000		General
124	561900	Dues	-	2,163	4,975	4,975		4,975		General
125	700000	OTHER FINANCING USES	-	-	-	-		-		
126		Vehicles						-		General
127	500003	**Personnel Budget Vacancy C**	-	-	-			-		
128	500004	Vacancy Credit-Budget Wag	-	-	-	(551)	551	-	A	General
129	500005	Vacancy Credit-Budget Ben	-	-	-	(178)	178	-	A	General
130	520010	Repairs and Maintenance	-	-	-	200		200		General
131		***Subtotal***	$ -	$ 155,023	$ 114,094	$ 114,847		$ 157,670		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		MAINTENANCE								
132	500010	**Salaries, Wages & Benefits**								
133	500100	**Salaries**								
134	500110	Salaries	$ -	$ -	$ -	$ 226,500	$ 52,091	$ 278,591	A	Salary
135	500350	Classified Full-Time	306,376	221,987	231,245	-		-		Salary
136	501400	Overtime	39,684	12,537	16,000	16,000		16,000		Overtime
137	501510	Worked Holiday @ 1.5	4,344	4,538	-	2,759	4,441	7,200	B	Overtime
138	501512	Worked Holiday @ 2.5	988	240	-	-	614	614	B	Overtime
139	502000	Annual Leave	(26,831)	19,009	-	-		-		Salary
140	502010	**Personal Day**				-		-		
141	502015	Miscellaneous Leave	2,185	2,037	-	-		-		Salary
142	502050	Comp-time	(534)	228	-	-		-		Salary
143	502100	Sick Leave	(35,152)	27,375	-	-		-		Salary
144	502200	Incentives	1,000	4,183	-	-	2,592	2,592	B	Benefits
145	503100	FICA	21,226	21,286	20,020	15,940		15,940		Benefits
146	503150	Retirement (PERA)	55,960	53,598	39,626	38,105		38,105		Benefits
147	503200	Employee Health Insurance	53,488	50,680	53,244	63,414		63,414		Benefits
148	503250	Retiree Health Care	4,930	5,170	4,168	3,784		3,784		Benefits
149	503350	Workers' Comp	9,011	7,202	7,293	7,039		7,039		Benefits
150	503400	City Share Dental Insurance	2,405	2,239	2,125	2,058		2,058		Benefits
151	520010	**Repairs and Maintenance**						-		
152	520400	Rep & Maint Machine & Equipment	4,080	5,075	5,000	5,000		5,000		Maintenance
153	520500	Rep & Maint Vehicles	-	-	-	-	3,250	3,250	C	Maintenance
154	530010	**Supplies**						-		
155	530100	Office Supplies	63	-	-	-		-		Supplies
156	530200	Operating Supplies	-	19,955	30,000	20,048		20,048		Supplies
157	530500	Uniform, Clothing, Linen	-	2,686	7,132	6,940		6,940		Supplies
158	530800	**Vehicles**	-	17,655	-	21,750		21,750		Supplies
159	530850	Auto Parts	672	42	1,000	750		750		Supplies
160	530900	Tires	-	-	2,500	2,500		2,500		Supplies
161	530950	Fuel						-		
162	531000	Gasoline	5,805	8,524	10,709	10,000		10,000		Fuel
163	531050	Diesel	9,484	9,088	7,585	8,500		8,500		Fuel
164	572400	Inventory Exempt	179	540	8,000	3,400	(3,400)	-	A	General
165	700000	OTHER FINANCING USES	-	-	-	-		-		General
166	500003	**Personnel Budget Vacancy**	-	-	-			-		General
167	500004	Vacancy Credit-Budget Wages	-	-	-	(4,530)	4,530	-	A	General
168	500005	Vacancy Credit-Budget Benefits	-	-	-	(1,314)	1,314	-	A	General
169		***Subtotal***	$ 459,364	$ 495,877	$ 445,647	$ 448,643		$ 514,074		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		RESIDENTIAL								
170	500100	**Salaries**								
171	500110	Salaries	$ -	$ -	$ -	$ 433,450	$ 41,830	$ 475,280	A	Salary
172	500350	Classified Full-Time	606,655	448,317	336,500	-		-		Salary
173	501400	Overtime	19,312	16,288	15,000	25,000	(4,800)	20,200	B	Overtime
174	501510	Worked Holiday @ 1.5	26,378	27,730	14,241	20,000	4,703	24,703	B	Overtime
175	501512	Worked Holiday @ 2.5	36	-	-	-		-		Overtime
176	501900	Shift Differential	-	-	6,250	1,500		1,500		Salary
177	502000	Annual Leave	(1,368)	39,457	-	-		-		Salary
178	502010	Personal Day				-		-		
179	502015	Miscellaneous Leave	3,179	5,707	-	-		-		Salary
180	502050	Comp-time	(4,641)	1,227	-	-		-		Salary
181	502100	Sick Leave	1,379	20,422	-	-		-		Salary
182	502200	Incentives	8,868	8,225	-	1,200	7,347	8,547	B	Benefits
183	503100	FICA	48,184	41,114	28,982	30,952		30,952		Benefits
184	503150	Retirement (PERA)	116,215	101,413	69,176	89,954		89,954		Benefits
185	503200	Employee Health Insurance	165,034	138,385	120,307	153,943		153,943		Benefits
186	503250	Retiree Health Care	10,239	9,783	7,233	8,860		8,860		Benefits
187	503350	Workers' Comp	35,577	25,099	16,584	18,296		18,296		Benefits
188	503400	City Share Dental Insurance	7,095	6,074	4,949	6,411		6,411		Benefits
189	520400	Rep & Maint Machin & Equipment	226,087	159,923	219,110	194,124	51,505	245,629	A	Maintenance
190	530010	**Supplies**						-		
191	530100	Office Supplies	176	-	-	-		-		Supplies
192	530200	Operating Supplies	28,477	14,863	5,000	15,000	4,447	19,447	B	Supplies
193	530500	Uniform, Clothing, Linen	802	-	-	-		-		Supplies
194	530800	Vehicles	-	282,183	-	309,530		309,530		Supplies
195	530850	Auto Parts	-	254	-	-		-		Supplies
196	530900	Tires	61,434	58,015	67,000	67,030	32,970	100,000	A	Supplies
197	530950	**Fuel**						-		
198	531000	Gasoline	5,875	6,701	2,000	7,500		7,500		Fuel
199	531050	Diesel	195,126	217,213	227,510	150,000	18,219	168,219	A	Fuel
200	531100	Compressed Natural Gas	-	-	7,643	85,000		85,000		Fuel
201	561800	Print/Publish	1,814	-	-	-		-		General
202	562500	Rental	-	-	-	-		-		General
203	570500	**Equipment & Machinery**	-	-	-	-		-		General
204	570950	Vehicles < 1.5	-	-	-	-		-		General
205	571000	Vehicles > 1.5	-	-	1,034,430	276,901	(276,901)	-	D	General
206	572400	Inventory Exempt	93,551	61,143	305,118	169,800	(169,800)	-	D	General
207	700000	**OTHER FINANCING USES**			-	-		-		General
208	700150	Interfund Transfers Out	198,989	-	-	-		-		General
209	500003	**Personnel Budget Vacancy Credit**	-	-	-			-		General
210	500004	Vacancy Credit-Budget Wages	-	-	-	(8,669)	8,669	-	A	General
211	500005	Vacancy Credit-Budget Benefits	-	-	-	(3,043)	3,043	-	A	General
212		***Subtotal***	$ 1,854,474	$ 1,689,537	$ 2,487,033	$ 2,052,739		$ 1,773,970		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		COMMERCIAL FRONT-LOAD								
213	500100	**Salaries**								
214	500110	Salaries	$ -	$ -	$ -	$ 357,594	$ 46,069	$ 403,663	A	Salary
215	500350	Classified Full-Time	329,089	256,404	407,370	-		-		Salary
216	500400	Classified Part-Time	-	798	-	-		-		Salary
217	501400	Overtime	8,559	7,296	25,000	15,000	(4,715)	10,285	B	Overtime
218	501510	Worked Holiday @ 1.5	13,482	12,848	-	18,500	(3,557)	14,943	B	Overtime
219	501900	Shift Differential	-	-	1,500	6,250		6,250		Salary
220	502000	Annual Leave	(9,236)	49,483	-	-		-		Salary
221	502010	Personal Day				-		-		
222	502015	Miscellaneous Leave	1,453	3,277	-	-		-		Salary
223	502050	Comp-time	(881)	1,106	-	-		-		Salary
224	502100	Sick Leave	506	14,823	-	-		-		Salary
225	502200	Incentives	1,843	2,497	-	-	2,170	2,170	B	Benefits
226	503100	FICA	24,557	25,041	26,354	28,434		28,434		Benefits
227	503150	Retirement (PERA)	60,229	60,543	84,848	73,199		73,199		Benefits
228	503200	Employee Health Insurance	70,794	76,826	152,007	111,526		111,526		Benefits
229	503250	Retiree Health Care	5,305	5,840	8,826	7,233		7,233		Benefits
230	503350	Workers' Comp	17,065	15,563	20,608	16,584		16,584		Benefits
231	503400	City Share Dental Insurance	2,920	3,186	6,591	5,003		5,003		Benefits
232	514100	Communication	929	-	-	-		-		General
233	520400	Rep & Maint Machin & Equipment	173,689	150,781	210,000	195,562	9,033	204,595	C	Maintenance
234	530010	Supplies						-		
235	530200	Operating Supplies	4,983	5,213	19,000	5,000		5,000		Supplies
236	530800	**Vehicles**				274,959	(274,959)	-	D	Capital Equip
237	530850	Auto Parts	-	744	-	-		-		Supplies
238	530900	Tires	65,553	59,889	67,739	45,207	54,793	100,000	A	Supplies
239	530950	Fuel						-		
240	531000	Gasoline	1,885	2,116	4,020	2,752		2,752		Fuel
241	531050	Diesel	180,679	195,245	235,044	100,000		100,000		Fuel
242	531100	Compressed Natural Gas	-	819	-	127,000		127,000		Fuel
243	571000	Vehicles > 1.5	-	-	796,916	255,165	(255,165)	-	D	General
244	572400	Inventory Exempt	36,169	46,019	370,000	304,061	(304,061)	-	D	General
245	700000	**OTHER FINANCING USES**	-	-	-	-	-	-		General
246	500003	**Personnel Budget Vacancy Credit**	-	-	-			-		General
247	500004	Vacancy Credit-Budget Wages	-	-	-	(7,152)	7,152	-	A	General
248	500005	Vacancy Credit-Budget Benefits	-	-	-	(2,551)	2,551	-	A	General
249		***Subtotal***	$ 989,571	$ 996,358	$ 2,435,823	$ 1,939,326		$ 1,218,637		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		COMMERCIAL REAR-LOADER								
250	500100	**Salaries**								
251	500110	Salaries	$ -	$ -	$ -	$ 175,816	$ (18,137)	$ 157,679	A	Salary
252	500350	Classified Full-Time	229,811	174,899	174,239	-		-		Salary
253	501400	Overtime	4,725	3,075	25,000	5,000		5,000		Overtime
254	501510	Worked Holiday @ 1.5	10,585	11,268	-	10,500		10,500		Overtime
255	501900	Shift Differential	-	-	6,000	6,000		6,000		Salary
256	502000	Annual Leave	(1,481)	17,343	-	-		-		Salary
257	502010	Personal Day				-		-		
258	502015	Miscellaneous Leave	1,352	2,251	-	-		-		Salary
259	502050	Comp-time	(1,266)	2,297	-	-		-		Salary
260	502100	Sick Leave	2,305	12,822	-	-		-		Salary
261	502200	Incentives	3,441	4,548	1,500	1,200	1,863	3,063	B	Benefits
262	503100	FICA	17,584	16,349	16,649	14,114		14,114		Benefits
263	503150	Retirement (PERA)	44,207	41,514	36,624	36,787		36,787		Benefits
264	503200	Employee Health Insurance	55,355	46,589	42,660	59,407		59,407		Benefits
265	503250	Retiree Health Care	3,894	4,005	3,800	3,618		3,618		Benefits
266	503350	Workers' Comp	11,949	11,070	9,859	7,398		7,398		Benefits
267	503400	City Share Dental Insurance	2,021	1,749	1,615	1,615		1,615		Benefits
268	520400	Rep & Maint Machin & Equipment	351	45,053	45,000	30,000		30,000		Maintenance
269	530010	**Supplies**				85,855		85,855		Supplies
270	530200	Operating Supplies	-	514	940	750		750		Supplies
271	530500	Uniform, Clothing, Linen	445	-	-	-		-		Supplies
272	530800	Vehicles	-	17,531	-	-		-		Supplies
273	530850	Auto Parts	29	-	-	-		-		Supplies
274	530900	Tires	2,533	5,030	30,000	15,105	34,895	50,000	A	Supplies
275	530950	Fuel						-		
276	531000	Gasoline	53	-	-	-		-		Fuel
277	531050	Diesel	14,437	12,500	60,000	25,000		25,000		Fuel
278	531100	Compressed Natural Gas				45,000		45,000		Fuel
279	571000	Vehicles > 1.5				659,448	(659,448)	-	D	General
280	572400	Inventory Exempt	-	6,486	19,700	20,018	(20,018)	-	D	General
281	700000	**OTHER FINANCING USES**	-	-	-	-	-	-		General
282	500003	**Personnel Budget Vacancy Credit**						-		General
283	500004	Vacancy Credit-Budget Wages	-	-	-	(3,516)	3,516	-	A	General
284	500005	Vacancy Credit-Budget Benefits	-	-	-	(1,229)	1,229	-	A	General
285		***Subtotal***	$ 402,332	$ 436,892	$ 473,586	$ 1,197,886		$ 541,786		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		COMMERCIAL ROLL-OFF								
286	500010	**Salaries, Wages & Benefits**								
287	500100	**Salaries**								
288	500110	Salaries	$ -	$ -	$ -	$ 206,742	$ (86,674)	$ 120,068	A	Salary
289	500350	Classified Full-Time	112,141	103,453	194,580	-		-		Salary
290	501400	Overtime	2,767	1,919	7,000	7,000		7,000		Overtime
291	501510	Worked Holiday @ 1.5	5,322	5,298	-	-	5,310	5,310	B	Overtime
292	501512	Worked Holiday @ 2.5	-	-	-	-		-		Overtime
293	501900	Shift Differential	-	-	-	-		-		Salary
294	502000	Annual Leave	39	22,682	-	-		-		Salary
295	502010	Personal Day				-		-		
296	502015	Miscellaneous Leave	908	547	-	-		-		Salary
297	502050	Comp-time	(3,262)	210	-	-		-		Salary
298	502100	Sick Leave	211	5,199	-	-		-		Salary
299	502200	Incentives	888	2,311	-	-	1,599	1,599	B	Benefits
300	503100	FICA	8,224	9,881	16,351	16,035		16,035		Benefits
301	503150	Retirement (PERA)	21,302	24,273	39,307	41,633		41,633		Benefits
302	503200	Employee Health Insurance	34,257	35,933	71,779	62,955		62,955		Benefits
303	503250	Retiree Health Care	1,877	2,341	4,135	4,135		4,135		Benefits
304	503350	Workers' Comp	5,896	7,799	11,003	11,003		11,003		Benefits
305	503400	City Share Dental Insurance	1,482	1,524	2,202	2,256		2,256		Benefits
306	520400	Rep & Maint Machin & Equipment	449	20,950	60,000	30,000	11,361	41,361	A	Maintenance
307	530010	**Supplies**						-		
308	530200	Operating Supplies	-	2,453	5,000	3,225		3,225		Supplies
309	530800	Vehicles	-	37,435	-	106,000	(106,000)	-	D	Supplies
310	530900	Tires	4,877	15,869	22,557	26,000	14,000	40,000	A	Supplies
311	530950	**Fuel**						-		
312	531000	Gasoline	-	52	-	-		-		Fuel
313	531050	Diesel	16,036	21,513	123,000	80,000		80,000		Fuel
314	572400	Inventory Exempt	-	-	19,600	50,178	(50,178)	-	D	General
315	700000	**OTHER FINANCING USES**	-	-	-	-	-	-		General
316	500003	**Personnel Budget Vacancy Credit**	-	-	-			-		General
317	500004	Vacancy Credit-Budget Wages	-	-	-	(4,135)	4,135	-	A	General
318	500005	Vacancy Credit-Budget Benefits	-	-	-	(1,491)	1,491	-	A	General
319		***Subtotal***	$ 213,414	$ 321,642	$ 576,514	$ 641,536		$ 436,580		

		Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
		RECYCLING								
320	500110	**Salaries**	$ -	$ -	$ -	$ 489,416	$ (3,580)	$ 485,836	A	Salary
321	500350	Classified Full-Time	216,466	191,952	464,979	-		-		Salary
322	501400	Overtime	3,356	4,907	5,000	10,000	(3,912)	6,088	B	Overtime
323	501510	Worked Holiday @ 1.5	7,627	9,637	-	26,630	(11,999)	14,631	B	Overtime
324	501512	Worked Holiday @ 2.5	61	-	-	-		-		Overtime
325	501900	Shift Differential	-	-	1,500	1,500		1,500		Salary
326	502000	Annual Leave	(12,071)	30,481	-	-		-		Salary
327	502010	Personal Day				-		-		
328	502015	Miscellaneous Leave	2,151	1,303	-	-		-		Salary
329	502050	Comp-time	(6,107)	1,337	-	-		-		Salary
330	502100	Sick Leave	310	11,221	-	-		-		Salary
331	502200	Incentives	2,810	4,478	3,900	4,200	(371)	3,829	B	Benefits
332	503100	FICA	15,340	18,425	31,631	36,002		36,002		Benefits
333	503150	Retirement (PERA)	41,173	43,737	102,263	99,687		99,687		Benefits
334	503200	Employee Health Insurance	29,668	52,017	147,919	186,761		186,761		Benefits
335	503250	Retiree Health Care	3,627	4,219	10,206	9,892		9,892		Benefits
336	503350	Workers' Comp	11,376	18,274	21,633	24,990		24,990		Benefits
337	503400	City Share Dental Insurance	1,946	2,333	5,865	6,562		6,562		Benefits
338	520400	Rep & Maint Machine & Equipment	2,449	44,604	94,500	94,500	32,889	127,389	A	Maintenance
339	530010	**Supplies**						-		
340	530200	Operating Supplies	-	6,078	15,705	5,000		5,000		Supplies
341	530800	Vehicles	-	33,219	-	110,431		110,431		Supplies
342	530900	Tires	-	7,014	50,770	32,181	47,819	80,000	A	Supplies
343	530950	Fuel					-	-		
344	531000	Gasoline	-	3,057	4,000	250		250		Fuel
345	531050	Diesel	-	23,148	25,000	50,000		50,000		Fuel
346	531100	Compressed Natural Gas				28,000		28,000		Fuel
347	570010	**Capital Purchases**						-		
348	571000	Vehicles > 1.5	-	-	150,000	1,053,968	(1,053,968)	-	D	General
349	572400	Inventory Exempt	-	40,461	188,750	217,570	(217,570)	-	D	General
350	700000	**OTHER FINANCING USES**	-	-	-	-	-	-		General
351	500003	**Personnel Budget Vacancy Credit**	-	-	-			-		General
352	500004	Vacancy Credit-Budget Wages	-	-	-	(9,788)	9,788	-	A	General
353	500005	Vacancy Credit-Budget Benefits	-	-	-	(3,519)	3,519	-	A	General
354		***Subtotal***	$ 320,181	$ 551,901	$ 1,323,621	$ 2,474,233		$ 1,276,849		

	Account Category & Description	FY 2011 Actual Expenditures	FY 2012 Actual Expenditures	FY 2013 Budgeted Amount	FY 2014 Estimated Expenditures	Adjustments	Test Year	Comment	Inflation Factor
	Capital Improvement								None
355	Frank Ortiz Landfill	$ -	$ -	$ -	$ -	100,000	$ 100,000	E	None
356	Replace Wetland Liner	-	-	-	-		-		None
357	Quality Assurance Project Plan	-	-	-	-	50,000	50,000	E	None
358	General Maintenance	-	-	-	-	10,000	10,000	E	None
359	Residential Refuse & Recycling Containers	-	-	-	-	160,000	160,000	E	None
360	Commercial Bins	-	-	-	-	150,000	150,000	E	None
361	***Subtotal***	$ -	$ -	$ -	$ -		$ 470,000		None
	Vehicle Replacement	-	-	-	-	1,200,000	1,200,000	E	None
362	***Subtotal***	$ -	$ -	$ -	$ -		$ 1,200,000		
363	**TOTAL EXPENSES**	**$ 9,378,149**	**$ 10,531,172**	**$ 13,813,433**	**$ 13,928,908**		**$ 14,559,543**		

	REVENUE OFFSETS	FY 2012 Total Commitments	FY 2013 BA Budget	FY 2014 Budget				
364	Residential	$ 4,282,689	$ 4,295,658	$ 4,696,893	$ (4,696,893)	$ -	F	General
365	Commercial	4,956,099	5,200,591	5,483,942	(5,483,942)	-	F	General
366	Recycling	169,551	127,495	169,551	(169,551)	-	F	General
367	Landfill Tipping - City	(11,503)				-		General
368	Service Adjustment	(121,060)				-		General
369	Vacancy Adjustment	(11,854)				-		General
370	Low Income Adjustment	(103,448)	(53,000)	(53,000)	53,000	-	A	General
371	Lien Fees	8,365				-		General
372	Facilities	65,055				-		General
373	Infrastructure GRT	1,829,904	1,737,859	(1,737,859)		(1,737,859)		None
374	Finance Charge Penalties	2				-		General
375	Sales of Capital Assets	23,035				-		General
376	Sales - Misc.	2,167				-		General
377	Interest on Investment	56,337	79,313	(62,716)		(62,716)		General
378	Santa Fe Beautiful Grant	(48,000)	(48,000)	(48,000)		(48,000)		General
379	Residential Bag Tag			(750)		(750)		General
380	**TOTAL REVENUE**	$ 11,097,339	$ 11,339,916	$ 8,448,061		$ (1,849,325)		
381	**REVENUE REQUIREMENT**	**$ 566,167**	**$ (2,473,517)**	**$ (5,480,847)**		**$ 12,710,218**		

Comment Legend

A	Adjusted per City Staff
B	Adjusted to reflect historical averages (excluding negative numbers)
C	Adjusted to reflect FY 2013 maintenance expenditures
D	Adjusted to account for capital improvement plan
E	Capital Improvements per City
F	To be determined based on the cost of service analysis and resulting proposed rates

Year 1		Total
Vehicle Replacement	$	1,200,000
Refuse & Recycling Containers		160,000
Commercial Bins		150,000
Frank Ortiz Landfill		100,000
Quality Assurance Project Plan		50,000
General Maintenance		10,000
	$	1,670,000

Year 2		Total
Vehicle Replacement	$	1,200,000
Refuse & Recycling Containers		163,200
Commercial Bins		153,000
Frank Ortiz Landfill		100,000
Replace Wetland Liner		50,000
General Maintenance		10,000
	$	1,676,200

Year 3		Total
Vehicle Replacement	$	1,200,000
Refuse & Recycling Containers		166,464
Commercial Bins		156,060
Frank Ortiz Landfill		100,000
General Maintenance		10,000
	$	1,632,524

Year 4		Total
Vehicle Replacement	$	1,200,000
Refuse & Recycling Containers		169,793
Commercial Bins		159,181
Frank Ortiz Landfill		100,000
General Maintenance		10,000
	$	1,638,974

Year 5		Total
Vehicle Replacement	$	1,200,000
Refuse & Recycling Containers		173,189
Commercial Bins		162,365
Frank Ortiz Landfill		100,000
General Maintenance		10,000
	$	1,645,554

Future Debt

Financing Term (Years)	15 Years
Interest Rate	0%
Date of Issue	7/1/2015
Date of Final Maturity	6/27/2030
Total Bonds Payable from Solid Waste Fund	3,200,000

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Period					
1 **Existing Debt**					
Principal	$ 830,000	$ 865,000	$ 900,000	$ 945,000	$ 985,000
Interest	478,823	442,660	408,078	363,060	322,425
Existing Debt Total	**$ 1,308,823**	**$ 1,307,660**	**$ 1,308,078**	**$ 1,308,060**	**$ 1,307,425**
2 **Future Debt**					
Principal	$ -	$ -	$ 213,333	$ 213,333	$ 213,333
Interest	-	-	-	-	-
Future Debt Total	**$ -**	**$ -**	**$ 213,333**	**$ 213,333**	**$ 213,333**
Total Principal	$ 830,000	$ 865,000	$ 1,113,333	$ 1,158,333	$ 1,198,333
Total Interest	478,823	442,660	408,078	363,060	322,425
Total Debt	**$ 1,308,823**	**$ 1,307,660**	**$ 1,521,411**	**$ 1,521,393**	**$ 1,520,758**

City of Santa Fe
Revenue Requirement

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
		ADMINISTRATION					
1	500100	**Salaries**					
2	500110	Salaries	$ 463,488	$ 477,393	$ 491,714	$ 506,466	$ 521,660
3	500200	Exempt Full-Time	-	-	-	-	-
4	500350	Classified Full-Time	-	-	-	-	-
5	500750	Temporary Full-Time	3,882	3,998	4,118	4,242	4,369
6	501050	Term Full-time	-	-	-	-	-
7	501400	Overtime	3,500	3,500	3,500	3,500	3,500
8	501500	Worked Holiday	-	-	-	-	-
9	501510	Worked Holiday @ 1.5	-	-	-	-	-
10	501512	Worked Holiday @ 2.5	-	-	-	-	-
11	502000	Annual Leave	-	-	-	-	-
12	502010	Personal Day					
13	502015	Miscellaneous Leave	-	-	-	-	-
14	502050	Comp-time	-	-	-	-	-
15	502100	Sick Leave	-	-	-	-	-
16	502200	Incentives	-	-	-	-	-
17	503000	**Employee Benefits(FICA - City Share Insurance)**					
18	503100	FICA	33,958	34,977	36,026	37,107	38,220
19	503150	Retirement (PERA)	114,779	118,222	121,769	125,422	129,185
20	503200	Employee Health Insurance	133,405	137,407	141,529	145,775	150,149
21	503250	Retiree Health Care	11,168	11,503	11,848	12,204	12,570
22	503300	Unemployment Insurance	8,482	8,736	8,999	9,269	9,547
23	503350	Workers' Comp	8,070	8,312	8,561	8,818	9,083
24	503400	City Share Dental Insurance	5,643	5,812	5,987	6,166	6,351
25	510100	Contractual Services	-	-	-	-	-
26	510250	Compliance Contracts	10,896	11,114	11,336	11,563	11,794
27	510300	Professional Contracts	55,979	57,099	58,241	59,406	60,594
28	510400	Grants and Services	688,312	702,078	716,120	730,442	745,051
29	513950	Gas	1,500	1,530	1,561	1,592	1,624
30	514000	Water	-	-	-	-	-
31	514050	Electric	8,000	8,160	8,323	8,490	8,659
32	514100	Communication	5,000	5,100	5,202	5,306	5,412
33	514150	Landfill Tip Fees	2,468,676	2,608,328	2,660,494	2,713,704	2,767,978
34	520010	Repairs and Maintenance					
35	520100	Rep and Maint Build/Structure	5,700	5,814	5,930	6,049	6,170
36	520300	Rep & Maint Furn/Fix/Equipment	2,500	2,550	2,601	2,653	2,706
37	520400	Rep & Maint Machine & Equipment	3,000	3,060	3,121	3,184	3,247
38	520500	Rep & Maint Vehicles	1,450	1,479	1,509	1,539	1,570
39	530010	**Supplies**					
40	530100	Office Supplies	5,500	5,665	5,835	6,010	6,190
41	530200	Operating Supplies	6,868	7,074	7,286	7,505	7,730
42	530300	Safety Supplies	6,527	6,723	6,924	7,132	7,346
43	530400	Food	100	103	106	109	113
44	530500	Uniform, Clothing, Linen	42,869	44,155	45,480	46,844	48,249
45	530600	Software-Purchased	3,000	3,090	3,183	3,278	3,377
46	530800	**Vehicles**					
47	530850	Auto Parts	500	515	530	546	563
48	530900	Tires	750	773	796	820	844
49	530950	Fuel					
50	531000	Gasoline	7,000	7,210	7,426	7,649	7,879
51	531050	Diesel	1,000	1,030	1,061	1,093	1,126
52	540000	**Depreciation/Amortization**					
53	540010	Depreciation Expense	-	-	-	-	-
54	540020	Amortization Expense	-	-	-	-	-
55	545010	**Bad Debt Expense**	-	-	-	-	-
56	555100	**Premiums**					
57	555250	Gen Liab Dept. Assessment	284,596	290,288	296,094	302,016	308,056
58	555260	Benefits Dept. Assessment	13,832	14,109	14,391	14,679	14,972
59	560010	**Other Operating Costs**					
60	560050	Travel	1,836	1,873	1,910	1,948	1,987
61	560100	Per Diem	-	-	-	-	-
62	560200	Out of State	-	-	-	-	-
63	560250	In State	-	-	-	-	-

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
64	560500	Out of State	836	853	870	887	905
65	560550	In State	-	-	-	-	-
66	560700	Registration	1,000	1,020	1,040	1,061	1,082
67	561000	Postage and Mail Service	1,539	1,570	1,601	1,633	1,666
68	561200	Employee Training/Tuition	2,160	2,204	2,248	2,293	2,339
69	561300	Fees and Taxes					
70	561700	Credit Card Fees	-	-	-	-	-
71	561750	Bank Charges & Fees	241	246	251	256	261
72	561800	Print/Publish	36,451	37,180	37,923	38,682	39,456
73	561850	Advertising	69,324	70,710	72,125	73,567	75,039
74	561900	Dues	500	510	520	531	541
75	563100	Svcs of other City Depts.	753,656	768,729	784,104	799,786	815,782
76	570100	Capital Outlay	-	-	-	-	-
77	570400	Building & Structures	-	-	-	-	-
78	570500	Equipment & Machinery	-	-	-	-	-
79	570850	Software	-	-	-	-	-
80	570950	Vehicles < 1.5					
81	572400	Inventory Exempt	-	-	-	-	-
82	572500	Remodeling & Replacement	13,053	13,314	13,581	13,852	14,129
83	590100	Debt Service Principal	830,000	865,000	1,113,333	1,158,333	1,198,333
84	590200	Debt Service Interest	478,823	442,660	408,078	363,060	322,425
85	590250	DS Interest-Amort Premium	-	-	-	-	-
86	700000	**OTHER FINANCING USES**					
87	700100	Operating Transfers Out	350,868	357,885	365,043	372,344	379,791
88	700150	Interfund Transfers Out	-	-	-	-	-
89	500003	**Personnel Budget Vacancy**	-	-	-	-	-
90	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
91	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
92	700400	Transfer Fixed Assets	-	-	-	-	-
93		Glass Processing Costs	19,759	19,759	19,759	19,759	19,759
94		***Subtotal***	$ 6,969,977	$ 7,180,420	$ 7,519,988	$ 7,648,568	$ 7,779,376
		SUSTAINABLE SANTA FE					
95	500100	**Salaries**					
96	500110	Salaries	$ 69,487	$ 71,572	$ 73,719	$ 75,930	$ 78,208
97	500350	Classified Full-Time	-	-	-	-	-
98	501400	Overtime	1,000	1,000	1,000	1,000	1,000
99	501900	Shift Differential	160	165	170	175	180
100	502000	Annual Leave	-	-	-	-	-
101	502010	Personal Day					
102	502015	Miscellaneous Leave	-	-	-	-	-
103	502050	Comp-time	-	-	-	-	-
104	502100	Sick Leave	-	-	-	-	-
105	502200	Incentives	146	150	155	159	164
106	503100	FICA	2,153	2,218	2,284	2,353	2,423
107	503150	Retirement (PERA)	5,576	5,743	5,916	6,093	6,276
108	503200	Employee Health Insuranc	12,844	13,229	13,626	14,035	14,456
109	503250	Retiree Health Care	553	570	587	604	622
110	503350	Workers' Comp	92	95	98	101	104
111	503400	City Share Dental Insurance	649	668	689	709	730
112	510010	Contractual Svs & Utilities					

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
113	510300	Professional Contracts	17,000	17,340	17,687	18,041	18,401
114	514100	Communication	750	765	780	796	812
115	520400	Rep & Maint Machin & Equipment	-	-	-	-	-
116	530400	Food	100	103	106	109	113
117	530700	Books/Subscrpts/Periodicals	100	102	104	106	108
118	530850	Auto Parts	-	-	-	-	-
119	560010	Other Operating Costs	23,430	23,899	24,377	24,864	25,361
120	560500	Out of State	-	-	-	-	-
121	560550	In State	75	77	78	80	81
122	561800	Print/Publish	14,380	14,668	14,961	15,260	15,565
123	561850	Advertising	4,000	4,080	4,162	4,245	4,330
124	561900	Dues	4,975	5,075	5,176	5,280	5,385
125	700000	OTHER FINANCING USES					
126		Vehicles	-	-	-	-	-
127	500003	**Personnel Budget Vacancy C**					
128	500004	Vacancy Credit-Budget Wag	-	-	-	-	-
129	500005	Vacancy Credit-Budget Ben	-	-	-	-	-
130	520010	Repairs and Maintenance	200	204	208	212	216
131		***Subtotal***	$ 157,670	$ 161,721	$ 165,880	$ 170,151	$ 174,537
		MAINTENANCE					
132	500010	**Salaries, Wages & Benefits**					
133	500100	**Salaries**					
134	500110	Salaries	$ 278,591	$ 286,949	$ 295,557	$ 304,424	$ 313,557
135	500350	Classified Full-Time	-	-	-	-	-
136	501400	Overtime	16,000	16,000	16,000	16,000	16,000
137	501510	Worked Holiday @ 1.5	7,200	7,200	7,200	7,200	7,200
138	501512	Worked Holiday @ 2.5	614	614	614	614	614
139	502000	Annual Leave	-	-	-	-	-
140	502010	**Personal Day**					
141	502015	Miscellaneous Leave	-	-	-	-	-
142	502050	Comp-time	-	-	-	-	-
143	502100	Sick Leave	-	-	-	-	-
144	502200	Incentives	2,592	2,669	2,749	2,832	2,917
145	503100	FICA	15,940	16,418	16,911	17,418	17,941
146	503150	Retirement (PERA)	38,105	39,248	40,426	41,638	42,888
147	503200	Employee Health Insurance	63,414	65,316	67,276	69,294	71,373
148	503250	Retiree Health Care	3,784	3,898	4,014	4,135	4,259
149	503350	Workers' Comp	7,039	7,250	7,468	7,692	7,922
150	503400	City Share Dental Insurance	2,058	2,120	2,183	2,249	2,316
151	520010	**Repairs and Maintenance**					
152	520400	Rep & Maint Machine & Equipment	5,000	5,100	5,202	5,306	5,412
153	520500	Rep & Maint Vehicles	3,250	3,315	3,381	3,449	3,518
154	530010	**Supplies**					
155	530100	Office Supplies	-	-	-	-	-
156	530200	Operating Supplies	20,048	20,649	21,269	21,907	22,564
157	530500	Uniform, Clothing, Linen	6,940	7,148	7,363	7,584	7,811
158	530800	**Vehicles**	21,750	22,403	23,075	23,767	24,480
159	530850	Auto Parts	750	773	796	820	844
160	530900	Tires	2,500	2,575	2,652	2,732	2,814
161	530950	Fuel					
162	531000	Gasoline	10,000	10,300	10,609	10,927	11,255
163	531050	Diesel	8,500	8,755	9,018	9,288	9,567
164	572400	Inventory Exempt	-	-	-	-	-
165	700000	OTHER FINANCING USES	-	-	-	-	-
166	500003	**Personnel Budget Vacancy**	-	-	-	-	-
167	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
168	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
169		***Subtotal***	$ 514,074	$ 528,700	$ 543,762	$ 559,275	$ 575,251

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
		RESIDENTIAL					
170	500100	**Salaries**					
171	500110	Salaries	$ 475,280	$ 489,538	$ 504,224	$ 519,351	$ 534,932
172	500350	Classified Full-Time	-	-	-	-	-
173	501400	Overtime	20,200	20,200	20,200	20,200	20,200
174	501510	Worked Holiday @ 1.5	24,703	24,703	24,703	24,703	24,703
175	501512	Worked Holiday @ 2.5	-	-	-	-	-
176	501900	Shift Differential	1,500	1,545	1,591	1,639	1,688
177	502000	Annual Leave	-	-	-	-	-
178	502010	Personal Day					
179	502015	Miscellaneous Leave	-	-	-	-	-
180	502050	Comp-time	-	-	-	-	-
181	502100	Sick Leave	-	-	-	-	-
182	502200	Incentives	8,547	8,803	9,067	9,339	9,619
183	503100	FICA	30,952	31,881	32,837	33,822	34,837
184	503150	Retirement (PERA)	89,954	92,653	95,432	98,295	101,244
185	503200	Employee Health Insurance	153,943	158,561	163,318	168,218	173,264
186	503250	Retiree Health Care	8,860	9,126	9,400	9,682	9,972
187	503350	Workers' Comp	18,296	18,845	19,410	19,993	20,592
188	503400	City Share Dental Insurance	6,411	6,603	6,801	7,005	7,216
189	520400	Rep & Maint Machin & Equipment	245,629	250,541	255,552	260,663	265,877
190	530010	**Supplies**					
191	530100	Office Supplies	-	-	-	-	-
192	530200	Operating Supplies	19,447	20,030	20,631	21,250	21,888
193	530500	Uniform, Clothing, Linen	-	-	-	-	-
194	530800	Vehicles	309,530	318,816	328,380	338,232	348,379
195	530850	Auto Parts	-	-	-	-	-
196	530900	Tires	100,000	103,000	106,090	109,273	112,551
197	530950	**Fuel**					
198	531000	Gasoline	7,500	7,725	7,957	8,195	8,441
199	531050	Diesel	168,219	173,266	178,464	183,817	189,332
200	531100	Compressed Natural Gas	85,000	87,550	90,177	92,882	95,668
201	561800	Print/Publish	-	-	-	-	-
202	562500	Rental	-	-	-	-	-
203	570500	**Equipment & Machinery**	-	-	-	-	-
204	570950	Vehicles < 1.5	-	-	-	-	-
205	571000	Vehicles > 1.5	-	-	-	-	-
206	572400	Inventory Exempt	-	-	-	-	-
207	700000	**OTHER FINANCING USES**	-	-	-	-	-
208	700150	Interfund Transfers Out	-	-	-	-	-
209	500003	**Personnel Budget Vacancy Credit**	-	-	-	-	-
210	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
211	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
212		***Subtotal***	$ 1,773,970	$ 1,823,386	$ 1,874,235	$ 1,926,559	$ 1,980,402
		COMMERCIAL FRONT-LOAD					
213	500100	**Salaries**					
214	500110	Salaries	$ 403,663	$ 415,773	$ 428,246	$ 441,093	$ 454,326
215	500350	Classified Full-Time	-	-	-	-	-
216	500400	Classified Part-Time	-	-	-	-	-
217	501400	Overtime	10,285	10,285	10,285	10,285	10,285
218	501510	Worked Holiday @ 1.5	14,943	14,943	14,943	14,943	14,943
219	501900	Shift Differential	6,250	6,438	6,631	6,830	7,034
220	502000	Annual Leave	-	-	-	-	-
221	502010	Personal Day					
222	502015	Miscellaneous Leave	-	-	-	-	-
223	502050	Comp-time	-	-	-	-	-
224	502100	Sick Leave	-	-	-	-	-
225	502200	Incentives	2,170	2,235	2,302	2,371	2,442
226	503100	FICA	28,434	29,287	30,166	31,071	32,003
227	503150	Retirement (PERA)	73,199	75,395	77,657	79,987	82,386

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
228	503200	Employee Health Insurance	111,526	114,872	118,318	121,867	125,523
229	503250	Retiree Health Care	7,233	7,450	7,673	7,904	8,141
230	503350	Workers' Comp	16,584	17,082	17,594	18,122	18,665
231	503400	City Share Dental Insurance	5,003	5,153	5,308	5,467	5,631
232	514100	Communication	-	-	-	-	-
233	520400	Rep & Maint Machin & Equipment	204,595	208,687	212,861	217,118	221,460
234	530010	Supplies					
235	530200	Operating Supplies	5,000	5,150	5,305	5,464	5,628
236	530800	**Vehicles**	-	-	-	-	-
237	530850	Auto Parts	-	-	-	-	-
238	530900	Tires	100,000	103,000	106,090	109,273	112,551
239	530950	Fuel					
240	531000	Gasoline	2,752	2,835	2,920	3,007	3,097
241	531050	Diesel	100,000	103,000	106,090	109,273	112,551
242	531100	Compressed Natural Gas	127,000	130,810	134,734	138,776	142,940
243	571000	Vehicles > 1.5	-	-	-	-	-
244	572400	Inventory Exempt	-	-	-	-	-
245	700000	**OTHER FINANCING USES**	-	-	-	-	-
246	500003	**Personnel Budget Vacancy Credit**	-	-	-	-	-
247	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
248	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
249		***Subtotal***	$ 1,218,637	$ 1,252,394	$ 1,287,122	$ 1,322,850	$ 1,359,607
		COMMERCIAL REAR-LOADER					
250	500100	**Salaries**					
251	500110	Salaries	$ 157,679	$ 162,409	$ 167,282	$ 172,300	$ 177,469
252	500350	Classified Full-Time	-	-	-	-	-
253	501400	Overtime	5,000	5,000	5,000	5,000	5,000
254	501510	Worked Holiday @ 1.5	10,500	10,500	10,500	10,500	10,500
255	501900	Shift Differential	6,000	6,180	6,365	6,556	6,753
256	502000	Annual Leave	-	-	-	-	-
257	502010	Personal Day					
258	502015	Miscellaneous Leave	-	-	-	-	-
259	502050	Comp-time	-	-	-	-	-
260	502100	Sick Leave	-	-	-	-	-
261	502200	Incentives	3,063	3,155	3,250	3,347	3,448
262	503100	FICA	14,114	14,537	14,974	15,423	15,885
263	503150	Retirement (PERA)	36,787	37,891	39,027	40,198	41,404
264	503200	Employee Health Insurance	59,407	61,189	63,025	64,916	66,863
265	503250	Retiree Health Care	3,618	3,727	3,838	3,953	4,072
266	503350	Workers' Comp	7,398	7,620	7,849	8,084	8,327
267	503400	City Share Dental Insurance	1,615	1,663	1,713	1,765	1,818
268	520400	Rep & Maint Machin & Equipment	30,000	30,600	31,212	31,836	32,473
269	530010	**Supplies**	85,855	88,431	91,084	93,816	96,631
270	530200	Operating Supplies	750	773	796	820	844
271	530500	Uniform, Clothing, Linen	-	-	-	-	-
272	530800	Vehicles	-	-	-	-	-
273	530850	Auto Parts	-	-	-	-	-
274	530900	Tires	50,000	51,500	53,045	54,636	56,275
275	530950	Fuel					
276	531000	Gasoline	-	-	-	-	-
277	531050	Diesel	25,000	25,750	26,523	27,318	28,138
278	531100	Compressed Natural Gas	45,000	46,350	47,741	49,173	50,648
279	571000	Vehicles > 1.5	-	-	-	-	-
280	572400	Inventory Exempt	-	-	-	-	-
281	700000	**OTHER FINANCING USES**	-	-	-	-	-
282	500003	**Personnel Budget Vacancy Credit**	-	-	-	-	-
283	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
284	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
285		***Subtotal***	$ 541,786	$ 557,275	$ 573,222	$ 589,641	$ 606,547
		COMMERCIAL ROLL-OFF					
286	500010	**Salaries, Wages & Benefits**					
287	500100	**Salaries**					

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
288	500110	Salaries	$ 120,068	$ 123,670	$ 127,380	$ 131,202	$ 135,138
289	500350	Classified Full-Time	-	-	-	-	-
290	501400	Overtime	7,000	7,000	7,000	7,000	7,000
291	501510	Worked Holiday @ 1.5	5,310	5,310	5,310	5,310	5,310
292	501512	Worked Holiday @ 2.5	-	-	-	-	-
293	501900	Shift Differential	-	-	-	-	-
294	502000	Annual Leave	-	-	-	-	-
295	502010	Personal Day					
296	502015	Miscellaneous Leave	-	-	-	-	-
297	502050	Comp-time	-	-	-	-	-
298	502100	Sick Leave	-	-	-	-	-
299	502200	Incentives	1,599	1,647	1,697	1,748	1,800
300	503100	FICA	16,035	16,516	17,012	17,522	18,048
301	503150	Retirement (PERA)	41,633	42,882	44,168	45,494	46,858
302	503200	Employee Health Insurance	62,955	64,844	66,789	68,793	70,856
303	503250	Retiree Health Care	4,135	4,259	4,387	4,518	4,654
304	503350	Workers' Comp	11,003	11,333	11,673	12,023	12,384
305	503400	City Share Dental Insurance	2,256	2,324	2,393	2,465	2,539
306	520400	Rep & Maint Machin & Equipment	41,361	42,188	43,032	43,893	44,770
307	530010	**Supplies**					
308	530200	Operating Supplies	3,225	3,322	3,421	3,524	3,630
309	530800	Vehicles	-	-	-	-	-
310	530900	Tires	40,000	41,200	42,436	43,709	45,020
311	530950	**Fuel**					
312	531000	Gasoline	-	-	-	-	-
313	531050	Diesel	80,000	82,400	84,872	87,418	90,041
314	572400	Inventory Exempt	-	-	-	-	-
315	700000	**OTHER FINANCING USES**	-	-	-	-	-
316	500003	**Personnel Budget Vacancy Credit**	-	-	-	-	-
317	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
318	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
319		***Subtotal***	$ 436,580	$ 448,895	$ 461,570	$ 474,618	$ 488,048
		RECYCLING					
320	500110	**Salaries**	$ 485,836	$ 500,411	$ 515,423	$ 530,886	$ 546,813
321	500350	Classified Full-Time	-	-	-	-	-
322	501400	Overtime	6,088	6,088	6,088	6,088	6,088
323	501510	Worked Holiday @ 1.5	14,631	14,631	14,631	14,631	14,631
324	501512	Worked Holiday @ 2.5	-	-	-	-	-
325	501900	Shift Differential	1,500	1,545	1,591	1,639	1,688
326	502000	Annual Leave	-	-	-	-	-
327	502010	Personal Day					
328	502015	Miscellaneous Leave	-	-	-	-	-
329	502050	Comp-time	-	-	-	-	-
330	502100	Sick Leave	-	-	-	-	-
331	502200	Incentives	3,829	3,944	4,063	4,185	4,310
332	503100	FICA	36,002	37,082	38,195	39,340	40,521
333	503150	Retirement (PERA)	99,687	102,678	105,758	108,931	112,199
334	503200	Employee Health Insurance	186,761	192,364	198,135	204,079	210,201
335	503250	Retiree Health Care	9,892	10,189	10,494	10,809	11,134
336	503350	Workers' Comp	24,990	25,740	26,512	27,307	28,126
337	503400	City Share Dental Insurance	6,562	6,759	6,962	7,170	7,386

		Account Category	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
338	520400	Rep & Maint Machine & Equipment	127,389	129,937	132,536	135,186	137,890
339	530010	**Supplies**					
340	530200	Operating Supplies	5,000	5,150	5,305	5,464	5,628
341	530800	Vehicles	110,431	113,744	117,156	120,671	124,291
342	530900	Tires	80,000	82,400	84,872	87,418	90,041
343	530950	Fuel					
344	531000	Gasoline	250	258	265	273	281
345	531050	Diesel	50,000	51,500	53,045	54,636	56,275
346	531100	Compressed Natural Gas	28,000	28,840	29,705	30,596	31,514
347	570010	**Capital Purchases**					
348	571000	Vehicles > 1.5					
349	572400	Inventory Exempt					
350	700000	**OTHER FINANCING USES**	-	-	-	-	-
351	500003	**Personnel Budget Vacancy Credit**	-	-	-	-	-
352	500004	Vacancy Credit-Budget Wages	-	-	-	-	-
353	500005	Vacancy Credit-Budget Benefits	-	-	-	-	-
		Subtotal	$ 1,276,849	$ 1,313,258	$ 1,350,735	$ 1,389,310	$ 1,429,016
		Capital Improvement					
351		Frank Ortiz Landfill	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
352		Replace Wetland Liner		50,000			
353		Quality Assurance Project Plan	50,000				
354		General Maintenance	10,000	10,000	10,000	10,000	10,000
355		Residential Refuse & Recycling Containers	160,000	163,200	166,464	169,793	173,189
356		Commercial Bins	150,000	153,000	156,060	159,181	162,365
357		***Subtotal***	$ 470,000	$ 476,200	$ 432,524	$ 438,974	$ 445,554
		Vehicle Replacement	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
358		***Subtotal***	$ 1,200,000	$ 1,200,000	$ 1,200,000	$ 1,200,000	$ 1,200,000
359		**TOTAL EXPENSES**	$ 14,559,543	$ 14,942,247	$ 15,409,039	$ 15,719,948	$ 16,038,340
		REVENUE OFFSETS					
360		Residential	$ -	$ -	$ -	$ -	$ -
361		Commercial	-	-	-	-	-
362		Recycling	-	-	-	-	-
363		Landfill Tipping - City	-	-	-	-	-
364		Service Adjustment					
365		Vacancy Adjustment					
366		Low Income Adjustment	-	-	-	-	-
367		Lien Fees	-	-	-	-	-
368		Facilities	-	-	-	-	-
369		Infrastructure GRT	(1,737,859)	(1,737,859)	(1,737,859)	(1,737,859)	(1,737,859)
370		Finance Charge Penalties	-	-	-	-	-
371		Sales of Capital Assets	-	-	-	-	-
372		Sales - Misc.	-	-	-	-	-
373		Interest on Investment	(62,716)	(63,970)	(65,250)	(66,555)	(67,886)
374		Santa Fe Beautiful Grant	(48,000)	(48,960)	(49,939)	(50,938)	(51,957)
375		Residential Bag Tag	(750)	(765)	(780)	(796)	(812)
376		**TOTAL REVENUE**	$ (1,849,325)	$ (1,851,554)	$ (1,853,828)	$ (1,856,148)	$ (1,858,513)
377		**REVENUE REQUIREMENT**	**$ 12,710,218**	**$ 13,090,693**	**$ 13,555,210**	**$ 13,863,800**	**$ 14,179,826**

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Refuse	$ 2,220,056	$ 2,271,199	$ 2,323,827	$ 2,377,984	$ 2,433,714
Recycling	1,307,239	1,338,929	1,371,553	1,405,139	1,439,716
Cart Maintenance/Replacement	164,635	168,092	171,490	174,957	178,494
Recycling Processing Fees	26,531	26,777	26,996	27,222	27,454
Subtotal - Direct	$ 3,718,461	$ 3,804,997	$ 3,893,866	$ 3,985,301	$ 4,079,378
Overhead/Indirect					
Administration	$ 1,200,427	$ 1,229,625	$ 1,344,374	$ 1,375,493	$ 1,406,980
Keep Santa Fe Beautiful	12,433	13,045	13,681	14,341	15,026
Sustainable Santa Fe	56,508	58,198	59,939	61,732	63,579
City Activities	42,730	43,995	45,298	46,639	48,021
Fleet Maintenance	92,937	95,667	98,479	101,375	104,358
Special Events	43,419	44,679	45,977	47,313	48,689
Subtotal - Indirect/OH	1,448,454	1,485,209	1,607,747	1,646,893	1,686,652
Total Collection and OH[1]	$ 5,166,915	$ 5,290,206	$ 5,501,614	$ 5,632,194	$ 5,766,029
Collection[2]					
96-gal	$ 4,800,690	$ 4,915,347	$ 5,113,650	$ 5,235,095	$ 5,359,557
32-gal	252,668	258,702	269,139	275,531	282,082
Extra Carts[3]	113,557	116,157	118,825	121,569	124,391
Disposal					
96-gal	$ 985,539	$ 1,082,758	$ 1,103,581	$ 1,124,822	$ 1,146,492
32-gal	34,580	37,992	38,722	39,467	40,228
Extra Carts	51,870	52,932	53,950	54,989	56,048
Total Disposal	$ 1,071,990	$ 1,173,682	$ 1,196,253	$ 1,219,278	$ 1,242,768
Customers - Active Accounts[4]					
96-gal	26,042	28,037	28,037	28,037	28,037
32-gal	1,371	1,476	1,476	1,476	1,476
Extra Carts[5]	1,371	1,476	1,476	1,476	1,476
Total Accounts	28,784	30,989	30,989	30,989	30,989
Total with Disposal					
96-gal	$ 5,786,230	$ 5,998,105	$ 6,217,230	$ 6,359,917	$ 6,506,048
32-gal	287,248	296,694	307,862	314,999	322,310
Extra Carts	165,427	169,089	172,775	176,557	180,439
Total Rev. Requirement	$ 6,238,905	$ 6,463,888	$ 6,697,867	$ 6,851,473	$ 7,008,797
Monthly COS					
96-gal	$ 18.52	$ 17.83	$ 18.48	$ 18.90	$ 19.34
32-gal	17.46	16.75	17.39	17.79	18.20
Extra Carts	10.06	9.55	9.76	9.97	10.19

1. Combined costs shown in Schedules 5 & 6.

2. Based on number of households with 96 and 32 gallon containers. Assumed 5% of households have extra carts, per City staff.

3. Cost for extra carts includes only collection and container maintenance costs.

4. Active accounts reflect growth from annexation.

5. Extra carts are all 96-gallon containers.

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Collection	$ 73,843	$ 74,790	$ 75,765	$ 76,768	$ 77,801
Overhead/Indirect					
Fleet Maintenance	631	649	668	688	708
Total Collection and OH	$ 74,474	$ 75,439	$ 76,433	$ 77,456	$ 78,509
Total Revenue Requirement	$ 74,474	$ 75,439	$ 76,433	$ 77,456	$ 78,509
Collections	252	252	252	252	252
Cost per Collection	$ 295.53	$ 299.36	$ 303.31	$ 307.37	$ 311.55

City of Santa Fe
Commercial Front Load Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Refuse	$1,455,982	$1,489,620	$1,524,227	$1,559,832	$1,596,465
Cart Maintenance/Replacement	77,783	79,261	80,866	82,504	84,176
Subtotal - Direct	$1,533,765	$1,568,880	$1,605,093	$1,642,336	$1,680,641
Overhead/Indirect					
Administration	$495,507	$507,371	$554,512	$567,134	$579,898
Keep Santa Fe Beautiful	5,132	5,383	5,643	5,913	6,193
Sustainable Santa Fe	23,325	24,014	24,723	25,453	26,205
City Activities	17,638	18,153	18,684	19,230	19,792
Fleet Maintenance	74,083	76,259	78,500	80,809	83,186
Special Events	17,922	18,436	18,964	19,508	20,067
Subtotal - Indirect/OH	633,608	649,615	701,025	718,046	735,342
Total Collection Cost[(1)]	$2,167,373	$2,218,495	$2,306,118	$2,360,383	$2,415,982
Number of Collections	140,036	142,636	142,636	142,636	142,636
Cost per Collection	$15.48	$15.55	$16.17	$16.55	$16.94
Disposal Costs	$963,758	$991,807	$1,010,881	$1,030,338	$1,050,187
Cubic Yards Collected	870,740	881,140	881,140	881,140	881,140
Cost per CY	$1.11	$1.13	$1.15	$1.17	$1.19
Total FL Rev Req	$3,131,131	$3,210,303	$3,316,999	$3,390,721	$3,466,170

1. Combined costs shown in Schedules 5 & 6.

Cost of Service FL Rates - FY 2014

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 81.46	$ 162.91	$ 244.37	$ 325.83	$ 407.28	$ 488.74
4 cy	$ 86.25	$ 172.51	$ 258.76	$ 345.01	$ 431.27	$ 517.52
6 cy	$ 95.85	$ 191.69	$ 287.54	$ 383.38	$ 479.23	$ 575.07
8 cy	$ 105.44	$ 210.88	$ 316.31	$ 421.75	$ 527.19	$ 632.63
C3	$ 110.23	$ 220.47	$ 330.70	$ 440.94	$ 551.17	$ 661.41
C4	$ 124.62	$ 249.25	$ 373.87	$ 498.49	$ 623.12	$ 747.74
C6	$ 153.40	$ 306.80	$ 460.20	$ 613.60	$ 767.00	$ 920.40
C8	$ 182.18	$ 364.36	$ 546.53	$ 728.71	$ 910.89	$ 1,093.07

Cost of Service FL Rates - FY 2015

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 82.03	$ 164.06	$ 246.09	$ 328.13	$ 410.16	$ 492.19
4 cy	$ 86.91	$ 173.82	$ 260.73	$ 347.64	$ 434.55	$ 521.45
6 cy	$ 96.66	$ 193.33	$ 289.99	$ 386.66	$ 483.32	$ 579.99
8 cy	$ 106.42	$ 212.84	$ 319.26	$ 425.68	$ 532.10	$ 638.52
C3	$ 111.30	$ 222.59	$ 333.89	$ 445.19	$ 556.48	$ 667.78
C4	$ 125.93	$ 251.86	$ 377.79	$ 503.72	$ 629.65	$ 755.58
C6	$ 155.20	$ 310.39	$ 465.59	$ 620.78	$ 775.98	$ 931.17
C8	$ 184.46	$ 368.92	$ 553.38	$ 737.84	$ 922.30	$ 1,106.76

Cost of Service FL Rates - FY 2016

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 84.97	$ 169.95	$ 254.92	$ 339.90	$ 424.87	$ 509.85
4 cy	$ 89.95	$ 179.89	$ 269.84	$ 359.78	$ 449.73	$ 539.68
6 cy	$ 99.89	$ 199.78	$ 299.67	$ 399.56	$ 499.44	$ 599.33
8 cy	$ 109.83	$ 219.66	$ 329.50	$ 439.33	$ 549.16	$ 658.99
C3	$ 114.80	$ 229.61	$ 344.41	$ 459.21	$ 574.02	$ 688.82
C4	$ 129.72	$ 259.43	$ 389.15	$ 518.87	$ 648.59	$ 778.30
C6	$ 159.55	$ 319.09	$ 478.64	$ 638.18	$ 797.73	$ 957.27
C8	$ 189.37	$ 378.75	$ 568.12	$ 757.50	$ 946.87	$ 1,136.24

Cost of Service FL Rates - FY 2017

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 86.91	$ 173.82	$ 260.73	$ 347.64	$ 434.55	$ 521.46
4 cy	$ 91.98	$ 183.96	$ 275.93	$ 367.91	$ 459.89	$ 551.87
6 cy	$ 102.11	$ 204.22	$ 306.34	$ 408.45	$ 510.56	$ 612.67
8 cy	$ 112.25	$ 224.49	$ 336.74	$ 448.98	$ 561.23	$ 673.48
C3	$ 117.31	$ 234.63	$ 351.94	$ 469.25	$ 586.56	$ 703.88
C4	$ 132.51	$ 265.03	$ 397.54	$ 530.06	$ 662.57	$ 795.08
C6	$ 162.92	$ 325.83	$ 488.75	$ 651.67	$ 814.58	$ 977.50
C8	$ 193.32	$ 386.64	$ 579.96	$ 773.28	$ 966.59	$ 1,159.91

Cost of Service FL Rates - FY 2018

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 88.89	$ 177.78	$ 266.68	$ 355.57	$ 444.46	$ 533.35
4 cy	$ 94.06	$ 188.11	$ 282.17	$ 376.23	$ 470.29	$ 564.34
6 cy	$ 104.39	$ 208.77	$ 313.16	$ 417.55	$ 521.93	$ 626.32
8 cy	$ 114.72	$ 229.43	$ 344.15	$ 458.86	$ 573.58	$ 688.30
C3	$ 119.88	$ 239.76	$ 359.64	$ 479.52	$ 599.40	$ 719.28
C4	$ 135.37	$ 270.75	$ 406.12	$ 541.50	$ 676.87	$ 812.25
C6	$ 166.36	$ 332.73	$ 499.09	$ 665.45	$ 831.81	$ 998.18
C8	$ 197.35	$ 394.70	$ 592.05	$ 789.40	$ 986.75	$ 1,184.11

Note: Volume based costs for compactors based on 3 times container size.

RL to Cart Collection Ratio 3

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Refuse	$751,490	$770,677	$790,433	$810,775	$831,720
Container Maintenance/Replacement					
Dumpsters	22,293	22,728	23,185	23,650	24,125
Carts	18,178	18,533	18,905	19,285	19,672
Subtotal - Direct	$791,961	$811,939	$832,523	$853,710	$875,518
Overhead/Indirect					
Administration	$255,751	$262,496	$287,559	$294,787	$302,113
Keep Santa Fe Beautiful	2,649	2,785	2,926	3,073	3,226
Sustainable Santa Fe	12,039	12,424	12,821	13,230	13,652
City Activities	9,104	9,392	9,689	9,995	10,311
Fleet Maintenance	13,323	13,714	14,118	14,533	14,960
Special Events	9,250	9,538	9,834	10,140	10,455
Subtotal - Indirect/OH	302,116	310,349	336,947	345,758	354,718
Total Collection Cost[1]	$1,094,077	$1,122,288	$1,169,470	$1,199,469	$1,230,235
Number of Collections[2]	199,420	199,420	199,420	199,420	199,420
Dumpsters (Actual)	22,360	22,360	22,360	22,360	22,360
Dumpsters (with Collection Factor)	67,080	67,080	67,080	67,080	67,080
Carts	132,340	132,340	132,340	132,340	132,340
Cost per Collection	$5.49	$5.63	$5.86	$6.01	$6.17
Disposal Costs	$162,999	$165,763	$168,950	$172,202	$175,520
Cubic Yards Collected	147,267	147,267	147,267	147,267	147,267
Cost per CY	$1.11	$1.13	$1.15	$1.17	$1.19
Total RL Rev Req	$1,257,076	$1,288,050	$1,338,420	$1,371,671	$1,405,755

1. Combined costs shown in Schedules 5 & 6.
2. Sum of Carts and Dumpsters (with Collection Factor).

Cost of Service RL/Cart Rates - FY 2014

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 85.71	$ 171.42	$ 257.13	$ 342.84	$ 428.55	$ 514.26
4 cy	$ 90.51	$ 181.01	$ 271.52	$ 362.03	$ 452.53	$ 543.04
6 cy	$ 100.10	$ 200.20	$ 300.30	$ 400.40	$ 500.50	$ 600.60
96-gal	$ 26.17	$ 52.34	$ 78.52	$ 104.69	$ 130.86	$ 157.03
64-gal	$ 25.45	$ 50.91	$ 76.36	$ 101.81	$ 127.26	$ 152.72

Cost of Service RL/Cart Rates - FY 2015

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 87.79	$ 175.59	$ 263.38	$ 351.17	$ 438.97	$ 526.76
4 cy	$ 92.67	$ 185.34	$ 278.01	$ 370.68	$ 463.36	$ 556.03
6 cy	$ 102.43	$ 204.85	$ 307.28	$ 409.71	$ 512.13	$ 614.56
96-gal	$ 26.83	$ 53.65	$ 80.48	$ 107.30	$ 134.13	$ 160.95
64-gal	$ 26.09	$ 52.19	$ 78.28	$ 104.38	$ 130.47	$ 156.56

Cost of Service RL/Cart Rates - FY 2016

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 91.15	$ 182.30	$ 273.45	$ 364.60	$ 455.75	$ 546.90
4 cy	$ 96.12	$ 192.24	$ 288.37	$ 384.49	$ 480.61	$ 576.73
6 cy	$ 106.06	$ 212.13	$ 318.19	$ 424.26	$ 530.32	$ 636.39
96-gal	$ 27.90	$ 55.80	$ 83.69	$ 111.59	$ 139.49	$ 167.39
64-gal	$ 27.15	$ 54.30	$ 81.46	$ 108.61	$ 135.76	$ 162.91

Cost of Service RL/Cart Rates - FY 2017

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 93.39	$ 186.79	$ 280.18	$ 373.57	$ 466.97	$ 560.36
4 cy	$ 98.46	$ 196.92	$ 295.38	$ 393.84	$ 492.30	$ 590.76
6 cy	$ 108.59	$ 217.19	$ 325.78	$ 434.38	$ 542.97	$ 651.57
96-gal	$ 28.60	$ 57.20	$ 85.79	$ 114.39	$ 142.99	$ 171.59
64-gal	$ 27.84	$ 55.68	$ 83.51	$ 111.35	$ 139.19	$ 167.03

Cost of Service RL/Cart Rates - FY 2018

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 95.69	$ 191.38	$ 287.08	$ 382.77	$ 478.46	$ 574.15
4 cy	$ 100.86	$ 201.71	$ 302.57	$ 403.43	$ 504.28	$ 605.14
6 cy	$ 111.19	$ 222.37	$ 333.56	$ 444.74	$ 555.93	$ 667.12
96-gal	$ 29.31	$ 58.63	$ 87.94	$ 117.26	$ 146.57	$ 175.89
64-gal	$ 28.54	$ 57.08	$ 85.62	$ 114.16	$ 142.70	$ 171.24

Recycling to Cart Collection Ratio 3

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Commercial Cardboard Recycling	$147,433	$150,438	$153,530	$156,713	$159,988
Container Maintenance					
Dumpsters	163	160	164	169	173
Carts	57	55	57	59	60
Subtotal - Direct	$147,652	$150,653	$153,752	$156,940	$160,221
Overhead/Indirect					
Administration	$50,175	$51,240	$55,854	$56,979	$58,114
Keep Santa Fe Beautiful	520	544	568	594	621
Sustainable Santa Fe	2,362	2,425	2,490	2,557	2,626
City Activities	1,786	1,833	1,882	1,932	1,983
Fleet Maintenance	5,567	5,730	5,899	6,072	6,251
Special Events	1,815	1,862	1,910	1,960	2,011
Subtotal - Indirect/OH	62,224	63,634	68,604	70,094	71,606
Total Collection Cost[1]	$209,877	$214,287	$222,355	$227,034	$231,827
Number of Collections	52,468	52,468	52,468	52,468	52,468
Dumpsters (Actual)	11,648	11,648	11,648	11,648	11,648
Dumpsters (with Collection Factor)	34,944	34,944	34,944	34,944	34,944
Carts	17,524	17,524	17,524	17,524	17,524
Cost per Collection	$4.00	$4.08	$4.24	$4.33	$4.42
Disposal Costs	$0	$0	$0	$0	$0
Cubic Yards Collected	59,826	59,826	59,826	59,826	59,826
Cost per CY	$0.00	$0.00	$0.00	$0.00	$0.00
Total Rev Req	$209,877	$214,287	$222,355	$227,034	$231,827

1. Combined costs shown in Schedules 5 & 6.

Cost of Service RL/Cart Rates - FY 2014

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 52.00	$ 104.00	$ 156.00	$ 208.00	$ 260.01	$ 312.01
4 cy	$ 52.00	$ 104.00	$ 156.00	$ 208.00	$ 260.01	$ 312.01
6 cy	$ 52.00	$ 104.00	$ 156.00	$ 208.00	$ 260.01	$ 312.01
96-gal	$ 17.33	$ 34.67	$ 52.00	$ 69.33	$ 86.67	$ 104.00
64-gal	$ 17.33	$ 34.67	$ 52.00	$ 69.33	$ 86.67	$ 104.00

Cost of Service RL/Cart Rates - FY 2015

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 53.09	$ 106.19	$ 159.28	$ 212.38	$ 265.47	$ 318.56
4 cy	$ 53.09	$ 106.19	$ 159.28	$ 212.38	$ 265.47	$ 318.56
6 cy	$ 53.09	$ 106.19	$ 159.28	$ 212.38	$ 265.47	$ 318.56
96-gal	$ 17.70	$ 35.40	$ 53.09	$ 70.79	$ 88.49	$ 106.19
64-gal	$ 17.70	$ 35.40	$ 53.09	$ 70.79	$ 88.49	$ 106.19

Cost of Service RL/Cart Rates - FY 2016

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 55.09	$ 110.19	$ 165.28	$ 220.37	$ 275.47	$ 330.56
4 cy	$ 55.09	$ 110.19	$ 165.28	$ 220.37	$ 275.47	$ 330.56
6 cy	$ 55.09	$ 110.19	$ 165.28	$ 220.37	$ 275.47	$ 330.56
96-gal	$ 18.36	$ 36.73	$ 55.09	$ 73.46	$ 91.82	$ 110.19
64-gal	$ 18.36	$ 36.73	$ 55.09	$ 73.46	$ 91.82	$ 110.19

Cost of Service RL/Cart Rates - FY 2017

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 56.25	$ 112.50	$ 168.76	$ 225.01	$ 281.26	$ 337.51
4 cy	$ 56.25	$ 112.50	$ 168.76	$ 225.01	$ 281.26	$ 337.51
6 cy	$ 56.25	$ 112.50	$ 168.76	$ 225.01	$ 281.26	$ 337.51
96-gal	$ 18.75	$ 37.50	$ 56.25	$ 75.00	$ 93.75	$ 112.50
64-gal	$ 18.75	$ 37.50	$ 56.25	$ 75.00	$ 93.75	$ 112.50

Cost of Service RL/Cart Rates - FY 2018

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
3 cy	$ 57.44	$ 114.88	$ 172.32	$ 229.76	$ 287.20	$ 344.64
4 cy	$ 57.44	$ 114.88	$ 172.32	$ 229.76	$ 287.20	$ 344.64
6 cy	$ 57.44	$ 114.88	$ 172.32	$ 229.76	$ 287.20	$ 344.64
96-gal	$ 19.15	$ 38.29	$ 57.44	$ 76.59	$ 95.73	$ 114.88
64-gal	$ 19.15	$ 38.29	$ 57.44	$ 76.59	$ 95.73	$ 114.88

Note: Volume based costs for compactors based on 3 times container size.

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Commercial Commingled Recycling	$319,112	$325,852	$332,789	$339,929	$347,279
Container Maintenance					
Carts	12.03	11.79	12.11	12.45	12.79
Subtotal - Direct	$319,124	$325,864	$332,801	$339,942	$347,291
Overhead/Indirect					
Administration	$108,602	$110,986	$121,068	$123,594	$126,145
Keep Santa Fe Beautiful	1,125	1,177	1,232	1,289	1,347
Sustainable Santa Fe	5,112	5,253	5,398	5,547	5,700
City Activities	3,866	3,971	4,079	4,191	4,305
Fleet Maintenance	9,688	9,972	10,265	10,567	10,878
Special Events	3,928	4,033	4,140	4,251	4,365
Subtotal - Indirect/OH	132,320	135,393	146,183	149,438	152,741
Total Collection Cost[(1)]	$451,444	$461,256	$478,984	$489,380	$500,033
Number of Collections	25,428	25,428	25,428	25,428	25,428
Carts	25,428	25,428	25,428	25,428	25,428
Cost per Collection	$17.75	$18.14	$18.84	$19.25	$19.66
Recycling Processing Costs	$473	$444	$447	$451	$455
Cubic Yards Collected	12,714	12,714	12,714	12,714	12,714
Cost per CY	$0.04	$0.03	$0.04	$0.04	$0.04
Total Rev Req	$451,917	$461,700	$479,432	$489,831	$500,488

1. Combined costs shown in Schedules 5 & 6.

Cost of Service RL/Cart Rates - FY 2014

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
96-gal	$ 77.01	$ 154.03	$ 231.04	$ 308.06	$ 385.07	$ 462.08
64-gal	$ 76.99	$ 153.98	$ 230.97	$ 307.96	$ 384.95	$ 461.94

Cost of Service RL/Cart Rates - FY 2015

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
96-gal	$ 78.68	$ 157.36	$ 236.04	$ 314.72	$ 393.41	$ 472.09
64-gal	$ 78.66	$ 157.32	$ 235.97	$ 314.63	$ 393.29	$ 471.95

Cost of Service RL/Cart Rates - FY 2016

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
96-gal	$ 81.70	$ 163.41	$ 245.11	$ 326.81	$ 408.51	$ 490.22
64-gal	$ 81.68	$ 163.36	$ 245.04	$ 326.72	$ 408.40	$ 490.08

Cost of Service RL/Cart Rates - FY 2017

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
96-gal	$ 83.47	$ 166.95	$ 250.42	$ 333.90	$ 417.37	$ 500.85
64-gal	$ 83.45	$ 166.90	$ 250.36	$ 333.81	$ 417.26	$ 500.71

Cost of Service RL/Cart Rates - FY 2018

Frequency	*1X*	*2X*	*3X*	*4X*	*5X*	*6X*
96-gal	$ 85.29	$ 170.58	$ 255.87	$ 341.16	$ 426.45	$ 511.75
64-gal	$ 85.27	$ 170.54	$ 255.80	$ 341.07	$ 426.34	$ 511.61

Note: Volume based costs for compactors based on 3 times container size.

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Direct Costs					
Refuse	$ 651,563	$ 666,554	$ 681,985	$ 697,871	$ 714,224
Cart Maintenance/Replacement	35,000	35,700	36,414	37,142	37,885
Subtotal - Direct	$ 686,563	$ 702,254	$ 718,399	$ 735,013	$ 752,109
Overhead/Indirect					
Administration	$ 221,743	$ 227,031	$ 248,105	$ 253,737	$ 259,434
Keep Santa Fe Beautiful	2,297	2,409	2,525	2,645	2,771
Sustainable Santa Fe	10,438	10,745	11,062	11,388	11,723
City Activities	7,893	8,123	8,360	8,603	8,855
Fleet Maintenance	18,162	18,695	19,244	19,810	20,393
Special Events	8,020	8,249	8,485	8,728	8,978
Subtotal - Indirect/OH	268,553	275,252	297,781	304,911	312,153
Total Collection and OH[1]	$ 955,116	$ 977,506	$ 1,016,181	$ 1,039,925	$ 1,064,262

Number of Pulls	3,123	3,123	3,123	3,123	3,123
Cost per Pull	$ 305.83	$ 313.00	$ 325.39	$ 332.99	$ 340.78

1. Combined costs shown in Schedules 5 & 6.

City of Santa Fe
Revenue Projections Based on Current Rates

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Residential Collection					
Refuse	$ 4,263,270	$ 4,735,066	$ 4,886,588	$ 4,886,588	$ 4,886,588
Additional Carts	140,135	155,652	160,610	160,610	160,610
Large Item	6,910	7,132	7,361	7,361	7,361
Bag Tags	750	750	750	750	750
	$ 4,411,065	$ 4,898,599	$ 5,055,308	$ 5,055,308	$ 5,055,308
Commercial Collection					
Refuse (Rear Load)					
Dumpsters	$ 591,966	$ 610,908	630,458	630,458	630,458
Carts[1]	1,711,320	$ 1,765,996	1,811,026	1,811,026	1,811,026
Refuse (Front Load)					
Non-Compactor	3,679,492	$ 3,916,595	4,041,933	4,041,933	4,041,933
Compactor	73,980	$ 76,348	78,791	78,791	78,791
Roll Off[2]	967,800	994,038	1,021,054	1,021,054	1,021,054
	$ 7,024,559	$ 7,363,885	$ 7,583,263	$ 7,583,263	$ 7,583,263
Recycling Collection					
Residential	Included Above	Included Above	Included Above	Included Above	Included Above
Commercial					
Dumpsters	$ 138,269	$ 138,269	138,269	138,269	138,269
Carts	327,990	327,990	327,990	327,990	327,990
	$ 466,258	$ 466,258	$ 466,258	$ 466,258	$ 466,258
Total Revenue at Projected Rates	$ 11,901,881	$ 12,728,742	$ 13,104,829	$ 13,104,829	$ 13,104,829
Revenue Requirement [(3)(4)]	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826
Over/Under Recovery	N/A	($361,951)	($450,381)	($758,971)	($1,074,997)
Cumulative Over/Under Recovery	N/A	($361,951)	($812,333)	($1,571,304)	($2,646,301)

(1) 1X per week service was calculated using the light commercial rear-loading rate.

(2) Roll-Off revenues were calculated using a combination of the scheduled & non-scheduled rates.

(3) For FY 2014, Leidos projected 27,413 households & increased the 4 CY front-load (FL) dumpster count by 50 accounts. For FY 2015 - FY 2018, household count increased to 29,513 & another 50-4 CY FL accounts were added.

(4) Assumes rate increases for FY 2014, FY 2015, FY 2016 as designated in Ordinance No. 2012-24.

City of Santa Fe
Revenue Projections Based on Recommended Rates

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Residential Collection					
Refuse	$ 4,263,270	$ 5,089,222	$ 5,241,509	$ 5,684,204	$ 6,126,899
Additional Carts	140,135	155,652	160,610	160,610	160,610
Large Item	6,910	7,132	7,361	7,361	7,361
Bag Tags	750	750	750	750	750
	$ 4,411,065	$ 5,252,755	$ 5,410,229	$ 5,852,924	$ 6,295,619
Commercial Collection					
Refuse (Rear Load)					
Dumpsters	$ 591,966	$ 610,908	630,458	630,458	630,458
Carts[1]	1,711,320	$ 1,765,996	1,811,026	1,811,026	1,811,026
Refuse (Front Load)					
Non-Compactor	3,679,492	$ 3,916,595	4,041,933	4,041,933	4,041,933
Compactor	73,980	$ 76,348	78,791	78,791	78,791
Roll Off[2]	967,800	994,038	1,021,054	1,021,054	1,021,054
	$ 7,024,559	$ 7,363,885	$ 7,583,263	$ 7,583,263	$ 7,583,263
Recycling Collection					
Residential	Included Above	Included Above	Included Above	Included Above	Included Above
Commercial					
Dumpsters	$ 138,269	$ 138,269	138,269	138,269	138,269
Carts	327,990	327,990	327,990	327,990	327,990
	$ 466,258	$ 466,258	$ 466,258	$ 466,258	$ 466,258
Total Revenue at Projected Rates	$ 11,901,881	$ 13,082,898	$ 13,459,750	$ 13,902,445	$ 14,345,140
Revenue Requirement [(3)(4)]	$ 12,710,218	$ 13,090,693	$ 13,555,210	$ 13,863,800	$ 14,179,826
Over/Under Recovery	N/A	($7,795)	($95,460)	$38,645	$165,314
Cumulative Over/Under Recovery	N/A	($7,795)	($103,256)	($64,611)	$100,703

(1) 1X per week service was calculated using the light commercial rear-loading rate.

(2) Roll-Off revenues were calculated using a combination of the scheduled & non-scheduled rates.

(3) For FY 2014, Leidos projected 27,413 households & increased the 4 CY front-load (FL) dumpster count by 50 accounts. For FY 2015 - FY 2018, household count increased to 29,513 & another 50-4 CY FL accounts were added.

(4) Assumes rate increases for FY 2014, FY 2015, FY 2016 as designated in Ordinance No. 2012-24, plus the consultant recommended rate increases.

Section 2
REVIEW OF RESIDENTIAL COLLECTION OPERATIONS

2.1 Introduction

This section addresses the Environmental Service Division's (ESD)[1] existing residential refuse and recycling collection operation and potential changes the City could make to improve the overall efficiency of the operation. Louis Berger identified the following operational areas of the residential operation as key components to review and analyze.

- Collection efficiency
- Routing
- Staffing
- Equipment

This section will focus on how various aspects of the City's residential collection operation could be modified in order to improve the efficiency. Louis Berger has provided a summary of key findings at the conclusion of this report section.

2.2 Program Overview

The City provides refuse collection service to the City's 27,413 residential customers with 96-gallon rolling carts.[2] Residential collection is provided once per week with automated side-load collection vehicles.

All 27,413 residential customers are provided with curbside recycling collection with 14-gallon bins. The City currently accepts the following material:

- Mixed paper
- Aluminum
- Tin
- Plastic bottles
- Cardboard
- Glass

Due to the City's current recycling processing operation, glass material must be collected separately from the other material commodities. The City collects recyclable

[1] The terms ESD and City will be used interchangeably.
[2] 32-gallon carts are available, but it is estimated that only approximately 5% of customers use this size cart.

material in automated side load vehicles via side-load troughs and two truck body compartments. One truck body compartment contains mixed recyclable materials and the other compartment contains glass material. Each recycling customer is provided with two 14-gallon bins. One bin is for glass materials and the second bin is for the collection of mixed paper, aluminum, tin and plastic materials. Residents are asked to flatten any cardboard material and stack material at the curb.

In this report section, Louis Berger will be reviewing the City's current residential refuse and residential recycling routes. Table 2-1 provides a summary of each operation's configuration.

Table 2-1
Collection Operation Route Configuration

	Residential Refuse	Residential Recycling
Number of Personnel per Route	1 driver	1 driver 1 worker
Vehicles Used	Automated side-loader	Side-load vehicle with troughs and two vehicle body compartments
Container	96-gallon rolling cart	14-gallon open-top bin
Number of Route Days per Week	41	30
Number of Weekly Routes	8.2	6.0

2.3 Level of Service

Louis Berger has benchmarked the City's level of service and identified that the City provides typical residential services by providing weekly refuse collection and weekly recycling collection.

Table 2-2
Benchmarking Level of Service

City	Santa Fe, NM	Albuquerque, NM	Glendale, AZ	Tempe, AZ	Salina, KS	Denton, TX	Midland, TX
Population	69,204	555,417	226,721	161,719	48,045	113,383	119,385
Frequency							
Refuse Collection	1 x wk	1 x wk	1 x wk	1 x wk	1 x wk	1 x wk	2 x wk
Recycling Collection	1 x wk	1 x wk	1 x wk	1 x wk	1 x wk subscription	1 x wk	N/A

2.4 Refuse Collection Efficiency

During route observations, Louis Berger observed that the collection operators exhibited a high level of skill when performing refuse collection. Louis Berger evaluated time and motion data collected through five days of field observations and data collected by City employees to understand the City's typical refuse collection efficiency.

In completing the operational analysis Louis Berger utilized two data sets when reviewing the City's collection operation:

1. Data collected on route observations by the Louis Berger Project Team over a five day period.
2. Operational data provided by City staff, including customer count and number of daily routes.

Louis Berger found a significant variation between these two data sets. The variation between Louis Berger and City refuse routing data is summarized below in Table 2-3.

Table 2-3
Operational Data for Residential Refuse Operation

	Louis Berger Data Collected on Route Observations	City Data Based on Current Route Sizing
Daily Collection Time	4.8 hours	4.8 hours
Average Time per Collection	34.6 seconds	23.7 seconds
Households Served/ Hr/ Route	104 households	152 households
Total Households Served/ Day/ Route	497 households	723 households

The data provided in Table 2-3, illustrates the importance of understanding the operational metrics of the daily collection operation. A slight change in the average time per collection can have a dramatic effect on the number of households each route can feasibly collect each day. Based on the data in Table 2-3, City refuse routes are, on average, able to collect between 104 and 152 households per hour. A typical automated collection operation can collect between 120 to 170 households per hour. The data indicates the City is maintaining an average refuse collection efficiency; however, based on the variance between the Louis Berger route observation data and the City's current route sizing it is difficult to fully validate this finding.

On average, refuse vehicles tip material twice per day. All refuse collection vehicles are directed to the Caja del Rio Landfill (Landfill) to tip material, which takes approximately 57 minutes round trip, based on Louis Berger's route observations. The City currently does not store any material in the collection vehicles overnight. This is a common industry practice, as storing material in collection vehicles overnight can be a safety hazard (i.e. fire) and can damage the vehicle body.

Based on the City's historical collection efficiency, the collection operation will need to maintain 38 route days to effectively collect the City's refuse customers under the current collection efficiency. If the City is able to increase the collection efficiency from 152 households per hour to 165 households per hour, there is an opportunity to reduce the refuse routes to 35 route days (i.e. 7.0 routes per week). Table 2-4 illustrates the number of routes needed to collect the City's current refuse customers on a weekly basis under the current operation and an improved operational efficiency.

Table 2-4
Refuse Collection Routes

Metric	Current Collection Operation		Sensitivity on Collection Operation
Number of City Refuse Customers	27,413 households	27,413 households	27,413 households
Households Served/ Hr/ Route	104 households	152 households	165 households
Total Households Served/ Day/ Route	497 households	723 households	786 households
Number of Weekly Routes Needed	55.2 routes	37.9 routes	34.9 routes
Number of Daily Routes Needed	11.0 routes	7.5 routes	7.0 routes

Currently the refuse operation operates 41 weekly route days. Based on Louis Berger's analysis the City can eliminate half of a weekly route if refuse routes are able to consistently achieve an average collection rate of 152 households per hour. If the City is able to achieve a higher average collection rate of 165 households per hour, the City has the opportunity to reduce the refuse collection operation from 38 route days per week to 35 route days per week. Marginal increases in efficiency will result in minimal savings (i.e., a "fraction of a route" saved does not generate significant savings); however a decrease in one front-line side load vehicle would result in an annual equipment savings of $70,719.[3]

2.5 Recycling Collection Efficiency

Louis Berger observed that the collection operators exhibit a high level of skill when performing recycling collection operations. Based on Louis Berger's route observations, the City's recycling program experiences an average "set-out rate" of 56 percent. This means that 56 percent of residential households set-out recyclable material each week. The time and motion data collected by Louis Berger during a week of route observations varies from the current customer count and routing data provided by the City. The variation between Louis Berger and City routing data is summarized below in Table 2-5.

Table 2-5
Operational Data for Residential Recycling Operation

	Louis Berger Data Collected on Route Observations	City Data Based on Current Route Sizing
Daily Collection Time	5.2 hours	5.2 hours
Average Time per Collection	30.6 seconds	20.4 seconds
Recycling Set-out Rate	56%	56%
Households Collected/ Hr/ Route	66 households	99 households
Households Passed-By/ Hr/ Route	52 households	78 households
Households Served/ Hr/ Route	118 households	176 households
Total Households Served/ Day/ Route	609 households	913 households

[3] This reflects the capital, fuel and repair costs for one year, for one side load vehicle.

A recycling program's efficiency and success is directly related to the recycling set-out rate. A program with a low set-out rate can collect material with less routes, as a route with fewer set-outs is passing-by more houses. Correspondingly a low set-out rate also indicates a low participation rate and typically generates marginal volumes of recyclable materials. Although the City can serve a greater number of customers per route with a low set-out rate, it is to the City's benefit to maximize citizen participation in the recycling collection program and divert the greatest amount of recyclables from the waste stream. Having an understanding of the recycling program's operational metrics, such as average time per collection and set-out rate, is crucial to evaluating the efficiency and success of the program.

Based on the City's historical collection efficiency and Louis Berger's route observations the City needs 31 route days to efficiently collect the City's recycling material. Currently the City is operating 30 route days, reflecting that under the current collection efficiency level the recycling operation is likely to incur regular overtime to complete the weekly residential recycling routes.

On average, City recycling routes tip recyclable materials at the Buckman Road Recycling and Transfer Station (BuRRT) twice per route. Based on Louis Berger's route observations, it takes on average 45 minutes, round trip, for the recycling vehicles to tip a recyclable load at BuRRT. The City recycling trucks are divided into two compartments to ensure that the glass material is collected separately from other recyclable materials. This truck capacity constraint requires the recycling truck to tip material when either of the two compartments reaches capacity. This operational constraint can require the drivers to tip material when the truck capacity is not fully maximized.

2.5.1 Recycling Volume

A common measurement to benchmark a City's recycling and diversion efforts is the City recycling rate. The recycling rate is determined by the volume of material recycled and organics that are diverted, divided by the City's annual generation. Figure 2-1 illustrates the calculation used to determine a city's recycling rate.

$$\frac{\text{Material Recycled + Organic Diversion}}{\text{Material Generated}} = \text{Recycling Rate}$$

$$\text{(Material Disposed + Material Recycled+ Organic Diversion)}$$

Figure 2-1. Calculation for City Recycling Rate

In Table 2-6, Louis Berger has provided the calculation for the City's recycling rate from fiscal year (FY) 2011 to FY 2013. Louis Berger was unable to calculate a separate recycling rate for residential and commercial customers as the City does not record residential and commercial recycling tonnage separately.

Table 2-6
City Recycling Rate

	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013
Tons Recycled and Diverted			
Material Recycled	5,035	5,224	5,324
Organics Diverted	57	13	110
Total Recycling and Diversion	5,092	5,237	5,434
Tons Disposed			
Residential	23,089	24,492	23,110
Commercial	27,864	25,588	35,461
Construction and Demolition (C&D)	125	3,280	241
Tires	4	-	206
Appliances	-	-	5
Uncovered	1	-	35
Tons Disposed Subtotal	51,083	53,360	59,058
Annual Generation	56,175	58,597	64,492
Recycling Rate	9.0%	8.9%	8.4%

As shown in Table 2-6, the City has maintained approximately the same recycling rate for the past three years, with refuse generation increasing more rapidly than recyclables in recent years.

In the recent Comprehensive Solid Waste Management Plan, the New Mexico Recycling Coalition identified a 33 percent recycling rate goal for the County, as a whole. If the City is to contribute to achieving this goal, it is Louis Berger recommendation that the City focus on increasing the volume of recyclables captured through the residential and commercial recycling programs.

It is typical for commercial recycling customers to generate a greater volume, as well as a different composition and quality of material compared to residential recycling customers; however due to data restrictions Louis Berger has analyzed the residential and commercial recyclable stream together. There were approximately 25,313 residential recycling customers and 463 commercial recycling customers in the City during FY 2013. With 5,324 tons of recyclables collected annually, the City annually collects approximately 413 pounds or recyclables per customer. Single-stream programs around the nation report a wide range of material collected. It is typical for healthy residential recycling programs to collect between 300 and 700 pounds of recyclables per household annually.[4]

[4] Given that commercial customers and tonnage is included in this calculation, it is safe to assume that the "pounds per customer per year" is significantly less than 413 pounds for residential customers.

To increase the City's annual recycling rate there are several options the City can consider:

- Improving participation in current recycling operations;
- Implementing a seasonal greenwaste collection program; and/or
- Implementing a food waste collection program.

Louis Berger has provided a brief discussion on each of these recycling and diversion options in Section 2.12 of this report section.

2.5.2 Recycling Participation

The current recycling collection operation has an average set-out rate of 56 percent. A well-established curbside recycling program will typically experience a set-out rate of 70 to 80 percent per week. The City can reach a higher set-out and participation rate through various methods, including:

- **Increased public education and outreach** – Ensuring that residents understand how to participate in the program is crucial to improving resident's participation in the program. The City can inform residents on the collection schedule, materials accepted, and educate residents on the environmental and cost benefit of recycling material instead of disposing material. Louis Berger recommends the City communicate with residents through multiple mediums, such as utility bill inserts, advertisements, electronic media, special events, and integration of recycling information into the local school curriculum.
- **Transition to automated recycling** – The City can increase the recycling capacity for each household by transitioning to rolling carts to collect recyclable material. The implementation of automated cart collection has been shown to increase the recycling rate of residential recycling collection programs by typically 20-40 percent.

2.6 Large Item Collection Efficiency

The City currently operates a large item collection program on an on-call basis. The City is currently serving all of the requested collections with one weekly route, operated on Wednesday. Customers are charged $28.30 per large item collection, regardless of the volume of material set-out.

The City collects furniture, appliances, brush, construction and demolition (C&D) and tires. These materials are typical for residential large item collection, with the exception of C&D material. It is Louis Berger's experience that collection programs that collect C&D in their residential program frequently encounter businesses that will utilize the residential large item collection program to dispose of C&D material inexpensively. Louis Berger recommends the City monitor the volume of C&D accepted through the large item collection program to ensure local businesses are not misusing this residential collection service, and if so, to discontinue the collection of C&D.

An advantage of an on-call program is the City can directly charge the residents that use the service a fee for the use of this program.

It is typical that large item collection programs are subsidized in part by the monthly user fee that all residents pay, and a portion of the cost of the program is directly paid for by the user of the program (i.e. $28.30 in Santa Fe). As shown in "Section 1, Cost of Service and Funding Options", the City's cost of the program is not fully recovered through the fixed fee charged to those customers that use the program. We would not recommend increasing the fee too high as there is a concern that if the fee is set too high that it may result in people not using the service and result in an increase in illegal dumping of these materials. Therefore, if the City desires to increase the rate we would recommend only a modest increase of $5 to $8 in the one-time fee.

There are a myriad of ways in which these programs are established, and services provided. The City's on-call program is a typical approach to providing this service. However, Louis Berger would recommend the City look at perhaps running the route every other week, or possibly every three weeks. It appears the service is somewhat under-utilized and the cost of providing this service could be reduced by reducing the frequency of time on route, without reducing the quality of the service for citizens. Under this approach, a citizen would call in for a pickup and based on the date provided by the City, he/she would put their item out for collection the evening before the assigned date.

The City might also consider splitting the City into two sections and having each section picked up once per month.[5] We have worked with numerous cities that operate their large item programs in this manner. This results in more time spent in one specific area of the city picking up waste and less time driving throughout the entire city.

2.7 Routing

Where refuse collection typically experiences a 95 to 100 percent set-out rate, recycling collection set-out rates will vary among cities. The City's current refuse set-out rate is basically 100 percent, which is much higher than the City's recycling set-out rate of 56 percent. This variation in set-out rate means the refuse and recycling routes are able to serve a different number of households per hour. Based on time and motion data collected, the City's refuse routes are able to collect between 104 households and 152 households per hour with a 100 percent set-out rate, and the City's recycling routes are able to collect between 118 households and 176 households per hour with a 56 percent set-out rate.[6]

Louis Berger has provided a summary of the operational routing factors that affect the routing size of the refuse and recycling collection operation in Table 2-7.

[5] This would result in a large item route being operated every other week (i.e. the 1st Wednesday of the month for one half of the City and the 2nd Wednesday of the month for the other half of the City.).
[6] In other words, only 56% of the 118 to 195 households have a set-out, so the recycling truck stops at only 66 to 99 houses per hour.

Table 2-7
Residential Routing

	Refuse		Recycling		
	Current Operation	Increased Collection Efficiency	Current Operation	Increased Collection Efficiency	Increased Set-out Rate [1]
Daily Trips to Tip	2	2	2	2	2
Set-out Rate	100%	100%	56%	56%	80%
Pounds per Household[2]	1,748	1,748	370	370	370
Non-Collection Time	3.7	3.7	3.3	3.3	3.3
Collection Time	4.8	4.8	5.2	5.2	5.2
Total Daily Time	8.5	8.5	8.5	8.5	8.5
Total HH Served/ Hour/ Route	104 - 152	165	118 – 176	224	133
Total HH Served/ Day/ Route	497 - 723	786	609 – 913	1,162	690
HH Served/ Week	27,413	27,413	27,413	27,413	27,413
Number of Route Days Needed	37.9 - 55.2	34.9	30.0 – 45.0	23.6	37.9
Number of Daily Routes Needed	7.6 – 11.0	7.0	6.0 – 9.0	4.7	7.6

1. Louis Berger assumed City time and motion data for the Increased Set-out Rate analysis.
2. Louis Berger assumed a current rate of 370 pounds per HH, not the 413 pounds per HH that includes commercial recycling.

The variation in a recycling program's set-out rate makes it difficult to set routes, as the set-out rate will vary in different parts of the City, and potentially over the course of the life of the recycling program. Louis Berger recommends the City begin tracking the residential recycling program set-out rate as part of the daily recycling operations.

2.8 Staffing

Louis Berger evaluated whether the City has the appropriate staffing levels to efficiently run the refuse and recycling collection operation. The City currently collects refuse via automated collection vehicles requiring one driver per route. The recycling collection operation is a manual collection operation, requiring one driver and one worker for each residential recycling collection route.

The refuse operation has minimal safety risk, as the driver remains in the vehicle the majority of the collection day. Differing from the refuse operation, the recycling operation is highly physical for the two employees on each route. The two employees are constantly getting "in" and "out" of the truck and emptying recycling bins. The recyclable material from theses bins are then placed in the vehicle troughs on the side of the vehicle, which are tipped into the vehicle with hydraulics. During Louis Berger's route observations, it was noted that workers will sometimes throw material directly into the vehicle body, rather than using the troughs in an attempt to increase collection efficiency. Although this collection method may result in an increased operational efficiency, it is unsafe for the employees to throw material overhead.

Louis Berger also noted during in-route observations that even when tipped via the vehicle troughs, glass material was observed breaking on the body of the recycling vehicles and small shards of glass hitting the worker. This is just one of the reasons why we evaluated the move to automated cart recycling later in this section of the report.

Table 2-8 outlines the personnel levels currently in place for the residential collection operation.

Table 2-8
Residential Collection Personnel Levels

	Current Staffing		Louis Berger Proposed Staffing [1]	
	Refuse	Recycling	Refuse	Recycling
Number of Routes	8.2	6.0	8.2	6.0
Drivers				
Front-Line			8.2	6.0
Back-up			1.6	1.2
Subtotal	10.0	6.0	9.8	7.2
Worker [2]				
Front-Line			2.0	6.0
Back-up			0.5	1.2
Subtotal	2.0	7.0	2.5	7.2
Total				
Drivers	16.0		17.0	
Workers	9.0		9.7	
Total	25.00		26.7	

1. Louis Berger Proposed Staffing level for back-up personnel is based on a 20 percent back-up ratio.
2. The workers identified for the refuse collection represent workers to complete special refuse collection routes.

As shown in Table 2-8, the City does not have an appropriate number of full-time equivalents (FTE) to maintain a 15-20 percent personnel back-up ratio. Based on the current crew configuration, Louis Berger recommends the City evaluate the distribution of workers. Based on Louis Berger's analysis the City is currently employing one FTE less than the appropriate number of drivers to operate with a 15-20 percent personnel back-up ratio. As shown in Table 2-8, the City currently is also operating with one less worker than is needed for the City's manual collection operations. It is important to note that if the City decides to transition the current recycling collection operation to an automated operation, the City may benefit from having a healthy volume of drivers on staff, as a reduced number of workers will be required for automated recycling collection. If the City decides to continue with a manual bin recycling collection operation, Louis Berger recommends the City review the current staffing and consider adding one additional worker to the recycling operation.

2.9 Vehicles

Louis Berger has reviewed the City's current fleet age, annual maintenance cost and fuel cost in order to benchmark the City's fleet against similar cities and identify areas for improvement. Any collection operation can only be as dependable and efficient as its fleet, making it imperative to maintain a reliable fleet.

Table 2-9
Benchmarking of City's Current Fleet

Vehicle	Number of Vehicles	Front-Line/ Back-up	Average Age	Maintenance Cost [1]	Fuel Cost [1]
Pick-up Truck					
City	12	Front-Line	14.8	$ 4,097	$ 3,833
Industry Average [2]	-	-	8.4	2,242	3,990
Automated Side-Load (refuse and recycling)					
City	15	Front-Line	6.1	$ 20,244	$ 16,741
City	4	Back-up	7.3	10,780	6,133
Industry Average [2]	-	-	7.0	26,199	11,939
Rear-Load					
City	1	Front-Line	3.0	$ 19,996	$ 21,198
City	3	Back-up	7.6	4,141	4,441
Industry Average [2]	-	-	7.8	17,349	7,564
Knuckleboom					
City	1	Front-Line	4.0	$ 1,656	$ 1,777
City	1	Back-up	20.0	828	888
Industry Average [2]	-	-	8.0	18,264	7,508

1. The City does not record vehicle maintenance and fuel data based on each vehicle's annual cost. Louis Berger extrapolated the annual vehicle maintenance and fuel cost for each vehicle based on the annual budget and number of vehicles. Due to minimal City data on a vehicle specific basis, Louis Berger will discuss theses benchmarks at a high level.
2. The Industry Average includes recent operational data from reviews completed by Louis Berger between 2011-2013. The Industry Average includes data from the following cities; Bozeman, MT; Corpus Christi, TX; Dallas, TX,; Del Rio, TX; Denton, TX; El Paso, TX; Phoenix, AZ; Tempe, AZ; and Temple, TX.

Louis Berger has provided benchmarking data in a compiled "Industry Average" format. As the City does not currently record maintenance cost or fuel cost on a vehicle basis, Louis Berger has extrapolated the cost for the different vehicles based on City budget data and fleet data. These "Industry Average" costs are comprised of the average cost and vehicle ages from nine different solid waste fleets in the United States, predominantly located in the Southwestern United States.

As shown in Table 2-9, the City is currently incurring maintenance cost slightly lower than average for automated side-loaders and significantly less for knuckleboom equipment, but higher than average for rear-loaders and pick-up trucks. The City's fuel cost for automated side-load and rear-load vehicles is significantly higher than the "Industry Average" fuel cost shown in Table 2-9. This variance in fuel cost from the "Industry Average" further supports the need to record vehicle costs on a vehicle and route basis, to allow the City's costs to be appropriately tracked and benchmarked.

Louis Berger recommends the City monitor the dependability and annual maintenance cost of vehicles over eight years old to determine when it is cost effective to transition

front-line vehicles to back-up vehicles and subsequently, when to sell back-up vehicles.

Vehicles will be transitioned to back-up vehicles on varying schedules based on each City's unique operations and the subsequent wear and tear on the vehicles. Louis Berger has provided a list of the average age vehicles are typically retired from front-line operations to serve as a guideline for the City;

- Pick-up Truck: 8-10 years
- Automated Side-Loader: 7 years
- Rear-Loader: 7-8 years
- Knuckleboom: 8 years

Louis Berger has reviewed the City's current back-up ratio to provide direction on the City's current level of vehicle inventory.

Table 2-10
Residential Vehicle Back-up Ratio [1]

	Number of Routes	Current Fleet			Industry Standard Back-up Ratio
		Front-Line	Back-up	Back-up Ratio	
Automated Side-Loader	12	15	4	33%	20-30%
Rear-Loader	1	1	3	300%	20-30%
Knuckleboom	1	1	1	100%	20-30%

1. The number of routes and vehicle count is reflective of routes prior to the addition of one automated refuse route and one recycling route to serve the recently annexed service area.

As shown in Table 2-10, the City is currently maintaining an adequate level of back-up vehicles, which is in-line with or exceeds the industry standard. Louis Berger recommends the City consider eliminating one or two of the City's back-up rear-loaders, as the City is maintaining a high level of back-up rear-loader vehicles for the number of routes served with rear-load vehicles.

2.10 Information Systems

During conversations with City staff, the Louis Berger Project Team determined that many of the Environmental Services Division's (ESD) information systems were not synchronized throughout the ESD and are therefore difficult to access. Through the data request process, City staff had a difficult time collecting and/or completing certain key solid waste metrics, such as customer counts by route; vehicle, maintenance, and fuel costs; and tons collected and disposed by various operations. Louis Berger would like to note that these challenges with data management are not unique to the City. However, given the complexities of the solid waste industry, Louis Berger recommends the City invest in software packages specific to the solid waste industry and/or devise one that meets the needs of the City. Such packages could include:

- **Customer billing software.** Having a firm understanding of the City's customer base is a crucial component in managing an efficient collection operation. Louis Berger recommends the City consider purchasing an automated customer tracking and billing software package, in order to ensure that customer counts, services and billing revenues are as accurate as possible.[7]
- **GPS units and vehicle tracking software.** Many communities have installed GPS units on their vehicles in order to increase management's tracking and oversight capabilities of route operations. Frequently, these units come as part of a package which can be integrated into container management (i.e. RFID tracking) and vehicle maintenance activities. Key benefits include: improved accuracy and efficiency of route design, improved customer service metrics, automated pre- and post-trip inspections, and increased vehicle oversight from fleet maintenance. If the City elects to utilizes a GPS-based tracking and oversight system, Louis Berger recommends the City develop a comprehensive plan for how the data collected by the system would be utilized and then proactively communicate this plan to staff.
- **Tonnage and trip tracking software.** Currently the City depends on the Agency to track the volume of material that the City collects annually. Louis Berger recommends the City consider purchasing or developing software that would allow the City to track disposal tonnages, customer counts, and collection trips on a more detailed basis. This type of software would allow the City to better understand how much material each collection operation is collecting annually, identify seasonal disposal trends and neighborhood waste demographics.
- **Route optimization software.** Having appropriately sized routes is imperative to running an efficient collection operation. Although the City's refuse routes were developed according to historical needs, the City has recently re-rerouted some areas due to the approximately 4,200 new residential accounts from the recent City annexation. Given the City's size and growth, Louis Berger recommends the City consider adopting a software-based approach for route planning and rebalancing. There are several options for accomplishing this, including;
  - GIS-based routing done by City staff,
  - GIS-based routing done in collaboration with a consulting firm, or
  - Specialized routing software.

2.11 Initial Key Findings

Louis Berger has identified key findings from reviewing the City's existing residential collection program.

1. **Low recycling set-out rate.** Louis Berger has identified that the City is currently achieving a 56 percent recycling set-out rate. An established curbside recycling program should achieve between a 70 to 80 percent set-out rate.

[7] Prior to purchasing this software a meeting should be set with the City's Finance and Information Systems Departments to verify the capabilities are not available "in house."

2. **Challenges with glass collection.** Due to processing restrictions the City currently collects recycling in a truck with two body compartments, one compartment for mixed recyclables and one compartment for glass. Although the glass compartment is significantly smaller than the mixed recyclable compartment, utilizing a dual compartment vehicle limits the recycling truck's collection capacity per trip. The recycling truck must tip material if one compartment reaches capacity, regardless of how full the second compartment is, decreasing efficiency as the vehicles' collection capacity is not consistently maximized.

   In addition to limiting collection capacity, Louis Berger observed operational collection hazards with glass collection. This safety concern will need to be addressed if the City continues to collect glass with the current recycling side-load vehicles.

3. **Excess back-up rear-loaders in fleet.** In evaluating the City's current fleet levels, Louis Berger identified that the City is currently maintaining a high volume of back-up rear-load vehicles. Louis Berger recommends the City eliminate one or two of the current back-up rear-load vehicles, as aging back-up vehicles incur additional cost to maintain and are not fully utilized. Based on the current maintenance costs, this can result in up to $8,300 in maintenance savings annually, plus a one-time gain from the sale of the trucks.
4. **Limited historical data regarding vehicle maintenance on a vehicle basis.** Louis Berger recommends the City begin to track vehicle maintenance on a vehicle basis. Tracking vehicle cost on each vehicle allows City staff to identify common vehicle trends and plan equipment repairs and replacements in a proactive manner. For example, the City may find that the City's automated side loaders' hydraulic arms typically fail in year five of the vehicle's life, correspondingly the staff can monitor and plan for hydraulic arm repairs on automated side loaders in their fifth year of operation.

   Tracking vehicle maintenance data per vehicle will allow City staff to identify the appropriate time to transition vehicles from front-line vehicles to back-up vehicles. Older vehicles begin to incur additional cost to maintain; however each vehicle differs based on the wear-and-tear on the vehicle. Utilizing this historical maintenance information, the City can determine the appropriate retirement age for front-line and back-up vehicles, based on the City's operations and vehicles. Louis Berger provides additional discussion on the City's current ESD's vehicle maintenance in "Section 4, Review of Fleet Maintenance Operations."

5. **Limited set-out and historical operational data.** Louis Berger recommends the City begin tracking operational metrics, such as:
   - Number of customers per route,
   - Set-out rate (recycling),

- Number of improper set-outs (i.e. glass mixed with other recyclables, carts improperly placed, etc.),
- Large item material composition, and
- Volume of large item set-outs.

Understanding customer participation and challenges customers experience with the collection program guidelines allows the ESD to more accurately target customer education and outreach. Utilizing operational data ensures that the City is maximizing its' staff and financial resources when implementing outreach strategies.

2.12 Program Alternatives Evaluated

Louis Berger has evaluated the financial and operational implication of programmatic changes in the residential collection program. In this report section Louis Berger has evaluated:

- Transitioning the current manual recycling collection operation to an automated collection operation,
- Implementing glass drop-off facilities and a subscription glass program, as a replacement for collecting glass in the automated single-stream recycling collection program, and
- Evaluating the feasibility of a yardwaste (i.e. greenwaste) and/or food waste collection program.

2.12.1 Automating Residential Recycling Collection.

Louis Berger identifies in this section the operational requirements and financial implications of transitioning the ESD's manual recycling collection operation to an automated rolling-cart collection operation. Table 2-11 outlines the differences between the current manual recycling collection program and the proposed automated recycling collection program.

Table 2-11
Recycling Program Components

	Current	Proposed
Collection Method	Manual	Automated
Vehicle	Side-Loader, with Troughs	Automated Side-Loader, with Hydraulic Arm
Container	Open-Top Bin	Rolling-Cart
Personnel	1 driver 1 worker	1 driver
Materials Collected	Mixed Paper Cardboard (OCC) Plastic Aluminum Tin Glass	Mixed Paper Cardboard (OCC) Plastic Aluminum Tin

Based on Louis Berger's experience, an automated recycling program results in a greater level of program participation. In the operational analysis Louis Berger has modeled an automated recycling collection operation with the same set-out rate as the current program, and a scenario where the City achieves an 80 percent set-out rate.

Table 2-12
Routing for Recycling Collection

	Status Quo [1]	Automated – Current Conditions [1]	Automated – Improved Participation
Container	Bin	Cart	Cart
Set-out Rate	56%	56%	80%
Avg. Seconds per Collection	20.4 - 30.6	16.04	20.8
Households Collected/ Day/ Route	511 - 341	650	718
Households Passed By/ Day/ Route	402 - 268	511	179
Total Households Served/ Day/ Route	913 - 609	1,162	897
Routes Needed	6.0 - 9.0	4.7	6.1
Routes Needed (rounded)	6.0 - 9.0	5.0	6.0

1. Louis Berger has utilized the higher collection efficiency from the City's refuse cart collection to model the automated collection of recycling material.

As shown in Table 2-12, the City has the opportunity to reduce the recycling operation by one route, under the current recycling program participation levels. If the City is able to increase customer participation in the recycling program, the City will need to maintain six routes to serve the residential recycling operation. As shown in Table 2-12 the residential recycling route would have additional capacity when automated, assuming no increase in participation, as approximately 4.7 routes will be needed to collect residential recyclables, allowing the additional route capacity to be used by commercial recycling or the refuse operation, as needed.

The manual collection operation utilizes two staff (one worker, one driver) to collect material from the recycling bins and place the material in the troughs on the side of the

side-loader. Once the troughs are full, they are tipped into the body of the truck. In an automated side-loader collection operation there is not a need for the second person, as the hydraulic arm collects the rolling cart, and tips the material into the body of the truck. Under the two automated operations modeled, fewer personnel would be required, as show in Table 2-13.

Table 2-13
Operational Requirements for Recycling Collection

	Status Quo	Automated – Current Conditions	Automated – Improved Participation
Staffing			
Staffing per Route			
Driver	1	1	1
Worker	1	-	-
Staffing Back-up Ratio	20%	20%	20%
Number of Routes	6	5	6
Staffing Needed			
Supervisor/ Manager	1	1	1
Driver	7	6	7
Worker	7	-	-
Total FTE Needed	15	7	8
Vehicles			
Vehicles per Route			
Automated Side-Loader	1	1	1
Vehicle Back-up Ratio	20%	20%	20%
Number of Routes	6	5	6
Vehicles Needed			
Automated Side Loaders			
Front-Line	6	5	6
Back-up	2	1(1)	2(1)
Total Vehicles Needed	8	6	8
Containers			
	Bin	Rolling-Cart	Rolling-Cart
Number of Containers per Customer	2.05	1.05	1.05
Total Containers Needed	56,197	28,784	28,784

1. Potentially additional economies could be realized with the same type automated side loader used for garbage and recycling collection, thereby reducing the total number of back-up vehicles.

To ensure a conservative analysis Louis Berger assumed the volume of recyclables captured in the automated collection programs modeled reflected a moderate increase per customer of 0.01 tons (20 pounds) per customer per year. It is reasonable to expect that the City will experience an increase in recyclable tonnage as well as an increase in

the recycling set-out rate with an automated program. However, the exact increase in tonnage and participation is unknown until a recycling program is fully implemented. In Table 2-14, Louis Berger has provided a sensitivity analysis of the City's recycling rate, considering a variation in annual tonnage collected per customer.

Table 2-14
Sensitivity Analysis on City Recycling Rate

	Status Quo	Automated – Current Conditions	Automated – Improved Participation
Residential Recycling Customers	27,413 customers	27,413 customers	27,413 customers
Tons Collected per Customer	0.21 tons	0.22 tons	0.22 tons
Residential Recycling Set-out Rate	56%	56%	80%
Number of Recycling Customers Setting-out Material	15,351 customers	15,351 customers	21,930 customers
Recyclables from Residential Customers	3,223 tons	3,377 tons	4,824 tons
Increase in Residential Recycling Tonnage	-	4.8%	49.7%

The City historically collects approximately 0.206 tons (413 pounds) of recyclables per customer annually. In a benchmarking study completed by Louis Berger (as SAIC) in 2011, of 82 recycling programs in North Central Texas, the average bin based program collected 0.14 tons (280 pounds) of recyclables per household. It is important to note that the City's 413 pounds per customer reflects both residential and commercial recyclables, as residential recycling is not tracked separately from commercial comingled recycling.

In Louis Berger's experience cart based recycling programs capture a larger volume of recyclables per household. In the same benchmarking study of North Central Texas mentioned previously, the average cart based program captured 0.22 tons (440 pounds) of recyclables per household.

Assuming the City is able to reach the average volume of material captured in a cart based program (0.22 tons per customer) and achieve an increased set-out rate (80%), it is reasonable to project the City's residential recycling tonnage will increase by nearly 50%.[8]

Each recycling operation will result in varying levels of personnel and equipment to effectively collect the City's recyclable material. Louis Berger has estimated the cost of operating each collection operation based on the City's current operating costs. In the analysis provided in Table 2-15, Louis Berger has included the following additional program costs, that are not currently included in the City's recycling budget:

- Vehicle replacement costs,
- Container replacement costs, and

[8] Note, this is not the recycling rate, merely the increase in tonnage that could potentially be collected in an automated residential recycling program.

- Public education costs.

Based on Louis Berger's experience in the solid waste and recycling industry, these are important costs to consider when evaluating a collection program. Vehicle and container replacement costs have been included in the collection operation cost analysis as it is vital to the efficiency of the collection operation that the City has a reliable fleet and the appropriate number of containers (bins or rolling-carts). Louis Berger has also accounted for a public education budget of $3.00 per household, annually, to promote and educate residents on the residential recycling program. In Louis Berger's experience, a successful recycling program will spend between $2.00 to $3.00 per household annually on recycling public education. Table 2-15 outlines the cost of each residential recycling collection program.

Table 2-15
Cost of Residential Recycling Collection

	Status Quo	Automated – Current Conditions	Automated – Improved Participation
Staffing			
Supervisor	$72,160	$72,160	$72,160
Drivers	406,560	348,480	406,560
Workers	332,640	-	-
Total Staffing Cost	$811,360	$420,640	$478,720
Vehicle			
Replacement Cost(1)	$192,850	$232,140	$278,570
Maintenance Cost	165,911	124,433	165,911
Fuel Cost	35,204	29,337	35,204
Total Vehicle Cost	$393,965	$385,910	$479,685
Container Cost	84,295	143,918	143,918
Public Education	82,239	82,239	82,239
Total Program Cost	$1,371,859	$1,032,707	$1,184,562

1. Amortized annual cost for the required recycling fleet.

The program cost shown in Table 2-15 represents the annualized cost of vehicles and containers; however, it is important to note that implementing an automated program will require an upfront investment in automated vehicles and rolling-carts for residents. These costs will be recovered through rates in the following years, although there will be a need for a significant investment to implement automating the recycling operation. This cost would include vehicle purchases (approximately $1,900,000 to $2,200,000) and container purchases (approximately $1,450,000) expenses. It is possible the City can achieve a more competitive price than the typical industry costs included in this analysis through a competitive bid process.

Additional Factors

There are several additional factors that are not reflected in the above analysis that must be considered prior to forecasting a potential cost savings associated with the movement to automated recycling collection. The first factor that needs to be included in this analysis is the fact that the City envisions adding two additional automated recycling routes to reflect the fact that the fully automated trucks cannot be used universally throughout the City of Santa Fe due to the narrow streets and alleys where

automated containers will need to be lifted using semi-automated recycling trucks. This will result in a reduction in the efficiency gained via fully automated recycling trucks. In addition, at present, recycling trucks go down the center of the street and collect from both sides of the street, versus a fully automated truck which needs to go down the street "twice" so as to collect the automated carts on both sides of the street. While the automated system will be much safer for the drivers, it will take more time on some of the routes using the fully automated recycling trucks as opposed to the manual recycling trucks.

Based on the additional routes (two additional trucks), offset by a reduction in labor cost, it is estimated that implementation of automated recycling will result in a savings of approximately $70,000 to $100,000 per year. If it is determined at a certain point that one of the two additional routes added is no longer required (due to improved route optimization, impact of narrow streets can be minimized, etc.), additional savings may be realized. Finally, it should be noted that some cities have implemented every other week recycling which would result in a significant savings, (a total savings of approximately $400,000 per year), because the number of trucks and drivers required for the recycling routes are reduced by half, because each home is picked up every other week. However, we do not consider this a strong possibility given the City's past experience with every other week recycling. Based on the analysis in this section, and these additional factors, we would estimate that the movement to automated recycling will save the City at a minimum, $70,000 to $100,000 per year.

2.12.2 Glass Collection

The City currently provides glass collection to residential and commercial customers. The current processing facility for the City's recyclables, BuRRT, is not designed to manage glass material, requiring that the City collect glass material separately from other recyclable materials in a split-body vehicle, as discussed in Section 2.2 of this report. Another prominent challenge with glass recycling in the Santa Fe area is the stability of a long term, stable market for the volume of material collected, making the material cost prohibitive to recycle. In this section of the report, Louis Berger has evaluated the feasibility of transitioning glass collection to a drop-off program and/or a subscription collection service.

Developing drop-off sites for glass collection provides an alternative to providing glass collection in the curbside recycling service, while still maintaining an outlet through which citizens may recycle their glass bottles. Louis Berger has modeled these drop-off sites as un-staffed sites with one 30 cubic yard roll-off container, including a catwalk and set of stairs to allow customers to access the open-top containers. The potential equipment configuration is similar to some of the County current drop-off sites, as shown in Figure 2-2(a). Figure 2-2(b) provides an example of the glass drop off container. The City could also configure a covered drop-off container similar to Figure 2-2(c).

Figure 2-2(a)

Figure 2-2(b)

Figure 2-2(c)

Figure 2-2. Drop-off Container Configurations

It is important to note that the analysis does not assume full-time staffed drop-off sites, in order to minimize costs of the drop-off operation.

Louis Berger has modeled two scenarios, one in which the City will be able to provide free sites to place roll-off containers where citizens can bring glass material to be recycled. This scenario assumes the City can utilize the drop-off facility at BURRT, parking lots at local municipal buildings or schools, or team with local non-profit organizations such as churches or community centers to place the glass drop-off centers. Alternatively, Louis Berger has forecasted the cost of implementing and operating a drop-off center if the City is required to purchase land for the glass drop-off centers. The feasibility analysis of a glass drop-off program is shown in Table 2-16.

Table 2-16
Glass Drop-off Collection

	City Owned Area	Purchased Area
Number of Drop-off Sites	3	3
Initial Investment		
Cost of Land (0.5 Acres per site)	$ -	$15,000
Signage	3,000	3,000
Total Initial Investment	$3,000	$18,000
Amortized Over	20 years	20 years
Annualized Cost of Initial Investment	$150	$900
Annual Cost of Operation		
Annualized Cost of Initial Investment	$150	$900
Staffing Cost (0.5 FTE)	30,767	30,767
Roll-off Container Costs	1,500	1,500
Stair Costs	2,700	2,700
Annual Roll-off Pulls	31,355	31,335
Glass Tipping Cost	20,741	20,741
Total Annual Cost of Operation	$ 87,213	$ 87,963

Operating three glass drop-off sites will cost the City approximately $87,200 to $88,000 per year, which equates to $0.30 per household, per month.

Louis Berger has also considered that some recycling customers may want to continue to receive curbside collection and be willing to pay a higher cost for this service, such as commercial customers with a large amount of glass material. Louis Berger has modeled a subscription glass collection program to serve these customers. Subscription programs are less efficient than city-wide (i.e. universal) programs as there is less collection density and a lack of economies of scale, this results in a higher cost for subscription services than universal programs. Table 2-17 outlines the operational requirements needed for a subscription glass collection program.

Table 2-17
Subscription Glass Collection Program

	Unit
Residential Accounts	
Number of Residential Accounts	27,413
Participation in Subscription Program	3.0%
Residential Subscription Accounts	822
Commercial Accounts	
Number of Commercial Recycling Cart Accounts	760
Participation in Subscription Program	100.0%
Commercial Subscription Accounts	760
Total Subscription Accounts	1,582
Assumed Set-out Rate	100.0%
Total Collections per Route	160
Total Routes Needed	2.0

The assumptions used to develop the routes needed for a subscription glass program differs from those when modeling a universal recycling program, in Section 2.12.1. The number of customers forecasted to participate in the subscription program is significantly less than a universal program; however, routes are still required to serve

the same footprint as a universal program, as the customers are located throughout the City. This program design results in more drive time and fewer collections per route. In a subscription program, it is realistic to assume that the collection operation will experience a higher set-out rate, typically 90 to 100 percent, as customers have made a conscious effort to subscribe and pay for the additional service. Based on these assumptions, Louis Berger forecasts that the City will need two weekly subscription glass recycling routes to serve residential and commercial customers.

Louis Berger has modeled the residential glass subscription program to be similar to the current recycling special collection operation, which utilizes one driver and a one-ton recycling truck. The driver exits the vehicle and manually tips material into the bed of the truck at each collection. The residential subscription glass operation will continue to use the current recycling bins used by the City. The commercial subscription program would be similar to the current commercial recycling collection program with an automated side-loader utilizing rolling-carts for glass collection. The commercial operation will differ from the residential glass collection as commercial businesses are expected to generate a larger volume of glass material compared to residential customers and for the safety of collection staff, it is beneficial to utilize automated collection vehicles.

For a back-up operation, to account for front-line vehicle downtime, Louis Berger has accounted for a second one-ton truck that would be shared between the residential and commercial operations. In the event a commercial back-up recycling route is required, the City will utilize a second FTE on the commercial glass collection back-up route to manage the rolling-carts. It has been assumed the second FTE can be sourced from either the solid waste or recycling operations on a case-by-case basis. The cost of this back-up operation is included in the costs shown in Table 2-18.

Table 2-18
Subscription Glass Collection

	Residential Collection	Commercial Collection	Total Subscription Glass Program
Vehicle Cost			
Replacement Cost	6,047	33,705	39,752
Maintenance Cost	25,924	25,924	51,847
Fuel Cost	7,825	7,825	15,650
Total Vehicle Cost	39,796	67,454	107,250
Staffing Cost	69,544	69,544	139,088
Container Cost	4,046	7,790	11,836
Annual Subscription Glass Collection Cost [1]	$113,386	$144,787	$258,173
Number of Customers	822	760	1,582
Monthly Collection Cost per Customer	$11.49	$15.88	N/A

1. The annual subscription glass collection cost does not include the $15.75 tipping cost per ton of glass collected, which is expected to add another 10-15% to the cost.

The residential and commercial collection cost have been presented separately in Table 2-18 as the two operations have different vehicle and container requirements, resulting in a slightly different cost of service. The two operations are modeled to

share a back-up vehicle and back-up personnel. The collection cost for the residential glass subscription program is projected to cost $11.49 per customer per month and the commercial glass collection is projected to cost $15.88 per customer per month. It is important to emphasize that both of these costs do not include the $15.75 per ton tipping cost of recycling glass at BuRRT.

Louis Berger recommends the City conduct community outreach to gain a better understanding of how many residential and commercial customers would be willing to subscribe to a glass collection program for a monthly cost of between $13.00 (residential) and $20.00 (commercial). Depending on the community response, the City may consider implementing a subscription glass collection program, although Louis Berger discourages the City from making the development of this program a top priority.

2.12.3 Organic Diversion

The City issued a Request for Bid (RFB) for a food waste pilot program in December 2013 with 30 local restaurants. Like many other cities around the United States and Canada, the City has been looking to divert additional material from the landfills, and organics is a natural target, as organic material makes up an average of 28 percent in the United States waste stream. [9]

Although organics is a large portion of the waste stream that can be diverted, it is also a more complicated and intensive material to capture. The City can explore various programs to capture and divert the food waste and yardwaste in an effort to achieve a higher diversion rate; however, based on Louis Berger's experience this organics material stream is much harder to capture than traditional single-stream materials (i.e. paper, plastic, metal).

Louis Berger has worked with various cities throughout the United States in assessing city-wide and county-wide food waste collection and has provided a list of some of the key challenges with developing and implementing a successful food waste program;

- Requires challenging decisions determining what materials are to be included (i.e. meat and dairy, greenwaste, paper, etc.)
- Involves a high level of education required of both residential and commercial participants
- Requires high level of compliance development and compliance officer involvement (i.e. bag liners, guidelines on materials accepted, container audits)
- Typically a percentage of customers express resistance to a three-cart collection program (i.e. set-out footprint, additional customer effort in material sorting)
- Challenge with identifying local processor that can accept material and material volume

[9] While it is recognized that green waste is not as a material element in more arid climates like New Mexico, a successful diversion program with regard to yard waste and/or food waste would substantially boost the City of Santa Fe's recycling rate.

- Certain regions struggle with identifying and developing a market for compost/mulch end product
- Added programs results in increased cost to customers and higher utility rates

If the City does pursue a program to capture organic materials in the future, Louis Berger recommends the City implement a seasonal residential yardwaste collection program in conjunction with a commercial food waste collection program.[10]

Yardwaste makes up 13.5% of Santa Fe's waste stream. Through implementing a seasonal yardwaste collection program the City can capture a healthy volume of organic material with relatively little capital investment. Additionally, a yardwaste program can be implemented with various collection frequencies (i.e. weekly, monthly, quarterly).

Collecting foodwaste is a more complicated and involved process compared to collecting yardwaste. If they City is intent on diverting foodwaste material from the waste stream, Louis Berger recommends that the City implement a commercial food waste collection program. Focusing on commercial institutions with high volumes of food waste allows the City to capture a significant volume of foodwaste from a limited number of customers.

Although the City is currently not diverting yardwaste or food waste in their current collection programs, the City does have a fully implemented recycling program with a low participation rate. Louis Berger recommends the City focus on strengthening the current recycling collection program before adding additional organics related collection programs.

Depending on equipment configuration, frequency of collection, materials accepted, etc. a seasonal yard waste collection program would add $1.50 to $2.50 to the monthly residential solid waste user fee.

2.13 Recommendations[11]

1. **Measure recycling program success and refocus efforts on recycling public outreach and education.** Educating customers on the environmental and financial benefit of diverting recyclable materials from the waste stream can result in a higher participation and set-out rate for the City's recycling program. In order to determine the effectiveness of recycling outreach, the City must first begin tracking the residential recycling program set-out rate.[12]
2. **Evaluate distribution of drivers and workers for refuse and recycling operations.** City does not have an appropriate number of full-time equivalents (FTE) to maintain a 15-20 percent personnel back-up ratio. Based on the

[10] A detailed description of the Commercial Food Waste Cost Analysis is provided in "Section 3 – Review of Commercial Collection Operations."
[11] Read in conjunction with Section 2.11, Initial Key Findings.
[12] More information will be provided regarding education on a system-wide basis (City, County, Agency) in the "Systemwide Report" section at the end of this report.

current crew configuration, Louis Berger recommends the City evaluate the distribution of drives and workers. Based on Louis Berger's analysis the City is currently understaffed one driver; in addition, the City is currently operating with too few workers for manual collection operations. If the City decides to forego automating the City recycling operation, Louis Berger recommends the City evaluate the number of recycling workers on staff in the residential operation.

3. **Eliminate redundant rear-loader back-up vehicles.** The current fleet is maintaining a high level of back-up rear-loader vehicles. Louis Berger recommends the City eliminate two rear-loaders, and work towards maintaining a 20-30 percent vehicle back-up ratio. Based on the current maintenance costs, this can result in up to $8,300 in maintenance savings annually, as well as a one time savings from the sale of these trucks.
4. **Monitor the dependability and annual maintenance cost of vehicles over their useful life.** Utilizing vehicle maintenance data, the City can determine when it is cost effective to transition front-line vehicles to back-up vehicles and subsequently, when to sell back-up vehicles. Vehicles are a crucial aspect of a collection operation and it is imperative to an efficient system that vehicle are properly maintained and appropriately replaced.
5. **Large item collection frequency should be reduced.** Louis Berger would recommend splitting the City into sections and collecting each section once per month. We would also recommend a modest increase of $5 to $8 on the customer fee.
6. **Transition current recycling operation to automated collection.** As discussed in Section 2.12.1, the City can benefit operationally and financially by transitioning from a manual recycling collection operation to an automated recycling collection operation. With an automated recycling collection operation the City has the opportunity to collect more customers per hour and increase the volume of material collected annually. Transitioning the current manual recycling collection to an automated collection can result in savings of between $270,000 and $420,000 annually. These annual cost savings translate into an opportunity to decrease the recycling cost of service by $0.82 to $1.28 per customer per month, from the current manual recycling collection operation cost of $4.15 per customer per month.
7. **Remove glass from current recycling operation and transition to a glass drop-off program.** The City's recycling operation would benefit from removing glass collection from the current single-stream collection operation, as glass commodities are challenging to collect and difficult to process and sell in the Santa Fe area. Based on the analysis in Section 2.12.2 the cost of operating three glass drop-off sites will cost the City approximately $90,000 per year, which equates to $0.30 per residential customer per month.
8. **Evaluate residential and commercial customer interest in a glass subscription program.** Providing a subscription curbside glass collection service is a viable option for the City to maintain the current curbside glass

collection service for those customers that are interested in paying for this service. Before implementing a subscription glass program, Louis Berger recommends the City identify the number of customers that would participate in this service before implementing a glass collection program. It is critical to the success of the program that there are enough participants subscribing to the service in order to operate efficiently.

9. **Invest in industry software and data management.** Based on Louis Berger's review of City data, Louis Berger recommends the City invest in software packages specific to the solid waste industry, such as; customer billing software, GPS units and vehicle tracking system, tonnage and trip tracking software and route optimization software. The use of these software packages will enable the City to improve the ESD's operational data. Information that must be gathered at a minimum includes:
   - Number of customers per route,
   - Set-out rate (recycling),
   - Number of improper set-outs (i.e. glass mixed with other recyclables, carts improperly placed, etc.),
   - Large item material composition, and
   - Volume of large item set-outs.

   Understanding customer participation and challenges customers experience with the collection program guidelines allows the ESD to more accurately target customer education and outreach. Utilizing operational data ensures that the City is maximizing its' staff and financial resources when implementing outreach strategies.

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Section 3
REVIEW OF COMMERCIAL COLLECTION OPERATIONS

3.1 Introduction

This section addresses the City's existing commercial refuse and recycling collection operation and potential changes the City may wish to consider to improve the overall efficiency of the commercial operation. Louis Berger identified the following areas of the commercial operation as key components to review and analyze:

- Collection efficiency
- Staffing
- Routing
- Equipment

Louis Berger has provided a summary of key findings at the conclusion of this report section.

3.2 Program Overview

The City provides commercial collection to businesses within the City limits. The majority of the City's commercial refuse collection is offered as front-load and roll-off service. The City does offer refuse collection in rear-load containers in the downtown area (i.e. The Plaza), due to limited collection space in the area's alleys.

Front-load service is provided on a set collection frequency ranging between one and six times per week. The City offers front-load containers in three cubic yard (CY), four CY, six CY and eight CY containers. Customers that require greater collection capacity than eight CY can be served by roll-off containers. The City collects 20 CY and 30 CY open-top roll-off containers and closed roll-off containers with compacting units. All compacting units are owned by customers, which is a common industry practice.

Rear-load refuse dumpsters are collected primarily in The Plaza area. Rear-load containers are provided in three CY, four CY and six CY containers. The City also provides commercial refuse collection to some commercial customers in 64-gallon and 96-gallon rolling-carts where the businesses do not have adequate space for larger containers.

Commercial recycling is collected in 96-gallon rolling-carts and rear-load containers, ranging in size from three CY, four CY and six CY containers. Commercial recycling service is provided between one to four times per week, depending on the volume of recyclables the business generates.

3.3 Market Share

As stated in the City Code, in Chapter XXI: Environmental Services, the City has the exclusive right within the City limits to collect solid waste, with the exception of nonresidential recyclables, dead animals, construction and demolition debris (C&D), and hazardous wastes. Table 3-1 outlines the volume of commercial material collected by the City in fiscal year (FY) 2013.

Table 3-1
Fiscal Year 2013 Commercial Tonnage

	Fiscal Year 2013
Material Hauled by City	
Commercial Waste	35,461
Recycling [1]	5,324
Construction and Demolition (C&D)	241
Total Commercial Tonnage Hauled By City	41,027
Self-Haul [2]	203
Total Annual Commercial Tonnage	41,230

1. Recycling tonnage reflects residential and commercial tonnage as the City's data does not differentiate between commercial and residential recyclable tonnage.
2. Self-Haul tonnage includes 154 commercial waste tons and 49 recycling tons annually.

Although the City does not have the exclusive right to haul nonresidential recyclables or C&D material, the City collection operation commands the majority of the City's commercial solid waste and recycling market, as shown in Table 3-1.

3.4 Collection Efficiency

During route observations of the City's commercial collection operation conducted during the week of June 24th, 2013, Louis Berger calculated the average round trip travel time from the collection route to the Caja del Rio landfill to be approximately 57 minutes. The City currently serves 1,374 front-load dumpsters, 1,604 rear-load carts and 203 rear-load dumpsters on a weekly basis.

3.4.1 Front-load Collection Efficiency

Front-load refuse collection is offered up to six times per week. Table 3-2 summarizes the current container count and collection frequency of the front-load containers currently served by the front-load collection operation.

Table 3-2
Front-load Container Frequency

Container Size	Collection Frequency (per week)						Total (containers)	%
	1	2	3	4	5	6		
3 CY	65	10	2	-	-	-	77	6%

Container Size	Collection Frequency (per week)						Total (containers)	%
4 CY	313	75	29	1	3	2	423	31%
6 CY	196	129	128	16	6	13	488	36%
8 CY	117	76	126	8	22	37	386	28%
							1,374	100%

Louis Berger evaluated the productivity of the commercial front-load collection operation based on a combination of field observations, data analyses, staff interviews and benchmarking. A summary of this analysis follows in this section.

Data collected from the field observations is presented in Table 3-3 which illustrates the productivity of the commercial front load operation. It is important to note that Louis Berger categorized time spent on-route and time spent off-route to determine the levels of efficiency being achieved by the front-load collection observation.

Table 3-3
Analysis of Louis Berger Field Observations for Front-load Route

	Route 1	Route 2	Route 3	Route 4	Average for Field Observations
Total Stops	83	78	66	59	71.5
Total Containers	86	91	72	63	78.0
Total Yards	534	587	410	348	469.8
Total Tons	13.09	11.15	11.71	9.99	11.5
Pounds/Yard	49.03	37.99	57.12	57.41	50.4
Yards/Container	6.21	6.45	5.69	5.52	5.97
Time Spent On-Route	3.70	3.10	3.63	3.98	3.60
Time Spent Off-Route[1]	4.80	5.40	4.87	4.52	4.90
Average Productive Minutes/Container	2.58	2.04	3.03	3.79	2.86
Average Total Minutes/Container	5.93	5.60	7.08	8.10	6.68

1. Includes lunch breaks, pre and post-trip inspections, travel time to landfill, breakdowns, etc.

The Environmental Services Division (ESD) front-load drivers were asked by Louis Berger to collect the same data for their routes during a one-week period. That data was then compiled by Louis Berger in Table 3-4. The data was derived from the daily driver route sheets, as well as a "Louis Berger provided" form. The results of the analysis show that drivers have correctly accounted for daily productivity, as the City data is fairly consistent with Louis Berger's observations. However, there are differences with regards to time spent off-route and on-route.

Table 3-4
Analysis of City Field Observations for Front-load Route

	Route 5	Route 6	Route 7	Route 8	Route 9	Route 10	Route 11	Route 12	Route 13	Route 14	Route 15	Route 16	Route 17	Average for Field Observations[1]
Total Stops	60	58	53	64	N/A[2]	56	63	67	58	57	77	64	N/A[2]	61.55
Total Containers	100	70	66	82	N/A[2]	77	98	94	61	72	93	88	N/A[2]	81.91
Total Yards	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]
Total Tons	17.56	15.92	15.30	10.06	15.37	10.99	12.09	10.44	11.15	9.61	18.82	13.38	N/A[2]	13.39
Pounds/Yard	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]
Yards/Container	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]	N/A[2]
Time Spent On-Route	4.48	5.23	3.90	4.10	5.80	3.10	4.52	3.70	4.00	4.93	4.48	3.88	4.08	4.32
Time Spent Off-Route[3]	4.02	3.37	4.60	4.40	2.70	5.40	3.98	4.80	4.50	3.57	4.02	4.62	4.42	4.18
Average Productive Minutes/Container	2.69	4.49	3.55	3.00	N/A[2]	2.42	2.77	2.36	3.93	4.11	2.89	2.65	N/A[2]	3.17
Average Total Minutes/Container	5.10	7.29	7.73	6.22	N/A[2]	6.62	5.20	5.43	8.36	7.08	5.48	5.80	N/A[2]	6.39

1. Average of Routes 5–17.
2. Data not provided.
3. Includes lunch breaks, pre- and post-trip inspections, travel time to landfill, breakdowns, etc.

A comparison between the observed productivity for the City's front-load collection system and industry standard is presented in Table 3-5. The data used for the analysis in Table 3-5 is based on Louis Berger's background conducting studies for other cities, as well as the general standards and goals established within the industry.

Table 3-5
Field Observations vs. Industry Standard

	Average for Louis Berger Field Observations (Routes 1-4)	Overall Average for Field Observations (Routes 1-17)	Industry Standard
Total Stops	71.5	64.2	75-80
Total Containers	78.0	80.9	100-110
Total Yards[1]	469.8	469.8	600-650
Total Tons	11.5	12.91	20–26
Pounds/Yard	50.4	50.4	75–90
Yards/Container	5.97	5.97	6.04
Time Spent On-Route	3.60	4.15	5.82
Time Spent Off-Route[2]	4.90	4.35	2.68
Average On-route Minutes/Container	2.86	3.09	3.25
Average Total Minutes/Container[3]	6.68	6.47	4.75

1. Average reflects data observed by Louis Berger.
2. Includes lunch breaks, pre and post-trip inspections, travel time to landfill, breakdowns, etc.
3. Includes total time on-route and off-route.

During field observations and staff interviews, Louis Berger identified several factors that have a negative impact on collection efficiencies. This analysis indicates that the productivity levels for the City's front-load operation are less efficient relative to industry standards. The following summarizes some of the identified problems, which are also illustrated in the table above:

- The total stops, containers, and yards serviced per day for each route, on average, lag behind the industry standard.
  - The average number of stops served per day by route ranges from a high of 83 on Tuesday to a low of 53 also collected on another Tuesday route. As a result, an overall average of approximately 64.2 stops is well below the industry average of 75 to 80 stops per day for each route.
  - Approximately 80.9 containers are served per day per route, which falls short of the industry standard of 100 to 110 containers. Please note that this can vary greatly, and Louis Berger has observed front-load operations that pick up between 130-140 containers served per day by route; this, however, is typically observed when customers have two to four containers per stop.
  - The average number of yards served per day by route ranges from a high of 534 CY on a Tuesday to a low of 348 CY on a Thursday. According to Louis

Berger's observations, the total cubic yards picked up is 30 to 40 percent below the industry standard.

- The total tons per route is significantly below the industry standard; well-run routes typically pick up 10 to 13 tons per load and average two loads per day.
- Louis Berger confirmed that most routes are picking up a significant amount of "air" as evidenced by the low tonnage, which averages approximately 50.39 pounds per cubic yard versus the industry standard of 75 to 90 pounds per cubic yard. This means many containers are being picked up that are not very full. This was confirmed on the "ride-alongs" by Louis Berger as well. This means some of these dumpsters could be serviced less frequently, thereby increasing the operational efficiency of the front-load system. However, this would also result in the loss of some revenue as the customer's monthly bill will decrease as it has less frequent pick-ups, unless these "reduced" pick-ups are replaced with new customers or a reduction of a route (i.e. cost savings).
- Based on Louis Berger's analysis, the City could improve its collection efficiency by moving to a four-day work schedule with 10-hour days (known as "4-10's"). Many of Louis Berger' public sector clients that provide commercial refuse collection use this type of schedule as the additional "two hour" gain in time is nearly 100 percent spent in the field collecting refuse.[1]
- In a 4-10's scenario, commercial customers requiring a five day collection schedule would still be served on the fifth day by staggering employee schedules. This schedule would result in some drivers having different days of the week off (i.e. Wednesday vs. Friday). Scheduling could be rotated or awarded as a longevity or a performance benefit, at the City's discretion.

3.4.2 Roll-off Collection Efficiency

The City commercial roll-off operation collects scheduled and on-call (i.e. unscheduled) roll-off containers five days a week[2]. In FY 2013, the collection operation collected 2,600 scheduled pulls and 523 on-call pulls. On-call roll-off pulls are typically scheduled the day before, when a customer requests a collection. Based on the FY 2013 pull data, 83 percent of the City's roll-off service is scheduled collection.

Open-top and compacting containers are both serviced by the City's commercial collection operation. The closed roll-off containers and compacting units are not provided by the City, but are owned by the customer. Typically closed-top roll-off containers are custom made to fit specific compacting units. This requires the City to return the same roll-off containers to customers after tipping each customers' load.

[1] Our industry average shown on Table 3-5 includes clients that utilize 8-hour and 10-hour days, with the standards for 10-hour days adjusted downward on a pro-rata basis to reflect a "normal" 8-hour day. This was done to ensure an "apples to apples" comparison for Santa Fe's operation.
[2] A higher fee is charged for unscheduled pulls, which is a common industry practice.

Based on Louis Berger's route observations the week of June 24th, 2013 the City's roll-off collection operation averages five roll-off containers per route day[3].

Based on our experience in dealing with roll-off collection operations, Louis Berger would make the following recommendations with regard to the City's roll-off collection operations:

- **The City should strongly consider doing away with the grandfathered "double-handled" compactors.** These compactors require the driver to disconnect the compactor from the container, pull the container out from the compactor, then find room to unload the container and then "re-load" the container from the other end so it can be safely secured and transported to the landfill for disposal. This same process is required when the compactor is returned to the customer's location, with the container being handled "twice" on both picking up and returning the container. Requiring customers to move to the newer configurations that don't require the "double handling" should save 10 to 20 minutes on each compactor pull. If the new roll-off compactors are not required, Louis Berger would recommend a $25-$50 surcharge for the "grandfathered" compactors due to the increased time it takes to service them.
- **Different user fee per pull for open-tops versus compactors.** Currently, the City does not charge a different rate for pulling an open-top versus a compactor. We would recommend that an additional $25-$35 per pull be charged for compactors, as the driver needs to get out of the truck to disconnect the compactor from the container, etc. and reconnect when returning the compactor. In addition, if the compactors that require to be "double-handled" remain in service, there should be an additional fee of $25 to $50 as described in the first bullet in addition to the additional $25-$35 being recommended for pulling a compactor versus an open-top. This will assist in getting customers to change to the newer compactor unit which will increase worker safety and productivity.
- **The City "pulls" approximately 3,100 roll-offs per year, which averages 12 per day, on a 5-day work week.** We would recommend the City work with the customers to schedule the pulls as much as possible to "levelize" the work load so that pulls are kept to 11-13 pulls per day as much as possible. If this is accomplished the City should be able to operate with two roll-off drivers instead of the three that are budgeted. Having each driver focus on one section of the town will also assist in helping them to achieve six pulls per day, on average.

It is important to note that over 30 percent of the pulls last year were compactors (1,040 out of 3,123). By moving towards the more efficient compactors the City will save time and increase the productivity of its routes. With these changes, the City should be able to operate with two roll-off drivers instead of three, and only on occasion need to utilize some minimal overtime, or another driver perhaps only 2 or 3 times per month, for part of a day.

[3] Louis Berger consultants rode three different roll-off routes, with two routes collecting five roll-offs and the third route collecting six roll-offs.

3.4.3 Recycling Collection Efficiency

The City provides commercial single-stream recycling and commercial cardboard recycling. Commercial single-stream recycling is provided in 96-gallon rolling-carts, whereas commercial cardboard recycling is provided via rear-load containers.

The City runs a "night route" to collect commercial cardboard recycling one day per week. This route is operated as a 'night route' that begins each Wednesday at 3:00 am in the morning and typically finishes collection by 11:30 am.

The commercial single-stream recycling route is operated from 7:30 am to 4:00 pm on Monday, Tuesday, Thursday and Friday. The commercial single-stream recycling operation utilizes the same side-load collection vehicle used in the residential recycling collection operation.

Table 3-6 summarizes the number of customers receiving commercial recycling collection each week.

Table 3-6
Commercial Recycling Collection Frequency

Container Size	Collection Frequency (per week)				Total (containers)
	1	2	3	4	
Commercial Single-Stream					
96 gallon rolling-cart	702	54	-	4	760
Commercial Cardboard					
3 CY	82	4	-	-	86
4 CY	20	-	9	-	29
6 CY	50	18	-	-	68
8 CY	1	-	-	-	1
Total Rear-Load Containers					184

Based on Louis Berger's experience in dealing with commercial recycling programs we made the following observations and resulting recommendations:

- From conducting our field observations while riding on front-load commercial refuse collection routes we observed a significant amount of cardboard being disposed of that could be recycled.
- The current once per week cardboard collection is too infrequent to get some commercial customers to sign up for the program. We heard anecdotal comments about several businesses that have asked for more frequent cardboard collection (requesting three and four times per week collection). The City needs to consider

expanding its commercial cardboard collection service to more than once per week.[4]

- We would strongly recommend that the City begin offering commercial cardboard collection services using a front-load truck. The City will still need to utilize a rear-loader truck for some cardboard routes because a front-load truck will not fit in some of the narrow alleys, as well as the narrow roads. However, from a safety standpoint the rear-load collection of commercial cardboard is a dangerous process that requires the workers to put themselves in precarious positions in order to get all of the cardboard out of the dumpster (starting at 3:00 am when it is still dark outside). If the City increases the frequency of commercial cardboard collection, it is going to need two trucks to collect the material so having a front-load and rear-load route would meet both types of clients' needs.
- In addition to educating the customers about the commercial cardboard collection service, as well as the increased frequency of the service (if Louis Berger's recommendation is implemented), education needs to be provided with regard to the importance of breaking the boxes down so dumpsters are not overflowing with cardboard.[5]
- The City has a customer representative that is supposed to be out promoting the commercial cardboard recycling program to businesses within the City. We would recommend that a monthly report be provided by him to the ESD Director that lists his monthly activities including such items as (number of "cold calls" on new commercial businesses, new accounts signed up, follow up visits with existing customers to check on their satisfaction, etc.)

3.5 Routing

Louis Berger utilized the time and motion data collected through route observations to model the current collection operations' routes. This analysis allows Louis Berger to determine if the City's collection operations are appropriately sized. The following timing assumptions were applied for all commercial collection operations evaluated.

[4] Louis Berger has conducted an in-depth analysis of the capital and operating costs associated with expanding the City's commercial cardboard collection later in Section 3.10.1 of this report.

[5] This is one of the advantages of a front-load truck being used for commercial cardboard collection as the dumpsters used for collecting cardboard are designed so the boxes need to flattened before being slid into the dumpster through an opening that approximately 6 inches by 6 feet across the top of the dumpster.

Table 3-7
Routing Assumptions

	Time
Workday	8.5 hours
Non-Collection Route Time	
Pre-trip	10 minutes
Time to Route	20 minutes
Breaks	30 minutes
Lunch	30 minutes
Re-fueling	15 minutes
Post-trip	5 minutes
Total Non-Collection Time	110 minutes
Disposal Time	
Landfill Trip Time	57 minutes
BuRRT Trip Time	45 minutes

3.5.1 Front-load Refuse Routing

If the City is able to achieve 100 to 110 front-load lifts per route the City has the opportunity to reduce three to five route days per week, from the current 31 route days. This would allow the City to achieve some savings with regard to capital and operating and maintenance costs. The key issue is whether this improved operational efficiency can be achieved. If so, the elimination of five route days (i.e. one full route, which equates to one less truck to purchase, one driver, and the associated fuel and maintenance costs) would result in an annualized cost saving of approximately $120,000 per year.

3.5.2 Rear-load Refuse Routing

In Louis Berger's analysis the City is achieving a collection efficiency very close to one that is modeled based on Louis Berger's time and motion data. This suggest that that the City's rear-load routes are appropriately sized. Even if the City were able to achieve the optimized timing forecast by Louis Berger, it would not result in a reduction in the number of weekly routes needed to serve the rear-load customers.

3.5.3 Roll-off Refuse Routing

Louis Berger has evaluated the number of routes currently serving the roll-off collection operation, utilizing the current customer data, current routing schedules and the time and motion data collected by Louis Berger during route observations. This analysis is summarized in Table 3-8.

Table 3-8
Roll-off Refuse Routing

	Time
Annual Pulls	3,123 pulls
Number of Weeks per Year	52 weeks
Average Pulls per Week	60 pulls
Modeled Operation – Louis Berger Time and Motion Data	
Collection and Disposal Time per Route	6.7 hours
Round Tip Time per Pull	1.1 hours
Potential Pulls per Route	6 pulls
Current Operation – City Data	
Average Pulls per Week	60 pulls
Route Days per Week	15 route days
Average Pulls per Route	4 pulls
Current Over/ (Under) Capacity on Routes	(2) pulls per route

Based on the time and motion data collected by Louis Berger the City can collect six pulls per route. The City is currently achieving an average of 5.3 pulls per route, although the current routes are sized to only collect 4 to 6 pulls per route, per day based on customer needs. This indicates that the City is currently operating more route days per week than necessary to serve the current roll-off customer base, if the scheduling of pick-ups could be levelized. Using the recommendations that Louis Berger made in Section 3.4 Collection Efficiency, the City should be able to reduce the current number of roll-off routes from three to two.

3.6 Staffing

Louis Berger has reviewed the commercial operations current staffing levels and outlined proposed staffing levels to ensure a 15 to 20 percent back-up ratio is maintained for each commercial operation. The current and proposed staffing levels are provided below.

Table 3-9
Commercial Collection Personnel Levels

	Number of Routes	Current Operation		Proposed Level	
		Level of FTE	Back –up %	Proposed Level of FTE	Back-up %
Commercial Refuse Operation					
Manager		1.30		1.30	
Mechanic		1.90		1.90	
Admin		0.95		1.00	
Supervisor		0.55		0.55	

	Number of Routes	Current Operation		Proposed Level	
		Level of FTE	Back –up %	Proposed Level of FTE	Back-up %
Front-load	6.20				
Driver		9.00	45%	7.50	21%
Rear-load [1]	2.20				
Driver		4.00	(10%)	5.00	14%
Roll-off	3.00				
Driver		3.00	0%	3.50	17%
Subtotal	11.40	20.70		20.0	
Commercial Recycling Operation					
Manager		0.25		0.25	
Mechanic		0.60		0.60	
Admin		0.50		0.50	
Supervisor		0.20		0.20	
Single-stream	1.60				
Driver		1.6	0%	2.00	25%
Rear-load Cardboard [1]	0.20				
Driver		0.40	0%	0.50	25%
Subtotal	1.80	3.55		4.05	
Total	13.20	24.25		24.80	
Total Commercial Staffing (Rounded)		25.00		25.00	

1. Two personnel are required to operate the rear-load commercial collection operation.

The level of personnel needed for each collection operation varies greatly between different collection configurations. It is an industry standard to maintain a back-up ratio of between 15 to 20 percent to ensure that operations are able to run efficiently, accounting for personnel sick days, vacation and training. As shown in in Table 3-9 while the total number of personnel are appropriate, some minor adjustments to staff assignments should possibly be considered.

It is reasonable for the City to maintain a back-up ratio that is less than 15 percent for administrative duties; however, it is crucial to maintain personnel that are cross trained in management and administration to ensure operations are efficiently run in the absence of front-line administrative personnel.

Louis Berger has proposed recommended staffing levels in order to obtain a 15 to 20 percent back up ratio for each operation in Table 3-9.

3.7 Vehicles

The City currently maintains front-load, rear-load, roll-off and automated side-load vehicles to provide commercial collection services. For special collections, the City utilizes smaller pick-up trucks to provide these services, as needed. Table 3-10

outlines the current volume of commercial solid waste and recycling equipment maintained by the City.

Table 3-10
Benchmarking of City's Current Fleet

	Number of Vehicles	Front-Line/ Back-up	Average Age [1]	Maintenance Cost [2]	Fuel Cost [2]
Pick-up Truck					
City	12	Front-Line	14.8	$ 4,097	$ 3,833
Industry Average [3]	-	-	8.4	2,242	3,990
Front-Load					
City	6	Front-Line	3.6	$22,869	$16,411
City	5	Back-up	9.2	22,869	16,411
Industry Average [3]	-	-	7.3	22,692	10,914
Rear-Load					
City	2	Front-Line	6.5	$16,667	$23,333
City	1	Back-up	10.0	16,667	23,333
Industry Average [3]	-	-	7.8	17,349	7,564
Roll-off					
City	3	Front-Line	4.7	$11,667	$3,129
City	3	Back-up	17.7	11,667	3,129
Industry Average [3]	-	-	11.2	18,215	7,466
Automated Side-Loader					
City	1	Front-Line	3.0	$20,739	$7,825
City	1	Back-up	9.0	20,739	7,825
Industry Average [3]	-	-	7.0	26,199	11,939

1. The Average Age represents the average age for the City's vehicles and the Industry Average useful life of vehicles.
2. The City does not record vehicle maintenance and fuel data based on each vehicles annual cost. Louis Berger extrapolated the annual vehicle maintenance and fuel cost for each vehicle based on the annual budget and number of vehicles. Due to there being minimal data on a vehicle specific basis, Louis Berger will discuss theses benchmarks at a high level.
3. The Industry Average includes recent operational data from reviews completed by Louis Berger between 2011-2013. The Industry Average includes data from the following cities: Bozeman, MT; Corpus Christi, TX; Dallas, TX; Del Rio, TX; Denton, TX; El Paso, TX; Phoenix, AZ; Tempe, AZ; and Temple, TX.

As shown in Table 3-10, the City is currently incurring maintenance costs slightly lower than the industry average, or comparable, for all commercial equipment, with the exception of pick-up trucks. On average, the City's fuel cost are slightly lower, or comparable, to the industry average, with the exception of the front-load and rear-load vehicles, which are much higher.

Louis Berger recommends the City begin to track vehicle maintenance and fuel data on a vehicle specific basis. This will enable the City to track vehicle maintenance trends and make informed decisions on when to retire vehicles and pro-actively

schedule routine maintenance. Louis Berger discusses the City's fleet maintenance in greater depth in Section 4 of this report.

3.7.1 Vehicle Back-up Ratio

A key operational measurement to evaluate is the vehicle back-up ratio. Maintaining adequate back-up vehicles ensures the collection operation is able to run consistently, accounting for vehicle down-time related to service and break-downs. It is industry standard and operationally optimal to maintain a 20 to 30 percent vehicle back-up ratio. Louis Berger has reviewed the City's current fleet's back-up ratio, based on the number of routes currently being operated.

Table 3-11
Commercial Vehicle Front-Line and Back-up Ratio

		Current Fleet				
	Number of Routes	Front-Line	Front-Line Ratio	Back-up	Back-up Ratio	Industry Standard Back-up Ratio
Front-loader	6.2	6	97%	5	80%	20-30%
Rear-loader	2.4	2	83%	1	41%	20-30%
Roll-off	3.0	3	100%	3	100%	20-30%
Automated Side-Loader [1]	1.6	1	63%	1	62%	20-30%

1. The automated side-loader route operates 2 routes per week, 4 days per week and is currently operating with less than appropriate front-line vehicles.

Although the City is currently maintaining a healthy back-up ratio for all commercial vehicles used in the commercial collection operation, it is important to note that the City is not maintaining a healthy front-line ratio for some commercial routes. Under the current fleet volume, some routes must operate front-line vehicles up to six-days per week, or regularly operate back-up vehicles on front-line routes.

As shown in Table 3-11, the front-load operation has 6.2 weekly routes, reflecting that one route is operated on Saturday, but only has six front-line vehicles. This front-load vehicle configuration requires one vehicle to be operated six-days each week, increasing the annual wear and tear of the front-line vehicles. The front-load operation is also maintaining a high level of back-up vehicles. Maintaining a large number of back-up vehicles can increase annual maintenance costs as these aged vehicles require an increased amount of annual up-keep in later years of their useful life. Louis Berger recommends the City reduce the front-load back-up vehicles to three back-up vehicles, reducing the number of back-up vehicles but still remains above the industry average.

Based on the number of routes currently operated and the number of rear-load vehicles currently maintained, Louis Berger recommends the City consider investing in an additional rear-loader vehicle to serve the 2.4 weekly rear-load routes. This will bring the front-line ratio to a percentage closer to 100 percent, ensuring that there is sufficient front-line equipment to serve the commercial routes on a daily basis.

For the commercial automated side-loader routes, a low front-line ratio requires one route to utilize the back-up vehicle as a front-line vehicle for the commercial single-stream recycling collection. Louis Berger recommends the City consider investing in an additional front-line automated side loader for the commercial side-load recycling program.

Louis Berger would recommend that the oldest roll-off back up truck, or the one incurring the most repair costs, be sold.

3.8 Commercial Rate Benchmarking

The market for a commercial collection operation differs from residential collection, as typically the municipal operation has to compete against private companies in the front-load and roll-off collection operation. Competition with private markets typically requires the commercial operation to operate at a higher level of efficiency, ensuring the City provided service is rate competitive compared to the private collection operations. Louis Berger has done market research to evaluate if the current rates the City is charging are competitive with the surrounding area.

Table 3-12
Commercial Rate Benchmarking

City	Santa Fe, NM	Albuquerque, NM	Glendale, AZ	Tucson, AZ	Peoria, AZ	El Paso, TX
4 CY Front-load 2 x weekly	$186.91	$254.31	$91.96	$ 154.00	$116.23	$148.00
40 CY Roll-off 1 pull	$187.95/ $236.31 [2]	$1,070.75 [3]	$175.00	$ 130.00	$195.00	$230.00

1. Per rate ordinance, effective July 1, 2014.
2. For scheduled and call-in service, respectively.
3. Reflects rate for a 30 CY container, and additionally includes disposal costs.

As shown in Table 3-12, the City's current front-load rate is competitive with Albuquerque, NM. The New Mexico rates for front-load service are higher than other benchmarked cities in the Southwest; however, it is important to note that there are multiple costs that effect the front-load rates that can vary significantly in different regions, including disposal costs, route density, larger commercial customer base, exclusive vs. non-exclusive service areas, etc.

Louis Berger has not provided rear-load rate benchmarking as few cities provide rear-load service. Typically rear-load rates are closely aligned with a city's front-load collection rates.

3.9 Initial Key Findings

Louis Berger has identified the following key findings from reviewing the City's existing program.

1. **Increase collection efficiency of front-load collection operation.** Louis Berger recommends the City target 100 to 110 lifts per front-load route, bringing the collection efficiency to be more in-line with industry standard. If the City is able to achieve 100 to 110 front-load lifts per route the City has the opportunity to reduce three to five route days per week, from the current 31 route days. This would allow the City to achieve some savings with regard to capital and operating and maintenance costs. The key issue is whether this improved operational efficiency can be achieved. If so, the elimination of five route days (i.e. one full route, which equates to one less truck to purchase, one driver, and the associated fuel and maintenance costs) would result in an annualized cost savings of approximately $120,000 per year. It should be noted that if this improved operational efficiency can be used to absorb the additional commercial accounts that are being annexed, this will result in a "cost savings" as the City will realize the additional revenue from serving these customers without needing to add an additional route to serve them.
2. **Reduce roll-off weekly routes operated.** Based on our time and motion modeling, and operational analysis we believe the City can serve current roll-off customers with two full roll-off routes and a partial roll-off route that would be only needed infrequently (2-3 times per month) if our recommendations in Section 3.4.2 are implemented which include the following:
    - The City should no longer allow customers to use "grandfathered" compactors that require "double-handling" by the route driver.
    - Different user fees should be charged for open top roll-offs versus compactors.
    - The City should work to "levelize" its routes – in coordination with its customers.
3. **Commercial cardboard recycling collection program has significant opportunity for growth.** Louis Berger recommends the City reach out to the businesses participating in the cardboard recycling program to better understand why the program is not more fully utilized. As mentioned in Section 3.4.3 we made the following observations:
    - We found a significant amount of cardboard being disposed of via front load refuse collection. There is a significant amount of material that is being landfilled that could be recycled.
    - Once per week cardboard collection is to infrequent to get customers to sign up, so increased service needs to be considered (the cost of this expanded cardboard collection service is addressed in Section 3.10.1.
    - The City should incorporate a front load collection truck into the cardboard recycling program. An additional truck will be required, as

the program grows, and using a front-load truck to collect cardboard is standard in the industry. The rear-load truck will still be needed for certain parts of town.

- The City's customer representative that is out promoting this service to businesses needs to provide the ESD Director with a monthly report documenting his activities (new account set-ups, "cold calls" on new businesses, etc.).

4. **The City is operating with a low front-line ratio for some commercial equipment.** Louis Berger recommends the City consider investing in an additional front-line automated side-loader for the commercial recycling program, and an additional rear-loader vehicle to serve the 2.4 weekly rear-load routes. This will bring the front-line ratio to a percentage closer to 100 percent, ensuring that there is sufficient front-line equipment to serve the commercial routes on a daily basis. Another option would be to transfer some "excess" equipment from the Residential Collection operation if practical. For instance, the Residential Collection has one to two excess rear-loaders that we recommend be sold. If one of them is in good working condition, it could be transferred to the Commercial Collection operation.
5. **The front-load operation is currently maintaining a high level of back-up equipment.** Louis Berger recommends the City reduce the front-load back-up fleet by two vehicles. Maintaining three front-load back-up vehicles will allow the City to achieve a 48 percent back-up ratio for front-load vehicles.
6. **The roll-off operation is currently maintaining a high level of back-up equipment.** Louis Berger recommends the City reduce its roll-off back-up fleet by one truck, selling either the oldest or the one that has the highest repair and maintenance costs.

3.10 Program Alternatives Evaluated

Louis Berger has provided discussion on the operational requirement and financial implications of the following commercial collection operational changes:

- Expand the commercial cardboard collection operation; and
- Implement a commercial food waste collection operation.

3.10.1 Commercial Cardboard Collection

As discussed in Section 3.4.3, the City's current commercial cardboard collection operation is collected once per week. The cardboard collection operation can be increased to operate three days per week, or five days per week and provide cardboard collection to a greater number of customers.

With an increased level of weekly service, the City will incur a greater cost for operating the cardboard collection operation when a second route is added for the 3 days per week and 5 days per week scenarios. As shown in Table 3-13, with the increased capacity to collect cardboard, however, the cost per ton will decrease from

approximately $120 per ton for one collection per week to under $60 per ton when operating three days a week and five days per week with a second route.

Table 3-13
Commercial Cardboard Scenarios

	Collection Operation Frequency		
	1 Day per Week	3 Days per Week	5 Days per Week
	1 Route (A)	2 Routes (B)	2 Routes (C)
Capital[2]	$220,000 ÷ 7	$440,000 ÷ 7	$440,000 ÷ 7
	200 dumpsters x $700 ÷ 10 yrs	300 x $700 ÷ 10	400 x $700 ÷ 10
	$31,500	$63,000	$63,000
	14,000	21,000	28,000
Capital Subtotal	$45,500	$84,000	$91,000
Maintenance & Fuel			
Maintenance	$4,600	$27,600	$46,000
Fuel	3,200	19,200	32,000
Maintenance & Fuel Subtotal	$7,800	$46,800	$78,000
Personnel			
Supervisor	$12,000	$18,000	$24,000
Drivers	10,000	60,000	100,000
Personnel Subtotal	$22,000	78,000	$124,000
Total Cost	$75,300	$208,300	$293,000
Cost Per Ton[1]	$120	$56	$47

1. Assumes 12 tons per route date. A conservative assumption. Scenario A 624 tons per year, Scenario B 3,744 tons per year, Scenario C assumes 6,240 tons per year.
2. Assumes seven year life for trucks, 10 year life for dumpsters.

Due to a significant amount fixed operating costs, as the operation serves more customers with the weekly cardboard route, the cost of providing the service to customers decreases and the cost per ton of material collected decreases. If the City is able to serve an increased number of commercial cardboard customers, and collect a healthy volume of material from each customer, the cardboard collection operation has the opportunity to become a more cost effective service by expanding and operating more than one day per week. Louis Berger recommends the City work to expand the current commercial cardboard operation to three days per week and develop cardboard recycling within the City's commercial customer base.

3.10.2 Commercial Food Waste Collection

In December 2013 the City completed a competitive bid process to acquire a service provider, Reunity Resources, to pilot a City food waste collection program. There are three key and complex aspects of a food waste program:

1. Collection;

2. Processing (composting); and
3. End Product Market Development.

Composting is a complicated and intensive operation, in which the City does not currently have the equipment, expertise or experience in the processing or the retail compost markets[6]. Based on the City's current operation, Louis Berger recommends the City outsource the food waste processing and end product market development to private companies. It is reasonable for the City to consider operating a commercial food waste collection program in the future; however key operational aspects must be considered, such as, but not limited to, the following;

- **Material composition available.** Composting requires a balanced combination of carbon and nitrogen rich materials to produce healthy composting activities. To facilitate a healthy compost processing operation a carbon to nitrogen ratio of 25:1 is typically required. Without the right combination of carbon and nitrogen the compost can fail to break down the material or the material can generate excess heat causing a risk of fire as healthy compost maintains a temperature of approximately 140 degrees. Many large scale operations will utilize a combination of brush scraps with food waste to ensure there is a sufficient carbon to nitrogen ratio. Before beginning a composting collection operation it is imperative to the success of the operation that the City has sufficient carbon rich and nitrogen rich material to create a healthy compost product.
- **Local processing capacity.** The site size of the compost processing location will determine the volume of material the City can accept, and correspondingly the number of customers the City can serve in the food waste collection operation. Material can be at the processing site for several months during the processing operation, including the time required to process the material and the time the material must be stored before being sold on the retail market. The City can be constrained by the amount of material the processing facility can accommodate on a regular basis.
- **Local market demand for compost material.** There must be an end market to sell the end compost product. It is imperative to the health of the compost operation that there is a consistent demand for the end compost product from the food waste collection operation. If the operation is unable to identify end users for the product, the processing facility will be overwhelmed with finished compost material to store, and will not have the capacity to accept food waste and process new material.
- **Customer interest in food waste collection.** Commercial customers must be interested and willing to participate in the food waste collection operation. The collection of food waste requires more customer involvement than traditional refuse and single-stream recycling collection. The customers involved in the food waste collection program will need to be educated on what materials are accepted

[6] With the exception of the composting facility currently operated by the City's water and wastewater utility.

(i.e. meat, dairy, paper products, etc.) and play a role in actively monitoring the on-site sorting of food waste material from the traditional waste stream.

If the City does implement a commercial food waste collection operation, Louis Berger recommends the City outsource the processing and marketing of the compost end-product. Louis Berger has provided a high-level cost estimate for a food waste collection operation based on the following program assumptions.

Table 3-14
Food Waste Collection Assumptions

Vehicle Used	Rear-Load Vehicle
Average Containers per Customer	3 96-gallon containers
Number of Personnel per Route	2 FTE
Average number of Tips per Route	2.5 tips
Tons per Tip	8.13 tons

Based on the collection configuration outlined in Table 3-14, Louis Berger forecasts that the City will be able to provide food waste collection to 65 commercial customers, via 96-gallon rolling containers with five days per week collection. Louis Berger has assumed each customer will require five day per week collection as food waste must be collected on a frequent basis to mitigate vectors. The modeled food waste collection operation can collect 195 containers of food waste per day with a total of 20 tons of food waste per day using two FTE and a rear-load vehicle. Louis Berger has provided a projected range of operational costs of the food waste collection operation in Table 3-15.

Table 3-15
Forecasted Food Waste Collection and Processing Costs

Cost of Operation	Low	High
Equipment		
Capital Costs	$21,071	$21,071
Maintenance	23,000	34,500
Fuel	16,000	24,000
Container Costs	985	1,200
Total Equipment Cost	$61,056	$80,771
Personnel Costs	$100,000	$116,000
Public Education and Outreach	5,000	5,000
Processing Costs	105,639	264,098
Revenue from Sale of End Product	-	(110,921)
Total Operational Cost	$271,695	$354,948
Monthly Cost per Customer[1]	$348	$455
Cost per CY[2]	$10.71	$14.00

1. Assumes 65 commercial establishments picked up, 5 days per week.
2. Assumes 195 gallon containers collected 5 days per week (195 x .5CY x 5 days x 52 weeks = 25,350 CYs per year).

As shown in Table 3-15, collecting food waste separately from refuse is only financially viable if the City is able to negotiate a reasonable processing cost, sale price for the end-product, and have a sufficient number of customers to operate the collection operation cost effectively. Table 3-16 provides a cost comparison between the food waste collection operation costs and the current front-load commercial collection and disposal costs.

Table 3-16
Commercial Collection

	Current Commercial Operation [1]	Food Waste	
		Low	High
Assumed Disposal/ Processing Cost (ton)	($40.00)	($20.00)	($50.00)
Assumed Sale Price of Compost (ton)	N/A	$-	$30.00
Volume of Compost Sold Annually	N/A	70%	70%
Net Disposal Cost per Ton	($40.00)	($20.00)	($29.00)
Collection & Disposal Cost			
Annual Cost	$3,131,131	$271,695	$354,948
Annual CY Collected	870,740	25,350	25,350
Cost per CY	$3.60	$10.71	$14.00

1. Commercial Operation cost and cubic yards reflect the City's current front-load and rear-load refuse operation.

The food waste collection operation is significantly more expensive than the standard commercial refuse collection operation, as the commercial refuse collection operation has a greater economy of scale. Collection of food waste is more labor intensive, achieves a lower compaction ratio and requires more frequent collections.

Although it is challenging to quantify at this stage, there are some benefits that exist from implementing a food waste collection operation, such as:

- **Processing cost.** The processing costs associated with the food waste can result in savings, compared to the current $40.00 disposal cost of commercial waste at the Caja Del Rio Landfill.
- **Decrease in refuse collection requirement.** The collection of food waste will allow some commercial customers to decrease their refuse collection schedule, as their refuse waste stream will no longer contain organic waste; however, it is difficult to forecast the overall reduction in refuse collection costs that will result from the introduction of a food waste collection.
- **Increased City diversion rate.** A commercial food waste program will improve the City's diversion and contribute to an increased recycling rate; however, unless it is operated on a large scale, the food waste collection operation is forecasted to be more costly than the current commercial refuse operation.

3.11 Recommendations [7]

1. **Increase collection efficiency of front-load collection operation.**

   Louis Berger recommends the City target 100 to 110 lifts per front-load route, bringing the collection efficiency to be more in-line with industry standard. If the City is able to achieve 100 to 110 front-load lifts per route the City has the opportunity to reduce three to five route days per week, from the current 31 route days. This would allow the City to achieve some savings with regard to capital and operating and maintenance costs. The key issue is whether this improved operational efficiency can be achieved. If so, the elimination of five route days (i.e. one full route, which equates to one less truck to purchase, one driver, and the associated fuel and maintenance costs) would result in an annualized cost savings of approximately $120,000 per year. It should be noted that if this improved operational efficiency can be used to absorb the additional commercial accounts that are being annexed, this will result in a "cost savings" as the City will realize the additional revenue from serving these customers without needing to add an additional route to serve them. ***We would strongly encourage the City to consider purchasing a routing software to assist with this recommendation***[8].

2. **Reduce roll-off weekly routes operated.**
   Based on our time and motion modeling, and operational analysis we believe the City can serve current roll-off customers with two full roll-off routes and a partial roll-off route that would be only needed infrequently (2-3 times per month) if our recommendations in Section 3.4.2 are implemented which include the following:

   - The City should no longer allow customers to use "grandfathered" compactors that require "double-handling" by the route driver.
   - Different user fees should be charged for open top roll-offs versus compactors.
   - The City should work to "levelize" its routes – in coordination with its customers.

3. **Evaluate the current commercial customer collection schedules and container sizing based on container capacity utilized.**

   Based on Louis Berger's analysis of the commercial container capacity utilized, the City can potentially transfer a number of customers to a smaller container or lower collection frequency. If the City does transition customers from their current service levels to an alternative container or collection frequency it is important for the City to monitor the commercial revenue, as the rate structure for these customers varies based on the container size and collection frequency.

[7] Read in conjunction with the Section 3.9, Initial Key Findings.
[8] This software would benefit <u>all</u> City solid waste collection operations – residential as well.

4. **Begin tracking vehicle maintenance cost by vehicle.**

   Louis Berger recommends the City begin to track vehicle maintenance data on a vehicle specific basis. This will enable the City to track vehicle maintenance trends and make informed decisions on when to retire vehicles and pro-actively schedule routine maintenance.

5. **Commercial cardboard recycling collection program has significant opportunity for growth.**

   Louis Berger recommends the City reach out to the businesses participating in the cardboard recycling program to better understand why the program is not more fully utilized. As mentioned in Section 3.4.3 we made the following observations**:**

   - We found a significant amount of cardboard being disposed of via front load refuse collection. There is a significant amount of material that is being landfilled that could be recycled.
   - Once per week cardboard collection is too infrequent to get customers to sign up, so increased service needs to be considered (the cost of this expanded cardboard collection service is addressed in Section 3.10.1.
   - The City should incorporate a front load collection truck into the cardboard recycling program. An additional truck will be required, as the program grows, and using a front-load truck to collect cardboard is standard in the industry. The rear-load truck will still be needed for certain parts of town.
   - The City's customer representative that is out promoting this service to businesses needs to provide the ESD Director with a monthly report documenting his activities (new account set-ups, "cold calls" on new businesses, etc.).

6. **Eliminate excess front-load back-up vehicles.**

   Louis Berger recommends the City eliminate two front-load back-up vehicles to bring the back-up ratio to be more in-line with the industry standard of a 20 to 30 percent back-up ratio. Maintaining three front-load back-up vehicles will allow for a 48 percent back-up ratio that can help support the front-load operations with a low front-line vehicle ratio.

7. **The roll-off operation is currently maintaining a high level of back-up equipment.**

   Louis Berger recommends the City reduce its roll-off back-up fleet by one truck, selling either the oldest, or the one that has the highest repair and maintenance costs.

8. **Purchase an automated side-loader and rear-load vehicle to ensure sufficient front-load and back-up equipment to maintain consistent daily operations.**

These equipment purchases will bring the front-line ratio to a percentage closer to 100 percent for all commercial collection operations, ensuring that there is sufficient front-line equipment to serve the commercial routes on a daily basis.

9. **If the City decides to collect and divert commercial food waste, Louis Berger recommends the City develop a commercial food waste collection operation and outsource the food waste processing and end product market development to a private company(s).**

   Composting is a complicated and intensive operation, in which the City does not currently have the equipment, expertise or experience in the processing or selling with regard to the retail compost market. The analysis provided in Section 3.10.2 illustrates that the viability of the food waste collection operation is highly dependent on negotiating a competitive processing contract, developing a healthy end-market market for the compost product generated and achieving a substantial customer base among commercial customers for the food waste collection operation to source food waste material.

Section 4
REVIEW OF FLEET MAINTENANCE OPERATIONS

4.1 Introduction/Overview

The City's Environmental Services Division (ESD) includes a fleet maintenance operations (fleet maintenance) that is organized and operated as a distinctly separate operation from the City's other fleet maintenance activities. The fleet maintenance is conducted out of a one-bay facility in proximity to the City's general fleet maintenance shop and the collection vehicle parking lot. Table 4-1 shows the count of principal rolling stock maintained by fleet maintenance. Sections 2 and 3 of this report present additional information concerning the solid waste division's vehicles and maintenance costs.

Table 4-1
Principal Rolling Stock

Operation	Front-Line Vehicles[1]	Back-Up Vehicles[1]
Administration	5	0
Fleet Maintenance	6	0
Residential Refuse Collection	13	7
Commercial Front-Load	8	6
Commercial Rear-Load	2	1
Commercial Roll-Off	3	3
Recycling	8	2
Total	45	19

1. Includes all assigned units including heavy trucks, pick-up trucks, and other vehicles.

4.2 Fleet Staffing

Four staff are assigned to fleet maintenance, one fleet maintenance supervisor and three mechanics. Staff work Monday through Friday, eight hours per day. Staff begin work on a staggered schedule starting at 6:00 am, 7:00 am, and 8:00 am. Each of the mechanics is nominally assigned to one of the collection operations (i.e., recycling, commercial, or residential). This nominal assignment is intended to assure vehicle maintenance issues are effectively communicated between the operations supervisors and the mechanics.

The current fleet maintenance staff have a range of backgrounds and training. Staff report that opportunities for continuing education and training on new equipment is limited because all of staff's time is committed to working on equipment so that it can stay in service to meet operational demands. Because of limited training opportunities for training, staff does not have proper training or certifications to work on

compressed natural gas (CNG) vehicles, and CNG engines. This is an important consideration in light of the City's acquisition of new CNG vehicles.

Fleet maintenance is not supported by dedicated clerical staff, parts staff, or helpers. All parts are ordered through the City's main fleet services operation, or by direct purchase orders (PO) through the City's procurement system to vendors.

4.3 Facilities and Equipment

Fleet maintenance operates out of a 4,100 square foot, one-bay facility. The shop was not originally designed for vehicle maintenance and is not outfitted with typical vehicle maintenance parts storage or truck lifts expected in such a facility. The work bay is not equipped to vent vehicle exhausts out of the facility. The equipment service areas do not have adequate safety protection required for work to be performed on CNG vehicles. Generally, facilities servicing CNG vehicles are required to have methane gas detection systems (with emergency backup in case of power loss), specific air handling system to deal with methane, electrical and heating upgrades to address methane safety concerns, and shop safety plans and procedures to address methane safety. Assessment for safety issues related to CNG safety should be addressed by a professional with competency in this field. Local fire and safety regulations should also be consulted. While the section of the building used for fleet maintenance has two roll up doors on the side and one in the front, because of equipment storage, truck access is only through the one front door.

Figure 4-1. One Bay Fleet Maintenance Shop Exterior

Figure 4-2. Equipment Maintenance Facility Interior

4.4 Work Processes

4.4.1 Routine Maintenance

Drivers are required to complete pre- and post-trip inspections every day on their vehicles. Any problems with the equipment should be noted on the inspection form. The inspection forms are turned in by the driver to their operations supervisor on a daily basis. The operations supervisor is responsible for relaying any problems noted on the drivers' inspection form to the designated mechanic or fleet maintenance supervisor to schedule a repair. Employees report that some repairs are not addressed in a timely manner because of supervisors or operators desire not to take trucks out of service for repair, but rather to keep the "best" trucks on the routes.

Staff reports that all of the CNG vehicles are newer and any repairs to them have so far been completed under warranty. Because the maintenance mechanics and shop are not certified for CNG work, certain work on the CNG vehicles needs to be contracted out.

4.4.2 Preventive Maintenance

Preventive maintenance (PM) is scheduled every six months for most equipment. A schedule of PMs is maintained on a white board posted in the fleet maintenance supervisor's office. Maintenance employees report that PMs are scheduled when there are no other repairs scheduled. There are no written procedures for PMs, and maintenance employees report that they "know" what needs to be done with each PM. The PMs conducted each cycle are always the same, there is no differentiation (e.g., A, B, or C) where more or less service is provided with a PM. Fleet maintenance does not analyze oil samples for wear metals.

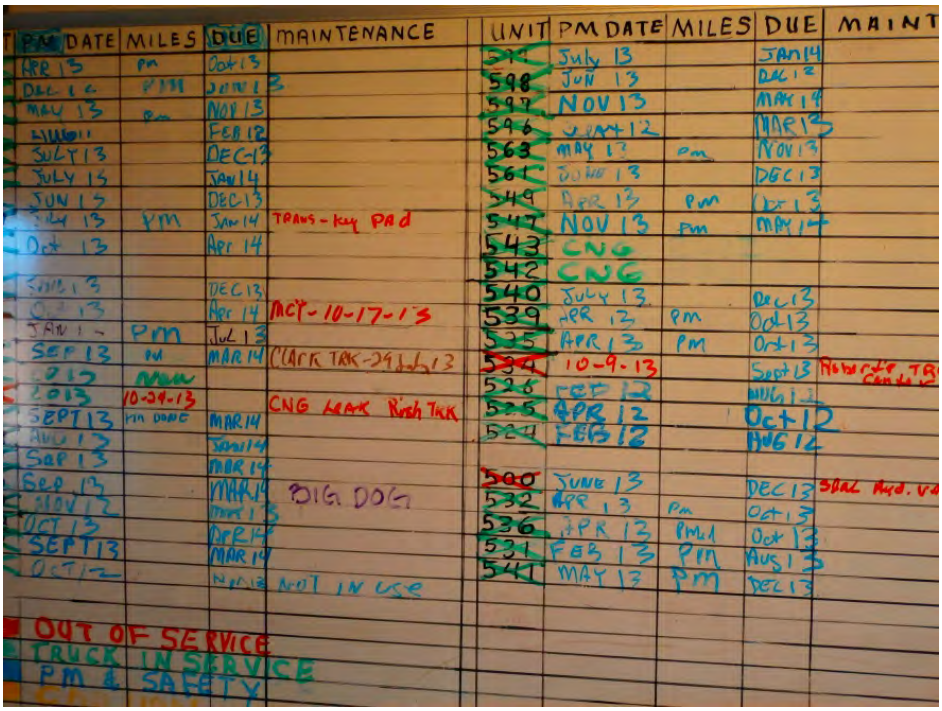


Figure 4-3. PM Scheduling Whiteboard

4.4.3 Non-Routine Maintenance

An important role performed by fleet maintenance is responding to equipment failures or accidents, repairing equipment quickly, and returning it to service as soon as possible. Non-routine repairs can be completed in the field in the case of a breakdown, or in the shop if a vehicle can be returned to the facility to affect the repair. In responding to breakdowns, fleet maintenance frequently sends two people into the field to conduct repairs. The reason for sending two people is reported as wanting to assure worker safety while in the field, although in most cases of a breakdown, the truck driver will be in the field with the disabled vehicle.

4.4.4 Work Assignments and Record Keeping

The fleet maintenance supervisor assigns work to the mechanics daily in response to breakdowns needing repair, PMs needing to be scheduled, reported deficiencies, etc. Work is apparently scheduled based on the understanding of the fleet maintenance supervisor, operations supervisors, and mechanics. Mechanics are provided their assignments through written work orders and a second white board with daily assignments. Of course, scheduled work can be displaced by the need to respond to an immediately needed repair.

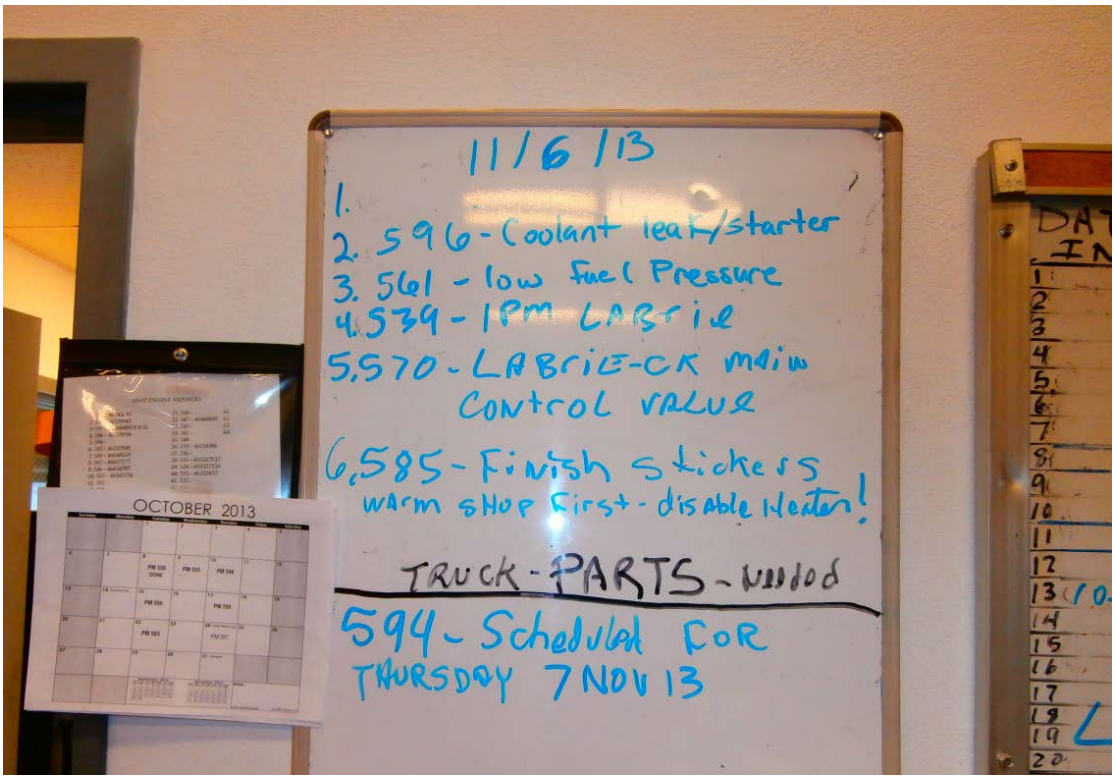


Figure 4-4. Daily Work Assignments Whiteboard

Mechanics record work completed by manually writing up completed work orders. The fleet maintenance manager enters the work completed into an Excel spreadsheet, maintained by equipment unit number, by date. The spreadsheet allows the fleet maintenance supervisor to review the repair history of a piece of equipment, but the spreadsheet does not allow cumulative work history and costs to be reviewed. The fleet maintenance system does not track repair costs (parts or labor) by unit number, so there is no way to assess the performance of individual trucks or mechanics. The City did not provide Louis Berger records of repair turn-around time, downtime, or warranty work on a per vehicle basis, or employee effort on repairs.

The City uses a fuel management system that requires the use of a key to access the fuel pump. Because drivers are not diligent about using each vehicle's dedicated key or entering correct mileage, the fuel system cannot be used to gather data on truck mileage or mile per gallon performance.

4.5 Comparison with Other Fleet Maintenance Operations

To provide the City with some comparative fleet operations data, Louis Berger surveyed other fleet maintenance operations to gather general information about their operations. The intent of this survey was to offer a snap shot of how other organizations organize and track their fleet maintenance operations. Because of differences in the way operations organize and track their fleet maintenance operations, an "apples-to-apples" comparison is not possible, rather general trends should be noted. The results of the survey are provided in Appendix B.

General observation considering the responses received to the survey are:

- The City operates the only fleet maintenance operation that is separate from the general government fleet maintenance, with the exception of Little Rock. All of the other agencies surveyed indicate their fleet services are integrated with other fleet operations.
- The City is the only operation that does not use a computerized fleet management system.
- The ratio of trucks per mechanic is the highest of operations surveyed – 21.3 vehicles per mechanic. A typical ratio is 10 to 12 trucks per mechanic.
- The City is the only operation without access to truck lifts. Not having lifts available severely limits the effectiveness of a fleet maintenance operation.
- The City is the only operation surveyed operating out of a one-bay shop. Operating with three mechanics in a one-bay facility does not lead to efficient operations.
- The City fleet has one spare truck for each 1.81 frontline truck operated. This is a very large number of backup trucks relative to frontline trucks in the fleet. Typical fleets maintain a ratio of one back up for each three to five front-line vehicles.
- The size of the City's shop is larger than two of the agencies surveyed, but because it was not initially developed as a vehicle maintenance facility, much of the City's shop is dedicated to equipment storage and support areas.

4.6 Findings and Recommendations

1. **Upgrade the fleet management facility to match the work effort and equipment being operated.**

   The current maintenance facility is undersized and inadequately equipped to support the solid waste fleet. At a minimum, the fleet operations should be provided three maintenance bays with associated support facilities for tires, parts, washing, and staff facilities. For any new facility, the City must assure that applicable health and safety standards applicable to working with CNG vehicles are met. To develop the plans for a new equipment maintenance facility, the City should work with an experienced architect who is familiar with local codes and conditions to lay-out a new facility.

2. **Provide training to staff to work on equipment, particularly CNG vehicles.**

   Fleet maintenance staff report that they have limited or no opportunities for continuing training. As the City transitions to more CNG vehicles, it is imperative that maintenance staff be trained to work on this type of equipment. Solid waste division management staff report that it generally crafts its equipment bid specs to include provisions for employee training on new equipment. This provision is helpful, but the technical demands for effective

vehicle maintenance exceed the limited training that a vendor is willing to include in its bid price. In addition, certain trucks are acquired by "piggy-backing" from procurement systems other than the City's, and training is not included in such purchases. If the City continues to operate fleet maintenance, it must assure that personnel are adequately trained on new vehicle technologies.

3. **Implement use of data tracking systems to monitor and manage performance of the fleet.**

   Currently, fleet maintenance activities are coordinated through manual systems (e.g., tracking PMs on a white board) or in response to breakdowns or driver reports. Fleet maintenance costs for repairs, maintenance, and fuel are not tracked by the Environmental Services Division. Use of computerized fleet maintenance systems is considered standard industry practice, and as mentioned in Section 4.5 all of the fleet maintenance operations surveyed use some form of fleet management software. Solid waste staff report that a fleet maintenance module is available from the City's accounting software, but such a system has not been put into practice by fleet maintenance. Use of such a system would allow tracking of use and costs on a per vehicle basis, and will provide valuable information concerning proactive maintenance and vehicle replacement decisions.

4. **Enforce use of fuel key system to assure mileage and miles per gallon can be tracked.**

   The solid waste division is not able to effectively monitor fuel usage on a per unit basis because truck drivers are not diligent in using each vehicle's assigned fuel key. By requiring drivers to use the appropriate fuel key, reliable information concerning miles per gallon, and fuel cost per unit could easily be obtained through the fuel management system. Such information can inform fleet maintenance personnel on potentially faulty equipment and can provide information to management concerning improper vehicle operation or misuse.

5. **Develop written operating procedures including written PM practices in accordance with manufacturers' specifications**.

   Fleet maintenance has limited written procedures, and mechanics report that they do not use written check-sheets or instructions when performing PMs. The solid waste division should consult available truck information and develop written PM procedures in accordance with each manufactures' requirements. Any work performed should be documented and maintained to support warranty claims.

6. **Investigate reducing back-up equipment.**

   As described in Section 4.5, the solid waste division maintains a ratio of back-up trucks to front-line trucks that is much higher than the industry average. While this high level of back-up trucks assures that operations can be conducted when a break-down occurs, the high number of back-up vehicles means that mechanics must commit the effort to maintain older, less reliable

equipment which distracts them from performing preventative maintenance on front-line equipment and drives up the cost of overall vehicle maintenance.

7. Review staffing levels to assure they are commensurate with work levels.

As described in Section 4.5, solid waste fleet maintenance has a high ratio of trucks to mechanics. This staffing ratio is likely caused by the high number of back-up vehicles maintained in the fleet. After the City reviews its need for backup equipment (and implements other recommendations provided herein), it should review its mechanic staffing level to determine if the appropriate ratio of mechanics to trucks can be maintained or if additional staff is needed.

8. Review the practice of mobilizing two mechanics to field repairs.

For safety and operations support reasons, fleet maintenance often sends two mechanics to respond to repair calls. In most cases, a truck driver will be in the field with a disabled vehicle. The driver should be able to provide assistance and safety backup as the mechanic effects repairs. Having the driver support the field mechanic will allow the second mechanic to continue to perform work in the shop or respond to additional repair calls.

9. Investigate increased integration of solid waste fleet maintenance operations with the City's other fleet maintenance activities.

The City of Santa Fe is relatively unique in having a fleet maintenance operation that is separate from the general city fleet maintenance operations. Supervisors, drivers, and mechanics report that the reason that solid waste has a separate fleet maintenance operation is because City fleet maintenance would avoid working on collection vehicles because they often had accumulations of garbage or leachate making working on them unpleasant to mechanics. Solid waste fleet maintenance currently depends on the City's fleet maintenance operations to support certain activities like the procurement of filters, parts, etc. It could improve overall efficiency if solid waste fleet maintenance staff was able to coordinate with City fleet maintenance operations to provide additional support services including tracking of expenditures and providing relief mechanic support. Of course, any such coordination would need to overcome employees opposition to change and the "yuck factor" of working on garbage collection trucks.

Appendix B
FLEET MAINTENANCE OPERATIONS BENCHMARKING

This Appendix includes supplemental information regarding Section 4 of this report.

Table B-1
Fleet Maintenance Operations Benchmarking

	Santa Fe, NM	Seminole County, FL	New Braunfels, TX	Norman, OK	Olathe, KS	Little Rock, AR	Oklahoma City, OK
Total Pieces of Equipment Reported As Maintained By Agency Fleet Maintenance[1]							
Total Number of Vehicles Reported[1]	64	20	40	41	375	64	120
Key Solid Waste Vehicles – Heavy Trucks Only[2]							
Front Load Collection (frontline/backup)	7/6	N/A[4]	6/1	7/2	No Info[5]	16/12	0
Rear Load Collection (frontline/backup)[2]	3/4	N/A[4]	6/2	6/3	No Info[5]	17/12	6/4 (4 CNG)
ASL (frontline/backup) [2]	10/2	N/A[4]	10/2	9/4	No Info[5]	N/A[4]	31/7 (13 CNG)
Roll-off (frontline/backup)	3/3	N/A[4]	2	N/A[4]	No Info[5]	N/A[4]	N/A[4]
Recycling Collection (frontline/backup)	6/3	N/A[4]	N/A[4]	N/A[4]	No Info[5]	N/A[4]	N/A[4]
Road Tractors (frontline/backup)	N/A[4]	18/2	N/A[4]	5/1	No Info[5]	N/A[4]	N/A[4]
Trailers	N/A[4]	36	N/A[4]	6	No Info[5]	N/A[4]	N/A[4]
Total “Frontline” Trucks[3]	29	18	24	27	No Info[5]	33	37
Total “Backup” Trucks[3]	18	2	5	10	No Info[5]	24	11
Number of Frontline Truck per Backup[3]	1.61	9	4.8	2.7	No Info[5]	1.38	3.36
Count of Other Equipment	17	0	11	4	No Info[5]	7	72

	Santa Fe, NM	Seminole County, FL	New Braunfels, TX	Norman, OK	Olathe, KS	Little Rock, AR	Oklahoma City, OK
Description of Other Equipment	5 Admin 6 Maintenance 6 Other (pickups, large item, container delivery)	Transfer station heavy equipment also maintained by mechanics	Grapple trucks Container delivery Shop truck Pickups	No Info[5]	No Info[5]	Landfill equipment also maintained by mechanics	33 Light Trucks 33 Other Vehicles 6 Brush/Dump
Notes:			4 of ASLs are Hydraulic hybrids	Peterbuilt/ Mack	Fire,PU,SW,Util, Parks/Rec/PW	Mechanics also work on landfill equipment	Transitioning to principally CNG fleet
Equipment Maintenance							
Contract or Self?	City	Contract – Serco	City	City	City	City	Contract – First Vehicle Services
Part of Public Works or stand-alone?	Stand alone	Contractor, for all county operations including public works, fire, etc.	All of fleet operations are combined under solid waste	All of fleet operations are combined	All of fleet operations are combined	Stand alone	Combined with Utilities Department
Staffing							
Total number of maintenance employees	4	Have "main shop" support	7	14	23	12	15
Number of mechanics	3	4 at TS 2 at LF	5	4	16	9	10
Number of support staff	1	No Info[5]	2	4	5	3	5
Hours mechanics work (describe if multiple shifts)	6:00 to 2:30 7:00 to 3:30 8:00 to 4:30	6:30 to 3:00, 12:00 8:30	8:00 to 5:00 one mechanic on call	7:00 to 3:30 8:30 to 5:00	2 shifts, 8 hours each	No Info[5]	5:00 to 1:30 2:00 to 10:30

	Santa Fe, NM	Seminole County, FL	New Braunfels, TX	Norman, OK	Olathe, KS	Little Rock, AR	Oklahoma City, OK
Total Number of Vehicles[1] per Mechanic	21.3	5.0 (also maintain transfer station equipment)	8.0	10.3	N/A[4]	7.1 (also maintain landfill equipment)	12.0
Facilities							
Size of shop (square feet - estimate)	4,100	3,000	2,992	18,000	22,000	+/- 10,000	9,776
Number of bays	1	2	2	17	25	8	5
Type and number of lifts	None	Portable lifts at Landfill shop, none at TS	1x 2 post, 1x 4 post	5 all types	4 above ground, 12 roll-around heavy lifts	1	4 post mobile lifts
Computerized fleet maintenance tracking used?, name.	None	Faster	Manager Plus Pro	Faster Asset Works	E-1	Faster	M5
Describe computerized system (good, OK, bad)	N/A[4]	No Info[5]	Good	OK	Good	OK	OK
What kind of work (or % of work) do you send off site for repairs	Warranty work, work beyond general repairs	Anything beyond PM and general repairs	10 to 13%, warranty, ASL arms, etc.	20%, hydraulic cylinders, upholstery, collision repair, radiator repair.	No Info[4]	25%	3.5% - Accident damage, alignments, computer programming, transmission overhaul, glass replacement, towing for fuel support or vehicles becoming stuck in mud.

1. "Total Number of Trucks" includes all trucks reported as maintained by the shop, and may include public works, fire, parks, etc. in addition to solid waste.
2. Vehicles (Heavy Vehicles) reconcile to Table 4.1, but vehicle types (i.e., Rear Load) are shared by residential refuse and commercial refuse.
3. Solid waste operations vehicles only, includes collection and transport vehicles only, does not include pickup trucks or support vehicles.
4. N/A means "Not Applicable".
5. No Info means no information was provided by survey respondent.

Section 5
REVIEW OF NON-COLLECTION ACTIVITIES

This section of the report addresses a number of non-collection activities, which the City has requested be reviewed during the course of this study. In addition, these are items that Louis Berger has addressed for other clients in the past and therefore brings institutional knowledge with regard to what are considered "best practices" concerning these activities.

5.1 Container Maintenance

Proper maintenance of containers[1] (commercial front load dumpsters, rear load dumpsters); roll-offs (open top and compactors); and carts (residential and commercial garbage carts – 96 gallon and 64 gallon) is critical to maintaining containers so their useful life is fully maximized. Front load dumpsters can cost $600 and up and therefore are an expensive city asset that must be properly maintained. To put it in perspective, the City has approximately 1,350 front load dumpsters and 200 rear load dumpsters located throughout the City. At a cost of $600 per dumpster, that is approximately $930,000 in dumpsters. The City has over 28,000 residential and commercial carts located throughout the City, at an average cost of $55 per cart, which represents an investment of over $1.5 million.

All containers should have a bar code. The City maintains an inventory of excess containers that are available for new customers or to replace old containers that either need to be repaired or have completed their useful life. All containers should be bar coded and tracked so the City knows where each container is located in the City (and linked to what account), as well as the size of the container and when it was purchased, and put into service. Depending on the type of customer that is using the container, containers can last 5 to 20 years. For instance, restaurants are oftentimes some of the "toughest" customers and create the most "wear and tear" on containers due to the large amounts of food waste that is wet and heavy. In fact, it is not uncommon for cities to have at least one or two containers damaged by fire on an annual basis because smoldering materials are placed in these containers, which later fully ignite.

Drivers must report damaged containers. It is critical that drivers be the "eyes and ears" for the City when they are out on a daily basis picking up containers and emptying them. They need to report containers that have damaged lids, bottoms that are starting to come loose from the sides as well as dumpsters that need to be

[1] The term container and dumpster are oftentimes used interchangeably to describe the large 3 to 8 cubic yard containers that are used by commercial businesses, restaurants and apartment complexes to collect their putrescible waste or recyclable cardboard and office paper within the City of Santa Fe. In this specific section of the report we will use the term container.

repainted. The containers' appearance reflects upon the City. Customers are much more willing to pay their monthly solid waste user fees when they see their containers lids are on tight, the containers are painted, have fresh stickers and make their property look more attractive. Louis Berger has seen where private haulers has used issues like container maintenance to push for privatization of commercial collection services.

All containers should be reviewed on a periodic basis. All containers should be reviewed on a scheduled basis (typically 2-3 year basis). Containers should be examined to see if containers need to be brought in for repairs, painting, and/or fresh decals. The driver should not be the only "line of defense". Review by commercial supervisors is mandatory. If a trend is found where a driver is not reporting containers that need maintenance, that driver needs to be told that is part of his job. It should be part of his performance appraisal.

Typical container maintenance shop layout. Figure 5-1 shows what a typical container maintenance shop looks like and how the containers "flow" through the shop. When the new fleet maintenance facility is built, it should include sufficient room for a maintenance shop laid out similar to this figure.

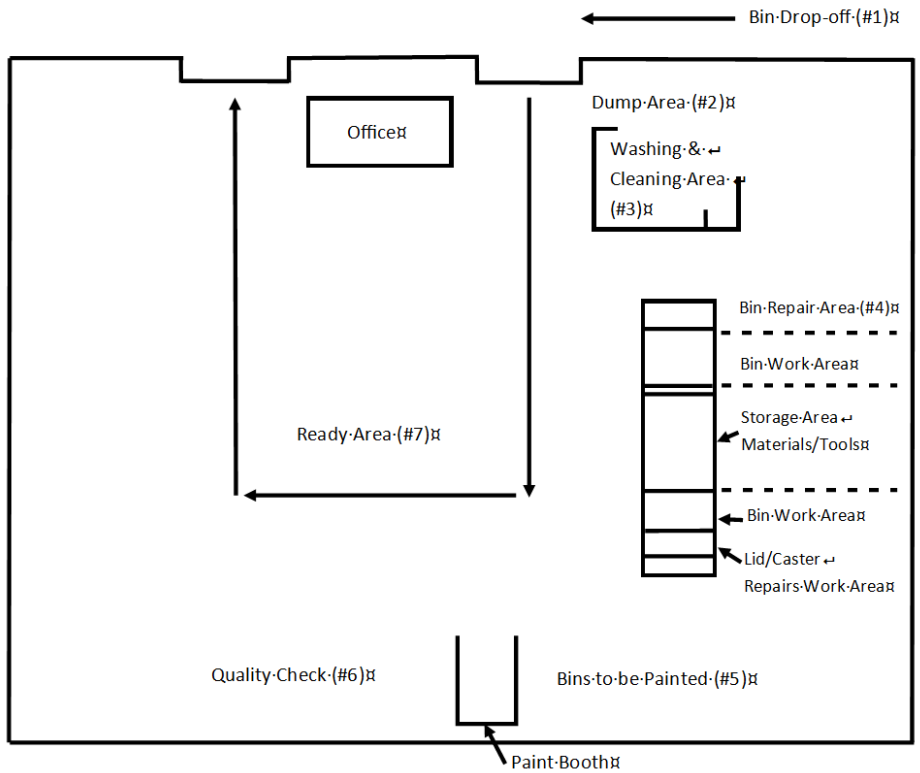


Figure 5-1. Typical Container Maintenance Shop Layout

Track when containers are brought in for repair. The fleet maintenance supervisor, or the appropriate manager, needs to be receiving a monthly report that lists the number of containers repaired, repainted, etc. This report should record when the container was brought in and when it was finished. It is critical that container maintenance activities are monitored. To assist in tracking this information, a

"container maintenance request form" such as the one shown in Figure 5-2 should be utilized by the City of Santa Fe.[2]

Cart maintenance is equally important. While this section has focused on containers, it is important that the City is equally diligent in maintaining the carts that are located throughout the City. The same "best practices" with regard to maintaining the City's containers should be used for maintaining the City's carts.

STANDARD OPERATING PROCEDURES	DOCUMENT NO.	
Administration/Customer Service	EFFECTIVE DATE:	
	REVISION DATE:	
Container Maintenance Requests	REVISION NO.	
	APPROVAL: Prepared by:	

1.0 PURPOSE

The objective of these procedures is to standardize procedures in the delivery and maintenance of containers.

2.0 REVISION HISTORY

Revision Date	Revision No.	Changes:
		Initial development
		Additions
		Revisions

3.0 PERSONS AFFECTED

Senior Office Assistant
Communications Dispatcher
Office Manager
Division Supervisor
General Service Worker

4.0 DEFINITIONS

Summarizes the definitions associated with this document.

5.0 RESPONSIBILITIES

Summarizes the roles and responsibilities of all individuals involved with this document.

6.0 PROCEDURES

- A telephone call or e-mail is received from residential or commercial customers to request container maintenance (i.e., lid, wheel, damaged), stolen container or new service.
- 311 Call taker generates a work order providing all pertinent information (address, name of person requesting service , name of account holder and telephone number, route and date information, specify type of service required.
- Work order is automatically assigns to Container Division – repairs and deliveries processed within 10 business days.
- Office Staff monitors open work orders, pending and follows up with Container Division.

Figure 5-2. Sample Container Maintenance Operating Procedure

[2] This form is one used by a large city in Texas to manage their containers.

5.2 Review of Solid Waste Administrative Function

The administrative function within the Environmental Services Division is established in a format which is typical for most cities. There were no significant findings of issues that need to be addressed, or processes changed other than the following:

- Louis Berger would recommend that the residential and commercial operations share vehicles and personnel where practical. We found there is some resistance to sharing of personnel and equipment (which is not atypical within the industry), but is still one that should be addressed.
- Louis Berger would recommend the City evaluate the various operating and financial reports generated for the various supervisors. We believe the City could develop three to five key daily, weekly and monthly reports that would allow the supervisors and managers to focus on some of the key metrics that will ensure their utility is operating as efficiently as possible, some of these include:
    1. Number of customers by route, time to complete route (daily);
    2. Tonnage by route (daily);
    3. Overtime (weekly);
    4. Vehicles at fleet maintenance (weekly – listing when it was taken in, for what, expected due date back, a "tickler" report that is generated when the due date is not met); and
    5. Vehicle repair and fuel costs (by truck), (weekly, monthly, and annually).

5.3 Review of City Ordinance

In reviewing the City's Solid Waste Ordinance (Ordinance No. 2012-24) we found it to be current and up to date with regard to the rates in place for the City's multitude of solid waste refuse and recycling services offered to its residential and commercial customers. It is our understanding that the City is going to, or has implemented an ordinance mandating the use of crushed glass in paving projects within the City limits. We would strongly encourage that recommendation be implemented. We would also recommend that if the "equal space" amendment (ensuring equal space is provided for refuse and recycling containers, dumpsters, etc.) has not been incorporated into the City's land use/permitting code for new construction projects, that it be implemented as soon as practical, so that recycling services are encouraged at both the residential and commercial level.

5.4 Audit solid waste accounts (containers and carts billed versus the number "collected")

Louis Berger has oftentimes found during its operational reviews and cost of service studies for solid waste utilities that there are carts and dumpsters in the field being collected by the operator but the account is not being billed. This happens when a citizen or business call in for delivery of a cart and the operations "side of the house"

delivers the cart or dumpster, but the new customer or additional cart/dumpster information is not relayed to the billing department.[3] In reviewing the operational data by route versus the customer count being billed we believe there may be an opportunity for the City to discover some accounts that are not currently being billed for service, or at least not being billed for all services being provided (i.e. more frequent dumpster collection than is being paid for). However, due to some of the inconsistencies with regard to the detailed listings of commercial and residential accounts, by route it is difficult to quantify this dollar amount. The only way to confirm this amount is to do a sample audit of some of the residential and commercial routes to confirm the number of containers in the field, and their frequency of pick-up, versus what is shown in the billing system. This is a laborious effort, but one that is critical to making sure that all customers are being billed for services received. We would estimate that this under-recovery may, at a minimum, be anywhere from $50,000 to $150,000 per year.

5.5 Additional Materials for Recycling

There has been discussion about expanding the City's recycling program to include additional materials such as cereal boxes, plastics #3-7, and other such materials. Louis Berger agrees that expansion of the program to accept these materials will help to increase the City's recycling rate, however, at present BuRRT is not capable of taking these additional materials without adversely impacting its current operations and/or adversely affecting the price it gets for its baled commodities. Louis Berger will be providing a series of recommendations in the SFSWM Agency section of the report with regard to recommended "next steps" concerning BuRRT, specifically the material recovery facility component. Based on the final recommendations and the desires of the SFSWMA Joint Powers Board, changes could be made that would allow the acceptance of additional materials.

5.6 Diversion Benchmarks

At present the City is recycling approximately 8.5 to 9.0 percent of its materials (see Table 2-6). If the City were to implement an automated residential recycling program it is not unusual to see a 20-40 percent increase in the volume of material recycled. Based on our commercial cardboard recycling analysis (see Table 3-13) it is quite conceivable that the City could conservatively see an increase in their commercial cardboard recycling by three to five times the current volumes. These two changes would allow the City to see an increase in their overall recycling rate to anywhere between a 16-20 percent recycling rate, or higher. The City should strive to reach 20 percent in the next two years and then 25-30 percent three years later.

[3] We had one large city in the Southwestern United States approximately 10 years ago that we identified this issue for and they were able to identify over $2 million per year in unbilled accounts that they began collecting revenue for, thereby postponing a significant rate increase.

5.7 "Zero waste" Defined

There has been a great deal of discussion within the solid waste industry concerning the term "zero waste" and what does it mean? Does it mean having no waste going to a landfill? Does it define a 70-80 percent recycling rate as "zero waste"?

To have an effective recycling program that maximizes its recycling rate, it is critical that automated recycling for residential customers be provided, and it is essential that commercial businesses are involved in the diversion process due to the amount of waste generated by businesses, as a direct result of their operations. The next component is to oftentimes focus on food waste for commercial businesses.

It has been shown that as a community's recycling rate increases, the "next increase in the recycling rate" becomes "incrementally more expensive". Due to Santa Fe's limited access to markets (with Albuquerque being the closest end market), we would focus on implementing our recommendations concerning automated residential recycling and expanding the commercial cardboard collection program and then see where the City's recycling rate is and where the City wants to go from there.

5.8 Pay-As-You-Throw Pricing (PAYT Rates)

As mentioned in Section 1 Cost of Service and Funding Options, we would recommend that the City begin preparing to implement a pay-as-you-throw rate structure for 64 and 96 gallons. A rate structure that charges $3 to $8 more for a 96 gallon cart versus a 64 gallon cart, coupled with an automated residential recycling program will assist in changing customer behavior and increasing the City's recycling rate. We would recommend the education of elected officials on this topic begin, with the goal of PAYT rates being implemented by January 2016.

5.9 Education/Outreach Programs

The City currently provides outreach with regard to recycling and/or solid waste services through three different entities within the City: Keep Santa Fe Beautiful, Sustainable Santa Fe, and the ESD. This is in addition to information disseminated by the County and the SFSWM Agency. This oftentimes results in different messages being distributed to folks within the City and County that has resulted in unclear messaging. We will discuss in more detail in Section 5 of the report, Systemwide Issues, the need for a universal source for the messaging with regard to proper disposal and recycling methods.

Section 6
SUMMARY OF KEY RECOMMENDATIONS

Listed below is a summary of our key recommendations, summarized by section. Where applicable, we have provided a conservative estimate of the potential "Annual Cost Savings" and/or "One Time Cost Savings". For more information on a particular recommendation, refer back to the appropriate section.

Section 1: Cost of Service and Funding Options	
Recommendation	Benefit/Purpose
Increase residential user fees for FY 2015 – FY 2018 per Table 1-18 in the Cost of Service and Funding Options section. Increase commercial rates for FY 2015 – FY 2016 per the Ordinance; remain unchanged for FY 2017 – FY 2018.	These proposed rate changes for the residential and commercial customers will ensure the financial integrity of the utility.
Audit the Commercial Recycling Service.	This will allow the City to verify the accuracy of the accounts being collected, by the type of container, in addition to accurately forecasting the growth of the program for future years.
Implement operational recommendations (see Section 4) related to the roll-off program and impose a $25 - $35 surcharge for compactor vs. open-top roll-off pulls.	Compactor roll-offs require more time to service than an open-top; this additional time should be reflected in an increased rate for compactors.
Increase the fee residential customers pay for an additional cart, to $8 per month for a 32-gallon cart, and $10 for a 96-gallon cart.	It is common industry practice to charge for a second cart, which will generate additional revenue for the City.
Implement Pay-As-You-Throw rates.	Louis Berger would recommend the City begin considering the topic of variable rates and how to implement a Pay-As-You-Throw price structure no later than January 2016.

Section 2: Review of Residential Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Evaluate distribution of drivers and workers.	Increases overall efficiency of the ESD.	High	Now–1 year
Eliminate 1-2 redundant rear-loader back-up vehicles.	Annual Cost Savings: $4,150 - $8,300 One Time Cost Savings: $25,000 - $75,000 [1]	High	Now–1 year

[1] One time sale of back-up rear-loaders.

Section 2: Review of Residential Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Monitor annual maintenance cost and fuel usage of vehicles over their useful life.	Allows the City to determine when it is cost effective to transition vehicles from front-line to back-up.	High	Now–1 year
Increase the recycling setout rate from 56% to 70% - 80%.	Increases participation and setout rate for the City's recycling program.	Medium	In next 12 months
Transition to automated recycling collection operation.	Annual Cost Savings: $70,000 - $100,000	High	In next 2 years
Remove glass from collection operation and transition to glass drop-off program.	The recycling collection operation would be less challenging to collect, and a drop-off program would still allow residents the opportunity to recycle glass.	High	In conjunction with the movement to automated recycling.
Evaluate residential and commercial customer interest in glass subscription program.	Provides glass recycling collection for residents and businesses interested in paying for this service.	Medium	In next 2 years
Invest in industry software and data management: -Customer billing software -GPS units and vehicle tracking software -Tonnage and trip tracking software -Route optimization software	Improves ESD's operational data.	High	Now–1 year
	Potential Cost Savings: One Time: $25,000 to $75,000 Annual: $74,150 to $108,300		

Section 3: Review of Commercial Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Expand current commercial cardboard operation to 3 days per week.	Increases the City's recycling rate.	High	In next 2 years
Increase front-load commercial lifts to 100-110 per route. Purchase a routing software.	Minimizes weekly routing by 3 to 5 routes per week. Annual Cost Savings: $20,000 to $120,000	High	In next 12 months
Reduce roll-off weekly routes from 3 to 2, per recommendations.	Annual Cost Savings: $30,000 to $40,000 One Time Cost Savings: $25,000	High	In next 12 months

Section 3: Review of Commercial Collection Operations			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Evaluate commercial customer container sizing versus the container capacity utilized.	Decreases the amount of "air" the ESD is currently picking up. Operational efficiencies to be gained may have some "adverse" revenue impact.	Medium	In next 12 months
Monitor annual maintenance cost and fuel usage of vehicles over their useful life.	Allows the City to determine when it is cost effective to transition vehicles from front-line to back-up.	High	Now–1 year
Purchase an automated side-loader and rear-load vehicle.	Ensures sufficient front-load and back-up equipment to maintain consistent daily operations.[2]	High	Now–1 year
Eliminate excess front-load back-up vehicles.	Annual Cost Savings: $10,000 to $20,000 One Cost Time Savings: $35,000 to $70,000	Medium	In next 12 months
If the City decides to collect and divert commercial food waste, Louis Berger would recommend the City develop the collection program and outsource the processing & end product market development.	Allows City to engage in a food waste collection programing without expending the resources required to process and/or sell food waste.	Low	TBD
Invest in industry software and data management: -Customer billing software -GPS units and vehicle tracking software -Tonnage and trip tracking software -Route optimization software	Improves ESD's operational data.	High	Now–1 year
Potential Cost Savings: One Time: $60,000 to $95,000 Annual: $60,000 to $180,000			

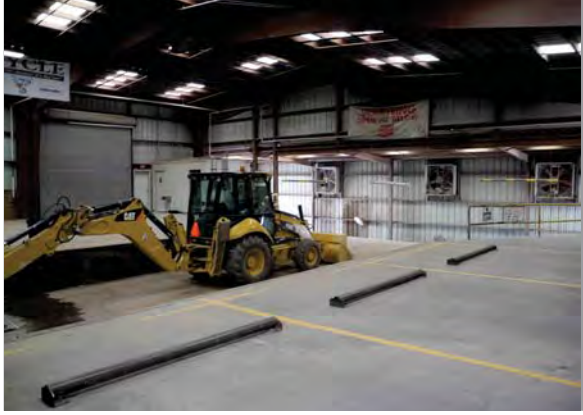
[2] May be able to transfer an "excess" rear-loader from the residential collection operation.

Section 4: Operational Assessment of Fleet Maintenance			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Upgrade fleet management facility to match the work effort and equipment being operated.	Improves safety and provides proper support for vehicle maintenance.	High	Now–1 year
Provide training to staff to work on equipment, particularly CNG vehicles.	Allows personnel to be adequately educated on new vehicle technologies.	Medium	In next 18 months
Invest in data tracking systems to monitor and manage the performance of fleet.	Allows tracking of use and costs on a per vehicle basis, which is needed to make proactive maintenance and vehicle replacement decisions.	High	Now–1 year
Enforce use of fuel key system.	Assures mileage and miles per gallon are effectively tracked.	High	Now–1 year
Develop written operating procedures.	Creates accountability and ensures that maintenance is performed in accordance with each manufacturers' requirements.	Low	In next 18–24 months
Reduce back-up equipment. (Addressed in Section 2 & 3)	Realize cost savings.	High	In next 12 months
Review staffing levels	Ensures appropriate staffing and back-up are commensurate with work levels.	High	Now–1 year
Review practice of mobilizing two mechanics to field repairs.	Allows a second mechanic to continue working in the shop and/or respond to additional repair calls.	High	Immediately
Increase integration of fleet maintenance operations with City's other fleet maintenance activities, if possible.	Improves efficiency.	Medium	In next 12 months
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.			

Section 5: Review of Non-Collection Activities			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Container Maintenance (i-v)			
Utilize bar codes for all containers.	Enables container tracking.	Medium	In next 18 months
Report damaged containers.	Maintains attractive appearance of the City.	Medium	In next 18 months
Periodically review containers.	Ensures that containers are maximized for their entire useful life.	Medium	In next 18 months
Container maintenance shop layout should reflect Figure 5-1 in Section 5.	Creates an efficient use of space that allows containers to flow through shop.	Medium	In next 24 months
Track when containers are brought in for repair.	Improves ESD's operational data.	Medium	In next 18 months
Share vehicles & personnel where practical among residential & commercial operations.	Increases efficiency.	Medium	In next 12 months
Develop 3-5 key daily, weekly, and monthly reports: -Number of customers by route -Tonnage by route -Overtime -Vehicle repair, fuel costs, etc.	Ensures that the utility is operating as efficiently as possible.	High	Now–1 year
Review City Ordinance and implement the following recommendations: -Mandate the use of crushed glass in paving projects -Implement "equal space" amendment	Encourages recycling services at both residential and commercial level.	High	Now–1 year
Audit solid waste accounts	Ensures that the City is capturing all accounts in their billing system. Annual Cost Savings: $50,000 to $150,000	High	Now–1 year
Expand City's recycling program to include additional materials (i.e., cereal boxes, plastics #3-7, etc.)	Increases City recycling rate.	Low	In next 12-18 months

Section 5: Review of Non-Collection Activities			
Recommendation	Benefit	Priority Level	Implementation Time Frame
Implement Pay-As-You-Throw rates.	Louis Berger would recommend the City begin discussing the topic of variable rates with its elected officials.	High	By January 2016
Consolidate Education/Outreach programs.	Increases awareness without inundating targeted audience.	Medium	In next 6–12 months
Potential Cost Savings: One Time: N/A Annual: $50,000 to $150,000			

City - Overall Potential Cost Savings	
One Time:	$85,000 to $170,000
Annual:	$184,150 to $438,300



SANTA FE SOLID WASTE MANAGEMENT AGENCY
CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study
County Section

FINAL REPORT | December 2014

NewGen Strategies & Solutions

Louis Berger

Solid Waste Assessment & Management Study

Santa Fe Solid Waste Management Agency
City of Santa Fe and Santa Fe County

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Section 1
COST OF SERVICE AND FUNDING OPTIONS

The purpose of the Cost of Service and Funding Options analysis was to determine the total cost of refuse and recycling services provided by the County, equitably distribute the cost to customers, identify possible funding and revenue sources, and design rates to safeguard the financial integrity of the utility. The total cost of providing services includes costs associated with operations and maintenance (O&M), debt service (if any) and cash capital outlays.

This section provides a discussion of the methodology utilized to conduct the analysis, the cost of providing services as determined by the analysis, and recommended rates to be adopted for refuse drop-off services. Various policy issues are also identified and discussed in Section 1.8 of this report section.

1.1 Current Solid Waste Operations

The County currently provides refuse and recycling drop-off services at seven citizen convenience centers and exclusively recycling drop-off services at one CCC. The convenience centers have also been referred to as "transfer stations" but for consistency, the term citizen convenience center (CCC) is used throughout this report.

The County's CCCs collect an average of 10,084 tons of refuse and 2,284 tons of recyclable materials a year.[1] Recycling represents 18.5 percent of the CCC annual volume collected.

1.2 Current Rates and Funding Sources

The County has the following rates in place for refuse services at the CCCs. Recycling material can be dropped-off at any CCC at no cost.

[1] Based on a historical average of two years, January 2011 to December 2012

Table 1-1
Current Refuse Rates

	Rate	Quantity Sold (FY 2013)	Approximate Volume/ Weight per Permit
Residential Customers			
1 Trip Permit	$15.00	515	4 CY or 800 lbs
24 Trip Permit	75.00	3,680	96 CY or 19,200 lbs
24 Trip Permit – Senior	70.00	1,426	96 CY or 19,200 lbs
24 Trip Permit – Low Income	65.00	161	96 CY or 19,200 lbs
5 Bag Tags	5.00	1,031	0.17 CY or 33 lbs
Commercial Customers			
5 Trip Permit	$100.00	3	20 CY or 4,000 lbs
10 Trip Permit	140.00	3	40 CY or 8,000 lbs
Commercial Billable Accounts			
Per Ton	$50.00	-	2,000 lbs
Per Pound	0.03	-	1 lbs

The County's refuse and recycling operation is also funded by the Environmental Gross Receipts Tax and an annual County General Fund Transfer. The sources of revenue for the refuse and recycling operation are summarized below in Table 1-2 for fiscal year (FY) 2014.

Table 1-2
Funding Sources

	FY 2014	Percentage Breakdown
Annual Actual Costs	$2,538,589	
Funding Source		
Revenue from Permit Sales	$399,885	15.7%
Environmental Gross Receipts Tax	650,000	25.6%
General Fund Transfer	$1,488,704	58.7%
Total Funding	$2,538,589	100%

1.3 Development of Cost of Service

A historical period of two years was reviewed for the purpose of estimating the future operating and capital costs for the County. The total of annual operating and capital costs constitutes the "cost of service". Louis Berger compared the FY 2013 and FY 2014 budgets with the actuals for FY 2011 and FY 2012. Based on this comparison, the FY 2014 budget appears to be a reasonable estimate of the expenses associated with the operations of the County.

1.3.1 Test Year

Louis Berger made various adjustments to the FY 2014 budget in order to establish a "Test Year" for the five-year financial forecast. A "Test Year" is a common term in rate studies that refers to an adjusted fiscal year budget that is used as a basis for establishing rates. The "Test Year" should be representative of "typical" conditions, with adjustments for any unusual or one-time expenses. Further, any projected non-recurring expenses or revenues were identified and reflected in the financial forecast, as appropriate. The FY 2014 budget, adjustments and resulting "Test Year" are shown in Appendix A, Schedule 1.

1.3.2 Inflation Factors

The Test Year cost of service was used as the basis for the five-year financial forecast. The majority of expenses were operations and maintenance (O&M) related costs. Therefore, the inflation assumptions were based on historical averages as follows:

- Salaries increase at 3.00 percent per year
- Benefits increase at 3.00 percent per year
- Insurance costs increase at 5.00 percent per year
- Fuel costs increase at 3.00 percent per year
- Equipment costs increase at 2.00 percent per year
- Disposal costs increase at 2.00 percent per year
- Other general operating costs increase at 2.00 percent per year.

1.3.3 Capital Repair and Replacement

Capital repair and replacement is included in the cost of service under the heading "Vehicle Expenses", line item "Vehicle Replacement Cost" (Appendix A, Schedule 1, page 1 of 2). These costs were estimated for the financial forecast to require an average of approximately $240,265 annually for refuse equipment replacement. These funds are to ensure the dependability and efficiency of facilities and vehicles. Louis Berger would like to stress the importance of ensuring the County's assets remain in good working condition in order to prevent equipment failures and expensive emergency repairs.

Appendix A, Schedule 2 provides additional detail on the equipment replacement schedule for the five-year forecast.

1.4 Cost of Service Forecast

Based on the Test Year, and inflation factors detailed above, Louis Berger developed the cost of service forecast for the County. Table 1-3 shows the County's cost of service for the five-year forecast. The detailed five-year forecast for the County is provided in Appendix A, Schedule 3.

Table 1-3
Cost of Service Forecast

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Salaries and Wages	$722,860	$744,546	$766,882	$789,889	$813,585
Employee Benefits	414,345	426,775	439,579	452,766	466,349
Travel	4,550	4,656	4,765	4,876	4,990
Vehicle Expenses	432,932	451,811	462,760	473,985	490,390
Maintenance	216,500	220,830	225,247	229,752	234,347
Contract Services	505,842	515,814	525,984	536,358	546,940
Supplies	71,700	73,134	74,597	76,089	77,610
Operating Costs	38,900	39,678	40,472	41,281	42,107
Other Operating Costs	84,409	87,576	90,900	94,389	98,052
Insurance & Deductibles	46,550	48,878	51,321	53,887	56,582
Solid Waste Cost of Service	$2,538,589	$2,613,698	$2,682,506	$2,753,271	$2,830,950

1.4.1 Cost of Service by Cost Category

Louis Berger worked with County staff to develop cost centers that will reflect the variety of services provided by the County's refuse and recycling operation. Identifying cost centers allows Louis Berger and the County to better understand the cost of operating each aspect of the County's refuse and recycling operation. The cost centers identified are as follows:

- Administration
- Education and Outreach
- Adopt A Road
- Eldorado
  - Refuse
  - Recycling
- Jacona
  - Refuse
  - Recycling
- La Cienega
  - Refuse
  - Recycling
- Nambe
  - Refuse
  - Recycling
- Rancho Viejo

  - Recycling
- San Marcos
  - Refuse
  - Recycling
- Stanley
  - Refuse
  - Recycling
- Tesuque
  - Refuse
  - Recycling
- Refuse and Recyclables Hauling
- Disposal

Louis Berger allocated the County's annual costs to the twenty (20) cost centers listed above. A detailed list of the allocation factors utilized for each County expense is listed in Appendix A, Schedule 4.

1.4.2 Allocating Common Costs to Each CCC

Certain cost categories provide a "benefit" to all of the CCCs and these costs need to be allocated to each CCC in an equitable manner. These overarching cost categories include: Administration, Education and Outreach, Adopt-a-Road, Refuse and Recyclables Hauling and Disposal. Louis Berger has allocated these costs to the different convenience centers based on the following methodologies:

- **Administration, Education and Outreach, and Adopt-a-Road.** These costs were allocated equally to each convenience center, regardless of tonnage handled. This is based on the assumption that, on average, all citizen convenience centers require an equal amount of attention from administrative personnel, education and outreach efforts and adopt-a-road support services. These administrative costs are then distributed to refuse and recycling activities at each citizen convenience center based on the volume of tonnage collected at each convenience center. Additional detail on the allocation of administration, education and outreach, and adopt-a-road is provided in Appendix A, Schedule 5.
- **Refuse and Recyclables Hauling.** The hauling costs are associated with the cost to transfer material from the citizen convenience centers to the Buckman Road Recycling and Transfer Station (BuRRT) and the Caja del Rio Landfill (Landfill). The hauling costs have been distributed to each CCC activity based on the number "pulls" for refuse and recycling from each CCC, as shown in Appendix A, Schedule 5. A "pull" is the process of one truck removing one load of refuse or recyclables from a CCC. This is intended to more accurately distribute the hauling cost to refuse and recycling activities at each CCC.
- **Disposal.** Disposal of refuse at the Caja del Rio Landfill currently costs $40 per ton. The projected cost of disposal is based on the assumption that the disposal cost

at the landfill will increase annually at 2.0 percent per year, resulting in the annual disposal cost shown in Appendix A, Schedule 5. The annual disposal cost is distributed to the refuse cost center at each convenience center based on historical refuse tonnage volumes at each convenience center. Save for glass, the County is not charged to drop-off recyclables at BuRRT. Glass drop-off currently costs $15.75 per ton.

After distributing these cost categories to the CCCs using the methodology described in prior pages, the full cost of operating each convenience center for refuse and recycling services is, shown in Table 1-4.

Table 1-4
Cost of Service by Citizen Convenience Center

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Eldorado					
O&M Costs	$246,303	$256,238	$263,100	$270,172	$279,419
Administration	49,925	51,263	52,606	53,985	55,421
Hauling	19,149	19,765	20,299	20,849	21,473
Disposal	93,482	95,351	97,258	99,204	101,188
Refuse Subtotal	$408,859	$422,618	$433,264	$444,210	$457,501
O&M Costs	$99,798	$102,975	$105,995	$109,108	$112,463
Administration	19,178	19,692	20,208	20,738	21,290
Hauling	53,662	55,389	56,886	58,427	60,175
Recyclables Subtotal	$172,639	$178,057	$183,090	$188,273	$193,927
Eldorado Subtotal	$581,497	$600,675	$616,353	$632,483	$651,428
Jacona					
O&M Costs	$229,667	$237,204	$243,370	$249,722	$257,191
Administration	56,393	57,905	59,421	60,979	62,601
Hauling	78,714	81,248	83,444	85,704	88,268
Disposal	132,734	135,388	138,096	140,858	143,675
Refuse Subtotal	$497,508	$511,745	$524,332	$537,263	$551,735
O&M Costs	$68,042	$70,171	$72,080	$74,048	$76,243
Administration	12,710	13,051	13,393	13,744	14,109
Hauling	25,582	26,406	27,119	27,854	28,687
Recyclables Subtotal	$106,334	$109,628	$112,592	$115,645	$119,040
Jacona Subtotal	$603,842	$621,373	$636,923	$652,908	$670,775
La Cienega					
O&M Costs	$117,564	$121,133	$124,745	$128,467	$132,339
Administration	64,316	66,040	67,769	69,546	71,396
Hauling	53,813	55,545	57,047	58,592	60,344
Disposal	84,861	86,559	88,290	90,056	91,857
Refuse Subtotal	$320,554	$329,277	$337,851	$346,661	$355,937
O&M Costs	$39,658	$40,829	$42,037	$43,282	$44,566
Administration	4,787	4,916	5,045	5,177	5,314
Hauling	11,883	12,265	12,597	12,938	13,325
Recyclables Subtotal	$56,328	$58,010	$59,679	$61,397	$63,206
La Cienega Subtotal	$376,882	$387,287	$397,530	$408,058	$419,143

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Nambe					
O&M Costs	$60,209	$62,062	$63,948	$65,892	$67,910
Administration	64,370	66,096	67,827	69,606	71,457
Hauling	17,938	18,515	19,016	19,531	20,115
Disposal	23,174	23,637	24,110	24,592	25,084
Refuse Subtotal	$165,691	$170,311	$174,901	$179,620	$184,566
O&M Costs	$27,906	$28,726	$29,571	$30,443	$31,343
Administration	4,733	4,860	4,987	5,118	5,254
Hauling	3,860	3,984	4,092	4,203	4,329
Recyclables Subtotal	$36,499	$37,570	$38,650	$39,764	$40,925
Nambe Subtotal	$202,190	$207,880	$213,551	$219,384	$225,491
Rancho Viejo					
O&M Costs	$18,563	$19,103	$19,661	$20,236	$20,831
Administration	69,103	70,956	72,814	74,723	76,711
Hauling	12,186	12,578	12,918	13,268	13,664
Rancho Viejo Subtotal	$99,852	$102,637	$105,393	$108,227	$111,206
San Marcos					
O&M Costs	$54,923	$56,617	$58,298	$60,031	$61,855
Administration	57,720	59,268	60,820	62,415	64,075
Hauling	22,630	23,359	23,990	24,640	25,377
Disposal	30,160	30,763	31,378	32,006	32,646
Refuse Subtotal	$165,433	$170,007	$174,487	$179,092	$183,953
O&M Costs	$44,974	$46,305	$47,677	$49,092	$50,550
Administration	11,383	11,688	11,994	12,308	12,636
Hauling	12,715	13,125	13,479	13,844	14,259
Recyclables Subtotal	$69,072	$71,118	$73,151	$75,245	$77,445
San Marcos Subtotal	$234,506	$241,124	$247,638	$254,336	$261,397
Stanley					
O&M Costs	$61,748	$63,682	$65,570	$67,516	$69,583
Administration	60,916	62,550	64,188	65,871	67,623
Hauling	15,289	15,781	16,207	16,646	17,144
Disposal	23,722	24,196	24,680	25,174	25,677
Refuse Subtotal	$161,674	$166,208	$170,645	$175,207	$180,027
O&M Costs	$36,304	$37,376	$38,480	$39,620	$40,794
Administration	8,187	8,406	8,626	8,853	9,088
Hauling	4,844	5,000	5,135	5,274	5,432
Recyclables Subtotal	$49,335	$50,782	$52,242	$53,746	$55,314
Stanley Subtotal	$211,009	$216,990	$222,887	$228,953	$235,341
Tesuque					
O&M Costs	$59,831	$61,901	$63,754	$65,666	$67,801
Administration	53,856	55,300	56,748	58,236	59,785
Hauling	27,323	28,202	28,965	29,749	30,639
Disposal	15,235	15,539	15,850	16,167	16,491
Refuse Subtotal	$156,244	$160,942	$165,317	$169,819	$174,716
O&M Costs	$47,404	$48,898	$50,337	$51,821	$53,410
Administration	15,247	15,656	16,066	16,487	16,926
Hauling	9,915	10,234	10,511	10,795	11,118
Recyclables Subtotal	$72,566	$74,788	$76,914	$79,104	$81,454
Tesuque Subtotal	$228,811	$235,731	$242,231	$248,922	$256,170
Total Cost of Service	$2,538,589	$2,613,698	$2,682,506	$2,753,271	$2,830,950

Table 1-5 provides a summary of the costs for the CCCs (summarized from Table 1-4) by the major cost categories. For instance, Table 1-5 shows that the County spends over $400,000 annually in tipping fees. In addition, it can be seen that collectively, over $360,000 is spent annually on the hauling of refuse ($234,856) and recyclables ($134,647). That is why it is essential that the County is optimizing its loads of refuse and recyclables so as to minimize this cost.

Table 1-5
Citizen Convenience Center Cost Summary

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
O&M Costs	$830,245	$ 858,837	$ 882,787	$ 907,468	$ 936,099
Administration	407,496	418,421	429,379	440,637	452,358
Hauling	234,856	242,416	248,968	255,710	263,360
Disposal	403,367	411,434	419,663	428,056	436,617
Refuse Subtotal	$1,875,964	$1,931,108	$1,980,797	$ 2,031,871	$2,088,434
O&M Costs	$ 382,650	$394,384	$405,839	$417,650	$430,200
Administration	145,328	149,225	153,133	157,148	161,328
Hauling	134,647	138,981	142,737	146,603	150,988
Recyclables Subtotal	$662,625	$682,589	$701,709	$721,400	$742,516
Total Cost of Service	$2,538,589	$2,613,698	$2,682,506	$2,753,271	$2,830,950

In Table 1-6, Louis Berger has provided a cost per ton for refuse and recyclable material at each Citizen Convenience Center.

Table 1-6
Cost of Service per Ton by Citizen Convenience Center

CCC	Annual Cost	Annual Tonnage	Cost per Ton
Refuse			
Eldorado	$408,859	2,337	$174.95
Jacona	497,508	3,318	149.94
La Cienega	320,554	2,122	151.06
Nambe	165,691	579	286.17
San Marcos	165,433	754	219.41
Stanley	161,674	593	272.64
Tesuque	156,244	381	410.09
Recycling			
Eldorado	$172,639	898	$192.25
Jacona	106,334	748	142.16
La Cienega	56,328	158	356.51
Nambe	36,499	43	848.81
Rancho Viejo	99,852	102	978.94
San Marcos	69,072	149	463.57
Stanley	49,335	80	616.69
Tesuque	72,566	108	671.91

As noted in Table 1-6, since the majority of costs associated with operating a CCC are "fixed costs" that do not vary with the amount of materials received (refuse or recyclables), those CCCs with the lowest tonnages being collected have the highest cost per ton. For instance, the highest cost per ton CCC to collect refuse is Tesuque at $410 per ton since they take the lowest amount of tonnage on annual basis of any of the CCCs. For recyclables, the two highest cost CCCs are Nambe (which only collects 43 tons per year of recyclables), and Rancho Viejo. Rancho Viejo has a high cost per ton because none of its fixed costs gets allocated to refuse related activities, since this CCC only accepts recyclables, resulting in a higher fixed cost, due to less tonnage (recyclables only).

1.5 Funding Options and Forecast

Table 1-7 provides a summary of the projected recovery of the cost of service if the current rates remain unchanged and the system experiences no growth in customers or tonnage over the five-year forecast. The County is projected to continue to be unable to fund the operation with revenue from rates alone (i.e. permit fees, bag tags), and will need to continue to support the operation with funding from the County General Fund and the Environmental Gross Receipts Tax.

Table 1-7
Funding Needs Based on Current Permit Rates

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2106	Year 4 FY 2017	Year 5 FY 2018	Year 5 Percentage Breakdown
Refuse						
Permit Revenue	$399,885	$399,885	$399,885	$399,885	$399,885	14.1%
Environmental Gross Receipts Tax	650,000	650,000	650,000	650,000	650,000	23.0%
General Fund Transfer	$1,488,704	$1,563,813	$1,632,621	$1,703,386	$1,781,065	62.9%
Cost of Service/Funding Need	2,538,589	2,613,698	2,682,506	2,753,271	2,830,950	100.0%

If permit fees are not adjusted, the County is forecasted to require an increase in the funding of solid waste services from the General Fund from $1,488,704 in FY 2014 to $1,781,065 by FY 2018, or an increase of nearly $300,000.

Property-based Solid Waste Assessment as an Alternative Funding Source

An alternative funding option is an annual or quarterly solid waste assessment on all properties in the unincorporated County. Some counties within New Mexico currently utilize such a funding mechanism (San Miguel, Torrance and Lincoln Counties – for more information on their assessment methodology refer to Appendix B, Figure B-1). However, if the "solid waste assessment" allows unlimited refuse disposal, such an assessment does not encourage recycling and is inconsistent with a "pay-as-you-throw" approach to pricing (i.e. the more refuse a citizen disposes of, the more he/she pays). Torrance County provides an assessment approach that limits how much refuse they will accept for the quarterly assessment. Once that amount is exceeded, the customer must pay an additional fee (a "hybrid" pay-as-you-throw) approach.

Conceivably, a solid waste assessment could provide the needed funding in place of both the permit fees and using the General Fund. Hypothetically, if Santa Fe County were to implement an annual solid waste assessment to recover the entire cost of operating its CCC program, the assessment would need to recover approximately $1.9 million per year.[2] This assumes that all of the County's Environmental GRT funds (currently $650,000 per year) would continue to be utilized for solid waste operations. This fee would then be assessed on those properties in the County (32,653), less those properties currently paying for curbside refuse and/or recyclables collection (approximately 6,500). This would result in an annual solid waste assessment of $72.[3] In this scenario there would be no permit fee, unless the County wanted to implement a program similar to Torrance County where "large disposers" of refuse pay the assessment and a fee for loads that exceed the weekly amount allowed by the County under the terms of their annual solid waste assessment. It should also be noted that if the County moves forward with contracting with private waste haulers to provide contractual refuse and recycling services in certain portions of the County, the number of homes that pay the assessment would decrease, as more residents in the County would subscribe for curbside collection services, resulting in the $72 assessment needing to be increased.[4] See "Section 4, Solid Waste Management System" for more information on this topic.

There are pros and cons to both approaches (permit fees and use of the General Fund versus an assessment), and a third approach as a "hybrid" which is effectively what Santa Fe County currently has through the permit fee structure coupled with the funding by the Environmental Gross Receipts Tax and County General Fund. The advantages of a permit fee is it clearly shows the citizen that the more refuse they dispose of the more they will pay in permit fees (based on our modifications to the County's permit fee structure as discussed in the next section). This, in turn, creates an incentive for citizens to recycle. With a solid waste assessment, there is also an equity or fairness issue for those citizens that don't generate much waste but are paying the same for the assessment as everyone else. The advantage of an annual solid waste assessment is that it ensures revenue stability by eliminating a potential revenue shortfall, versus with a permit fee revenue source that is subject to potential revenue shortfalls if people buy fewer permits than is expected.

1.6 Proposed Refuse Permit Rates for Consideration

Louis Berger developed the two rate scenarios (Tables 1-8 and 1-9) listed on the following pages based on the financial forecast as described in the prior pages of this section, as well as by taking into consideration the current demographics of the customer base, and how the CCCs are used by the citizens of Santa Fe County. Citizen collection center programs are rarely funded exclusively through rates. Due to

[2] FY 2014 budget $2,538,589 - $650,000 (Environmental GRT) = $1,888,589.
[3] $1,888,589 / (32,653-6,500) = $72.21
[4] The $72 assessment, based on the FY 2014 budget also does not reflect that the cost of providing solid waste services will increase over the next five years, as shown in Table 1-6.

the lack of density of customers per square mile and the high transportation costs (because of the distances required to haul the refuse and recyclables) solid waste services typically need to be supported by additional local government funding sources beyond the revenue obtained from permit fees. In the case of Santa Fe County, the General Fund and the Environmental GRT provide that funding support. The two refuse rate scenarios proposed for consideration in this section will still require funding support from those two existing sources. As part of our analysis, Louis Berger forecast the "maximum" potential number of visits made by citizens based on the type of permit sold. The maximum amount of visits that citizens could have made to the CCCs is approximately 126,000 times during the course of the year. If a refuse rate were to recover 100% of the cost of the County's solid waste and recycling budget ($2,538,589 for FY 2014), the average fee charged a citizen would be approximately $20 per trip.[5] A fee of this magnitude would potentially create a significant financial hardship on many citizens, and would lead to an increase in illegal dumping of waste, and other behaviors that are counter-productive to keeping Santa Fe County beautiful.

Louis Berger is recommending that the rate structure be modified to provide greater pricing options to the citizens as described on the following page (i.e. more options to purchase a permit that better matches the disposal frequency needs of the customer). Based on citizen input County staff has received and feedback from Commissioners, Louis Berger is also recommending that the permits not expire. However, with this change in the variety of permits available at different prices and the change to no expiration date (meaning citizens will not need to purchase new permits each fiscal year), the actual number of differently priced permits that will be sold each year is unknown. These changes, therefore, create the potential for a greater degree of revenue instability – particularly in the first few years when the County is gaining familiarity with how citizens are responding to the new rate reschedule. As much as practicable, therefore the revenue forecast on the following page is based on conservative assumptions with regard to what percentage of each type of permit will be sold.

1.6.1 Permits

Residential permits are presently offered for one trip or 24 trips. Commercial permits are offered as five trip or ten trip permits. Louis Berger recommends the County transition to offering the same 1, 6, 12 and 24 trip permits for both residential and commercial customers (i.e. eliminate the existing separate commercial permit system).[6] As noted above, we also recommend that the permits not expire, as they currently due at the end of the fiscal year. By allowing residential and commercial customers to have a wider selection of permits to purchase, the customer will be able to better select a permit that matches their disposal need. It is also reasonable to

[5] $2,538,589 / 126,000 trips= $20.15 per trip

[6] There does not need to be a different permit for residential or commercial customers, as is currently the case. Both customers are disposing of similar types of refuse. In addition, very few commercial permits are even issued. The County should move toward issuing a "standard permit" that is used by both residential and commercial customers.

expect that there will be less permit sharing among County residents, both because customers can purchase the permit size that best matches their needs and the fact that with a permit that doesn't expire, there is no potential for "wasted punches" on a permit. In addition, this should also assist in reducing the number of calls received at the County by citizens that are not pleased that their 24 trip permit has expired at the end of the fiscal year when there are still remaining punches or "trips" on the permit.

Table 1-7 shows the first scenario, which assumes the expansion of permit options with regard to the number of trips per permit (1, 6, 12 and 24). It also assumes that the proposed rate increases that were passed by Resolution 2010-5 for the 24 trip permit and were "frozen" until this study was completed, would be "unfrozen" and increased by $10 per year beginning in FY15. The suggested rates for the new 6 and 12 trip permits were developed in relationship to the cost of the 24 trip permit.

Table 1-8
Current Rates if the Commission's Originally Adopted Rate (Resolution 2010-5) for 24 Trip Permit is Restored (Option A)

	Current Rate	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2106	Year 4 FY 2017	Year 5 FY 2018	Cost Per Trip Year 5
1 Trip Permit	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
6 Trip Permit	n/a	30.00	40.00	50.00	60.00	60.00	10.00
12 Trip Permit	n/a	50.00	60.00	70.00	80.00	80.00	6.67
24 Trip Permit	75.00	75.00	85.00	95.00	105.00	105.00	4.38
24 Trip Senior Citizen/Low Income	70.00	70.00	75.00	85.00	95.00	95.00	3.96
5 Bag Tags	5.00	5.00	5.00	6.00	6.00	7.00	1.40

Note: The suggested rates for the new 6 and 12 trip permits were developed in relationship to the cost of the 24 trip permit.

If the County desires to increase the percentage of revenue generated through the permit fees to say 30 percent of the cost of operating the solid waste CCC system by FY 2018 (FY 2018 budget is projected at $2,830,950), the permit fees will need to rise significantly, with the rates for the 6, 12 and 24 permits needing to more than double. The following table assumes a more aggressive rate design increase with the goal of recovering by FY 2018 approximately 30 percent of the cost of operating the CCCs through the permit revenue.

Table 1-9
Proposed Rates to Achieve 30% Recovery of the Cost of Service by FY 2018 through Permit Revenue (Option B)

	Current Rate	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2106	Year 4 FY 2017	Year 5 FY 2018	Cost Per Trip Year 5
1 Trip Permit	$15.00	$15.00	$16.00	$17.00	$18.00	$19.00	$19.00
6 Trip Permit	n/a	30.00	40.00	53.00	71.00	95.00	15.83
12 Trip Permit	n/a	50.00	65.00	85.00	111.00	145.00	12.08
24 Trip Permit	75.00	80.00	98.00	120.00	147.00	180.00	7.50
24 Trip Senior Citizen/Low Income	70.00	70.00	88.00	110.00	137.00	170.00	7.08
5 Bag Tags	5.00	5.00	6.00	7.00	8.00	9.00	1.80

1.6.2 Bag Tags

Bag tags are offered to allow customers to bring small amounts of material to the CCC. Louis Berger has provided the proposed rates for the two rate scenarios in CCC bag tags in Tables 1-8 and 1-9.

1.6.3 Senior and Low Income Discounted Rates

The County provides service to senior and low income customers at a discounted rate. Louis Berger recommends the County transition the 24 trip senior and low income rate to a standard rate for both senior and low income customers that is $10 less than the rate for "typical" customers. Louis Berger's experience is that the same rate is typically provided to both types of customers. Tables 1-8 and 1-9 illustrate the proposed rates for senior and low income customers under the two different scenarios.

The proposed rates shown create rate parity between the senior and low income rates. Currently, a senior/low income discount is offered only on the 24 trip permit. The County will need to decide whether they want to offer the discount on the 6 and 12 permits, or only the 24 trip permit. Louis Berger would recommend the discount only be offered on the 24 trip permit.

1.7 Projected Revenue Recovery

The rates proposed by Louis Berger in this section of the report are projected to generate the revenue listed in Tables 1-10 and 1-11 over the next five years.

Table 1-10 shows that with the "unfrozen" rates implemented there is a modest increase, on a percentage basis, from 13% to 17% of the CCC costs being recovered by permit revenue.

Table 1-10
Proposed Revenue Generated by Rates in Table 1-8

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Revenue Requirement	$ 2,538,589	$ 2,613,698	$ 2,682,506	$ 2,753,271	$ 2,830,950
1 Trip Permit	$ 6,225	$ 6,225	$ 6,225	$ 6,225	$ 6,225
6 Trip Permit	16,101	21,468	26,835	32,202	32,202
12 Trip Permit	107,340	128,808	150,276	171,744	171,744
24 Trip Permit	141,750	160,650	179,550	198,450	198,450
24 Trip Senior Citizen/Low Income	51,578	59,513	67,448	75,383	75,383
5 Bag Tags	5,155	5,155	6,186	6,186	7,217
	$ 328,149	$ 381,819	$ 436,520	$ 490,190	$ 491,221
% Rate Recovered	13%	15%	16%	18%	17%

Table 1-11 shows that the revenues generated by the user fees in Table 1-9 would generate over $850,000 by FY 2018.

Table 1-11
Proposed Revenue Generated by Rates Designed to Achieve 30% Recovery of Cost of Service

	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
Revenue Requirement	$ 2,538,589	$ 2,613,698	$ 2,682,506	$ 2,753,271	$ 2,830,950
1 Trip Permit	$ 6,225	$ 6,640	$ 7,055	$ 7,470	$ 7,885
6 Trip Permit	16,101	21,468	28,445	38,106	50,987
12 Trip Permit	107,340	139,542	182,478	238,295	311,286
24 Trip Permit	151,200	185,220	226,800	277,830	340,200
24 Trip Senior Citizen/Low Income	55,545	69,828	87,285	108,710	134,895
5 Bag Tags	5,155	6,186	7,217	8,248	9,279
	$ 341,566	$ 428,884	$ 539,280	$ 678,658	$ 854,532
% Rate Recovered	13%	16%	20%	25%	30%

1.8 Findings and Recommendations

Louis Berger has provided comments on some key policy issues and recommendations for consideration by the Board of Commissioners. These observations are based on Louis Berger's experience with cost of service and rate design studies as well as Louis Berger's experience in dealing with economic and financial planning issues for rural county collection systems.

1. **Create rate parity between senior and low income rates.** There is no cost of service reason to have a variance between senior citizen rates and low income rates. Louis Berger recommends the County implement one discounted rate for senior citizens and low income customers.
2. **Eliminate the $.03 per pound rate.** In discussions with County staff, this rate is not used. In Louis Berger's solid waste experience, we have not seen a rate offered in this manner. The elimination of this rate will not in any manner adversely impact the refuse services provided by the County.
3. **Educate citizens about the County's CCC program.** It is important for the long-term success of the County's rural CCC system to be viewed by County citizens as a service. When County citizens understand that the County is providing a service to citizens, and there is a corresponding cost for those services, there will be a greater understanding by citizens of the need to increase operational efficiency and the need to raise rates in a gradual and equitable manner to fund the County's citizen collection center program as it is presently provided.
4. **Monitor, monthly, the purchase of permits, by type.** It is critical once the new permit structure is implemented to track the number of permits sold by month, by type of permit (1, 6, 12 and 24 trip, bags, and senior citizen/low income permits). This will allow the County to track its revenue and better understand the types of permits being purchased by its citizens. Ideally, the County would also track the monthly usage of the permits (i.e. how quickly are the 6, 12 and 24 trip permits being used up). This will help determine how quickly the various permits will be purchased again. Both types of tracking, permit purchases and usage rates will also assist the County as they work on future rate increases for the different types of permits to know the amount of revenue that the rate increase will generate, by type of permit.
5. **Recommend a 30 percent recovery of costs through permit fees.** Louis Berger would recommend that the permit fees be increased to recover 30% of the operating and capital costs for the CCCs by FY 2018. The rates as shown in Table 1-9 would achieve this goal. The remaining 70% of costs would be recovered through the Environmental Gross Receipts Tax and the General Fund. This amount of a rate increase will strike a balance between the "direct users" of the CCCs paying for a portion of operating the CCCs with the remaining costs being financed by both users and non-users of the CCCs via the Environmental GRT and General Fund transfer. Generating greater revenue from permit fees is consistent with a Board-adopted policy in Resolution 2011-15 (adopting the 2010 Solid Waste Management Plan). It also partially addresses the question, "What opportunities exist for the program to be self-sufficient…?" noted in Resolution 2012-52 (establishing the Solid Waste Task Force.)

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Appendix A
COST OF SERVICE AND FUNDING OPTIONS

This appendix includes schedules for Section 1, Cost of Service and Funding Options.

- Schedule 1 | Test Year
- Schedule 2 | Capital Replacement and Improvements
- Schedule 3 | Revenue Requirement
- Schedule 4 | Allocation
- Schedule 5 | Common Costs, Refuse Recyclables Hauling Costs, Disposal Costs

	GMBA Line Item	Line Item Name	Actual FY 2011	Actual FY 2012	Budgeted FY 2013	Budgeted FY 2014	Adjustments	Test Year	Notes
1	***Salaries and Wages***								
2	10-22	Permanent Employees	737,365	624,671	726,378	771,697	(90,497)	681,200	A
3	10-24	Temporary Positions	4,172	19,527	-		19,000	19,000	B
4	10-25	Overtime	10,928	36,588	22,660	22,660		22,660	
5	10-90	Other Wages			3,565			-	
6	***Total Salaries & Wages***		752,465	680,786	752,603	794,357		722,860	
7									
8	***Employee Benefits***								
9	20-01	FICA-Regular	43,087	38,917	46,662	49,250		49,250	
10	20-02	FICA-Medicare	10,077	9,102	10,913	11,518		11,518	
11	20-03	Retirement Contributions	137,744	116,104	142,392	155,420		155,420	
12	20-05	Health Care	109,471	93,242	130,111	182,502		182,502	
13	20-06	Retirement Health Care	12,338	11,721	14,981	15,434		15,434	
14	20-08	Workers Comp - Assessment	318	196	221	221		221	
15	***Total Employee Benefits***		313,036	269,282	345,280	414,345		414,345	
16									
17	***Travel***								
18	30-01	I/S Mileage & Fares		189	-	1,500		1,500	
19	30-03	I/S Meals & Lodging	-	528	2,500	5,250	(2,200)	3,050	
20	***Total Travel***			717	2,500	6,750		4,550	
21									
22	***Vehicle Expenses***								
23	35-01	Vehicle Fuel	137,281	134,517	226,660	182,000		182,000	
24	35-02	Vehicle Oil			-			-	
25	35-03	Vehicle Maintenance			-			-	
26		Vehicle Replacement Cost					240,265	240,265	F
27	***Total Vehicle Expense***		137,281	134,517	226,660	182,000		422,265	
28									
29	***Maintained***								
30	40-01	Maint Bldgs/ Structures	9,399	5,477	15,000	15,000		15,000	
31	40-02	Maintenance Contracts	1,037			182,500		182,500	
32	40-03	Grounds/ Roadways		512	12,000	12,000		12,000	
33	40-05	Furniture/ Fixtures						-	
34	40-06	Maintenance Equipment	103,290	138,474	180,000			-	
35	40-07	Maintenance Supplies	143	805	1,500	3,000		3,000	
36	40-09	Maintenance Service			500	500		500	
37	40-10	Pest Control	1,878	1,117	3,000	3,500		3,500	
38	***Total Maintenance***		115,746	146,385	212,000	216,500		216,500	
39									
40	***Contract Services***								
41	50-03	Contractual Professional Services	-	4,047	-		403,367	403,367	C
42	50-90	Services	497,309	469,704	648,500		80,000	80,000	D
43		Greenwaste Disposal					15,193	15,193	C
44		Glass Disposal					7,283	7,283	C
45	***Total Contract Services***		497,309	473,751	648,500	-		505,842	
46									
47	***Supplies***								
48	60-01	Non-Consumable Supplies	202			50,000		50,000	
49	60-02	Safety Supplies	3,445	3,507	4,000	5,000		5,000	
50	60-03	Uniform Expenses	3,412	1,240	6,900	6,900		6,900	
51	60-07	Operational Supplies		952	1,200	9,800		9,800	
52	60-08	Field Supplies	3,454	2,745	6,000			-	
53	60-12	Food Provisions			-			-	
54	60-90	Other Supplies	598	937	-			-	
55	***Total Supplies***		11,111	9,381	18,100	71,700		71,700	
56									
57	***Operating Costs***								
58	70-01	Equipment/ Machinery	-	-	1,900	2,500		2,500	
59	70-02	Rent of Land/ Buildings	50						
60	70-03	Telephone	713	465	-	1,600		1,600	
61	70-04	Electricity	10,687	10,499	9,100	9,500		9,500	
62	70-05	Gas & Heating Cost	2,601	3,472	4,000	5,000		5,000	
63	70-07	Water	1,055	801	1,500	2,500		2,500	
64	70-13	Liability & Insurance	49,977						
65	70-33	Seminars & Workshops	800	725	2,550	1,500		1,500	
66	70-36	Postage & Mail Services	1,512	1,590	5,800	5,800		5,800	
67	70-37	Advertising	15,433	5,548	9,500	9,000		9,000	

County of Santa Fe, NM
Cost of Service
Schedule 1 - Test Year

	GMBA Line Item	Line Item Name	Actual FY 2011	Actual FY 2012	Budgeted FY 2013	Budgeted FY 2014	Adjustments	Test Year	Notes
68	70-39	Subscriptions and Dues	180	180	800	1,500		1,500	
69	70-40	Medical Services	-	-	600			-	
70	70-90	Miscellaneous	158	106					
71	***Total Other Operating Costs***		83,166	23,386	35,750	38,900		38,900	
72									
73	***Other Operating Cost***								
74	75-01	Brokerage & Policy Fees		195	334	1,787		1,787	
75	75-02	Workers Comp - Premiums		8,169					
76	75-04	Property Insurance Prem.		2,081	4,315	25,786		25,786	
77	75-08	Pollution Insurance		33,486	29,836	36,836		36,836	
78	75-14	Property Insurance Deductibles		2,267					
79		Jacona Site Improvement					20,000	20,000	E
80	***Total Other Operating Cost***		-	46,198	34,485	64,409		84,409	
81									
82	***Insurance & Deductibles***								
83	80-03	Equipment & Machinery			43,631		43,631	43,631	B
84	80-09	Vehicles		279,681	357,235			-	F
85	80-15	Computers & Peripherals		-				-	
86	80-95	Inventory Exempt Computers		1,150				-	
87	80-99	Capital Pkg - Inv Exempt		3,188	2,650		2,919	2,919	B
88	***Total Insurance & Deductibles***		-	284,019	403,516	-		46,550	
89									
90	**Total Expenses**		**1,910,113**	**2,068,423**	**2,679,394**	**1,788,961**		**2,527,921**	
91									
92	**Revenue**								
93		Solid Waste - Residential			335,000			-	
94		Solid Waste - Roll-off Fees			3,750			-	
95		Solid Waste - Gov't			41,472			-	
96		Solid Waste - Small Comm			1,200			-	
97		24 Trip	420,160	330,225		276,000	(276,000)	-	G
98		1 Trip	11,535	17,595		7,725	(7,725)	-	G
99		Senior	70	68,880			-	-	G
100		Low Income	4,080	7,735			-	-	G
101		Bag Tag	6,545	9,920		5,155	(5,155)	-	G
102		Small Commercial - 5	1,100	640		103,100	(103,100)	-	G
103		Small Commercial - 10		720		420	(420)	-	G
104	***Total Revenues***		443,490	435,715	381,422	392,400		-	
105									
106	**Cost of Service**		**1,466,623**	**1,632,708**	**2,297,972**	**1,396,561**		**2,527,921**	

Page Reference
Vehicles | Personnel | Inputs

NOTES:

A Based on County's current personnel list and salaries.
B Adjusted to reflect historical cost incurred by County Operations in FY 2011 and FY 2012.
C Based on discussions with County staff, reflects annual disposal cost.
D Contractual cost of closed landfill.
E Represents the capital investment of moving and enhancing the Jacona CCC, ($1 million/50 years = $20,000 per year).
F Moved annual vehicle replacement cost from the Insurance & Deductibles subheading to the Vehicles Expenses subheading
G Calculated based on historical permits sold, future permits projected and solid waste permit rates outlined in the County ordinance.

County of Santa Fe, NM
Cost of Service
Schedule 2 - Capital Replacement and Improvements

	License No	Year	Vehicle No.	Make	Model	Assigned Driver	Purpose	Annual Maintenance	Annual Fuel	Capital Cost	Useful Life	Annual Replacement Cost	Impact Year
1		2012	611-1	Caterpillar	Loader U-611-1	Staff	CAT Wheeled Loader	15,000	$ 1,138	$ 150,000	15	$ 10,000	2014
2	G84761	2012	673	International	Rolloff 673	Danny Zamora	Transport MSW & Recy.	19,000	20,475	150,000	10	15,000	2014
3	G58304	2004	677	Sterling	Rolloff 677	Richard Lopez	Transport MSW & Recy.	19,000	26,281	-	-	-	2014
4	G47655	2000	676	Freightliner	Rolloff 676	Jeff Spillers	Replaced by Unit 679	19,000	10,010	-	-	-	2014
5	G49242	2002	672	Freightliner	Transport 672	Staff	Transport MSW & Recy.	10,000	9,614	150,000	9	16,667	2014
6	G58420	1996	675	Freightliner	Transport 675	Staff	Transport MSW & Recy.	10,000	6,825	150,000	9	16,667	2014
7	G65481	1997	678	Freightliner	Transport 678	Staff	Transport MSW & Recy.	15,000	6,825	150,000	9	16,667	2014
8	G62954	2005	670	Sterling	Rolloff 670	Staff	Replaced by Unit 673	15,000	20,475	-	-	-	2014
9	G68680	2007	671	Volvo	Rollofff 671	Staff	Transport MSW & Recy.	15,000	3,795	-	-	-	2014
10	G68007	2006	674	Sterling	Rollofff 674	Staff	Replaced by Unit 669	15,000	20,475	-	-	-	2014
11	G57755	2004	526	Chevy Silverado	P-U526	Les Francisco	Staff Transport.	2,500	6,825	-	-	-	2014
12	G67963	2008	527	Dodge Ram	P-U 527	Olivar Barela	Staff Transport.	2,500	455	23,000	8	2,875	2014
13	G72369	2008	524	Ford F-150	P-U 524	Rudy Anaya	Recycling Truck	2,500	4,323	23,000	8	2,875	2014
14	G61147	2005	523	Ford Explorer	SUV 523	Joe Martinez	Compliance vehicle	2,500	4,050	23,000	8	2,875	2014
15		2011	621	Caterpillar	Backhoe 621	Eldorado TS	Transfer Station Equip.	10,000	4,117	23,000	8	2,875	2014
16		2003	628	Caterpillar	Backhoe 628	La Cienega TS	Transfer Station Equip.	5,000	719	68,000	15	4,533	2014
17		2003	629	Caterpillar	Backhoe 629	Jacona TS	Transfer Station Equip.	10,000	596	68,000	15	4,533	2014
18		1998	622	John Deere	Backhoe 622	Nambe TS	Transfer Station Equip.	10,000	1,879	-	15	-	2014
19		1996	623	Case	Backhoe 623	Stanley TS	Transfer Station Equip.	10,000	2,075	68,000	15	4,533	2014
20		2005	618	John Deere	Loader 618	Jacona TS	Transfer Station Equip.	15,000	519	150,000	15	10,000	2014
21		2010		Rolloff USA	Compactor	Stanley TS	Transfer Station Equip.	5,000	3,258	20,000	10	2,000	2014
22		2003	710-2	Rocky Mtn.	Compactor 710-2	La Cienega TS	Transfer Station Equip.	5,000	-	20,000	20	1,000	2014
23		2003	709	Rocky Mtn.	Compactor 709	Nambe TS	Transfer Station Equip.	5,000	273	20,000	20	1,000	2014
24		2003	710-1	Rocky Mtn.	Compactor 710-1	San Marcos TS	Transfer Station Equip.	5,000	182	20,000	20	1,000	2014
25		1997	633	Stenco	WF Trailer 633	Eldorado TS	Transfer Station Equip.	2,000		75,500	7	10,786	2014
26		2007	682	Stenco	WF Trailer 682	Eldorado TS	Transfer Station Equip.	2,000		75,500	15	5,033	2014
27		1999	685	McClain	WF Trailer 685	Eldorado TS	Transfer Station Equip.	2,000		75,500	15	5,033	2014
28		2012	622-1	Caterpillar	Backhoe U622-1	San Marcos TS	Transfer Station Equip.	2,000		68,000	15	4,533	2014
29	G85473	2012	679	International	Rolloff U 679	Jeff Spillers	Transport MSW & Recy.	10,000		150,000	10	15,000	2014
30		2013	669	Caterpillar	Rolloff U 669	Richard Lopez	Transfer Station Equip.	10,000	10,010	150,000	10	15,000	2014
31	G 866632	2013	522	Chevy Silverado	P-U Unit 522	Les Francisco	Public Works	2,500	20,475	23,000	10	2,300	2014
32		2004	714-2	Lincoln	Welder 714-2		Mobile Equip. Unit 525			3,500	8	438	2014
33		2003	714	Millller	Welder 714	Eldorado TS	Transfer Station Equip.			3,500	15	233	2014
34		2004	714-2	Lincoln	Welder 714-2	Dominic Martinez	Mobile Equip. Unit 526			3,500	15	233	2014
35		2014		Recycling Bins (6)		Jacona TS	Jacona Recycle		-	33,000	15	2,200	2014
36		2014		Loader		Jacona TS	Jacona TS	15,000		150,000	10	15,000	2014
37				Compactor Receivers (3)		Stanley, LaCienega	Stanley, LaCienega, Nambe	500		24,000	10	2,400	2014
38				40 yd containers OT(8)		MSW All Centers	MSW All Centers			48,000	10	4,800	2018
39				30 yd containers OT (4)		MSW All Centers	MSW All Centers			20,000	10	2,000	2015
40				30 yd Mixed recyclable containers(4)		Recycling All Cente	Recycling All Centers			22,000	10	2,200	2015
41				Recycling Compactors (2)		Eldorado TS	Eldorado TS	500		40,000	10	4,000	2015
42				Remaining Containers at CCC		All Centers	All Centers			189,500	20	9,475	2014
43				Stenco	WF Trailer (3)	Jacona TS	Jacona TS	6,000		225,000	10	22,500	2014
44				Freightliner	Tractor Transport (3)	Jacona TS	Jacona TS	40,000		30,000	15	2,000	2014
				Jacona Improvement						1,000,000	50	20,000	2014
								$ 334,500	$ 185,667	$ 3,685,500		$ 260,265	

County of Santa Fe, NM
Cost of Service
Schedule 2 - Capital Replacement and Improvements

	License No	Year	Vehicle No.	Make	Model	Cost Category: Administration: Administration	Administration: Education and Outreach	Administration: Adopt A Road	Collection Centers: Eldorado: Solid Waste	Eldorado: Recyclables	Jacona: Solid Waste	Jacona: Recyclables	La Cienega: Solid Waste	La Cienega: Recyclables
1		2012	611-1	Caterpillar	Loader U-611-1	0%	0%	0%	100%	0%	0%	0%	0%	0%
2	G84761	2012	673	International	Rolloff 673	0%	0%	0%	0%	0%	0%	0%	0%	0%
3	G58304	2004	677	Sterling	Rolloff 677	0%	0%	0%	0%	0%	0%	0%	0%	0%
4	G47655	2000	676	Freightliner	Rolloff 676	0%	0%	0%	0%	0%	0%	0%	0%	0%
5	G49242	2002	672	Freightliner	Transport 672	0%	0%	0%	100%	0%	0%	0%	0%	0%
6	G58420	1996	675	Freightliner	Transport 675	0%	0%	0%	100%	0%	0%	0%	0%	0%
7	G65481	1997	678	Freightliner	Transport 678	0%	0%	0%	100%	0%	0%	0%	0%	0%
8	G62954	2005	670	Sterling	Rolloff 670	0%	0%	0%	0%	0%	0%	0%	0%	0%
9	G68680	2007	671	Volvo	Rollofff 671	0%	0%	0%	0%	0%	0%	0%	0%	0%
10	G68007	2006	674	Sterling	Rollofff 674	0%	0%	0%	0%	0%	0%	0%	0%	0%
11	G57755	2004	526	Chevy Silverado	P-U526	100%	0%	0%	0%	0%	0%	0%	0%	0%
12	G67963	2008	527	Dodge Ram	P-U 527	100%	0%	0%	0%	0%	0%	0%	0%	0%
13	G72369	2008	524	Ford F-150	P-U 524	0%	0%	0%	0%	0%	0%	0%	0%	0%
14	G61147	2005	523	Ford Explorer	SUV 523	0%	100%	0%	0%	0%	0%	0%	0%	0%
15		2011	621	Caterpillar	Backhoe 621	0%	0%	0%	77%	23%	0%	0%	0%	0%
16		2003	628	Caterpillar	Backhoe 628	0%	0%	0%	0%	0%	0%	0%	0%	0%
17		2003	629	Caterpillar	Backhoe 629	0%	0%	0%	0%	0%	0%	0%	0%	0%
18		1998	622	John Deere	Backhoe 622	0%	0%	0%	0%	0%	0%	0%	0%	0%
19		1996	623	Case	Backhoe 623	0%	0%	0%	0%	0%	0%	0%	0%	0%
20		2005	618	John Deere	Loader 618	0%	0%	0%	0%	0%	0%	0%	0%	0%
21		2010		Rolloff USA	Compactor	0%	0%	0%	0%	0%	0%	0%	0%	0%
22		2003	710-2	Rocky Mtn.	Compactor 710-2	0%	0%	0%	0%	0%	0%	0%	100%	0%
23		2003	709	Rocky Mtn.	Compactor 709	0%	0%	0%	0%	0%	0%	0%	0%	0%
24		2003	710-1	Rocky Mtn.	Compactor 710-1	0%	0%	0%	0%	0%	0%	0%	0%	0%
25		1997	633	Stenco	WF Trailer 633	0%	0%	0%	100%	0%	0%	0%	0%	0%
26		2007	682	Stenco	WF Trailer 682	0%	0%	0%	100%	0%	0%	0%	0%	0%
27		1999	685	McClain	WF Trailer 685	0%	0%	0%	100%	0%	0%	0%	0%	0%
28		2012	622-1	Caterpillar	Backhoe U622-1	0%	0%	0%	0%	0%	0%	0%	0%	0%
29	G85473	2012	679	International	Rolloff U 679	0%	0%	0%	0%	0%	0%	0%	0%	0%
30		2013	669	Caterpillar	Rolloff U 669	0%	0%	0%	0%	0%	0%	0%	0%	0%
31	G 866632	2013	522	Chevy Silverado	P-U Unit 522	100%	0%	0%	0%	0%	0%	0%	0%	0%
32		2004	714-2	Lincoln	Welder 714-2	100%	0%	0%	0%	0%	0%	0%	0%	0%
33		2003	714	Millller	Welder 714	100%	0%	0%	0%	0%	0%	0%	0%	0%
34		2004	714-2	Lincoln	Welder 714-2	100%	0%	0%	0%	0%	0%	0%	0%	0%
35		2014		Recycling Bins (6)		0%	0%	0%	0%	0%	0%	100%	0%	0%
36		2014		Loader		0%	0%	0%	0%	0%	0%	0%	0%	0%
37				Compactor Receivers (3)		0%	0%	0%	0%	0%	0%	0%	25%	0%
38				40 yd containers OT(8)		0%	0%	0%	0%	0%	0%	0%	0%	0%
39				30 yd containers OT (4)		0%	0%	0%	0%	0%	0%	0%	0%	0%
40				30 yd Mixed recyclable containers(4)		0%	0%	0%	26%	74%	0%	0%	0%	0%
41				Recycling Compactors (2)		0%	0%	0%	0%	100%	0%	0%	0%	0%
42				Remaining Containers at CCC		0%	0%	0%	0%	0%	0%	0%	0%	0%
43				Stenco	WF Trailer (3)	0%	0%	0%	0%	0%	100%	0%	0%	0%
44				Freightliner	Tractor Transport (3)	0%	0%	0%	0%	0%	100%	0%	0%	0%
				Jacona Improvement		0%	0%	0%	0%	0%	75%	25%	0%	0%

County of Santa Fe, NM
Cost of Service
Schedule 2 - Capital Replacement and Improvements

	License No	Year	Vehicle No.	Make	Model	Cost Category										
						Collection Centers										
						Nambe		Rancho Viejo	San Marcos		Stanley		Tesuque		R&R Hauling	Disposal
						Solid Waste	Recyclables	Recyclables	Solid Waste	Recyclables	Solid Waste	Recyclables	Solid Waste	Recyclables		
1		2012	611-1	Caterpillar	Loader U-611-1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	G84761	2012	673	International	Rolloff 673	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
3	G58304	2004	677	Sterling	Rolloff 677	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
4	G47655	2000	676	Freightliner	Rolloff 676	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
5	G49242	2002	672	Freightliner	Transport 672	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6	G58420	1996	675	Freightliner	Transport 675	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
7	G65481	1997	678	Freightliner	Transport 678	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8	G62954	2005	670	Sterling	Rolloff 670	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
9	G68680	2007	671	Volvo	Rollofff 671	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
10	G68007	2006	674	Sterling	Rollofff 674	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
11	G57755	2004	526	Chevy Silverado	P-U526	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
12	G67963	2008	527	Dodge Ram	P-U 527	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
13	G72369	2008	524	Ford F-150	P-U 524	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
14	G61147	2005	523	Ford Explorer	SUV 523	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
15		2011	621	Caterpillar	Backhoe 621	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
16		2003	628	Caterpillar	Backhoe 628	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
17		2003	629	Caterpillar	Backhoe 629	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
18		1998	622	John Deere	Backhoe 622	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
19		1996	623	Case	Backhoe 623	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
20		2005	618	John Deere	Loader 618	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
21		2010		Rolloff USA	Compactor	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
22		2003	710-2	Rocky Mtn.	Compactor 710-2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
23		2003	709	Rocky Mtn.	Compactor 709	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
24		2003	710-1	Rocky Mtn.	Compactor 710-1	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%
25		1997	633	Stenco	WF Trailer 633	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
26		2007	682	Stenco	WF Trailer 682	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
27		1999	685	McClain	WF Trailer 685	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
28		2012	622-1	Caterpillar	Backhoe U622-1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
29	G85473	2012	679	International	Rolloff U 679	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
30		2013	669	Caterpillar	Rolloff U 669	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
31	G 866632	2013	522	Chevy Silverado	P-U Unit 522	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
32		2004	714-2	Lincoln	Welder 714-2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
33		2003	714	Millller	Welder 714	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
34		2004	714-2	Lincoln	Welder 714-2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
35		2014		Recycling Bins (6)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
36		2014		Loader		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
37				Compactor Receivers (3)		25%	0%	0%	25%	0%	25%	0%	0%	0%	0%	0%
38				40 yd containers OT(8)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
39				30 yd containers OT (4)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
40				30 yd Mixed recyclable containers(4)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
41				Recycling Compactors (2)		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
42				Remaining Containers at CCC		0%	0%	0%	0%	0%	0%	0%	73%	27%	0%	0%
43				Stenco	WF Trailer (3)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
44				Freightliner	Tractor Transport (3)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
				Jacona Improvement		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	GMBA Line Item	Line Item Name	Test Year	Inflation Factor	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
1	***Salaries and Wages***								
2	10-22	Permanent Employees	$ 681,200	Salaries	$ 681,200	$ 701,636	$ 722,685	$ 744,366	$ 766,697
3	10-24	Temporary Positions	19,000	Salaries	19,000	19,570	20,157	20,762	21,385
4	10-25	Overtime	22,660	Salaries	22,660	23,340	24,040	24,761	25,504
5	10-90	Other Wages	-	Salaries	-	-	-	-	-
6	***Total Salaries & Wages***		$ 722,860		$ 722,860	$ 744,546	$ 766,882	$ 789,889	$ 813,585
7									
8	***Employee Benefits***								
9	20-01	FICA-Regular	$ 49,250	Benefits	$ 49,250	$ 50,728	$ 52,249	$ 53,817	$ 55,431
10	20-02	FICA-Medicare	11,518	Benefits	11,518	11,864	12,219	12,586	12,964
11	20-03	Retirement Contributions	155,420	Benefits	155,420	160,083	164,885	169,832	174,927
12	20-05	Health Care	182,502	Benefits	182,502	187,977	193,616	199,425	205,408
13	20-06	Retirement Health Care	15,434	Benefits	15,434	15,897	16,374	16,865	17,371
14	20-08	Workers Comp - Assessment	221	Benefits	221	228	234	241	249
15	***Total Employee Benefits***		$ 414,345		$ 414,345	$ 426,775	$ 439,579	$ 452,766	$ 466,349
16									
17	***Travel***								
18	30-01	I/S Mileage & Fares	$ 1,500	Fuel	$ 1,500	$ 1,545	$ 1,591	$ 1,639	$ 1,688
19	30-03	I/S Meals & Lodging	3,050	General	3,050	3,111	3,173	3,237	3,301
20	***Total Travel***		$ 4,550		$ 4,550	$ 4,656	$ 4,765	$ 4,876	$ 4,990
21									
22	***Vehicle Expenses***								
23	35-01	Vehicle Fuel	$ 182,000	Fuel	$ 185,667	$ 191,237	$ 196,974	$ 202,884	$ 208,970
24	35-02	Vehicle Oil	-	Fuel	-	-	-	-	-
25	35-03	Vehicle Maintenance	-	General	-	-	-	-	-
26	0	Vehicle Replacement Cost	240,265	Equipment	247,265	260,574	265,786	271,101	281,419
27	***Total Vehicle Expense***		$ 422,265		$ 432,932	$ 451,811	$ 462,760	$ 473,985	$ 490,390
28									
29	***Maintenance***								
30	40-01	Maint Bldgs/ Structures	$ 15,000	General	$ 15,000	$ 15,300	$ 15,606	$ 15,918	$ 16,236
31	40-02	Maintenance Contracts	182,500	General	$ 182,500	$ 186,150	$ 189,873	$ 193,670	$ 197,544
32	40-03	Grounds/ Roadways	12,000	General	12,000	12,240	12,485	12,734	12,989
33	40-05	Furniture/ Fixtures	-	General	-	-	-	-	-
34	40-06	Maintenance Equipment	-	General	-	-	-	-	-
35	40-07	Maintenance Supplies	3,000	General	3,000	3,060	3,121	3,184	3,247
36	40-09	Maintenance Service	500	General	500	510	520	531	541
37	40-10	Pest Control	3,500	General	3,500	3,570	3,641	3,714	3,789
38	***Total Maintenance***		$ 216,500		$ 216,500	$ 220,830	$ 225,247	$ 229,752	$ 234,347
39									
40	***Contract Services***								
41	50-03	Contractual Professional Services	$ 403,367	Disposal	$ 403,367	$ 411,434	$ 419,663	$ 428,056	$ 436,617
42	50-90	Services	80,000	General	80,000	81,600	83,232	84,897	86,595
43	0	Greenwaste Disposal	15,193	Disposal	15,193	15,497	15,807	16,123	16,445
44	0	Glass Disposal	7,283	Disposal	7,283	7,283	7,283	7,283	7,283
45	***Total Contract Services***		$ 505,842		$ 505,842	$ 515,814	$ 525,984	$ 536,358	$ 546,940
46									
47	***Supplies***								
48	60-01	Non-Consumable Supplies	$ 50,000	General	$ 50,000	$ 51,000	$ 52,020	$ 53,060	$ 54,122
49	60-02	Safety Supplies	5,000	General	5,000	5,100	5,202	5,306	5,412
50	60-03	Uniform Expenses	6,900	General	6,900	7,038	7,179	7,322	7,469
51	60-07	Operational Supplies	9,800	General	9,800	9,996	10,196	10,400	10,608
52	60-08	Field Supplies	-	General	-	-	-	-	-
53	60-12	Food Provisions	-	General	-	-	-	-	-
54	60-90	Other Supplies	-	General	-	-	-	-	-
55	***Total Supplies***		$ 71,700		$ 71,700	$ 73,134	$ 74,597	$ 76,089	$ 77,610
56									
57	***Operating Costs***								
58	70-01	Equipment/ Machinery	$ 2,500	Equipment	$ 2,500	$ 2,550	$ 2,601	$ 2,653	$ 2,706
59	70-02	Rent of Land/ Buildings	-	General	-	-	-	-	-
60	70-03	Telephone	1,600	General	1,600	1,632	1,665	1,698	1,732
61	70-04	Electricity	9,500	General	9,500	9,690	9,884	10,081	10,283
62	70-05	Gas & Heating Cost	5,000	General	5,000	5,100	5,202	5,306	5,412
63	70-07	Water	2,500	General	2,500	2,550	2,601	2,653	2,706
64	70-13	Liability & Insurance	-	General	-	-	-	-	-
65	70-33	Seminars & Workshops	1,500	General	1,500	1,530	1,561	1,592	1,624
66	70-36	Postage & Mail Services	5,800	General	5,800	5,916	6,034	6,155	6,278
67	70-37	Advertising	9,000	General	9,000	9,180	9,364	9,551	9,742
68	70-39	Subscriptions and Dues	1,500	General	1,500	1,530	1,561	1,592	1,624
69	70-40	Medical Services	-	General	-	-	-	-	-

	GMBA Line Item	Line Item Name	Test Year	Inflation Factor	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016	Year 4 FY 2017	Year 5 FY 2018
70	70-90	Miscellaneous	-	General	-	-	-	-	-
71	***Total Operating Costs***		$ 38,900		$ 38,900	$ 39,678	$ 40,472	$ 41,281	$ 42,107
72									
73	***Other Operating Cost***								
74	75-01	Brokerage & Policy Fees	$ 1,787	General	$ 1,787	$ 1,823	$ 1,859	$ 1,896	$ 1,934
75	75-02	Workers Comp - Premiums	-	Benefits	-	-	-	-	-
76	75-04	Property Insurance Prem.	25,786	Insurance	25,786	27,075	28,429	29,851	31,343
77	75-08	Pollution Insurance	36,836	Insurance	36,836	38,678	40,612	42,642	44,774
78	75-14	Property Insurance Deductibles	-	Insurance	-	-	-	-	-
79	0	Jacona Site Improvement	20,000	None	20,000	20,000	20,000	20,000	20,000
80	***Total Other Operating Cost***		$ 84,409		$ 84,409	$ 87,576	$ 90,900	$ 94,389	$ 98,052
81									
82	***Insurance & Deductibles***								
83	80-03	Equipment & Machinery	$ 43,631	Insurance	$ 43,631	$ 45,813	$ 48,103	$ 50,508	$ 53,034
84	80-09	Vehicles	-	Equipment	-	-	-	-	-
85	80-15	Computers & Peripherals	-	Insurance	-	-	-	-	-
86	80-95	Inventory Exempt Computers	-	Insurance	-	-	-	-	-
87	80-99	Capital Pkg - Inv Exempt	2,919	Insurance	2,919	3,065	3,218	3,379	3,548
88	***Total Insurance & Deductibles***		$ 46,550		$ 46,550	$ 48,878	$ 51,321	$ 53,887	$ 56,582
89									
90	**Total Expenses**		**$ 2,527,921**		**$ 2,538,589**	**$ 2,613,698**	**$ 2,682,506**	**$ 2,753,271**	**$ 2,830,950**
91									
92	**Revenue**								
93	0	Solid Waste - Residential	$ -	None	$ -	$ -	$ -	$ -	$ -
94	0	Solid Waste - Roll-off Fees	-	None	-	-	-	-	-
95	0	Solid Waste - Gov't	-	None	-	-	-	-	-
96	0	Solid Waste - Small Comm	-	None	-	-	-	-	-
97	0	24 Trip	-	None	-	-	-	-	-
98	0	1 Trip	-	None	-	-	-	-	-
99	0	Senior	-	None	-	-	-	-	-
100	0	Low Income	-	None	-	-	-	-	-
101	0	Bag Tag	-	None	-	-	-	-	-
102	0	Small Commercial - 5	-	None	-	-	-	-	-
103	0	Small Commercial - 10	-	None	-	-	-	-	-
104	***Total Revenues***		$ -		$ -	$ -	$ -	$ -	$ -
105									
106	**Cost of Service**		**$ 2,527,921**		**$ 2,538,589**	**$ 2,613,698**	**$ 2,682,506**	**$ 2,753,271**	**$ 2,830,950**

Inputs Tab
Vehicles Tab

County of Santa Fe, NM
Cost of Service
Schedule 4 - Allocation

		Cost Category								
		Administration			Collection Centers					
					Eldorado		Jacona		La Cienega	
	Allocation Factor	Administration	Education and Outreach	Adopt A Road	Solid Waste	Recyclables	Solid Waste	Recyclables	Solid Waste	Recyclables
1	Administration	100%	0%	0%	0%	0%	0%	0%	0%	0%
2	Education and Outreach	0%	100%	0%	0%	0%	0%	0%	0%	0%
3	Adopt A Road	0%	0%	100%	0%	0%	0%	0%	0%	0%
4	Disposal	0%	0%	0%	0%	0%	0%	0%	0%	0%
5	Equipment	3%	1%	0%	40%	3%	19%	3%	1%	0%
6	Equipment Maintenance	3%	1%	0%	24%	1%	18%	0%	2%	0%
7	Personnel	17%	6%	5%	5%	5%	7%	3%	7%	3%
8	Collection Center Tonnage	0%	0%	0%	19%	7%	27%	6%	17%	1%
9	Collection Center Pulls	0%	0%	0%	5%	15%	21%	7%	15%	3%
10	Solid Waste	0%	0%	0%	14%	0%	14%	0%	14%	0%
11	Recycling	0%	0%	0%	0%	13%	0%	13%	0%	13%
12	Equally to Collection Centers	0%	0%	0%	6%	6%	6%	6%	6%	6%
13	Long-hauling	0%	0%	0%	0%	0%	0%	0%	0%	0%
14	Jacona Site	0%	0%	0%	0%	0%	75%	25%	0%	0%

County of Santa Fe, NM
Cost of Service
Schedule 4 - Allocation

	Allocation Factor	Cost Category										
		Collection Centers									R&R Hauling	Disposal
		Nambe		Rancho Viejo	San Marcos		Stanley		Tesuque			
		Solid Waste	Recyclables	Recyclables	Solid Waste	Recyclables	Solid Waste	Recyclables	Solid Waste	Recyclables		
1	Administration	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	Education and Outreach	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3	Adopt A Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4	Disposal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
5	Equipment	0%	0%	0%	1%	0%	1%	0%	3%	1%	23%	0%
6	Equipment Maintenance	0%	0%	0%	2%	0%	2%	0%	0%	0%	47%	0%
7	Personnel	4%	2%	1%	4%	3%	4%	2%	4%	2%	17%	0%
8	Collection Center Tonnage	5%	0%	0%	1%	6%	1%	5%	1%	3%	1%	0%
9	Collection Center Pulls	5%	1%	0%	3%	6%	3%	4%	1%	7%	3%	0%
10	Solid Waste	14%	0%	0%	14%	0%	14%	0%	14%	0%	0%	0%
11	Recycling	0%	13%	13%	0%	13%	0%	13%	0%	13%	0%	0%
12	Equally to Collection Centers	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	0%
13	Long-hauling	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
14	Jacona Site	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
Common					
Administration	$ 422,319	$ 433,154	$ 444,030	$ 455,194	$ 466,795
Education and Outreach	78,015	80,432	82,806	85,251	87,836
Adopt A Road	52,490	54,060	55,676	57,341	59,055
Common Subtotal	$ 552,824	$ 567,646	$ 582,512	$ 597,785	$ 613,686
Number of Collection Centers	8				
Allocation of Common					
Eldorado	$ 69,103	$ 70,956	$ 72,814	$ 74,723	$ 76,711
Jacona	69,103	70,956	72,814	74,723	76,711
La Cienega	69,103	70,956	72,814	74,723	76,711
Nambe	69,103	70,956	72,814	74,723	76,711
Rancho Viejo	69,103	70,956	72,814	74,723	76,711
San Marcos	69,103	70,956	72,814	74,723	76,711
Stanley	69,103	70,956	72,814	74,723	76,711
Tesuque	69,103	70,956	72,814	74,723	76,711
Total	$ 552,824	$ 567,646	$ 582,512	$ 597,785	$ 613,686
Allocation to Collection Center Operation					
Tonnage					
Eldorado					
Refuse	2,337	2,337	2,337	2,337	2,337
Recyclables	898	898	898	898	898
Jacona					
Refuse	3,318	3,318	3,318	3,318	3,318
Recyclables	748	748	748	748	748
La Cienega					
Refuse	2,122	2,122	2,122	2,122	2,122
Recyclables	158	158	158	158	158
Nambe					
Refuse	579	579	579	579	579
Recyclables	43	43	43	43	43
Rancho Viejo					
Refuse	102	102	102	102	102
San Marcos					
Refuse	754	754	754	754	754
Recyclables	149	149	149	149	149
Stanley					
Refuse	593	593	593	593	593
Recyclables	80	80	80	80	80
Tesuque					
Refuse	381	381	381	381	381
Recyclables	108	108	108	108	108
Subtotal	12,368	12,368	12,368	12,368	12,368

	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
Allocation to Collection Center Services					
Eldorado					
Refuse	$ 49,925	$ 51,263	$ 52,606	$ 53,985	$ 55,421
Recyclables	19,178	19,692	20,208	20,738	21,290
Jacona					
Refuse	$ 56,393	$ 57,905	$ 59,421	$ 60,979	$ 62,601
Recyclables	12,710	13,051	13,393	13,744	14,109
La Cienega					
Refuse	$ 64,316	$ 66,040	$ 67,769	$ 69,546	$ 71,396
Recyclables	4,787	4,916	5,045	5,177	5,314
Nambe					
Refuse	$ 64,370	$ 66,096	$ 67,827	$ 69,606	$ 71,457
Recyclables	4,733	4,860	4,987	5,118	5,254
Rancho Viejo					
Recyclables	$ 69,103	$ 70,956	$ 72,814	$ 74,723	$ 76,711
San Marcos					
Refuse	$ 57,720	$ 59,268	$ 60,820	$ 62,415	$ 64,075
Recyclables	11,383	11,688	11,994	12,308	12,636
Stanley					
Refuse	$ 60,916	$ 62,550	$ 64,188	$ 65,871	$ 67,623
Recyclables	8,187	8,406	8,626	8,853	9,088
Tesuque					
Refuse	$ 53,856	$ 55,300	$ 56,748	$ 58,236	$ 59,785
Recyclables	15,247	15,656	16,066	16,487	16,926
Subtotal	$ 552,824	$ 567,646	$ 582,512	$ 597,785	$ 613,686

	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
R&R Hauling	$ 369,503	$ 381,397	$ 391,705	$ 402,312	$ 414,348
Pulls per Collection Center					
Eldorado					
Refuse	127	127	127	127	127
Recyclables	355	355	355	355	355
Jacona					
Refuse	520	520	520	520	520
Recyclables	169	169	169	169	169
La Cienega					
Refuse	356	356	356	356	356
Recyclables	79	79	79	79	79
Nambe					
Refuse	119	119	119	119	119
Recyclables	26	26	26	26	26
Rancho Viejo					
Refuse	81	81	81	81	81
San Marcos					
Refuse	150	150	150	150	150
Recyclables	84	84	84	84	84
Stanley					
Refuse	101	101	101	101	101
Recyclables	32	32	32	32	32
Tesuque					
Refuse	181	181	181	181	181
Recyclables	66	66	66	66	66
Total Annual Pulls	2,441	2,441	2,441	2,441	2,441

	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
Allocation to Collection Center Operation					
Eldorado					
Refuse	$ 19,149	$ 19,765	$ 20,299	$ 20,849	$ 21,473
Recyclables	53,662	55,389	56,886	58,427	60,175
Jacona					
Refuse	$ 78,714	$ 81,248	$ 83,444	$ 85,704	$ 88,268
Recyclables	25,582	26,406	27,119	27,854	28,687
La Cienega					
Refuse	$ 53,813	$ 55,545	$ 57,047	$ 58,592	$ 60,344
Recyclables	11,883	12,265	12,597	12,938	13,325
Nambe					
Refuse	$ 17,938	$ 18,515	$ 19,016	$ 19,531	$ 20,115
Recyclables	3,860	3,984	4,092	4,203	4,329
Rancho Viejo					
Recyclables	$ 12,186	$ 12,578	$ 12,918	$ 13,268	$ 13,664
San Marcos					
Refuse	$ 22,630	$ 23,359	$ 23,990	$ 24,640	$ 25,377
Recyclables	12,715	13,125	13,479	13,844	14,259
Stanley					
Refuse	$ 15,289	$ 15,781	$ 16,207	$ 16,646	$ 17,144
Recyclables	4,844	5,000	5,135	5,274	5,432
Tesuque					
Refuse	$ 27,323	$ 28,202	$ 28,965	$ 29,749	$ 30,639
Recyclables	9,915	10,234	10,511	10,795	11,118
Subtotal	$ 369,503	$ 381,397	$ 391,705	$ 402,312	$ 414,348

	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018
Disposal Cost	$ 403,367	$ 411,434	$ 419,663	$ 428,056	$ 436,617
Tonnage	10,084	10,084	10,084	10,084	10,084
Disposal Cost per Ton	$ 40.00	$ 40.80	$ 41.62	$ 42.45	$ 43.30
Disposal Cost per Collection Center					
Eldorado	$ 93,482	$ 95,351	$ 97,258	$ 99,204	$ 101,188
Jacona	132,734	135,388	138,096	140,858	143,675
La Cienega	84,861	86,559	88,290	90,056	91,857
Nambe	23,174	23,637	24,110	24,592	25,084
Rancho Viejo	-	-	-	-	-
San Marcos	30,160	30,763	31,378	32,006	32,646
Stanley	23,722	24,196	24,680	25,174	25,677
Tesuque	15,235	15,539	15,850	16,167	16,491
Total Annual Disposal Cost	$ 403,367	$ 411,434	$ 419,663	$ 428,056	$ 436,617

Section 2
OPERATIONAL ASSESSMENT OF COUNTY CCCs

Santa Fe County (County) operates eight Citizen Convenience Centers (CCC) within the County.[1] The refuse collected at the CCCs is hauled to the Caja del Rio Landfill (Landfill), and the recyclables are hauled to the Buckman Road Recycling and Transfer Station (BuRRT). Both the Landfill and BURRT are operated by the Santa Fe Solid Waste Management Agency (SFSWMA, or Agency). The Agency is governed by a Board of Directors, referred to as the Joint Powers Board (JPB, the Board). The JPB has three seats for the City and three seats for the County. The Agency is owned equally by both the City and the County.

The purpose of this section of the report is to review and evaluate the County's refuse and recycling operations. In particular, the following aspects of the County's operation were analyzed:

- Facility configuration and condition
- Equipment
- Staffing
- Refuse and recyclables hauling
- Safety issues
- Operating efficiency
- Benchmarking

Oftentimes during the course of these types of operational analyses, Louis Berger will be asked how many CCCs should a county have? This is a rather subjective question as the size of the county (square miles) can vary dramatically and has a direct impact on the number of CCCs within a county; population density is another key variable in determining the number of CCCs; level of service provided by hauling companies within the county will impact the number of CCCs; and finally the financial "affluence" of the county has a major impact on what fiscal constraints may or may not limit the funding of additional CCCs. With that said, we have found that oftentimes counties will have anywhere from 3 to 8 CCCs located throughout the county. That has proven to be the case in studies done by Louis Berger within Arizona, New Mexico, Texas and elsewhere. A survey conducted by Louis Berger of CCCs in New Mexico (as shown in Appendix B, Figure B-1 shows that of the eight counties surveyed in New Mexico only one had more than 8 – San Miguel County has 10.)

[1] CCCs are oftentimes referred to as transfer stations within Santa Fe County, but for purposes of this study, and to be consistent with terminology used in the solid waste industry, we will refer to these facilities as Citizen Convenience Centers.

It is important while reviewing this section of the report to remember that the County's Citizen Convenience Centers benefit from increased economies of scale, as the County's refuse budget is comprised of primarily fixed costs. Therefore, as a citizen collection center collects a greater volume of material, that center has the ability to achieve a lower cost per ton. This is especially critical with regard to recyclables as each ton that is diverted from the Landfill avoids a tipping fee and has the potential to generate revenue for the County/Agency partnership through the successful marketing of these materials to end-users.

2.1 Facility Configuration and Condition

The refuse and recycling operation for the County is tasked with providing disposal, recycling and diversion services to rural, sparsely populated areas. Figure 2-1, on the following page, provides a map illustrating the population densities of the County, and the current locations for the County's eight Citizen Convenience Centers. (A larger map of the service area is provided in Appendix B, Figure B-2.)

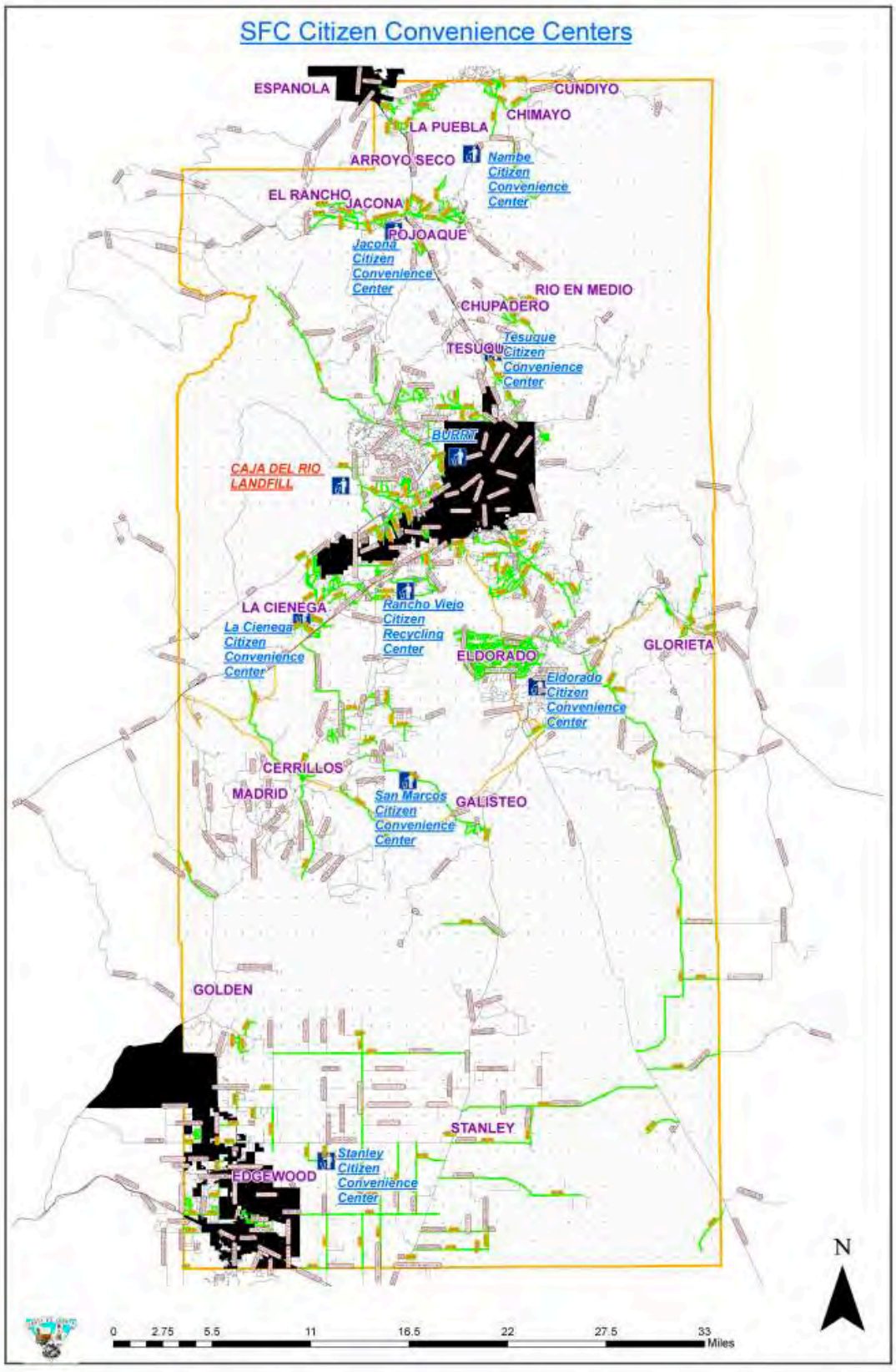

Figure 2-1. County CCC Locations

2.1.1 Description of Current Citizen Convenience Centers

The County operates seven staffed CCCs and one unstaffed CCC. Table 2-1 provides a summary of the operating hours and materials accepted at each CCC.

Table 2-1
Citizen Convenience Centers Operations

CCC	Days of Operation	Hours of Operation	Distance from Landfill	Distance from Recycling Facility	Collects Refuse	Collects Recycling (2)	Collects Other Materials (3)
Eldorado	Wed - Sun	8:00 am – 5:00 pm	26 miles	31 miles	X	X	X
Jacona	Wed - Sun	8:00 am – 5:00 pm	27 miles	22 miles	X	X	
La Cienega	Wed - Sun	8:00 am – 5:00 pm	14 miles	19 miles	X	X	
Nambe	Wed, Fri- Sun	8:00 am – 5:00 pm [1]	31 miles	26 miles	X	X	X
Rancho Viejo	Fri - Sat	8:30 am – 4:30 pm	N/A	10 miles		X	
San Marcos	Wed, Fri- Sun	8:00 am – 5:00 pm	23 miles	28 miles	X	X	X
Stanley	Wed - Sun	8:00 am – 5:00 pm	62 miles	67 miles	X	X	X
Tesuque	Wed, Fri - Sun	8:00 am – 5:00 pm [1]	16 miles	11 miles	X	X	

1. The Citizen Collection Center is closed from 12:00 pm (noon) – 1:00 pm.
2. Recycling includes: mixed paper, cardboard, aluminum containers, tin, and plastic.
3. Other materials include: oil, paint, antifreeze, light bulbs, and batteries.

Currently the Tesuque and Jacona CCCs are located on Pueblo land; however, the County is currently in the process of moving the Jacona center to County land, which Louis Berger discusses in greater detail in Section 2.8.1. The Nambe CCC is located on Bureau of Land Management (BLM) land. All other CCCs are located on County land.

The CCCs vary in levels of infrastructure, ranging from open-air spaces with open-top roll-off containers to enclosed facilities. The majority of CCCs are open-air facilities, with only Eldorado and Stanley centers being enclosed.

At the open-top facilities customers may drop materials into open-top roll-offs (where the site has been graded) or they utilize metal stairs next to open-top roll-off containers to place material into the roll-off containers. Louis Berger has provided an example of a roll-off container in Figure 2-2 on the following page.

Figure 2-2. Roll-off Container

Eldorado and Stanley include covered, graded drop-off areas where refuse material is unloaded onto a tipping floor. Recyclables are collected at the Eldorado and Stanley centers in closed-top and open-top roll-off containers located outside the enclosed facility.

Figure 2-3. Eldorado Citizen Convenience Center

Figure 2-4. Jacona Citizen Convenience Center

Figure 2-5. La Cienega Citizen Convenience Center

Figure 2-6. Nambe Citizen Convenience Center

Figure 2-7. San Marcos Citizen Convenience Center

Figure 2-8. Stanley Citizen Convenience Center

Figure 2-9. Tesuque Citizen Convenience Center

The majority of the recycling containers maintained at the CCCs are open-top roll-off containers. The County maintains compacting containers at the following sites listed in Table 2-2 on the following page.

Table 2-2
Compacting Roll-off Containers

Center	Compactors – Roll-off		
	Refuse	OCC [1]	Mixed Recyclables [2]
Eldorado	-	1 [3]	1 [3]
Jacona	-	-	-
La Cienega	1	-	-
Nambe	1	-	-
Rancho Viejo	-	-	-
San Marcos	1	-	-
Stanley	1	-	-
Tesuque	-	-	-
Total	4	1	1

1. Old corrugated containers (OCC) is cardboard material.
2. Mixed recyclables consist of the following items; mixed paper, aluminum cans, tin, and plastic containers.
3. Recycling compacting units have been approved to be purchased and installed at Eldorado; and are expected to be in operation by July 2014. However, they are currently not in operation.

Table 2-3, on the following page, provides a detailed list of the containers currently at each of the CCCs.

Table 2-3
Citizen Convenience Center Containers

Citizen Convenience Center	Number of Containers	Total CY of Capacity	Refuse			Recycling								Reuse Area
						Mixed Recyclables [1]	Cardboard	Glass	Tires	Scrap Metal	Green Waste		Oil & Antifreeze	
			Open-Top	Compactor	Transfer Trailer	Enclosed	Open-Top	Open-Top	Open-Top	Open-Top	Open-Top	Collection Area		
Eldorado	10	570 CY			(3) 110 CY	(2) 35 CY	(2) 30 CY	30 CY	40 CY	40 CY		X	X	X
Jacona	10	375 CY	(5) 40 CY			35 CY	30 CY	30 CY	40 CY	40 CY		X		
La Cienega	8	295 CY	(2) 40 CY	40 CY		35 CY	30 CY	30 CY	40 CY	40 CY				
Nambe	8	295 CY	(2) 40 CY	40 CY		35 CY	30 CY	30 CY	40 CY	40 CY			X	
Rancho Viejo	3	95 CY				35 CY	30 CY	30 CY						
San Marcos	8	295 CY	(2) 40 CY	40 CY		35 CY	30 CY	30 CY	40 CY	40 CY			X	
Stanley	8	295 CY	40 CY	40 CY		35 CY	30 CY	30 CY	40 CY	40 CY	40 CY		X	
Tesuque	6	195 CY	(2) 30 CY			35 CY	30 CY	30 CY	40 CY					
Total	61	2,415 CY												

1. Mixed recyclables consist of mixed paper, aluminum cans, tin, and plastic containers.

2.1.2 Current Convenience Center Material

Recyclables are source separated and collected in roll-off containers. Recyclable materials are hauled and processed at the Buckman Road Recycling and Transfer Station facility, which is operated by the Santa Fe Solid Waste Management Agency. All refuse collected at the County's CCCs in roll-off containers is hauled and disposed of at the Caja del Rio Landfill. Each CCC collects varying volumes of material due to their location in the County and surrounding population, as shown in Table 2-4.

Table 2-4
Citizen Convenience Center Tonnage

CCC	Refuse		Recycling [1]		Percent of Material Collected Recyclable
	Calendar Year 2011	Calendar Year 2012	Calendar Year 2011	Calendar Year 2012	
Eldorado	2,397	2,277	896	900	27% - 28%
Jacona	3,111	3,526	975	521 [2]	24% - 13%
La Cienega	2,212	2,032	183	133	8% - 6%
Nambe	639	520	40	46	6% - 8%
Rancho Viejo	N/A	N/A	100	104	100%
San Marcos	769	739	146	152	16% - 17%
Stanley	577	610	78	81	12%
Tesuque	383	379	104	111	21% - 23%
Total	10,086	10,082	2,522	2,047	20% - 17%

1. Recycling volumes include recyclable commodities and diverted green waste.
2. The decrease in recyclables in 2012 was due to BuRRT being unable to accept green waste for a period of time therefore the green waste was hauled to the Landfill.

Figure 2-10 provides a graphic representation of the refuse collected at each CCC and Figure 2-11 provides a graphic representation of the recycling at each CCC, illustrating the commodity trends from 2011 to 2012.

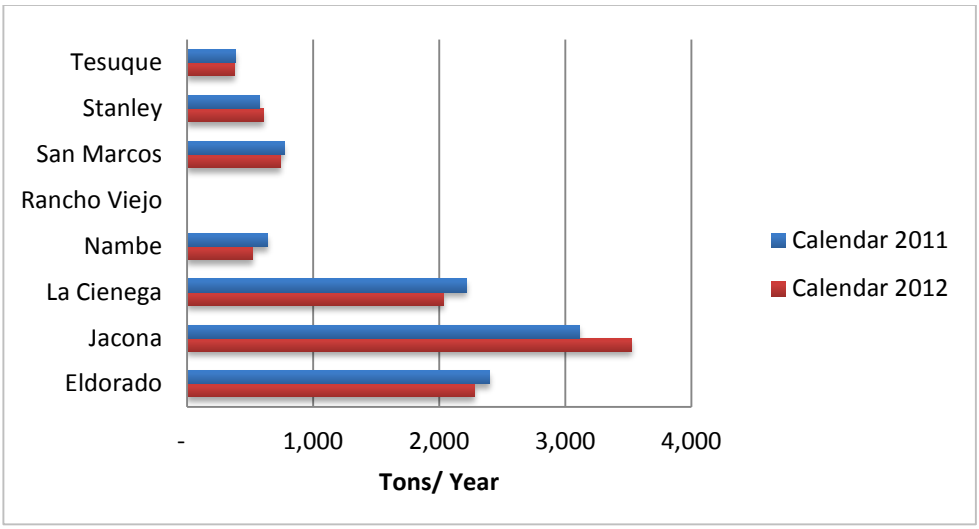

Figure 2-10. Convenience Center Refuse from 2011 to 2012

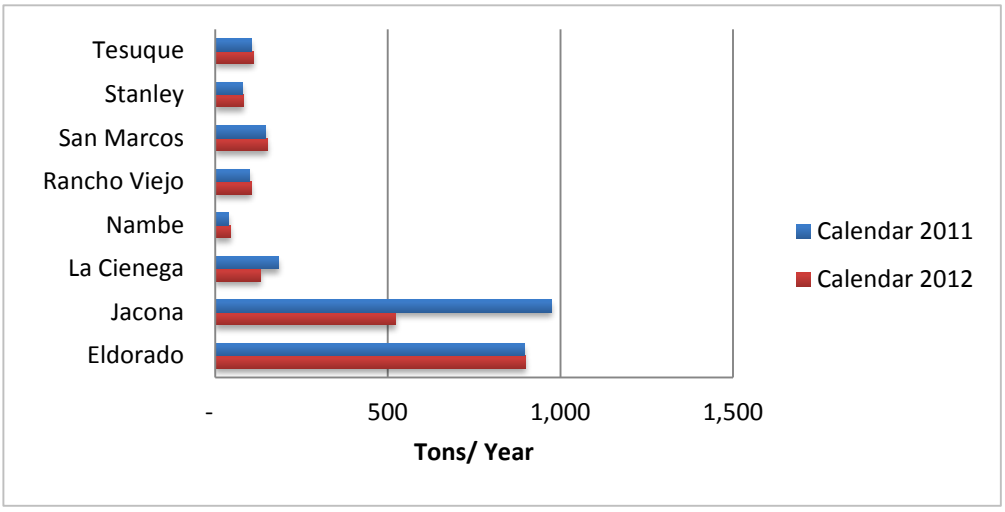

Figure 2-11. Convenience Center Recycling from 2011 to 2012

As shown in Figure 2-10 the refuse collected at the Citizen Convenience Centers has remained relatively stable during calendars years 2011 and 2012, showing a slight decrease in tonnage at some centers. The decrease in recyclables at Jacona in 2012 was due to BuRRT being unable to accept green waste for a period of time and therefore green waste was disposed of at the Landfill. Overall, the County recycling collected at the CCCs has reflected no significant change over the 2011 and 2012 calendar years.

Three CCCs currently collect green waste material. Eldorado, Jacona and Stanley. The green waste is collected in a designated green waste area on site or in an open-top roll-off container. The County transports the green waste material to BuRRT where the material is mulched by the Agency. The Stanley center is 67 miles from the

BuRRT facility, which is significantly farther from BuRRT than the Eldorado and Jacona sites, which are 31 and 22 miles, respectively. Due to the increased distance from Stanley to the BURRT location, Louis Berger would like to emphasize the importance of stockpiling brush material at the Stanley CCC before hauling the material, ensuring a full green waste load is transferred from the Stanley CCC.

In addition to traditional single-stream materials and green waste, the County also collects items such as:

- Tires – All CCCs collect tires, with the exception of Ranch Viejo. The tires are hauled to BuRRT where the Agency manages the processing of all County tire materials.
- Oil and Antifreeze – Four CCCs collect oil in 500 gallon double contained tanks and antifreeze in 55 gallon containers; Eldorado, Nambe, San Marcos and Stanley. The oil and antifreeze collected at these CCCs is collected by Mesa Environmental, a regional processor. The County is not responsible for transporting the oil and antifreeze material.
- Appliances – All CCCs collect appliances from County residents, with the exception of Ranch Viejo and Tesuque, which are then hauled by the County to Capital Scrap, a local scrap metal processor.

  In previous years the County collected compact fluorescent bulbs and fluorescent tube lights as part of the County's household hazardous waste (HHW) collection program on a limited basis. Based on recent direction from the Joint Powers Board (JPB) the County is working to integrate e-waste into the County collection program. Louis Berger recommends that the County continue to accept the existing HHW materials being collected, such as: dry paint, oil, antifreeze and batteries (not car batteries)[2]. Louis Berger has provided a high level outline of how to safely collect the HHW materials in the County's collection program in Appendix B, Figure B-3. To balance the request for additional services with the associated costs of providing those services, Louis Berger would recommend that the County consider the expansion of e-waste services occur only at the four CCCs where HHW is currently being collected (Eldorado, Nambe, San Marcos, and Stanley). The County should also consider the feasibility of continuing to offer fluorescent bulb recycling at the four CCCs where HHW is currently collected. When the new Jacona CCC is on-line, e-waste should be collected at this site, due to it being one of the highest volume CCCs. In an effort to promote reuse in the County, the Eldorado center has a reuse area where citizens can bring materials that can be reused and/or repurposed by other County citizens.

[2] Wet paint can be taken to BuRRT. Car batteries can be taken to private establishments (car part stores, car dealers, etc.).

2.2 Equipment

Five primary pieces of equipment are in use at the Citizen Convenience Centers:

- Backhoe – Used as a load tamper for managing waste and loading trailers on the tipping floor and/or roll-off containers at the CCC
- Front Loader – Used for managing waste and loading trailers on the tipping floor
- Transfer Trailer and Cab – Used for hauling waste to the Caja del Rio Landfill and green waste to BuRRT
- Roll-off Compactor – Used for high volume commodities to maximize the volume collected in each roll-off container at the CCC
- Roll-off Trucks – Used to transport roll-off containers to BuRRT and the Caja del Rio Landfill

Louis Berger has provided pictures of the equipment the County maintains in Figure 2-12 and in Figure 2-13.

Figure 2-12. Front Loader and Backhoe

Figure 2-13. Transfer Trailer and Roll-off Truck

The County does not currently keep historical information on equipment maintenance cost on a unit basis. Louis Berger recommends that the County begin to track the equipment maintenance cost by unit going forward. Having equipment maintenance data by vehicle enables County staff to identify the appropriate useful life of equipment, based on the typical 'wear and tear' of the equipment.

2.2.1 Transfer Trailers

Utilizing transfer trailers to transport material, the County is able to transport a higher volume material more efficiently. The Eldorado location has a graded facility which allows refuse and green waste material to be top-loaded into the transfer trailer, tamped down with a backhoe and hauled to the BuRRT facility or Landfill.

Currently the County plans to build a new, full-service Jacona CCC which will include a graded facility allowing refuse and green waste material to be hauled from the new Jacona CCC with transfer trailers. The County has three walking floor trailers and three transfer trailer cabs for the Eldorado center, and is planning on purchasing three additional walking floor trailers and transfer trailer cabs for the new Jacona CCC. Based on Louis Berger's analysis of the material flow and daily number of pulls required from Eldorado and Jacona, Louis Berger recommends the County reduce the three planned transfer trailer and transfer trailer cabs to two, and transition one Eldorado transfer trailer and transfer trailer cab to a back-up transfer trailer unit status. This configuration will place two walking floor transfer trailers and two transfer trailer cabs at each center (Eldorado and Jacona), and have a shared back-up transfer trailer and transfer trailer cab that can be used at Eldorado or Jacona as needed.

2.3 Staffing

The Citizen Convenience Centers maintain varying levels of staff based on the size of the centers and the annual volume of material received at each location. Table 2-5 provides a summary of the County's current CCC staffing levels.

Table 2-5
Current Personnel (FTE)

Position	Current Operation
Refuse Manager	1
Adopt a Road Coordinator	1
Compliance Officer	1
Superintendent	1
Transportation Foreman	1
Maintenance Foreman	1
Driver	3
Operator	2
Caretaker	11
Total Staff	22

The Transportation Foreman and Drivers operate the roll-off trucks and transfer trailers. Operators supervise the CCC operations to ensure daily operations are run effectively. All CCCs are manned by Caretakers, with the exception of Ranch Viejo, to manage the customer traffic and material flow. Table 2-6 identifies the staffing level at each CCC.

Table 2-6
Current Citizen Convenience Center Staffing Level

Citizen Convenience Center	Caretakers	Operators	Average Annual Tonnage
Eldorado	2.00	0.27	3,235
Jacona	2.00	0.27	4,066
La Cienega	2.00	0.27	2,279
Nambe	1.00	0.27	622
Rancho Viejo	-	0.27	102
San Marcos	1.00	0.27	903
Stanley	1.00	0.27	673
Tesuque	1.00	0.27	489
Rover Position [1]	0.50	-	N/A
Total	10.50 [2]	2.00	12,368

1. Two part-time caretaker positions are used on an as needed basis to manage full-time caretaker leave, sick days and vacancies. The positions are assigned to CCC locations on a daily basis.
2. One part-time Caretaker position is currently vacant.

A key operational finding and recommendation in this report section is the potential closure of the Nambe and Tesuque locations. If these locations are closed in the future, this will result in two less Caretaker positions, bringing the total County Caretakers to 8.5. The personnel and cost savings realized from these reductions could total approximately $112,000. The costs are summarized in Table 2-7 and discussed in Section 2.8.2.

Table 2-7
Operational Savings from Site Closure

Costs Components	Annual Cost (FY 2014)		
	Nambe	Tesuque	Total
Personnel			
Salary	$22,588	$22,588	$45,116
Employee Benefits	8,584	8,584	17,168
Equipment			
Replacement Cost	834	13,167	14,001
Equipment Maintenance	87	-	87
Equipment Fuel	10,953	16,163	27,116
Operating Expenses	3,552	5,114	8,666
Total Annual Savings	$46,598	$65,616	$112,214

2.4 Refuse and Recyclables Hauling

A collection center operation is comprised of primarily fixed costs (i.e. equipment, staffing, general operations and maintenance costs). The two variable aspects of the collection center operation are the disposal costs and the hauling costs. The County can minimize disposal costs by encouraging recycling and waste reduction. Hauling costs can be minimized by achieving the highest material compaction per load, and minimizing the number of trips needed to transport material from the CCCs to the Landfill or BuRRT. Louis Berger has provided an analysis of the County's current hauling operation in this section.

Hauling operations utilize a mixed fleet of roll-off trucks and walking floor transfer trailers. Based on the vehicle configuration and commodity the vehicle is carrying, the vehicle payload can vary significantly. Louis Berger utilized EPA weight to volume factors to calculate average payloads for the various combinations of commodity, which are shown in Table 2-8.

Table 2-8
Average Industry Standard Payload (tons) [1]

Commodity	Vehicle		
	Roll-off Truck – Uncompacted	Roll-off Truck – Compacted [2]	Transfer Trailer [2]
OCC	1.5	3.0	
Mixed Recyclables	2.1	4.3	
Glass	9.0	13.5	
Tires	3.4	5.1	
Green waste	5.0	10.0	20.0 [3]
Appliances/ Scrap Metal	2.3	3.5	
Refuse	4.0	8.0	20.0 [3]

1. Industry standard payloads are based on the EPA volume to weight conversion factors
2. Louis Berger has assumed a 2:1 compaction ratio, with the exception of glass, tires and appliances/scrap metal which assumed at 1.5:1 compaction ratio.
3. Louis Berger does not recommend hauling more than 20 to 22 tons per load, due to department of transportation payload limits.

Currently the County utilizes roll-off containers to collect the majority of the material at CCCs. Select commodities are collected with compacting units at certain CCCs, allowing a greater volume of material to be transported per pull.

The Eldorado center utilizes three walking floor transfer trailers to transport green waste and refuse material to the Landfill and BuRRT. Transfer trailers can transport a larger payload per pull based on the increased vehicle capacity. In Louis Berger's experience most public agencies and private companies hauling waste are limited to a maximum legal gross vehicle weight of 80,000 pounds (40 tons) and therefore utilize tractor and trailer equipment that can achieve payloads in the 20 to 22 ton range.

Louis Berger has evaluated the County's average payload per pull, for each commodity collected, and compared the County's performance to the average industry standard in Table 2-9.

Table 2-9
Average Payload Comparison to Industry Standard (tons)

Commodity	Roll-off Truck (uncompacted)		Transfer Trailer	
	County	Industry	County	Industry
OCC	1.0	1.5		
Mixed Recyclables	1.4	2.1		
Glass	5.5 [1]	9.0		
Tires	3.8	3.4		
Green waste	N/A [2]	5.0	N/A [2]	20.0
Appliances/ Scrap Metal	5.9	2.3		
Refuse	5.0	4.0	18.5	20.0

1. There were discussions with County staff on the capability of some of the equipment to haul heavier loads of glass. We would recommend some sampling of full roll-offs be conducted to determine the capability to haul loads closer to 9 tons. Typically, roll-off trucks should be capable of loads of this size.
2. This number is not available as green waste loads are pulled in both roll-off and transfer trailers without the type of vehicle being distinguished at the scalehouse. Therefore, Louis Berger would recommend going forward the type of vehicle be tracked to determine the efficiency of the loads being hauled versus the metrics in Table 2-9.

As shown in Table 2-9, for most commodities, the County is doing an effective job of maximizing the amount of material that can be transported per load. There are particular commodities where the County may be able to increase the material transported per load, such as: OCC (cardboard), mixed recyclables, glass, and green waste. Louis Berger recommends the County implement the following operational changes to increase the amount of material per pull for these four commodities:

- OCC (cardboard) – Ensure that all cardboard boxes have been broken down by customers before being placed into the collection container. Caretakers can work to inform customers that cardboard material must be flattened and broken down before being deposited in the collection containers. Additionally, the County should include signage next to OCC collection containers asking customers to break down and flatten cardboard boxes.
- Mixed Recyclables (mixed paper, aluminum cans, steel cans, plastic) – The collection of mixed recyclables can vary greatly based on the composition of the material collected, as plastic containers typically weigh significantly less than aluminum and steel containers. Due to an inconsistent commodity composition and "plastic memory" it is difficult to achieve a competitive or consistent weight per pull. Therefore, the use of compactors at the higher volume CCCs for this material should be considered.
- Glass – Louis Berger recommends the County monitor glass CCC pulls to ensure that containers are full before transporting the material and check their weight to compare versus the stated benchmark in Table 2-9.
- Green Waste Collected in Transfer Trailers – Brush is transported primarily with transfer trailers at the Eldorado center. The Eldorado site has a backhoe on site that

can be utilized to tamp down the green waste load to ensure the maximum amount of green waste is collected per pull.

Table 2-10 provides a summary of the current payload achieved by each CCC for the respective recycled commodities accepted at each location.

Table 2-10
Current Payload per Pull (Tons)

	Collection Center								Avg.
	Eldorado	Jacona	La Cienega	Nambe	Rancho Viejo	San Marcos	Stanley	Tesuque [2]	
Commodity									
OCC	1.13	1.01	1.12	1.07	0.56	0.82	1.40	0.67	0.97
Mixed Recyclables	1.75	1.20	1.53	1.13	1.18	1.37	1.45	1.44	1.38
Glass	6.56	4.93	4.08	6.13	4.16	5.31	7.33	5.26	5.47
Tires	3.02	3.72	3.21	3.97	-	2.90	5.21	-	3.80
Green Waste	5.75 [1]	9.82	-	-	-	-	3.81	-	4.78
Appliances/ Scrap Metal	6.93	5.76	6.65	4.92	-	4.63	6.53	-	5.90
Refuse	18.47 [1]	6.38	5.97	4.89	-	5.04	5.87	2.11	5.04

1. Material is transferred with transfer trailers, with significantly greater capacity than roll-off containers. It is not atypical to have three times the weight transferred in a transfer trailer, versus a 40 cubic yard roll-off container.
2. If Tesuque is retained, Louis Berger would recommend a backhoe be obtained for this CCC to assist in tamping down the waste. As noted by their 2.11 ton average payload versus the average of 5.04 tons, they are significantly under the norm.

Based on the analysis provided above, in Table 2-10, Rancho Viejo, San Marcos and Tesuque are consistently operating at a below average payload, compared to the other County CCCs. Louis Berger recommends that the County monitor the container capacity used for these three centers, and assess the container collection schedule at each site, making sure each container is full prior to it being pulled.

The County currently plans to utilize walking floor transfer trailers at the new Jacona site for refuse and green waste; which will allow the County to further maximize the volume of material transported per pull from the Jacona center. As discussed earlier, it is important for the County to ensure that green waste hauled in transfer trailers is tamped down to ensure that the maximum amount of material is transported with each load.

Based on Louis Berger's analysis of the County's hauling operation, the County will not be able to decrease the hauling fleet by improving compaction. There will however be incremental cost savings by increasing compaction per load, by decreasing fuel use and minimizing wear and tear on hauling equipment. Based on the number of pulls per year (approximately 2,400) and the average cost of $150 per pull, if 30 percent of costs are variable (fuel, overtime, "wear and tear" on vehicles), every pull "avoided" will result in a "real" savings of $45 per pull. While not a huge number, it represents a

savings, and more importantly, postpones the need to hire additional personnel or replace equipment earlier than necessary. That is where the real savings occurs.

2.5 Safety Issues

The current drop-off access to the roll-off containers at the CCC sites is a movable metal stepladder on wheels, as shown in Figure 2-14. The use of this unfixed ladder by the public is a safety concern as customers could easily fall off the ladder or incur injury while carrying materials up the stairs or lifting material into a roll-off container.

Figure 2-14. Roll-off drop-off Accessibility

As an alternative to the current operational practice of directing customers to use stepladders to access the roll-off containers, Louis Berger recommends the County install permanent ramps to access the containers. Utilizing ramps will enable all customers to easily access the containers, and minimize customer risk of injury in transporting materials to the roll-off container drop-off point. It is important to ensure that sufficient fall protection is in place (i.e. railings) when designing the ramps, safeguarding customers from accidentally falling into the open-top roll-off containers.

2.6 Operating Efficiency

There are a limited number of variables that can be optimized in a drop-off collection operation; however, there are certain measurements that can be evaluated and optimized to ensure the County is maximizing its resources. These metrics include;

- **Evaluate the transition of waste hauling operations to a ten-hour workday –** As discussed in Section 2.4, there are operational improvements that can be made in the waste hauling operation by working towards greater payloads per pull for certain commodities, through tamping down transfer trailer and roll-off loads, ensuring all cardboard has been broken down before collection, and utilizing compacting units on roll-off containers that collect high volumes of material weekly. The County currently employs three drivers and one transportation foreman to transport material from the CCCs to BuRRT and the Landfill. County drivers average 2.45 pulls per day. Assuming 45 minutes of travel time to and from

the CCCs to the tipping site (BuRRT or Landfill), this allows the driver approximately one hour to collect the roll-off container, or load the transfer trailer. In Louis Berger's experience, 30 to 45 minutes is typical for wait and load time of a transfer trailer; however for roll-off collection Louis Berger would expect 10 to 15 minutes for collection of the container. Based on Louis Berger's analysis if the County was able to achieve a 45 minute transfer trailer load time and 15 minute roll-off collection, due to the average 45 minute drive time between the CCCs there is not sufficient time for drivers to collect an additional container.

Louis Berger evaluated the potential of achieving greater efficiency if the County operated the hauling operation on a ten-hour workday, four days a week. Table 2-11 provides a comparison of the County's current hauling operation, utilizing an eight-hour work day, versus a ten-hour work day.

Table 2-11
Hauling Operation Workday Sensitivity

	8 hour work day	10 hour work day
Hours/ Day	8 hours	10 hours
Minutes/ Day	480 minutes	600 minutes
Non-collection time	90 minutes	90 minutes
Collection and Disposal Time	390 minutes	510 minutes
Time/ Pull		
Transfer Trailer	145 minutes	145 minutes
Roll-off	115 minutes	115 minutes
Possible Pulls/ Driver/ Day		
Transfer Trailer	2.69 pulls	3.52 pulls
Roll-off	3.39 pulls	4.43 pulls
Possible Pulls/ Driver/ Week		
Transfer Trailer	13.45 pulls	14.07 pulls
Roll-off	16.96 pulls	17.74 pulls

The County's transportation operation is achieving the maximum amount of pulls per driver, based on time constraints and work schedule. As shown in Table 2-11 the County can marginally improve the operational efficiency of the hauling operation by transitioning County Drivers to a ten-hour workday. Although a ten-hour workday would improve daily hauling efficiency, there would not be a significant cost savings, as the improved operational efficiency will not result in reduced staffing or equipment.

- **Optimize the proper type of containers and the proper number of containers at each CCC.** Each CCC is different. For instance, as shown in Table 2-4, 27 percent of the materials collected at the Eldorado CCC are recyclables versus at Nambe only 7 percent of the materials are recyclables. In addition, Eldorado collects approximately 4 times the tonnage of Nambe. Therefore it is critical that the right type of containers (recycling roll-offs versus refuse roll-offs, compacting

units where practical, etc.) and the proper number of each type is available at each CCC to make sure the operation runs smoothly to avoid overtime for drivers, overflows of containers, etc. Louis Berger has provided an example of evaluating the container distribution at Eldorado in Table 2-12.

Table 2-12
Eldorado CCC
Matching Capacity of Containers versus Demand by Citizens (1)

Commodity	Container Size	Pulls per Week	CY Weekly Capacity [1]	%
OCC	30 CY	2 x wk	60 CY	10%
Mixed Recyclables	35 CY	3 x wk	70 CY	18%
Glass	30 CY	Every other week	30 CY	3%
Tires	40 CY	On-call	40 CY	7%
Green Waste [2]	N/A	Every other week	N/A	-
Appliances/ Scrap Metal	40 CY	Every other week	40 CY	7%
Refuse	110 CY	2 x wk	330 CY	56%

1. Required cubic yards of weekly capacity is calculated by the following formula: Container size (CY) x Collection Frequency (pulls per week). CY Weekly Capacity reflects the number of containers at the CCC.
2. Green waste is collected at Eldorado in a green waste collection area, that does not have a limited cubic yard capacity.

Based on the available cubic yards of capacity, by container type available for each commodity collected at the Eldorado CCC, it appears that the Eldorado CCC has effectively distributed its available capacity based on the volume of material Eldorado currently receives.

- **Improve Customer Accessibility and Experience** –To encourage citizens to bring recycling and refuse material to the County's CCCs, it is imperative to ensure that the center is easily accessible to the County citizens and the center is aesthetically pleasing and easy to navigate. Louis Berger recommends the County implement uniform CCC signage throughout the County and include more graphics.

  In line with increasing the uniformity between the County's CCCs, Louis Berger recommends the County paint all of the center's refuse roll-off containers a uniform color and a different uniform color for all of the recycling related roll-offs. Painting the containers will improve the aesthetics of the centers for a minimal cost and also help provide visual cues as to which containers are for recycling and which are for refuse.

  Currently each container or collection area is identified with a sign, stating the commodity collected at that location. The majority of the current signage is simple and does not provide descriptive text about what materials should and should not be placed in the containers. Some signage gives more detailed description on the

commodities accepted and materials that should not be placed in each container. Examples of the current signs are shown in Figure 2-15.

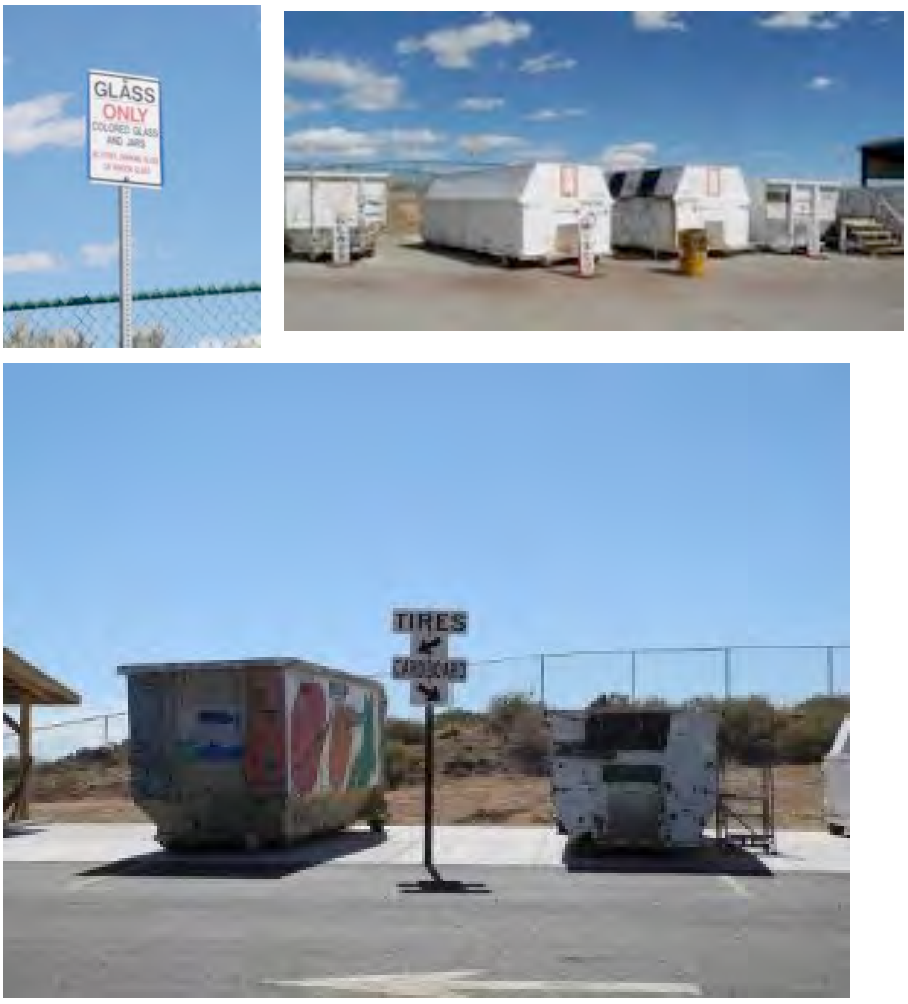

Figure 2-15. Citizen Convenience Center Signage

Louis Berger recommends that the County move away from text only signage and begin to utilize signage with graphics in the CCC signs. Including more colorful and graphically based signage will improve the aesthetics of the sites and reduce contamination and customer confusion. Due to the low level of contamination currently experienced by the County this change in signage is not an immediate need. Louis Berger has provided examples of graphically based signage from other drop-off facilities in Figure 2-16.

Figure 2-16. Examples of Drop-off Facility Signage

The current signage at the eight CCCs vary by site. To streamline signage and minimize confusion among County customers, Louis Berger recommends the County implement consistent signage at all eight stations. Utilizing uniform signage provides benefits in cost savings when developing and ordering signage and streamlines public education, minimizing customer confusion. The pictures above were taken at BuRRT and are examples of signage on the roll-off dumpsters that provide brief descriptions of the materials and pictures of the "acceptable" materials. Louis Berger would recommend standard signs for all of the CCCs recycling operations be developed that are modeled after signage at the BuRRT drop-off site.

In addition to signage indicating the proper materials to be placed in each container, it is additionally important to ensure proper signage is placed on roads surrounding the CCC to direct customers to the location. The County's CCC locations are in rural areas and may require additional signage to ensure customers are able to easily locate the site. Additional examples of signage are provided in Appendix B, Figure B-4.

- **Increase Recycled Material and Diverted Material** – Encouraging recycling and material diversion benefits the County's operation by decreasing the amount of refuse tonnage disposed, and correspondingly the operation's annual refuse disposal cost. Currently, the Agency accepts recyclable and organic materials from the County. While the County is charged a fee for glass ($15.75 per ton) and yard waste ($21.00 per ton) it is still less than the Agency's tipping fee of $40 per ton. Louis Berger recommends that the County encourage diversion, to minimize disposal costs and increase the County's recycling rate. It should be noted that Santa Fe County Ordinance No. 2010-5, Section 7 (A) states that recyclables shall be separated at the County's CCCs.
- **Re-emphasize Public Education and Outreach** – It is important for the financial integrity of the County's CCC program to optimize its customer flow and hence its revenue. However the CCCs can only reach a high level of efficiency by collecting a significant volume of material (both refuse and recyclables). Ensuring that County residents are knowledgeable of the services being provided and aware of the locations where these services are offered is a significant aspect of developing a

healthy drop-off program. This is consistent with Principal C in the Comprehensive Solid Waste Management Plan developed in 2010 by the Agency:

> *Principle C "The system should maintain an ongoing, multi-faceted promotion/education effort in the City and County that uses diverse messages and communication media to inform a variety of audiences about waste disposal and diversion"*

Currently the County provides the following information on the County's website:

- Hours of Operation
- Materials Accepted
- Location of CCCs
- Permit Information
- County Contact Information

Developing and implementing a thorough public education strategy requires identifying the specific needs of the community. The basic process to develop a public education campaign includes the following key steps:

- Gather a Team
- Establish Clear Goals
- Identify and Profile the Target Audience
- Develop the Message
- Select the Education Approach
- Develop a Feedback Loop
- Evaluate the Program

- **Modify the Rate Structure** – Currently the County utilizes a rate structure based on the number of visits to the CCCs. Residential customers can purchase a one trip permit or a 24 trip permit to dispose of refuse at a CCC accepting refuse. Commercial customers can purchase a five trip permit or a ten trip permit to dispose of refuse at a CCC accepting refuse. The County also provides bag tags to accommodate customers with smaller loads. Customers are permitted to drop-off recyclables free of charge and without a CCC permit. All CCC permits must be purchased at the County building or via U.S. mail, requiring refuse customers to plan ahead and purchase permits before bringing material to a CCC.

  Louis Berger recommends the County modify the rate structure in several ways. First, Louis Berger would recommend that the County do away with the Commercial customer permit since very few of them are sold (less than 100 per year) and purchasing of the standard "Residential permit" will meet the need of

these individuals.[3] Second, Louis Berger would recommend a greater variety of trip permits be issued. Presently, the County only sells Residential one trip and 24 trip permits. We would recommend that 1, 6, 12 and 24 trip permits be issued. This will allow citizens to purchase a permit that better meets their disposal needs. This should also minimize the complaints by some customers that the permit is only good for one year. Pricing of the permits is discussed in "Section 1 Cost of Service" of this report. Additionally, to increase County residents proactively purchasing permits, Louis Berger recommends the County invest in an outreach program that will send mailers to all County residents encouraging them to pre-purchase CCC permits or bag tags via the U.S. mail. This type of mailer can be sent out annually, biannually or quarterly.

2.7 Benchmarking

In order to thoroughly assess the County's drop-off centers, Louis Berger compared the County's program to similar programs in other counties within New Mexico. A detailed table of those counties surveyed is provided in Appendix B, Figure B-1 The following counties were chosen for benchmarking:

- Dona Ana
- San Miguel
- Lincoln
- Los Alamos
- Sandoval
- Torrance
- Rio Arriba

The majority of the counties selected border Santa Fe County or are located in near proximity.

Key criteria for evaluating refuse and recycling drop-off centers include;

- Hours of operation – Drop-off centers vary from 24-hour facilities to specific hours of operation on certain days.[4]
- Type of materials accepted – CCCs throughout the United States include a wide variety of materials in their collection program.
- Pricing – some counties recover their fee entirely through the general fund (either a specific assessment for all residents, or through an appropriation), others will charge a user fee, while others will choose a "hybrid" approach – part user fee/permit, part general fund financed.
- Type of facility – Some facilities will be "state of the art" – fully enclosed facilities with HHW services, while others may consist of two, 40 cubic yard roll-off containers enclosed within a fenced area.

[3] In fact, this permit should just be called a "Permit". Most of the small businesses that bring their waste (general contractors, etc.) are typically using a Residential permit anyhow.

[4] Levels of contamination in recycling drop-off programs vary, but unstaffed CCCs typically experience the highest level of contamination, including not only refuse, but e-waste, batteries, and other HHW related items.

Table 2-13 shows summary information for the recycling drop-off collection programs in each of these counties, while Figure B-1 in Appendix B provides a more detailed description of each of these counties' CCC programs.

Table 2-13
Summary of County Drop-Off Collection Programs

County	Population	Square Miles	No. of CCCs	Square Miles/CCC	Population/Square Mile
Santa Fe	146,375	1,911	8	239	76.60
Dona Ana	200,000	3,815	8	477	52.42
Sandoval	131,561	3,714	3	1,238	35.42
San Miguel	7,580	1,288	10	129	3.65
Torrance	16,021	3,346	8	418	1.34
Lincoln	21,000	4,831	5	966	4.35
Rio Arriba	40,318	5,896	7	842	6.84
Los Alamos	18,159	109	3	36	166.60

One of the things Louis Berger noticed in compiling the data in Table 2-13 is that the number of CCCs per square mile is relatively high for Santa Fe County (at one CCC per 239 square miles) when compared to the other counties listed in the table. This statistic confirms that it merits consideration that some of the CCCs that are underutilized be consolidated with nearby CCCs.

2.7.1 Comparison of Operating Hours

Table 2-14 summarizes the operating hours for the County CCCs and the benchmarked counties. As shown in Table 2-14, many of the benchmark programs have limited operating hours, similar to the County, in order to have an attendant on-site to monitor customers and ensure proper use of the facility.

Table 2-14
Operating Hours for CCCs

Location	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Santa Fe County							
Eldorado	Closed	Closed	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm
Jacona	Closed	Closed	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm
La Cienega	Closed	Closed	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm
Nambe	Closed	Closed	8:00 am – 5:00 pm [1]	Closed	8:00 am – 5:00 pm [1]	8:00 am – 5:00 pm [1]	8:00 am – 5:00 pm [1]
Rancho Viejo	Closed	Closed	Closed	Closed	8:30 am – 4:30 pm	8:30 am – 4:30 pm	Closed

Location	Mon	Tue	Wed	Thu	Fri	Sat	Sun
San Marcos	Closed	Closed	8:00 am – 5:00 pm	Closed	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm
Stanley	Closed	Closed	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm	8:00 am – 5:00 pm
Tesuque	Closed	Closed	8:00 am – 5:00 pm [1]	Closed	8:00 am – 5:00 pm [1]	8:00 am – 5:00 pm [1]	8:00 am – 5:00 pm [1]
Dona Ana							
All 8 CCCs	7:30 am – 5:30 pm	7:30 am – 5:30 pm	7:30 am – 5:30 pm	7:30 am – 5:30 pm	7:30 am – 5:30 pm	Closed	Closed
Sandoval							
All 3 CCCs	Closed	Closed	8:00 am – 4:00 pm	Closed	Closed	8:00 am – 4:00 pm	Closed
San Miguel							
All 10 CCCs	Closed	8:00 am – 12:00 pm	8:00 am – 12:00 pm	8:00 am – 12:00 pm	8:00 am – 12:00 pm	8:00 am – 12:00 pm	Closed
Torrance							
Duran (2nd and 4th Sat. of each month)	Closed	Closed	Closed	Closed	Closed	8:00 – 12:00 pm	Closed
Punta De Agua	Closed	Closed	Closed	7:00 am – 3:00 pm	Closed	Closed	8:00 am – 4:00 pm
Tajique	Closed	7:00 am – 3:00 pm	Closed	Closed	9:00 am – 5:00 pm	8:00 am – 4:00 pm	Closed
Northern	7:00 am – 3:00 pm	9:00 am – 5:00 pm	9:00 am – 5:00 pm	9:00 am – 5:00 pm	9:00 am – 5:00 pm	8:00 am – 4:00 pm	Closed
Southern	Closed	Closed	7:00 am – 3:00 pm	Closed	Closed	8:00 am – 4:00 pm	Closed
Indian Hills	Closed	7:00 am – 3:00 pm	Closed	9:00 am – 5:00 pm	Closed	8:00 am – 4:00 pm	Closed
Hills-N-Valley	Closed	Closed	7:00 am – 3:00 pm	Closed	9:00 am – 5:00 pm	8:00 am – 4:00 pm	Closed
Central	Closed	7:00 am – 3:00 pm	Closed	9:00 am – 5:00 pm	Closed	8:00 am – 4:00 pm	Closed
Lincoln							
Carrizozo (3rd Sat. of each month)	Closed	Closed	Closed	Closed	Closed	9:00 am – 12:00 pm	Closed
Capitan	Closed	Closed	4:00 pm – 6:00 pm	Closed	Closed	Closed	Closed
Corona	All Day	All Day	All Day	All Day	All Day	All Day	All Day

Location	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Greentree	8:00 am – 4:00 pm	8:00 am – 4:00 pm	8:00 am – 4:00 pm	8:00 am – 4:00 pm	8:00 am – 4:00 pm	2nd Sat (Apr. – Sept): 8:00 am – 12:00 pm	
Lincoln (1st Sat. of each month during Apr. – Sept.)	Closed	Closed	Closed	Closed	Closed	9:00 am – 2:00 pm	
Rio Arriba	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Los Alamos							
White Rock (May 1 – Oct. 1)	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	Closed	Closed	Closed	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	8:00 am – 12:00 pm; 1:00 pm – 6:00pm
White Rock (Oct. 2 – Apr. 30)	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	Closed	Closed	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	8:00 am – 12:00 pm; 1:00 pm – 6:00pm	8:00 am – 12:00 pm; 1:00 pm – 6:00pm
Sullivan Field	All Day	All Day	All Day	All Day	All Day	All Day	All Day
Eco-Station	9:00 am – 3:30 pm	9:00 am – 3:30 pm	9:00 am – 3:30 pm	9:00 am – 3:30 pm	9:00 am – 3:30 pm	9:00 am – 3:30 pm	9:00 am – 3:30 pm

1. Citizen Convenience Center is closed from 12:00 pm (noon) – 1:00 pm

In compiling the hours of operation it was documented that all of Santa Fe County's manned CCCs are open 32 to 45 hours per week. However, if the reader examines the comprehensive listing of CCCs in other counties (Table 2-14), while some of the counties have their CCCs open 40 hours per week, many of the CCCs are open considerably less than that. Again, this finding helps to support that some CCCs within Santa Fe County perhaps don't need to be open as many hours as they currently are operating (such as San Marcos and Stanley).

2.8 Findings and Recommendations

Using the analysis discussed in this report section Louis Berger has developed recommendations for the County's CCCs, which are presented below.

2.8.1 Overall System-wide Recommendations

1. Optimize payloads to meet or exceed industry standard.

As discussed in Section 2.4, the County is doing a good job in maximizing its loads prior to hauling them to the Landfill or BuRRT. However, they should be able to realize some marginal improvement in the payloads of certain material loads, such

as OCC, mixed recyclables, glass and potentially green waste. The optimal payload of each load can differ based on the vehicle configuration and the material being transported. Louis Berger has provided optimal payloads for the different commodity types and vehicle configurations in Table 2-7.

2. Cancel the purchase of one walking floor transfer trailer and one transfer trailer cab.

The County has three walking floor trailers and three transfer trailer cabs for the Eldorado center, and is planning on purchasing three additional walking floor trailers and transfer trailer cabs for the new Jacona center. Based on Louis Berger's analysis of the material flow and daily number of pulls required from Eldorado and Jacona, Louis Berger recommends the County purchase only two trailers and two cabs, and transition one Eldorado transfer trailer and transfer trailer cab to a back-up transfer trailer unit status. This configuration will place two walking floor transfer trailers and two transfer trailer cabs at each center (Eldorado and Jacona), and have a shared back-up transfer trailer and transfer trailer cab that can be used at Eldorado or Jacona as needed.

3. Expand HHW materials collected at specific CCC locations.

In previous years the County collected compact fluorescent bulbs and fluorescent tube lights as part of the County's household hazardous waste (HHW) collection program on a limited basis. Based on recent direction from the Joint Powers Board (JPB) the County is working to integrate e-waste into the County collection program. Louis Berger recommends that the County continue to accept the existing HHW materials being collected, such as: dry paint, oil, antifreeze and batteries (not car batteries)[5]. To balance the request for additional services with the associated costs of providing those services, Louis Berger would recommend that the County consider the expansion of e-waste services occur only at the four CCCs where HHW is currently being collected (Eldorado, Nambe, San Marcos, and Stanley). The County should also consider the feasibility of continuing to offer fluorescent bulb recycling at the four CCCs where HHW is currently collected. When the new Jacona CCC is on-line, e-waste should be collected at this site, due to it being one of the highest volume CCCs.

All staff that handle HHW materials should go through training on how to accept and pack material to be safely transported. Louis Berger has provided additional information with regard to the proper handling of certain types of HHW materials in Appendix B, Figure B-3.

4. Close or relocate all CCCs currently on Pueblo land.

The Jacona and Tesuque centers are located on Pueblo land. Operating citizen convenience centers on Pueblo land can be challenging as the County has no rights to the land the centers are located on, or the area immediately around the center (i.e. roads). Louis Berger recommends the County close or relocate the centers

[5] Wet paint can be taken to BuRRT. Car batteries can be taken to private establishments (car part stores, car dealers, etc.).

currently on Pueblo land. The County is in the process of relocating the Jacona center to County land. Louis Berger recommends the County move forward with the Jacona relocation and also consider closing the Tesuque center. Section 2.8.2 provides more detailed discussion on the Jacona and Tesuque CCCs.

5. Develop and implement operational metrics to measure efficiency.

Recordkeeping of operational metrics is essential to evaluating the operation and identifying areas for improvement. Louis Berger recommends the County develop a database that records the following metrics:

- Equipment maintenance cost by vehicle
- Equipment fuel cost by vehicle
- Customer traffic at each collection center, by day and by hour
- Number of pulls from each CCC
- Volume of material collected by commodity from each CCC
- Number of pulls per day by roll-off or transfer trailer

The County can utilize this internal database to measure the CCC's operational efficiency and identify operational areas of improvement (i.e. high traffic flow at specific locations, vehicles incurring above average maintenance costs, variations in material levels and flows at CCCs, etc.).

Louis Berger also recommends the County develop a long term equipment replacement schedule, to ensure that equipment is being replaced once the equipment maintenance cost begin to escalate as the vehicle reaches the end of its' useful life.

6. Improve customer accessibility to drop-off areas.

The current drop-off access to the roll-off containers at the CCC sites is a movable metal stepladder on wheels. The use of this unfixed ladder by the public is a safety concern as customers could easily fall off the ladder or incur injury carrying materials up the stairs and lifting material into a roll-off container.

As an alternative to the current operational practice of directing customers to use stepladders to access the roll-off containers, Louis Berger recommends the County install permanent ramps to access the containers. It is important to ensure that sufficient fall protection is in place (i.e. railings) when designing the ramps, safeguarding customers from accidentally falling into the open-top roll-off containers.

7. Improve CCC signage.

The current signage at the eight CCCs vary by site. To streamline signage and minimize confusion among County customers, Louis Berger recommends the County implement consistent signage at all eight centers. BuRRT has examples of good signage at its recyclables drop-off area and Louis Berger recommends that the eight CCCs model their signage after that.

In addition to signage indicating the proper materials to be placed in each container, it is also important to ensure proper signage is placed on roads surrounding the CCC to direct customers to the location. The County's CCC locations are in rural areas and may require additional signage to ensure customers are able to easily locate the site.

8. Paint all containers.

Louis Berger recommends the County paint all of the center's refuse roll-off containers a uniform color and a different uniform color for all of the recycling related roll-offs. Painting the containers will improve the aesthetics of the centers for a minimal cost and also help provide visual cues as to which containers are for recycling and which are for refuse.

9. Modify the rate structure.

Louis Berger recommends the County modify the rate structure in several ways. First, Louis Berger would recommend that the County do away with the Commercial customer permit since very few of them are sold (less than 100 per year) and purchasing of the standard "Residential permit" will meet the need of these individuals.[6] Second, Louis Berger would recommend a greater variety of trip permits be issued. Presently, the County only sells Residential one trip and 24 trip permits. We would recommend that 1, 6, 12 and 24 trip permits be issued and they not expire. This will allow citizens to purchase a permit that better meets their disposal needs. This should also minimize the complaints by some customers that the permit is only good for one year. Pricing of the permits is discussed in Section 1, Cost of Service and Funding Options of this report.

2.8.2 Citizen Convenience Center Specific Recommendations

Eldorado

1. Optimize trailer and roll-off truck payloads.

OCC and mixed recyclable material is currently collected in 40 CY roll-off containers. For OCC material, a greater level of compaction can be achieved by breaking down boxes or utilizing a compacting unit to accommodate a larger volume of OCC per load. The County has the opportunity to decrease the OCC pulls at the Eldorado center by introducing compacting units for OCC and mixed recyclables. If the County is able to realize a 2:1 compaction ratio, the Eldorado center can reduce its annual OCC pulls from 98 pulls to 49 pulls and its annual mixed recyclable pulls from 161 to 80. A compacting unit and the receiving box cost $28,000 each. To implement compaction containers for Eldorado's OCC and mixed recyclable material the cost will be approximately $56,000.

[6] In fact, this permit should just be called a "Permit". Most of the small businesses that bring their waste (general contractors, etc.) are typically using a Residential permit anyhow.

Green waste and refuse material is currently transported primarily with transfer trailers. Louis Berger recommends the County utilize a backhoe, trackhoe or excavator to maximize the transfer trailer compaction in each load. It is inherently difficult to achieve a high level of compaction with green waste loads as the material is bulky and difficult compact; however the use of equipment to tamp down loads will increase material compaction.

Jacona

1. Relocate current Jacona CCC to a new location.

The County currently plans to relocate the Jacona CCC and increase the site capacity at the new location. The existing Jacona CCC is on Pueblo land, leaving the County limited rights to the CCC's land. Louis Berger would recommend the relocation of the Jacona CCC be made a high priority for the County.

Nambe

1. Consider closing Nambe CCC once the new Jacona CCC is open.

Nambe CCC currently accepts a marginal amount of the material annually collected, managing 6 percent of all CCC annual refuse material collected in the County, and 2 percent of all CCC recycling within the County. The Nambe CCC is located within close proximity to the proposed new Jacona CCC location. Once the new Jacona CCC is open Louis Berger recommends the County consider closing the Nambe CCC. Based on the cost of service analysis in Section 1 of this report, Louis Berger has identified an annual operational cost savings of $46,598 from closing the Nambe CCC.

San Marcos

1. Consider Reducing Days or Hours of Operation.

The San Marcos center currently collects a healthy volume of material annually; however, the center collects a significantly smaller volume of material than the larger CCCs (i.e. Eldorado, Jacona and La Cienega). Louis Berger recommends the County consider reducing the days and/or hours the San Marcos center is open to accept material. Louis Berger recommends the County record the customer traffic for a four month period and identify the days, or hours the center experiences the least amount of customer traffic. Using this data the County can determine if the San Marcos operating days and/or hours can be reduced. This change will likely result in only marginal cost savings to the County ($10,000 to $30,000), but will allow the County to better utilize the employee stationed at the San Marcos CCC at other CCCs.

Stanley

1. Consider Reducing Days or Hours of Operation.

The Stanley center is operated for 45 hours a week. This station is important to the County's CCC operation as it serves a large area in the southern portion of the County; however, it collects a small volume of the CCC's annual volume of

material collected. Louis Berger recommends the County consider reducing Stanley's operating days and/or hours. To determine the most appropriate days, or hours to reduce from the center's current operating schedule, Louis Berger recommends the County record the customer traffic for a four month period and identify the days, or hours the center experiences the least amount of customer traffic. This change will not result in huge savings ($10,000 to $30,000), but will allow the County to better utilize the employee stationed at the Stanley CCC at other CCCs.

Tesuque

1. Consider closure of center.

Tesuque currently receives the least amount of tonnage of all the County's CCCs, excluding the Rancho Viejo recycling center. In addition to being the lowest volume center, Tesuque is located on Pueblo land. The County has no rights to the Pueblo land, which can create operational challenges regarding access to the Tesuque location. Louis Berger recommends the County consider closing the Tesuque location and redirect the current customers to the Jacona CCC or BuRRT for recycling and disposal needs once the new Jacona CCC site is operational. As part of this recommendation an agreement would need to be established between the County and SFSWMA regarding permits used at BuRRT. Based on the cost analysis completed in Section 1, Cost of Service and Funding Options of this report, Louis Berger has identified an annual operational cost savings of $65,616 from closing the Tesuque center.

A summary of the recommendations is presented on the following page as part of Table 2-15. As noted below, the recommendations, if implemented, should allow the County to realize a one-time savings of $150,000 in addition to an annual savings of $132,214 to $172,214 per year.

Table 2-15
Summary of Recommendations

Key Finding and Recommendations	Location	Benefit	Priority Level	Implementation Time Frame
Develop and implement operational metrics to measure efficiency.	All CCCs	Improved operation	High	Now – 6 months
Improve customer accessibility to drop-off areas.	All CCCs	Improved operation, improved site safety	High	Now – 1 year
Optimize payloads to meet or exceed industry standard.	All CCCs	Increased efficiency	High	Now – 1 year
Modify rate structure.	All CCCs	Improved clarity, equality and cost recovery	High	Now – 1 year
Cancel purchase of one walking floor transfer trailer and one transfer trailer cab.	Eldorado and Jacona	Save $150,000	High	Now
Consider reducing days or hours of operation.	San Marcos	Save $10,000 - $30,000	High	Now – 1 year
Consider reducing days or hours of operation.	Stanley	Save $10,000 - $30,000	High	Now – 1 year
Close or relocate all CCCs currently on Pueblo land.	Jacona and Tesuque	Improved operation	High	Now – 2 years
Relocate current center to new site.	Jacona	Increased capacity and improved operation	High	Now – 2 years
Improve CCC signage.	All CCCs	Improved operation, less contamination	Medium	Now – 1 year
Expand HHW materials collected at specific CCC locations.	Eldorado and Jacona	Added service, capture more material	Medium	6 months – 1 year
Consider closure of center.	Nambe	Save $46,598	Medium	After opening of new Jacona center
Consider closure of center.	Tesuque	Save $65,616	Medium	After opening of new Jacona center
Paint all containers. Refuse – one color Recycling – one color	All CCCs	Improved perception, less contamination	Medium	In next 12 months
	Potential Cost Savings: One Time: $150,000 Annual: $132,214 - $172,214			

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Appendix B
OPERATIONAL ASSESSMENT: SUPPLEMENTAL INFORMATION

This Appendix includes figures, text and schedules from Section 2 of this report.

Figure B-1
Survey of New Mexico Counties Citizen Convenience Centers (CCC)

County	Population	Square Miles	Citizen Convenience Centers (CCC)	Square Miles/CCC	Population per Square Mile	Population per Convenience Center	Materials Accepted	Hours of Operation	Pricing	Configuration	Additional Information	Follow Up
Santa Fe	146,375	1,911	8	239	76.60	18,297	Residential Refuse Recyclables - Plastics, aluminum, tin, paper, cardboard, glass, tires, scrap metal, green waste, oil	Eldorado, Jacona, La Cienega, Stanley: Wed-Sun 8:00 am - 5:00 pm Nambe, San Marcos, Tesuque: Wed, Fri-Sun 8:00 am - 5:00 pm Rancho Viejo: Fri - Sat 8:30 am - 4:30 pm	Residential Customers: 1 Trip Permit: $15.00 24 Trip Permit: $75.00 24 Trip Permit (Senior): $70.00 24 Trip Permit (Low Income): $65.00 5 Bag Tags: $5.00 Commercial Customers: 5 Trip Permit: $100.00 10 Trip Permit: $140.00 Commercial Billable Accounts: Per Ton: $50.00	Eldorado: (3) 100 CY transfer trailers for refuse; (2) 35 CY closed containers for recyclables; (3) 30 CY, (2) 40 CY open top containers for other recyclable material Jacona: (5) 40 CY for refuse; (1) 35 CY closed container for recyclables; (2) 30 CY, (2) 40 CY open top containers for other recyclable material La Cienga, Nambe, San Marcos: (2) 40 CY open tops, (1) 40 CY compactor for refuse; (1) 35 CY closed container for recyclables; (2) 30 CY, (2) 40 CY open top containers for other recyclable material Rancho Viejo: (1) 35 CY closed container for recyclables; (2) 30 CY open tops for other recyclable material Stanley: (1) 40 CY open top, (1) 40 CY compactor for refuse; (1) 35 CY closed container for recyclables; (2) 30 CY, (3) 40 CY open tops for other recyclable material Tesuque: (2) 30 CY open tops for refuse; (1) 35 CY closed container for recyclables; (2) 30 CY, (1) 40 CY open tops for other recyclable material	N/A	

County	Population	Square Miles	Citizen Convenience Centers (CCC)	Square Miles/CCC	Population per Square Mile	Population per Convenience Center	Materials Accepted	Hours of Operation	Pricing	Configuration	Additional Information	Follow Up
Dona Ana	200,000	3,815	8	477	52.42	25,000	Residential Refuse Single Stream Recyclables Yard Waste Household Hazardous Waste (must be under five pounds) - batteries, oil, paint, antifreeze, and pesticides	Mon - Fri: 7:30 am - 5:30 pm	Punch card system with a minimum fee of $4.00 for up to 200 lbs of material; truck loads are $8.00 or two punches; Trailers are $12 or three punches. All recycling, HHW, and yard waste may be disposed of free of charge. Customer is required to purchase cards at other county facility prior to coming to location. No cash is handled at facilities, however punch cards may be purchased online or at several other locations. All fees are paid to the County, and the Authority is paid for tonnage and a flat fee for management.	Mesquite, La Mesa, Hill: Top Load into a semi-truck La Union: 40 CY roll-off boxes Hatch: Compactor Unit plus 40 CY roll-off box Garfield, Butterfield, Anthony: Top load into 40 CY roll-off box	SCSWA is beginning to design new facilities that will solve the punch card issue and also the commercial HHW issue by equipping these facilities with a gate system and designing them to receive commercial and residential vehicles. The County also maintains 4 recycling centers.	
Sandoval	131,561	3,714	3	1,238	35.42	43,854	Residential Refuse Construction Debris Yard Waste	Wed, Sat: 8:00 am - 4:00 pm	All transactions are cash only; Fees charged at the collection center are as follow: $0.50 per bag up to 4 bags; Pick-Up size load (level bed): $4.75 Pick-Up size cab or above: $9.50	All facilities maintain (2) 40 CY open top bins and (1) 40 CY open top for bulk items. Cuba, Pena Blanca: 18 CY recycling trailers that collect cardboard, mixed paper, plastic, aluminum, and tin.	Jemez Valley Recycling center resides next to Canon Collection Center and collects cardboard, mixed paper, plastic, aluminum, tin, and some scrap metal. Please note that the County maintains a total of 4 recycling centers.	
San Miguel	7,580	1,288	10	129	3.65	758	Residential Refuse Yard Waste	Tues - Sat: 8:00 am - 12:00 pm **Most convenience centers (with the exception of Pecos and Rociada) are actually open 24/7; citizens are able to walk under gate and dispose of trash in open top container.	Each Household is charged a fee of $14.90 per month; this fee is a tax assessment that occurs on a quarterly basis. No additional fee is assessed at the convenience center unless yard waste is being disposed: This fee is $9 per cubic yard, and is calculated by multiplying the following dimensions: (Width X Height X Length)/27. These tickets are billed to the customers at the end of each month; the Billing Clerk at each of the convenience centers produces monthly invoices for each customer.	Most convenience centers are configured in an L shape, where there is (1) 40 CY open top container & then (1) compactor for the receiving container. Citizens can drive up to the open top and dump waste themselves. Pecos: (4) 40 CY open top containers, and 1 compactor for the receiving container. Please note that there is room for 2 compactors, however only one is currently in operation. Bernal: (2) 40 CY open top containers, and no compactors.	N/A	

County	Population	Square Miles	Citizen Convenience Centers (CCC)	Square Miles/CCC	Population per Square Mile	Population per Convenience Center	Materials Accepted	Hours of Operation	Pricing	Configuration	Additional Information	Follow Up
Torrance	16,021	3,346	8	418	1.34	2,003	Residential Refuse Construction Debris Recyclables - Weeds/Brush, White Goods, Tires, Metal Household Hazardous Waste - Batteries, Waste Oil, Anti-Freeze E-Waste *Northern & Southern Collection Centers also accept branches Paint & Thinners and other recyclable Items will be accepted in future*	Duran: 2nd & 4th Saturday of every month, 8:00 am - 12:00 pm Punta De Agua: Thurs 7:00 am - 3:00 pm, Sun 8:00 am - 4:00 pm Tajique: Tues 7:00 am - 3:00 pm, Fri 9:00 am - 5:00 pm, Sat 8:00 am - 4:00 pm Northern: Mon 7:00 am - 3:00 pm, Tues - Fri 9:00 am - 5:00 pm, Sat 8:00 am - 4:00 pm Southern: Wed 7:00 am - 3:00 pm, Sat 8:00 am - 4:00 pm Indian Hills: Tues 7:00 am - 3:00 pm, Thurs 9:00 am - 5:00 pm, Sat 8:00 am - 4:00 pm Hills-N-Valley: Wed 7:00 am - 3:00 pm, Fri 9:00 am - 5:00 pm, Sat 8:00 am - 4:00 pm Central: Tues 7:00 am - 3:00 pm, Thurs 9:00 am - 5:00 pm, Sat 8:00 am - 4:00 pm	A solid waste management fee is assessed, billed and collected quarterly. The fee is $13.45 per month and entitles each customer to bring up to one level pickup load to any of the 8 manned collection stations each week. The bill is a 2-part postcard, which the customer sends one part back with payment, and keeps the other half as a payment stub to verify to the station attendant that he has an account. Excess loads are inclusive of a pickup load above the side rails, or a trailer load, and are billed at a rate of $5 per cubic yard. This is calculated using the following formula: (L X W X H)/27. No cash is taken at the stations, rather excess fees are added to the customer's account and billed out each month.	Stations are equipped with compactor roll off containers and 30 & 40 CY open-top containers for bulky items, metal tires, and OCC. 5 stations have ramp access to roll offs, others have stairs 4 stations have cathedral top segregated recycling roll offs	N/A	

County	Population	Square Miles	Citizen Convenience Centers (CCC)	Square Miles/CCC	Population per Square Mile	Population per Convenience Center	Materials Accepted	Hours of Operation	Pricing	Configuration	Additional Information	Follow Up
Lincoln	21,000	4,831	5	966	4.35	4,200	Carrizozo, Lincoln, Capitan CCC: Residential Refuse Bulky Waste Metal Corona CCC: Residential Refuse Bulky Waste Recyclables - Cardboard, 1 & 2 plastic, bundled newspaper Greentree Direct Haul: Residential Refuse Bulky Waste Recyclables - Cardboard, 1 & 2 plastic, bundled newspaper Household Hazardous Waste (HHW) **HHW is considered to be any hazardous waste (i.e., drain-o, pesticides, etc) that must have an absorbing agent (i.e., sand, cat litter, or paper towels) applied to it in order to absorb the liquid; this material is then thrown into their regular trash.	Carrizozo: 3rd Sat of every month, 9:00 am - 12:00 pm Capitan: Every Wed, 4:00 pm - 6:00 pm Corona: Daily, 24/7 Greentree Direct Haul: Mon - Fri, 8:00 am - 4:00 pm Additional Seasonal Hours: April - September, second Saturday 8:00 am - 12:00 pm Lincoln: April - September, first Saturday of month 9:00 am - 2:00 pm	Fees assessed by the County (GSWA), please note this is not a tax assessment: Residents utilizing poly-carts: $74.31 per quarter Residents not utilizing poly-carts: $71.16 per quarter Convenience Center Fees ((width, X length X height)/27) Miscellaneous waste (i.e., bulk, C&D, MSW) - $20 per cubic yard Cardboard: $7 per cubic yard Green Waste: $8 per cubic yard For all waste brought into the convenience center, citizens pay cash; commercial accounts can set a charge account that is billed monthly.	In general, most convenience centers have at least (1) 40 & one 30 CY roll-off container Corona: (2) compactors for refuse, (1) 30 CY roll-off for refuse, (1) 30 CY roll-off for recyclables, (1) 20 CY for paper, 3-4 compactors for cardboard Greentree: 40 CY & 30 CY roll-off containers, for a total of 9 roll-offs at the dock	In addition to these collection centers, the County manages about 17 "direct hauls", which provides free disposal to residents for municipal solid waste only. These locations maintain 34 CY compactors, which remain unmanned, and are open 24/7.	

County	Population	Square Miles	Citizen Convenience Centers (CCC)	Square Miles/CCC	Population per Square Mile	Population per Convenience Center	Materials Accepted	Hours of Operation	Pricing	Configuration	Additional Information	Follow Up
Rio Arriba	40,318	5,896	7	842	6.84	5,760	N/A	N/A	$188 annual fee - 8 punch card (1 CY of waste per punch), to dispose in CCC.	N/A	The County currently maintains one registered recycling facility.	Pricing
Los Alamos	18,159	109	3	36	166.60	6,053	White Rock: Residential waste Recyclables - brush, cardboard, paper, mixed recycling Sullivan Field: Recyclables - phonebooks, cardboard, mixed recycling Eco-Station: Recyclables - Brush, metal, concrete, asphalt, tires, appliances, mixed recycling, cardboard, books HHW E-waste *Eco Station offers free mulch, manure, and glass cullet*	White Rock Overlook: May 1 - Oct 1: Fri - Mon 8:00 am - 12:00 pm, 1:00 pm - 6:00 pm Oct 2 - Apr 30: Fri - Tue 8:00 am - 12:00 pm, 1:00 pm - 6:00 pm Sullivan Field: 24/7 Recycling Services at Eco Station: Mon - Sun 9:00 am - 3:30 pm	Residential Solid Waste Service: $18.15/month After using 12 free loads, residential loads will be billed at the following rate: $10 for pick-up truck or trailer, and $5 for car *Loads must be residential waste only, not large loads of demolition	N/A	10 Outdoor Recycling bins are located throughout Los Alamos.	Clarify if tax assessment or monthly bill; HHW

Figure B-2. County Population Density and CCC Locations

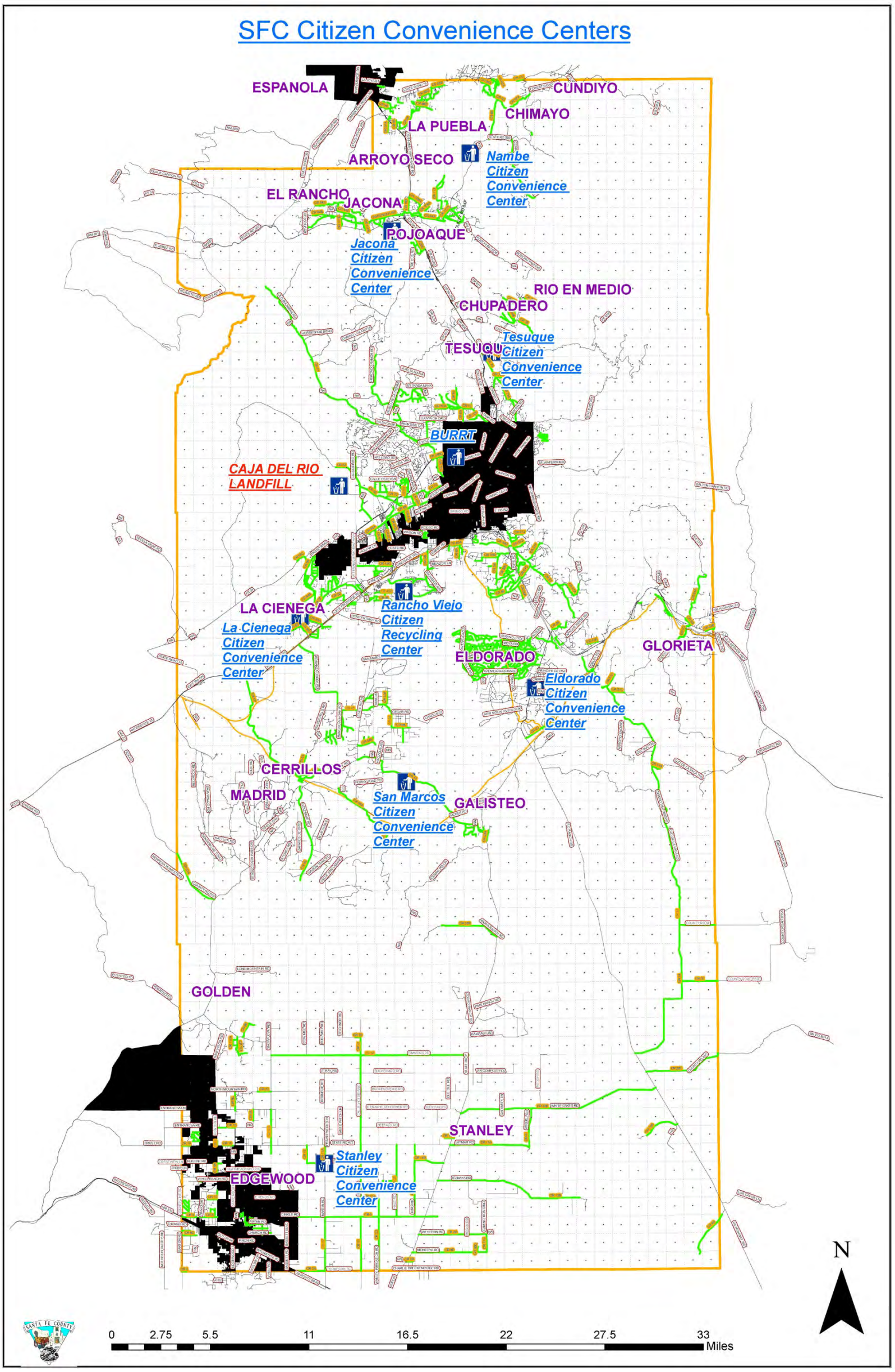


Figure B-3. Collection of HHW Materials

- Paint – Most paints are either latex or oil-based. Oil-based paints can damage groundwater supplies unless precautions are taken. The County can collect paint and provide the paint free of charge to County citizens for reuse, or collect paint in 55 gallon barrels. Latex paint and oil paint should be collected in separate barrels, and then transported to a paint processor that will screen and reuse the paint. Latex paints can also have a bulking agent (i.e. cat litter or sand) added to it, it will then harden and can be safely placed in a refuse roll-off container.
- Light bulbs – Recycling light bulbs prevents the release of mercury into the environment, caused from the breaking of a light bulbs. Light bulbs should be handled in a manner to prevent breakage. Light bulb collection can involve boxes containing whole lamps or the County can utilize a drum top crusher (DTC) device to reduce the volume of the light bulbs. A drum top crusher is designed to fit on top of a 55 gallon drum in order to prevent the release of mercury vapors while crushing the fluorescent light bulbs in the drum below.
- Batteries – Multiple batter types can be accepted. Louis Berger recommends that the CCC accept rechargeable and non-rechargeable batteries. A clamshell container is designed for the collection of batteries at the drop-off facility, shown in the picture below. Louis Berger recommends the City collect rechargeable and non-rechargeable batteries in separate clamshell containers. All rechargeable batteries must be wrapped before being placed in the clamshell as unwrapped rechargeable batteries create a fire hazard due to the potential for rechargeable battery terminals to meet and cause a short circuit. The County will need to develop and post signage explaining the requirement that rechargeable batteries must be wrapped in plastic or have their terminals taped.

Clamshell Battery Drop-off

Louis Berger recommends the CCC not accept lead acid batteries (car batteries). Lead acid battery collection programs are well established and have one of the highest recovery rates in the industry. The CCC should not accept lead acid batteries from a safety perspective due to the high risk of the material type. The County can inform customers of recycling options for car batteries (i.e. auto stores, local mechanics, etc.)

- E-waste – The industry standard in electronics collections is hand-to-hand receipt of the materials, this ensures the integrity of the cathode ray tubes (CRT) and television tubes. The CCC should only accept e-waste when the center is manned and personnel is available to accept and process e-waste properly.

  E-waste material should be stored and transported in such a way as to reduce breakage. Upon receipt of the electronic material, it should be placed on a pallet on a slip sheet, face down. Monitors should be palletized with monitors. Other electronics should be palletized according to proper vendor specifications. All pallets should be shrink wrapped before storage. The e-waste material should then be stored in an enclosed area until there is sufficient e-waste to transport the material to BuRRT.

  CRTs and TVs are made of leaded glass with a lead reflective lining. When broken, lead dust can be released into the atmosphere. There are some interpretations by the Resource Conservatory and Recovery Act (RCRA) that would designate a broken CRT as hazardous waste. However, the Environmental Protection Agency (EPA) is currently not regulating used and broken CRTs as hazardous waste as long as the following conditions are met:

  - CRT containers are clearly labeled regarding contents;
  - CRTs are safely transported in containers designated to minimize releases;
  - CRTs are stored in a building or container designed to minimize releases; and
  - CRTs are stored on site less than one year before recycling.

Figure B-4. Recycling Signage Examples

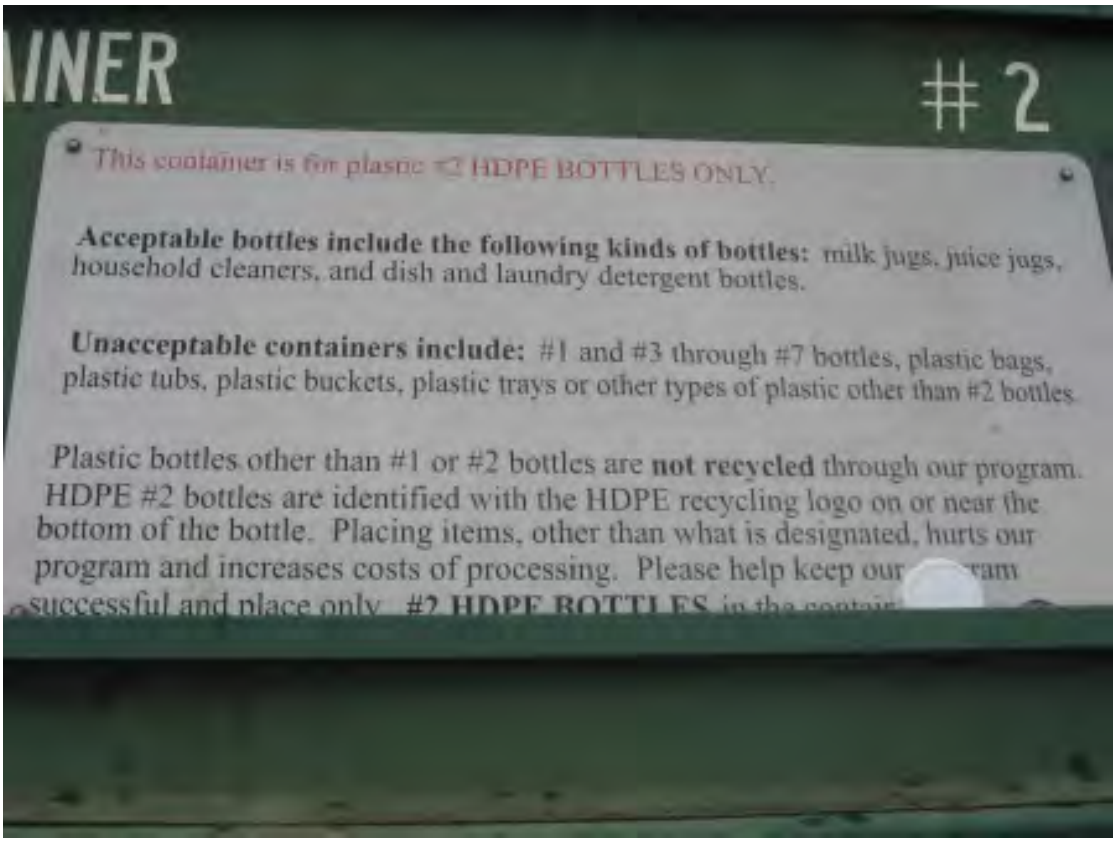

DRAGOON TRANSFER STATION
OPERATING HOURS:
TUESDAY 8:00AM - 1:00PM
THURSDAY 8:00AM - 1:00PM
SATURDAY 8:00AM -2:00PM


TVs and Monitors
UP


PLEASE DO NOT
LEAVE ITEMS
OUTSIDE FENCE


Fayetteville E-Waste
Recycling Program
STAND CLEAR
WHEN TAILGATE
IS OPENED


PLASTIC SODA
BOTTLES
STEEL
CANS


INER
#2
This container is for plastic #2 HDPE BOTTLES ONLY.
Acceptable bottles include the following kinds of bottles: milk jugs, juice jugs, household cleaners, and dish and laundry detergent bottles.
Unacceptable containers include: #1 and #3 through #7 bottles, plastic bags, plastic tubs, plastic buckets, plastic trays or other types of plastic other than #2 bottles.
Plastic bottles other than #1 or #2 bottles are not recycled through our program. HDPE #2 bottles are identified with the HDPE recycling logo on or near the bottom of the bottle. Placing items, other than what is designated, hurts our program and increases costs of processing. Please help keep our
successful and place only #2 HDPE BOTTLES in the contain


This container is for plastic #1 PET BOTTLES ONLY.
Acceptable bottles include the following kinds of bottles: soft drinks, water, juice, mouthwash, salad dressings and ketchup bottles.
Unacceptable items include the following kinds of items: #2 through #7 bottles, plastic bags, plastic tubs, plastic buckets, plastic trays or other types of plastic other than #1 bottles.
Plastic bottles other than #1 or #2 bottles are not recycled through our program. PET#1 bottles are identified with the PET recycling logo on or near the bottom of the bottle. Placing items, other than what is designated, hurts our program and increases costs of processing. Please help keep our program successful and place only #1 PET BOTTLES in the container.


WE ACCEPT
BULK HOUSEHOLD WASTE
(NO GARBAGE)
FURNITURE
APPLIANCES
(NO FREON)
IRON & STEEL
TIRES (LIMIT 4)
CAR & LIGHT TRUCK
VEHICLE BATTERIES
USED MOTOR OIL
WE DO NOT ACCEPT
COMMERCIAL WASTE
HAZARDOUS WASTE
MEDICAL WASTE
HOUSEHOLD TRASH
LIQUIDS OF ANY KIND
PAINT
PESTICIDES
FERTILIZER
FREON OR ANYTHING CONTAINING FREON
FUEL AND FUEL CONTAINERS
(GAS, PROPANE, BUTANE, ETC.)
CLOSED CONTAINERS
ASBESTOS
RADIOACTIVE MATERIAL

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Section 3
WASTESHED ANALYSIS
(County Service Levels and Material Flow)

3.1 Introduction

This section describes the analysis undertaken to estimate where refuse and recyclables that are generated by commercial and residential customers in unincorporated areas of Santa Fe County (unincorporated County) are delivered for disposal and recycling.[1]

To gain an understanding of the flow of refuse, Louis Berger reviewed New Mexico Bureau of Solid Waste Management (NMBSWM) reports, Santa Fe Solid Waste Management Agency (SFSWMA) records, and County records. We also contacted and interviewed private solid waste haulers operating in the unincorporated County and waste management facilities located in areas surrounding Santa Fe County. To assure the confidentially of sensitive business information provided by solid waste haulers, information related to private solid waste haulers is only presented in an aggregated form in this report.

3.2 Private Solid Waste Haulers

Refuse from residential sources may be delivered to a County operated citizen convenience center (CCC), collected by a residential solid waste hauling company (solid waste hauler), or managed in another manner as described below.

Private solid waste haulers in the unincorporated County compete in an open, unregulated market. Waste collection companies contract with individual residences in most of the unincorporated County, and in certain areas homeowners associations contract for collection in entire neighborhoods. Solid waste haulers in the unincorporated County were contacted and asked to provide information concerning the number of customers they serve, the services they provide, and the quantity of refuse they collect. Not all solid waste haulers provided information, and some solid waste haulers provided more complete information than others. Where necessary, information from secondary sources (e.g., SFSWMA scale records) was used to flesh out our understanding of residential refuse flow in the unincorporated County. The methodology used to contact and obtain information from haulers is provided in Appendix C.

[1] For the purposes of this analysis the "unincorporated County" includes all residences and businesses in the unincorporated areas of Santa Fe County and the portions of the City of Edgewood and Town of Espanola located in Santa Fe County.

Some of the major solid waste haulers identified as providing residential collection services in the unincorporated County are:

- Waste Management Inc.
- East Mountain Disposal
- MCT Waste Inc.
- Ibarra's Trash Service

Based on solid waste hauler self-reported data, it is estimated that private solid waste haulers provide service to approximately 6,000 to 6,500 households out of approximately 32,650 households in the unincorporated County.[2] Haulers report collecting approximately 14,000 to 15,500 tons of refuse and recyclables annually. Refuse collection services are generally provided once each week and residential recycling is offered by some solid waste haulers for an additional fee. Certain solid waste haulers reported delivering refuse to landfill disposal and recycling locations outside of Santa Fe County for disposal and recycling.

3.3 County Citizen Convenience Centers

A description of the County's CCCs is provided in "Section 2, Operational Assessment of County CCCs." SFSWMA reported that approximately 14,000 tons of residential refuse and recyclables were delivered by the County to the Caja del Rio Landfill (Landfill) and Buckman Road Recycling and Transfer Station (BuRRT) in calendar year (CY) 2012 [3,4].

3.4 Analysis of Waste Flow In The Unincorporated County

The methodology developed to analyze the waste flow within Santa Fe County considered available data in the order described in the following paragraphs. First, the NMSWB annual New Mexico Solid Waste Report (Solid Waste Report) describing statewide recycling and disposal activities was analyzed. To develop an understanding of the quantity of refuse and recyclables generated in Santa Fe County and where they are delivered for disposal and recycling, Louis Berger's analysis used the Solid Waste Report as the starting-point. Such data is typically used as a starting-point in waste flow analyses because it presents the best understanding of overall solid waste management activities because statewide information will "smooth-out" data anomalies caused by waste moving between local jurisdictions within the state.

Second, SFSWMA information for transactions at the Landfill and the BuRRT, including customer counts, material quantities, and types of refuse delivered, provided additional important input into this analysis. Third, information provided by the County concerning its CCC operations was then considered in this analysis. Finally, information reported by solid waste haulers was used to adjust the quantities of refuse and recyclables reported by the other sources.

[2] Values are estimated after annexation of residential areas by the City of Santa Fe.
[3] Because of differences in timing and record keeping, there may be discrepancies between County reported tonnage and SFSWMA reported tonnage.
[4] CY 2012 is the most recent available full-year's data.

In the Solid Waste Report, the phrase "municipal solid waste" is used to describe the quantity of refuse and recyclables disposed or recycled in the state annually. In the Solid Waste Report "municipal solid waste" does not include construction and demolition debris (C&D), brush, tires or other waste types. The analysis in Section 3.4 is limited to refuse and recyclables, only, so that a comparison can be made between statewide refuse and recyclable quantities reported in the Solid Waste Report and locally reported refuse and recyclable quantities for Santa Fe County. The analysis in Sections 3.4.1 through 3.4.3 is intended to reconcile the actual quantity of refuse and recyclables generated in Santa Fe County with the quantity of refuse (i.e. putrescible waste) and recyclables that would be expected based on statewide averages from the Solid Waste Report. Further analysis is performed in Section 3.5 where quantities of C&D, brush, tires, and other waste, are added to the refuse and recyclable quantities (as quantified in Section 3.4) shown in Table 3-3.

3.4.1 Expected Waste Generation Quantities

As the first step in the analysis, Louis Berger used available statewide data reported in the Solid Waste Report to develop an estimate of the amount of refuse and recyclables each resident in New Mexico generates annually. As shown in Table 3-1, the statewide average commercial and residential refuse and recyclables generated per capita per year is 0.95 tons.

Table 3-1
New Mexico Solid Waste Tonnage Per Capita

	NM State
Tons of Refuse and Recyclables (called "Solid Waste Generation" in NMSWB annual report) [1]	1,953,643
Population [2]	2,059,179
Refuse and Recyclables Per Capita (Tons per Person per Year)	0.95

1. NM State data was collected from the 2010 New Mexico Solid Waste Report prepared by the New Mexico Solid Waste Bureau (page 8). http://www.nmenv.state.nm.us/swb/AnnualReportsandForms.htm
2. 2010 population was collected from the U.S. Census Bureau http://quickfacts.census.gov/qfd/states/35000.html

Second, when the generation rate of 0.95 tons per capita is applied to City and unincorporated County population estimates, the expected annual refuse and recyclable amounts shown in Table 3-2 are projected.

Table 3-2
Expected Annual Solid Waste and Recyclables Generation

	City of Santa Fe	Unincorporated County	Total
Population [1]	69,204	77,171	146,375
Refuse and Recyclables Per Capita [2] (Tons per Person per Year)	0.95	0.95	0.95
Estimated Waste Generation (Tons)	65,657	73,216	138,873

1 2012 population estimates were collected from the U.S. Census Bureau *http://quickfacts.census.gov/qfd/states/35000.html*
2 For reference, see Table 3-1

3.4.2 Analysis of Available Collection and Disposal Data

In the third step of the analysis, SFSWMA scale data for the Landfill and BuRRT was combined with information obtained from other sources (e.g., CCC data and solid waste hauler surveys) to produce an estimate of the quantities of refuse and recyclables disposed or recycled from sources in Santa Fe County as shown in Table 3-3, on the following page. It is important to note, that Table 3-3 does not present all waste types generated in Santa Fe County, rather only the material types (i.e. refuse and recyclables) that directly compare to "municipal solid waste" in the Solid Waste Report.[5]

It is important to note that the lack of sound, verifiable data from solid waste haulers meant that Louis Berger needed to make estimates and adjustments to address certain data gaps concerning the quantities of refuse and recyclables managed by private haulers. Additionally, estimates were made to allocate certain waste quantities between the City and County where definitive waste generation location information was not available. While there may be some uncertainty in the allocation of self-haul waste between the City and the County because of data limitations, the allocations do not have a material impact on the analysis and findings in this section.

[5] Table 3-3 only shows refuse and recyclables, it does not include C&D, brush, tires, and other waste.

Table 3-3
Refuse and Recyclables Collected in Santa Fe County and Disposed/Recycled at SFSWMA Facilities or Other Locations, CY 2012

Material Type/ Delivered By	City of Santa Fe (Tons)	Unincorporated County (Tons)	Total (Tons)
Refuse [1]			
Residential Refuse			
Government [2]	24,411	12,725	37,136
Private Solid Waste Haulers [3, 4]	-	13,553	13,553
Self-Haul [3, 5]	5,573	6,214	11,787
Sub Total Residential Refuse	29,983	32,492	62,475
Commercial Refuse			
Government [2]	35,330	211	35,541
Private Solid Waste Haulers [3, 4]	-	19,412	19,412
Self-Haul [3, 5]	154	172	326
Subtotal Commercial Refuse	35,484	19,794	55,278
Total Refuse	65,467	52,286	117,753
Recycling [6]			
Government [2]	5,302	1,333	6,635
Private Solid Waste Haulers [3, 4]	-	912	912
Self-Haul [3, 5]	49	55	105
Scrap Metals and Appliances [7]	NA	155	155
Sub Total Recycling	5,352	2,455	7,807
Total Refuse and Recyclables Disposed or Recycled	70,819	54,741	125,560

1 Based on scale data provided by SFSWMA for Landfill and BuRRT.
2 Government means waste delivered by City or County (including waste from citizen convenience centers)
3 For BuRRT materials, some quantities were allocated based on 2012 City and County population estimates.
4 Includes data provided by interviews with private haulers and delivered to facilities outside of Santa Fe County.
5 Self-Haul means waste delivered to a SFSWMA facility by a person that does not pay by account.
6 Based on scale data provided by SFSWMA at BuRRT.
7 Based on 2012 data from citizen convenience centers provided by County.

3.4.3 Comparison of Expected Waste Generation To Available Disposal Data

Table 3-4 compares the expected generation amounts of refuse and recyclables from Table 3-1 with the actual amounts collected and disposed or recycled in Table 3-3.

Table 3-4
Refuse and Recyclables Collected in Santa Fe County and Disposed at the Landfill or Other Locations, CY 2012

	City of Santa Fe (Tons)	Unincorporated County (Tons)	Total (Tons)
Expected Refuse & Recyclables (Tons per Year)	65,657	73,216	138,873
Actual Refuse & Recyclables (Tons per Year)	70,819	54,741	125,560
Difference between Expected and Actual (Tons per Year)	5,162	(18,475)	(13,313)
% difference	7.8%	-25.3%	-9.6%
Actual Tons of Refuse & Recyclables per Person per Year	1.02	0.71	0.86

Table 3-4 shows that more refuse and recyclables are generated per capita in the City (1.02 tons per person per year) than the unincorporated County (0.71 tons per person per year). This difference can be primarily attributed to the significant concentration of commercial waste generating activity in the City.

In this analysis, Louis Berger was able to account for 125,560 tons of refuse and recyclables generated in the incorporated and unincorporated areas of Santa Fe County in 2012. Multiplying the statewide average of 0.95 tons per person by the population of Santa Fe County results in an estimate of 138,873 tons of waste generated in 2012. The difference between the actual amount generated and the predicted generation amount is 13,313 tons, or about 9.6 percent. This difference may reflect that residents and businesses in Santa Fe County actually generate less refuse and recyclables per capita than the state average, or this difference may be caused by a number of other factors including refuse being delivered to locations outside of Santa Fe County (in additional to what we identified in our survey of private haulers). Again, it should be noted that the lack of sound, verifiable data from solid waste haulers meant that Louis Berger needed to make estimates and adjustments to address certain data gaps concerning the quantities of refuse and recyclables managed by private haulers. Additionally, estimates were made to allocate certain waste quantities between the City and County where definitive waste generation location information was not available.

3.5 Santa Fe County Waste and Recyclable Material Quantities

3.5.1 Detailed Presentation of Waste and Recyclable Quantities

Table 3-5 compiles all available waste tonnage information for Santa Fe County (i.e., the waste types C&D, brush, and other[6] are added to refuse and recyclables shown in Table 3-3). Where possible, material quantities have been identified as being generated in the City or County. Where the generation location of material cannot reasonably be identified, only the total quantity of waste is shown in Table 3-5. The designation "NA" is used for quantities that are not allocated.

Table 3-5
All Waste/Recyclables Types Generated in Santa Fe County and Reported Disposed At SFSWMA Facilities or Other Locations

Material Type/ Delivered by	City (Tons)	County (Tons)	Total (Tons)
Refuse [1]			
Residential Refuse			
Government [2]	24,411	12,725	37,136
Solid Waste Haulers [3, 4]	-	13,553	13,553
Self-Haul [3, 5]	5,573	6,214	11,787
Subtotal Residential Refuse	29,983	32,492	62,475
Commercial Refuse			
Government [2]	35,330	211	35,541
Solid Waste Haulers [3, 4]	-	19,412	19,412
Self-Haul [3, 5]	154	172	326
Subtotal Commercial Refuse	35,484	19,794	55,278
Total Refuse	65,467	52,286	117,753
Recycling [7]			
Government [2]	5,302	1,333	6,635
Solid Waste Haulers [3, 4]	-	912	912
Self-Haul [3, 5]	49	55	105
Scrap Metals and Appliances [8]	NA	155	155
Total Recycling	5,352	2,455	7,807
Brush [7]			
Government	186	503	689
Other [9]	NA	NA	5,706
Brush [5][7]			6,395
Construction & Demolition [1]			
Government	4,050	52	4,102

[6] "Other" waste includes: tires, sweeper waste, and wastewater treatment plan sludge.

Material Type/ Delivered by	City (Tons)	County (Tons)	Total (Tons)
Solid Waste Haulers [9]	NA	NA	21,491
Self-Haul [9]	NA	NA	4,810
BuRRT Transfer Station [9]	NA	NA	4,126
Total Construction & Demolition			34,528
Other Waste [1, 9, 10]			
Government	NA	NA	3,894
Solid Waste Haulers	NA	NA	30
Self-Haul	NA	NA	11
BuRRT Transfer Station	NA	NA	156
Total Other Waste			4,091
Santa Fe County Total Waste			170,574

1 Based on scale data provided by SFSWMA for Landfil and BuRRT.
2 Government means waste delivered by City or County (including refuse and recyclables from CCCs)
3 For BuRRT materials, some quantities were allocated.
4 Includes data provided by interviews with private haulers and delivered to facilities outside of Santa Fe County.
5 Self-Haul means waste delivered to a SFSWMA by a person that does not pay by account.
6 Waste allocated based on 2012 population estimates.
7 Based on scale data provided by SFSWMA at BuRRT.
8 Based on 2012 data from citizen convenience centers provided by County.
9 SFSWMA scale data did not provided an origin of the waste.
10 Other waste includes: tires, sweeper waste, and wastewater treatment plan sludge.

3.5.2 Observations of Refuse and Recycle Material Quantities

Based on the information shown in Table 3-5 and considering other information presented in this report, Louis Berger provides the following important observations:

- **Citizen Convenience Centers are an important part of the County's solid waste management system.** More than 33,000 tons of refuse and recyclables are disposed or recycled from unincorporated County customers. On an average annual basis, this represents more than one ton from each residential unit is disposed or recycled at either SFSWMA facilities or facilities outside of Santa Fe County.

  There are more than 32,000 residential units in the unincorporated County, and solid waste haulers report only providing curbside service to between 6,000 and 6,500 of them[7], so it appears that up to 26,000[8] residential units require the services of the CCCs to properly dispose of their refuse and recyclables. Based on the number of permits sold by the County, approximately 127,000 trips to the citizen convenience centers are purchased annually, equating to 4.9 trips per household. Based on Louis Berger's analysis, the convenience centers manage approximately 26 percent of the refuse and recyclables in the unincorporated County.

[7] See Section 3.2.
[8] Calculation: 32,000 residential units minus 6,000 (low estimate) equals 26,000 residential units (high estimate).

- **Solid waste haulers manage a significant portion of the residential refuse and recyclables in the unincorporated County.** Approximately 41 percent[9] of residential refuse and recyclable tons are managed by solid waste haulers, and the remainder is either delivered to a citizen convenience center or self-hauled by residents to the Landfill or BuRRT. Of course, the lack of definitive data from all private solid waste haulers in the County does mean that there is some subjectivity in this estimate.
- **There is limited recycling in the unincorporated County.** Based on the gathered data and assuming all reported recyclables are from residential sources, approximately 7.0 percent[10] of residential refuse and recyclables is diverted from landfill (not including brush and yard waste) or approximately 8.3 percent[11] of residential refuse and recyclables is diverted from landfill (including brush and yard waste).

3.6 Findings

1. Some private solid waste haulers were forthcoming in reporting information concerning the number of customers served and amounts collected, while others were reluctant to do so.
2. Where certain private haulers self-reported certain information and it does not match SFSWMA disposal records shows that even where information is freely provided it may not be accurate because of a lack of specificity in responding to inquiries or lack of accurate data management by the hauler.
3. Because of the lack of sound, verifiable data from solid waste haulers, Louis Berger needed to make estimates and adjustments to address certain data gaps concerning the quantities of refuse and recyclables managed by private haulers.
4. Certain solid waste haulers reported collecting refuse in Santa Fe County and disposing it outside of the County.
5. Understanding where refuse and recyclables are generated and where they are disposed and recycled is difficult because private solid waste haulers are not required to report collection and disposal activities to the County or State.
6. In the analysis, approximately 90 percent of the refuse and recyclables expected to be generated in Santa Fe County (based on statewide generation rates) was identified. The approximately 10 percent discrepancy can be attributed to a number of factors including: 1) limited amounts of industrial and commercial activity in the Santa Fe area compared to other metropolitan areas of the state

[9] Calculation: 13,553 tons collected by private haulers divided by 32,492 total residential tons in County equals 41.7%
[10] Calculation: 2,455 tons total recycling divided by (2,455 tons recycling plus 32,492 tons residential refuse) equals 7.02%
[11] Calculation: (2,455 tons total recycling plus 503 tons brush) divided by (2,455 tons recycling plus 32,492 tons residential refuse plus 503 tons brush) equals 8.34%

(result in the actual generation rate in Santa Fe being less than the statewide rate); 2) haulers transporting refuse out of the County for disposal; and 3) residents in the unincorporated areas bringing refuse to work and disposing of it as commercial refuse in Santa Fe or Albuquerque.

7. Acknowledging the potential for refuse and recyclables to be taken out of the County for disposal or recycling, based on available data, it appears that per capita disposal rates are higher in the City (1.02 tons per person per year) compared to the unincorporated County (0.71 tons per person per year). This difference is consistent with the realization that greater amounts of commercial refuse is generated in the City.

3.7 Recommendations

1. **Consider implementing a solid waste management system in the unincorporated County.**

   As described in "Section 4, Solid Waste Management System," Louis Berger recommends that the County consider implementing a solid waste management system in the unincorporated County. Such a system will enhance the County's ability to gather data concerning solid waste management in the unincorporated County. Additionally, depending on how such a system is implemented, it would likely increase the recycling rate in the unincorporated County.

2. **Develop a comprehensive data management system**.

   Louis Berger recommends that the County, City, and SFSWMA develop a comprehensive data management system. Such a system could be based on a comprehensive, web-based system, that would allow all three entities to seamlessly access and monitor information on the generation, flow, and disposal of refuse and recyclables in Santa Fe County.

Appendix C
DATA GATHERING

This Appendix includes our approach to gathering data and the data request letter that was transmitted to solid waste haulers.

Approach to Data Gathering

In an effort to gain an understanding of refuse and recyclables quantities generated in Santa Fe County and where such materials are disposed or recycled, Louis Berger undertook the following activities.

1. An initial list of haulers known to operate in Santa Fe County was identified. This list was augmented with data available for the NMBSWM.[1] The list of identified haulers is shown in Table C-1.
2. Each identified hauler was sent a letter, signed by the Santa Fe County Public Works Director advising them of the solid waste project and requesting their support of the project.
3. Follow-up contact was made by Louis Berger's subconsultant Justin Stockdale. Because Mr. Stockdale was located in Santa Fe County, he made an effort to arrange face-to-face meetings with haulers. Not all haulers were able to meet with Mr. Stockdale. While some haulers were forthcoming with information, others were not.
4. In an effort to promote communication, Louis Berger prepared and executed confidentiality agreements with certain haulers assuring that gathered information would not be released to the County or the public, except in aggregated form.
5. As a follow-up to Mr. Stockdale's efforts, Louis Berger staff attempted to contact waste haulers by telephone and e-mail to gather additional and clarifying information. Haulers provided limited information in response to these inquiries. In some circumstances, Louis Berger was unable to reach identified haulers (e.g., because phone messages were not returned). In other cases, contact was made but information requested from the hauler was not available or was not provided.
6. Information requested from the haulers included services provided, numbers of customers served (for both commercial and residential), tonnage collected (by material type), areas served, and prices charged. As has been previously stated hauler responses ranged from not wanting to provide information, to offering to provide information and not following up, to offering information. Because of

[1] NMBSWM, "Commercial and Special Waste Haulers, Report run on June 3, 2013."

sensitivities concerning confidential information, hauler responses are only presented in aggregate form.

7. Information obtained from all sources was compiled and used to prepare the wasteshed analysis presented in the report. Table C-1 shows the haulers identified from various sources, if contact was made, and if Louis Berger was able to obtain any kind of information from the company.

Table C-1
Haulers Contacted for Wasteshed Study

Company	Able to Make Contact	Information Obtained From
Capital Scrap Metals	Yes	No
East Mountain Disposal	Yes	Yes
Enviroworks LLC	No	No
Gallegos Trucking	Yes	Yes
Green Production Resources	No	No
Ibarra's Trash Services	Yes	Yes
J-n-L Trucking	No	No
MCT/High Mesa	Yes	Yes
NM Waste Services	Yes	No
Ortega and Cruz	No	No
Road Runner Waste	Yes	No
Santa Fe Waste Services	Yes	Yes
Waste Management Inc.	Yes	Yes
Western Disposal	Yes	No

8. In addition to the haulers identified in Table C-1, Louis Berger contacted refuse and recycling facilities in neighboring counties in an attempt to identify the types and quantities of waste that these facilities accept from Santa Fe County. Certain facilities indicated that they do not accept materials from Santa Fe County, or that they do not account for the location where materials are received from. Many facilities did not return inquiries made by phone or e-mail. The facilities contacted were identified from the NMBSWM "List of New Mexico Solid Waste Facilities by County." The number of facilities contacted in neighboring counties are as follows:
    a. Bernalillo County – 24 facilities
    b. Los Alamos County – three facilities
    c. San Miguel County – five facilities
    d. Sandoval County – two facilities
    e. Rio Arriba County – 11 facilities

Letter Provided to Haulers

May 1, 2013

Mr. Frank Santiago
WMI
2021 Girard SE, Suite 275
Albuquerque, NM 87106

Mr. Frank Santiago,
As you may be aware, the City and County of Santa Fe along with the Santa Fe Solid Waste Management Agency (SFSWMA) are undertaking a broad analysis of ways to improve the Santa Fe region's solid waste system and infrastructure. Recently, the three entities retained SAIC, a solid waste consulting firm, to conduct a comprehensive solid waste management assessment. As part of this effort, Santa Fe County is exploring various methods to bring comprehensive solid waste and recycling collection services directly to households in the unincorporated County, including evaluating options for the franchising of solid waste collection. For your information, attached is SAIC's scope of services for the County-portion of the study.

While we know that there are several existing collection services in some areas, the County desires to gain a better understanding of the refuse and recycling collection services that exist as it considers future County-wide solid waste management options. To achieve this goal the County is asking for your assistance. In order for the consultant, SAIC, to provide viable alternatives for the County's consideration, a thorough understanding of current solid waste services in the County is essential.

SAIC or Justin Stockdale (SAIC's subconsultant) will be contacting you within the next few weeks with a request for information related to your current activities in Santa Fe County. SAIC has a long standing practice of maintaining the confidentiality of sensitive business information. To this end, SAIC can guarantee that any information you provide will not only be kept confidential (for the use of SAIC only), but will not be shared with the County or other parties, whether related to this project or otherwise.

All information will remain strictly confidential as the information provided will be aggregated with all other haulers, processors and generators surveyed in Santa Fe County. The purpose of surveying haulers, processors and generators is to understand the volume of materials that are generated by County residents and commercial entities and the collection services provided by the private sector.

For purposes of this study all data will be aggregated prior to providing the data to any of the entities (City, County and SFSWMA).

102 Grant Avenue · P.O. Box 276 · Santa Fe, New Mexico 87504-0276 · 505-986-6200 · FAX: 505-995-2740 www.santafecounty.org

SAIC will provide all companies a written statement of confidentiality to further support their commitment to your business and the confidentiality of the information provided (Sample attached).

Santa Fe County sincerely appreciates your commitment to providing safe and efficient solid waste services to the residents of the County and hopes you will support our efforts to gain a better understanding of the private sector's solid waste services in the County as we consider effective solid waste and recycling strategies going forward. Craig O'Hare, with the County Public Works Department, is the Project Manager for the County's portion of the SAIC study. In addition to communicating with the SAIC representative that will be contacting you, feel free to contact Craig directly (cohare@santafecountynm.gov, 505-992-3044), should you have any questions, concerns or helpful ideas about the study.

Sincerely,

Adam Leigland
Santa Fe County Public Works Director

Attach: Scope of Services, Sample Confidentiality Agreement

102 Grant Avenue · P.O. Box 276 · Santa Fe, New Mexico 87504-0276 · 505-986-6200 · FAX: 505-995-2740 www.santafecounty.org

Section 4
SOLID WASTE MANAGEMENT SYSTEM

4.1 Introduction and Background

Santa Fe County (County) is considering managing solid waste county-wide, including the waste collected by private haulers. As a result, the County is considering developing a system to manage the collection of solid waste by private haulers within certain areas of its jurisdiction. This section of the report provides direction concerning the issues that must be considered in implementing such a system. The following sections present an outline of the steps the County can undertake to implement a solid waste management system. The actual implementation of such a system is beyond the scope of this Solid Waste Assessment and Management Study. The following steps may be undertaken by the County using its own resources, or it may engage the services of a qualified consultant to assist in addressing some or all of the effort required.

4.1.1 Solid Waste Management in the County

The County Solid Waste Division collects and transports refuse and recyclables that are self-hauled by citizens to seven convenience centers, also referred to as transfer stations. In unincorporated areas of the County, private haulers collect refuse from residential and commercial customers on a "free market – subscription" basis in County unincorporated areas. There are no designated territories or contractual arrangements with the private haulers set up by the County. In contrast, the City of Santa Fe's (City) Solid Waste Division collects all residential and commercial trash in the City.[1, 2]

4.1.2 About Solid Waste Collection Contracts or Licenses

In many areas across the country, local governments use contracts or licensing systems to manage solid waste collection conducted by private haulers in their jurisdictions. Under contract or licensing systems, a company (or companies) is given the right to provide solid waste services in the County. Based on a local government's solid waste policies and goals, the company may be required to: 1) deliver waste to specific disposal or recycling facilities; 2) report tonnage managed; 3) provide recycling services; and 4) report customer or other operational data to the County. The company may also be required to pay the local government an "administration fee" as part of the contract arrangement. Such an approach is often called private hauler "franchising."

[1] Comprehensive Solid Waste Management Plan
[2] Construction and demolition debris may be collected by private solid waste haulers in the City.

In this report, the phrase "solid waste management system" is, instead, used to convey the broader solid waste management objectives that are achieved by such an approach.

It is recommended that the County pursue such an arrangement for residential solid waste management in certain identified areas of the County. At a later date, the County can consider whether it wants to establish a similar management system for commercial solid waste. In this report, Residential Solid Waste Collection Contracts (Residential Contracts) are suggested to be awarded to firms that would be the sole provider of service in specific designated areas. Under this proposal, the Residential Contracts and possible future Commercial Licenses, along with an enabling ordinance and rules, would make up the County's private sector solid waste management system.

Some of the expected benefits and challenges associated with implementing a solid waste collection management system are listed in Table 4-1.

Table 4-1
Benefits and Challenges of Implementing a
Solid Waste Collection Management System

Benefits	Challenges
• Protect public health, safety, and welfare • Offer affordable solid waste service to customers • Generally, due to economies of scale, customers cost for service under collection contracts may be less than equivalent services under open markets[1] • Control solid waste collection activities and assure minimum service standards are met • Increase recycling participation and waste diversion rates • Revenue recovery (with adoption of an administration fee) to address heavy truck impacts to County infrastructure (i.e., wear and tear of roadways) and to support solid waste programs	• Development and implementation of a management system • Increased administration to manage franchising • Enforcement of franchising • Private sector hauler reaction

1 With the implementation of a residential solid waste management system, granting one service provider an exclusive Residential Contract to serve a defined area, the price for the services provided is generally less than in a situation where multiple service providers operate overlapping routes providing the same services. Of course, if the Residential Contract requires a higher level of service than currently provided (i.e., add recycling collection where it was not provided before), the price may increase.

4.1.3 Using Solid Waste Collection Permits as a Data Gathering Tool

Beyond the County's convenience center activities, fully understanding private hauler solid waste management activities in the unincorporated County is difficult because of the lack of data concerning where waste is generated, who transports it, where it is managed ,and how much is disposed or recycled. To aid in gathering data, some counties across the country have incorporated solid waste data reporting requirements in their solid waste ordinances. To assure reporting requirements are met, the solid waste haulers are required to periodically (e.g., quarterly or annually) report the quantity of waste and recyclables collected and the destinations to which they are

delivered. This report identifies three possible residential collection areas where a Residential Contract would authorize a single private hauler to serve a given collection area. Solid waste data reporting requirements are customarily included in such contracts. However, in addition to the three collection areas, the County could consider establishing reporting requirements for all solid waste collection in the County.

A limited permitting system that would require all private haulers, whether in the three collection areas or not, to report certain data to the County would be similar to the Commercial Licensing system discussed below. An important distinction about the permit is that it would apply to all waste collection activities countywide.

Permit systems, Commercial Licenses, and Residential Contracts are all tools available to the County in implementing a solid waste management system. The County should assess each of these tools as it considers how best to implement a solid waste management system. Implementing permits, licenses, or contracts each places a burden on the County and the affected solid waste haulers. The benefit gained by implementing the selected solid waste management system should align with effort required by the County and haulers to implement the system.

4.1.4 Examples of Solid Waste Management Systems in New Mexico

Bernalillo County

Bernalillo County has established a solid waste management system that requires all residential units in the unincorporated areas of the county to use county contracted solid waste collection haulers. Three hauler collection areas have been defined by the county, and certain areas in the "east mountains" are exempt from the requirement to use the contract solid waste hauler. One hauler provides solid waste collection and recycling collection in all three areas. Under the county's system, the contractor bills the resident directly for the service provided. The hauler stated that the hauler collects residents on behalf of Bernalillo County, and hands over the collected fees to the County. The County then pays the hauler for services provided, and the County keeps an administrative fee. The hauler bills each resident $16.20 per month. The County pays the hauler $11.60 per household per month and retains the difference.

The county code governing solid waste management (Bernalillo County Code Chapter 70) requires solid waste to be "collected, conveyed and disposed of by the county or its authorized contractors." Actual producers of solid waste may haul their own waste for disposal. The code authorizes the county manager to implement a licensing requirement and licensing fee for haulers that transport solid waste and authorizes the board of county commissioners to designate areas of the county for the phase in of mandatory solid waste collection service. The haulers are not required to deliver waste to any particular landfill for disposal of solid waste.

Taos County

Two solid waste haulers have entered into non-exclusive franchise agreements authorizing the haulers to collect residential and commercial solid waste in unincorporated areas of Taos County. The franchise agreements require that the hauler pay the county a franchise fee, establish BCC review and approval of rates and rate structure, require reporting of customers and waste volumes, and require collected waste to be delivered to the Taos Regional Landfill. The franchise agreements also establish certain performance standards that include minimum insurance requirements, and requirements for the haulers to address customer complaints.

The franchise agreements have a term of four years, renewable for an additional four-year term. The franchise agreements do not create designated service areas, and the two haulers compete countywide. The larger hauler is reported to have approximately 95 percent market share. The county charges each hauler a franchise fee based on a percentage of gross revenues collected. The larger firm pays a franchise fee of 8 percent and the smaller firm pays a fee of 4 percent. The franchise fee shows up as a separate line item on the individual invoice. Curbside rates charged to customers range from $20.72-36.96/month (depending on the housing density in the area). Garbage is collected in 90 gallon containers, no recycling service is provided curbside.

4.1.5 Regulatory Background

In New Mexico, counties are granted the authority to "establish, maintain, manage and supervise a system of storage, collection and disposal of all refuse."[3] The County has adopted solid waste management ordinances that establish and define the County's solid waste management system, most recently as Ordinance 2010-5, adopted June 8, 2010 (the Solid Waste Ordinance). Ordinance 2010-5 generally defines a solid waste management system organized around the County operating a series of solid waste citizen convenience centers (also known as solid waste transfer stations).

On May 28, 2013, the Solid Waste Ordinance was amended (Solid Waste Ordinance Amendments) to establish mandatory roadside collection districts and to establish procedures for roadside solid waste collection. While these amendments are related specifically to areas of the County that were and will be annexed into the City of Santa Fe, there are important parallels between the Solid Waste Ordinance Amendments and steps the County will need to consider in implementing a solid waste collection contract.

In December 2013, the County adopted the Sustainable Land Development Code SLDC). Section 7.20 of the SLDC addresses certain solid waste management related matters. In particular, 70.20.2.1 requires that "All developments within SDA-1 shall be served by County curbside collection as prescribed by separate ordinance, if applicable, or shall utilize a solid waste collection service." Further 70.20.2.2 states that "All subdivisions within SDA-2 or SDA-3 and all non-residential multifamily and manufactured home communities shall be served by County curbside collection and

[3] NSMA 1978, Section 4-56-1

recycling as prescribed by separate ordinance, if applicable, or if inapplicable utilize one of the following: 1) a solid waste collection service; or 2) the nearest existing sanitary landfill or transfer station." It appears that the SLDC and the solid waste management system proposed in this report are compatible, but the County should assure alignment of the SLDC and any new solid waste ordinance that is created.

4.1.6 Planning Background

In December 2010, a Comprehensive Solid Waste Management Plan (Solid Waste Plan) was finalized for the City, County, and Santa Fe Solid Waste Management Agency (Agency), and it was adopted by the Board of County Commissioners (BCC) on February 22, 2011.[4] Two recommendations related to implementing a solid waste collection control system in the County are identified in the Solid Waste Plan. The two recommendations are listed below:

- **Recommendation # 12** – Explore the feasibility of establishing franchises or permits for private haulers in County unincorporated areas.
- **Recommendation # 13** – Evaluate requiring that residential, commercial, and institutional generators receive collection services for trash and recyclables in County unincorporated areas.

In 2010, the County adopted the Santa Fe County Sustainable Growth Management Plan (Growth Management Plan).[5] The Growth Management Plan identifies Sustainable Development Areas (SDA) in the County where growth is occurring and where future growth should be directed. The designation SDA-1 is assigned to areas contiguous to the City that anticipate higher growth rates and denser development and SDA-2 is assigned to areas where more moderate development density are planned. SDA-1 and SDA-2 are the optimum areas for implementing a solid waste collection management system.

On February 12, 2013, the County's Solid Waste Task Force (Task Force) made a presentation to the BCC entitled "Solid Waste Task Force Report and Short-Term Recommendations." In the presentation, the BCC accepted a number of the Task Force's recommendations, including "[Proceeding] with and [funding] the County-wide solid waste study." One of the tasks in this study is a "Franchising Assessment: Develop options to more actively manage SW in the unincorporated County, including franchising of private haulers."

At the August 27, 2013 BCC meeting, Louis Berger made a presentation to the BCC concerning solid waste contracting and discussed the different approaches and considerations for implementing such contracts. Matters that were discussed and direction was received from the BCC at the meeting to continue with investigating the possibility of implementing a solid waste management system and report back to the BCC with findings. The directions provided by the BCC concerning possible

[4] County Resolution No. 2011-16
[5] County Resolutions 2010-210 and 2010-225

approaches to implementing a solid waste management system are incorporated into this report.

4.2 Tasks and Timing Considerations

Figure 4-1 shows the process steps and a relative timeline for implementing a solid waste management system in the County. Key elements to consider in the timeline are described below. It should be realized that the presented timeline may need to be adjusted in response to feedback received from the BCC, private haulers, or residents or in response to unforeseen occurrences.

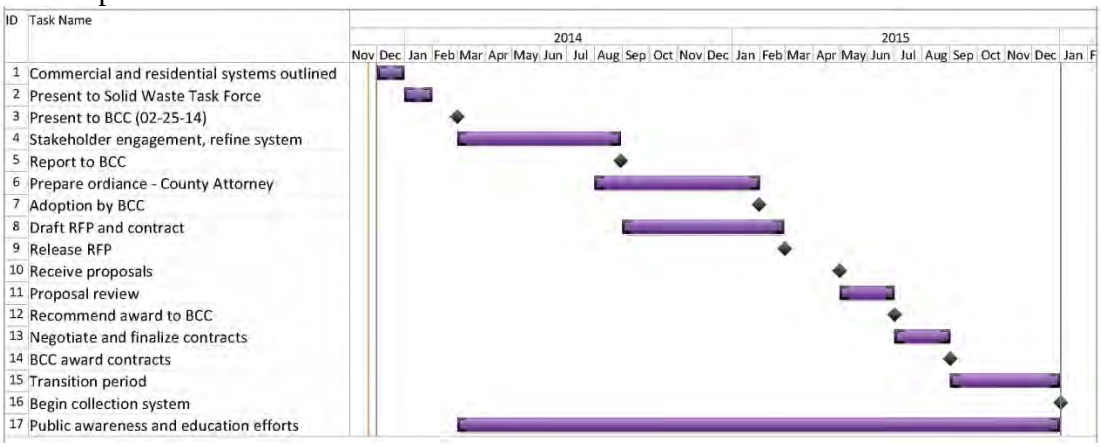

Figure 4-1. Key Tasks and Implementation Timeline

As shown in Figure 4-1, the following steps may be taken to develop and implement a solid waste management system.

Step 1. Investigate and outline the proposed solid waste management system as directed by the BCC (the results are presented in this report).

Step 2. Present this report and the proposed solid waste management system to the County Solid Waste Task Force for feedback and input.

Step 3. Present to the BCC the information in this report outlining the approach to developing a countywide solid waste management system, convey the input from the Solid Waste Task Force, and request authorization to proceed with implementation.

Step 4. If the BCC authorizes implementation, County staff should undertake efforts to engage stakeholders that may be affected by the solid waste management system to obtain their feedback. Feedback could be solicited from affected homeowners and homeowners associations by conducting a series of public meetings to discuss the proposed system. Also, County staff could have discussions with solid waste haulers concerning their interest and ideas for the solid waste collection contract and the procurement process prior to initiating the formal solicitation.

Step 5. Staff should report back to the BCC concerning public comments received and request BCC authorization for the County Attorney to update the solid waste ordinance to implement the solid waste management system.

Step 6. County Attorney would draft the necessary revisions to the solid waste ordinance, if directed by the BCC.

Step 7. Upon completion of ordinance development by the County Attorney's office, it would be presented to the BBC for adoption.

Step 8. If directed to do so by the BCC, concurrent to preparing the update to the solid waste ordinance, staff should develop a draft request for proposal (RFP) and contract with the assistance of the County Attorney, and/or other appropriate outside assistance.

Step 9. Upon completion of the RFP and contract, the procurement should be released for solicitation. It is customary to conduct a pre-proposal meeting to offer potential proposers an opportunity to address any questions they have concerning the formal procurement or draft contract.

Step 10. After a period of time, approximately 60 to 90 days, proposals from interested solid waste hauling firms should be submitted to the County.

Step 11. Upon receipt of the proposals, staff should evaluate the submitted proposal. Section 4.8, below, provides an outline of potential review criteria.

Step 12. After careful evaluation of the submitted proposals, the ranked proposals should be presented to the BCC for preliminary award in order for the BCC to authorize staff to negotiate any outstanding terms or conditions as appropriate with the selected vendors.

Step 13. Following BCC direction, staff should conduct negotiations to finalize any outstanding issues with the selected vendors. While including the draft agreements in the RFP should eliminate the need for significant contract negotiations, time should be allotted for the selected contractors to provide all required information (e.g., insurance certificates) before the BCC awards the contracts.

Step 14. Staff should bring the final contracts back to the BCC for final award to the selected haulers.

Step 15. The transition period provides a number of months for the selected vendors to obtain and put into service appropriate resources and to transition customers to new service providers, if necessary.

Step 16. Begin operations under the contracts.

Step 17. Throughout the planning and implementation process, the County should undertake efforts to advise citizens of the new solid waste management systems and its benefits. The public awareness efforts can include public meetings, a promotional campaign, advertising, outreach at fiestas and public events, etc.

Obviously, significant County staff time will be required to undertake the tasks outlined in Steps 1 through 17. Once the program is in place, however, the administrative demands on County staff are greatly reduced (discussed in Section 4.9).

4.3 Service Level Criteria

An important consideration in implementing a solid waste collection management system is the services that residential solid waste collection service providers (Residential Contractors or Contractor) and commercial solid waste collection service providers (Commercial Licensees or Licensee) are expected to provide. The work effort expected from these service providers are defined in the following sections.

4.3.1 Service Levels for Residential Collection Service

For residential solid waste collection service, it is recommended that three separate Residential Contracts will be awarded. Each Residential Contract would be awarded to a firm to provide collection service in one of three discrete service areas. The service level criteria suggested to be incorporated into the Residential Contracts are listed in Table 4-2.

Table 4-2
Residential Solid Waste Collection Service Levels

Service Level Criteria	Approach
Residential Solid Waste Collection Contract	Residential collection in designated areas of unincorporated County can only be performed by firms under contract with the County
Exclusive Service Area	One service provider will be granted a contract for a service area. If residents choose to have collection service, they must contract with the area's Residential Contractor
Non-Mandatory Collection	Residents are not required to have roadside collection (i.e. they may continue to self-haul to transfer stations)
Contract Term	Contracts typically are awarded for a period that would allow a contractor to amortize the cost of equipment, generally five to seven years, with contract extensions if both parties agree
Contract Award Process	Request for Proposal
Service Areas	As defined by County - three initial areas identified in this report
Contractor Service Area Limitation	No provider shall be awarded more than two of the three identified service areas
Service Provider to Contract Directly with Customer	Contractor shall contract directly with the resident for service and be responsible for billing resident
Garbage Collection	Once per week
Garbage Containers	Carts provided by collector, size 96 gallons with smaller alternatives available. It is possible to promote a "pay as you throw" approach by establishing different prices for different sizes of containers (e.g., a lower price for a smaller container)
Recyclables Collection	At minimum once every other week.
Recyclables Containers	96 gallon carts with smaller alternatives available, or bins
Recyclables Collected	List of collected materials to be consistent with BuRRT acceptance criteria
Bulky Waste Collection	On-call billed per pickup

Service Level Criteria	Approach
Yard Waste Collection	On-call billed per pickup
Waste Excluded from Collection	Tires, hazardous, or special waste
Waste Segregation Required	Garbage, recyclables, bulk waste, and yard waste must each be collected separately and shall not be commingled with each other
Service Price	To be determined by competitive procurement
Spillage and Litter	Must be cleaned up immediately with report to County
Complaints	Contractor to maintain a call center during collection hours and make monthly reports to County
Property Damage	Contractor responsible for repairs and must make monthly report to County. In the event of a dispute, County may make repairs and bill contractor
Missed Collection	Must be collected within 24-hours
Insurance Requirements	Determined by County
Collection Equipment	Equipment shall not be more than seven years old without written consent of County. Equipment shall be maintained in good repair. Equipment may be removed from service area if repeated violations of spillage and litter
Equipment Marking	All containers and equipment shall be marked with contractors name and contact number
Reports to County	1. Customer list (additions and deletions each month) 2. Complaints and resolution 3. Quantity of material collected and disposed/recycled
Disposal/Recycling Facilities	All collected material to be delivered to Caja Landfill or BuRRT
Hours and Days of Collection	Monday through Friday 7 am to 6 pm
Holiday Collection	No collection required on New Year's Day, Thanksgiving Day, and Christmas Day. Waste not collected on designated holiday shall be collected on the following Saturday.
Notification	Customers must be notified annually of rates, service level, and any pending rate changes
Non-Collection Procedures	If unacceptable waste is left at the curb, the contractor must leave a tag notifying the resident of the problem
Contractor's Recourse for Non-Payment	Contractor shall be allowed to remove containers from customer's site with notification to County
County Contract Administration Fee	To be determined

4.3.2 Service Levels for Commercial Collection

Once the County has decided if it wants to implement a residential solid waste management system, it may then want to address commercial solid waste collection. In the event that the County decides to initiate a commercial solid waste collection management system, this section provides an outline for implementing such a system.

As described in Section 4.1.3, the County could implement a limited permit system to facilitate data gathering concerning certain solid waste management activities in unincorporated Santa Fe County.

If a commercial solid waste collection management system is implemented, it is suggested that multiple firms be awarded Commercial Licenses. In this scenario, all of the Commercial Licensees would be allowed to provide services throughout a County designated commercial solid waste service area. The Commercial Licenses would establish a minimum level of service each firm will be required to provide in return for the privilege of being able to compete for commercial solid waste customers.

Table 4-3
Service Levels for Commercial Collection

Service Level Criteria	Approach
Commercial Solid Waste Collection License	Commercial solid waste collection in designated areas of unincorporated Santa Fe County can only be performed by firms awarded a Commercial License by the County
Non-Exclusive Service Area	Licensed firms will be authorized to collect waste Countywide
Non-Mandatory Collection	Customers are not required to contract for collection
License Term	To be determined
License Award Process	Request for Proposal process with multiple licenses awarded to top qualifying firms as determined by the County
Service Areas	As defined by County
Contractor Service Area Limitation	Licensed firms may compete for customers countywide
Service Provider to Contract Directly with Customer	Licensee shall contract directly with the business for service and be responsible for billing the customer
Garbage Collection	Minimum service level is once per week for garbage
Garbage Containers	Carts or dumpsters as negotiated between Licensee and customer
Recyclables Collection	Must make recycling available to all customers
Recyclables Containers	Carts or dumpsters as negotiated between Licensee and customer
Recyclables Collected	Negotiated between Licensee and customer
Bulky Waste Collection	Negotiated between Licensee and customer
Yard Waste Collection	Negotiated between Licensee and customer
Waste Excluded from Collection	Tires, hazardous, or special waste
Waste Segregation Required	Garbage, recyclables, bulk waste, and yard waste must each be collected separately and shall not be commingled with each other
Service Price	To be determined between Licensee and customer
Spillage and Litter	Must be cleaned up immediately with report to County
Complaints	Contractor to maintain a call center during collection hours and make monthly reports to County
Property Damage	Contractor responsible for repairs and must make monthly report to County. In the event of a dispute, County may make repairs and bill contractor
Missed Collection	Must be collected within 24-hours

Service Level Criteria	Approach
Insurance Requirements	Determined by County
Collection Equipment	Equipment shall be maintained in good repair. Equipment may be removed from service area if repeated violations of spillage and litter
Equipment Marking	All containers and equipment shall be marked with contractors name and contact number
Reports to County	1. Customer count (additions and deletions each month) 2. Complaints and resolution 3. Quantity of material collected and disposed/recycled
Disposal/Recycling Facilities	All collected solid waste material to be delivered to Caja Landfill, recycling is open market
Hours and Days of Collection	Monday through Sunday 4 am to 6 pm
Holiday Collection	To be determined between Licensee and customer
Notification	Customers must be notified annually of rates, service level, and any pending rate changes
Non-Collection Procedures	To be determined between Licensee and customer
Contractor's Recourse for Non-Payment	Contractor shall be allowed to remove containers from customer's site with notification to County
County Contract Administration Fee	To be determined

4.4 Collection Service Areas

As described above, the SDAs designated in the Growth Management Plan identify areas in the County where growth is occurring and where future growth should be directed. Areas designated SDA-1 and SDA-2 that are contiguous or in close proximity to the City present relatively densely populated areas that can provide optimum solid waste collection service areas.

4.4.1 Residential Solid Waste Collection Service Areas

County geographic information system (GIS) maps were analyzed in the development of residential solid waste collection service areas. As described earlier in the report, three service areas for residential waste collection are recommended. Approximately 15,700 residential dwelling units are located in SDA-1 and SDA-2 contiguous or in close proximity to the City. As shown in Table 4-4, three possible service areas with approximately the same number of residential units could be created. The three residential service areas designated North Service Area, Southeast Service Area, and Southwest Service Area are shown in Figures 4-4. Based on information presented in "Section 3Wasteshed Analysis," Louis Berger estimates that private solid waste haulers serve between 6,000 to 6,500 residences in the unincorporated County and collect approximately 14,000 to 15,500 tons of refuse and recyclables annually. Based on information gathered during the solid waste hauler interviews (see Section 4.10), the County may want to consider creating a fourth service area that targets allowing smaller solid waste hauling companies to compete for a franchise service area.

Table 4-4
Number of Housing Units

Residential Service Area	Total
North Service Area	5,011
Southeast Service Area	5,729
Southwest Service Area	5,006
Total	15,746

Source: County GIS Data

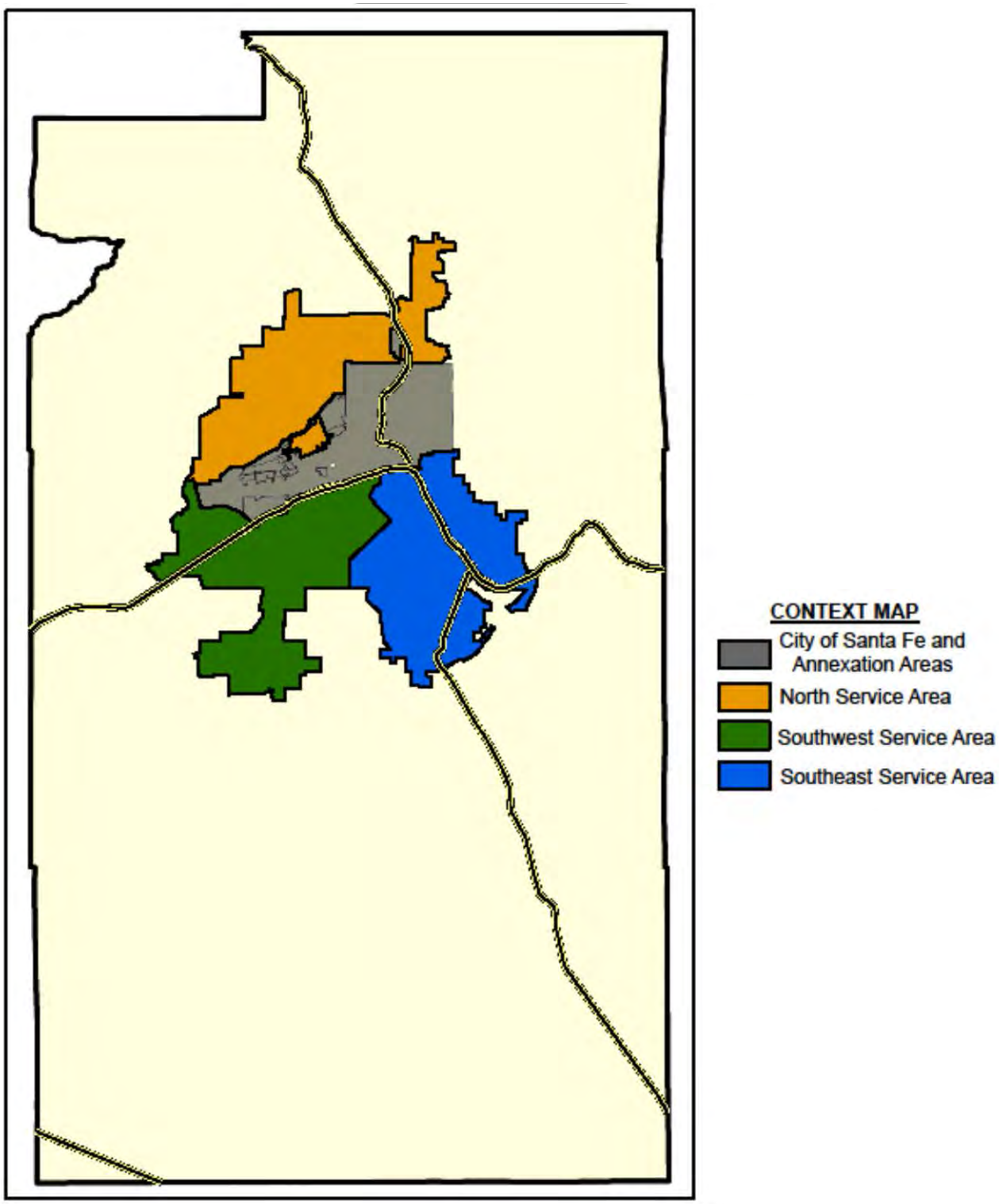

Figure 4-2. Residential Solid Waste Collection Service Areas

4.4.2 Commercial Service Area

The single commercial solid waste collection service area is proposed to overlay all three residential service areas combined. The Commercial Service Area shown in Figure 4-3 encompasses approximately 340 businesses properties (including commercial and industrial properties).[6]

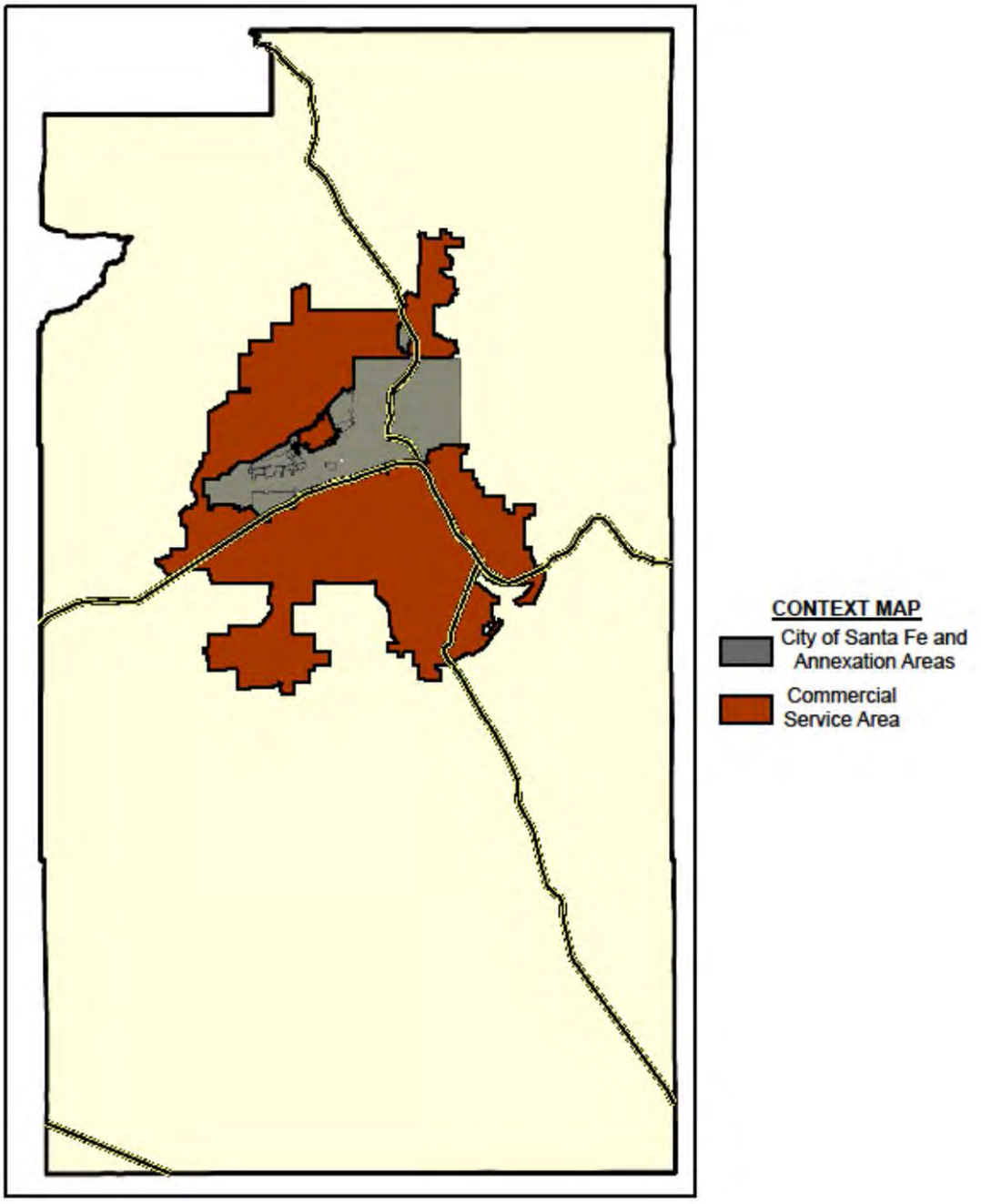

Figure 4-3. Commercial Service Area

[6] Based on County GIS data.

4.5 Solid Waste Ordinance Revisions

As described in Section 1, the County amended its Solid Waste Ordinance in May 2013 to address mandatory residential solid waste collection in areas of the unincorporated County that were or will be annexed into the City. To implement the Residential Contracts and Commercial Licenses the County would need to further update the Solid Waste Ordinance.[7] Key elements that must be included in a revised Solid Waste Ordinance to implement the new solid waste system are listed in Table 4-5.

Table 4-5
Elements of Solid Waste Ordinance Requiring Revision

Issues to Address
Update definitions to include new terms used in Residential Contracts and Commercial Licenses
Authorize BCC to police and regulate persons generating, collecting, and transporting waste in the unincorporated County
Authorize BCC to create and modify residential and commercial solid waste collection service areas
Create solid waste collection service areas
Authorize BCC to grant Residential Contracts and Commercial Licenses
Require solid waste collectors to have Residential Contracts and Commercial Licenses to provide service and their define rights and responsibilities
Require residents and businesses to contract for collection service only with Residential Contractors and Commercial Licensees
Authorize BCC to set, charge, and collect solid waste related fees
Establish that Residential Contractors and Commercial Licensees may be required to post bonds or letters of credit as established by the BCC (to assure conformance with agreements and assure payment of any assessed penalties)
Authorize BCC to set rates for residential solid waste collection service
Identify authorized disposal site(s) and residential recycling site(s)
Other issues may be addressed as determined by the County Attorney

[7] It is expected that the County Attorney will be responsible for the final development of any legal documents developed for the County. The outline of terms reflects Louis Berger' experience providing technical support in developing solid waste collection procurement documents.

4.6 Outline of Contract/License Terms

The Residential Contracts and Commercial Licenses would need to include additional language beyond the service level criteria developed above. The information in Tables 4-6 and 4-7 presents generic lists of the sections that could be included in the final agreements.[8]

4.6.1 Residential Contract Terms

Sections that may be incorporated into Residential Contracts are provided in Table 4-6.

Table 4-6
Outline of Residential Contract Terms

Section	Title	Description
TOC	Table of Contents	
Intro.	Recitals	Whereas clauses providing background for agreement
1	Definitions	Listing of all defined terms used in the contract
2	Contract	Describe the rights granted under the contract (e.g., exclusive right to collect residential solid waste), along with the limitations of the contract
3	Contract Term	Define the time period of the contract and any renewals
4	Service Area	Define the service area granted under the contract and describe how adjustments will be made to the service area, if any
5	Contractor's Obligations Prior to the Commencement Date	Require Contractor to provide a transition plan and identify transition period deadlines
6	General Scope of Contractor's Duties	General description of Contractors responsibilities
7	Contractor's Specific Collection Services	Detailed description of the scope of work to be performed by the Contractor. Need to be sure to identify any special collection circumstances that may exist (e.g., alley collection, small roadways, etc.)
8	Hours and Days of Collection Service	Define dates and time collection is allowed, identify any holidays
9	Schedules and Routes for Collection Service	Require hauler to provide information on how routes will be operated in the service area
10	The Customer List	Requirement for the Contractor to periodically provide a list of customers served to the County
11	Proper Collection Procedures	Describe Contractor's collection requirements

[8] It is expected that the County Attorney will be responsible for the final development of any legal documents developed for the County. The outline of terms reflects Louis Berger's experience providing technical support in developing solid waste collection procurement documents.

Section	Title	Description
12	Restriction On collection of Mixed Loads	Describe any materials that must be collected separately (e.g., requirement that recyclables may not be collected with garbage)
13	Non-Collection Procedures	Describe procedure the Contractor must follow if waste is left at the curb because it is not acceptable
14	Procedures for Missed Collection	Procedures Contractor must follow if waste is not collected as scheduled
15	Protection of Private Property	Describe Contractors responsibility to repair private property damages
16	Contractor's Access to Streets and Collection Containers	Grant Contractor right to access County streets to provide collection service
17	The County's Designated Facility	List the facilities where Contractors are allowed to deliver collected materials (e.g., Caja Landfill and BuRRT)
18	Spillage and Litter	Require Contractor to clean up spills and litter it causes
19	Exempt Waste	List wastes that are not required to be picked up
20	Contractor's Safety Program	Require each hauler to have a safety program
21	Contractor's Collection Plan	Require hauler to have a written collection plan
22	Ownership of Solid Waste and Recyclable Materials	Define that ownership of materials transfers from customer to hauler at time of collection
23	Set Out Procedures for Customers	Describe how customers shall prepare waste for collection. This will be different for resident, commercial, recycling, etc.
24	Collection Containers	Describe the types of collection containers to be used, who owns the containers, how they are distributed, etc.
25	Contractor's Vehicles and Collection Equipment	Requirements for the operation and maintenance of equipment to be operated by Contractor. Describe any required markings, cleanliness, etc. Describe if County wants to inspect vehicles periodically
26	Contractor's Personnel	Requirements for experience of management, training requirements, identification of points of contact, how employees should conduct themselves, minimum attire, any labor law restrictions and requirements
27	Contractor's Office	Require local office
28	Customer Relations and Handling Customer Complaints	Describe how customer complaints will be handled, local phone number, and dispute resolution
29	Contractor Relationship with County	Describe access County should have to Contractor's contacts, define County Manager as responsible official for contract management, County's right to inspect Contractor's operations and records

Section	Title	Description
30	Contract for Collection Service	Contractor will contract directly with customers for service. Describe the contract that Contractor must enter into with customers served, County has right to review and approve contract used to assure conformance with this contract, state terms for Contractor to bill customers, describe frequency of invoicing and whether invoicing is in advance or arrears, define circumstances for terminating service
31	Record Keeping and Reporting	List what reports the Contractor must make to the County and reporting frequency (e.g., monthly report listing customer served and amount invoice, customers added and terminated each month, quantities collected, recycled and disposed, complaints, property damage), explicitly state County's right to audit hauler's records
32	Public Notices and Educational Services	Identify what notices need to be provided to residents and when (e.g., commencement of service notification, annual notice of rates to customers, notices to new customers, notices required for changing collection days, holiday collection) and any educational
33	Contractor's Collection Service to County	Optional: Include any services to county that Contractor shall provide (e.g., service to County facilities or transfer stations)
34	Contractor's Emergency Service	Optional: Include any disaster recovery services that Contractor may provide to the County upon notice by County
35	Rates for Contractor's Service	All rates must be uniform to customers, refer to Contractor's proposed rates, describe rate increases (e.g., CPI or percent of CPI, fuel increase, adjustments to disposal rates) identify components of proposers rates (collection versus disposal), adjustments for change in law, if extraordinary rate adjustments can be requested
36	Payments to the County	Fee paid to County for administering the contract, and any other amounts due to the County (e.g., "Each Agreement Year, the Contractor shall pay to the County the sum of _____, which shall compensate the County for the administrative and other services provided by the County in connection with this Agreement")
37	Recycling Revenues	Contractor shall receive all recycling revenue, if any
38	Tipping Fees	Contractor responsible for paying all tipping fees
39	Administrative Charges	List of penalties that may be assessed to Contractor for failure to perform, describe the mutual agreement to penalties, procedure for assessing, appeal procedure, include penalties for failure to meet transition deadlines
40	Force Majeure	Describe force majeure
41	Beach and Termination	List grounds and procedure for breach and termination including failure to fulfil obligations, insolvency of Contractor, repeat violations
42	Operations During Dispute	Require Contractor to perform duties during a dispute
43	Dispute Resolution Procedures	Describe dispute resolution procedures
44	Contractor's Obligations Prior to Termination	Describe requirements for Contractor to assist in transfer of service at termination of agreement

Section	Title	Description
45	Indemnification and Hold Harmless	As determined by County Attorney
46	Contractor's Insurance	As determined by County
47	Performance Bond	If required
48	Parent Corporation Guarantee	As determined by County
49	Assignment or Transfer of Agreement	Contract may be assigned or transferred by Contractor only with approval of the County
50	Amendments to Agreement	List conditions for amending agreement
51	Governing Law and Venue	As determined by County Attorney
52	Compliance with Regulations	Require Contractor to comply with all applicable laws and regulations
53	Permits and Licenses	Describe permits and licenses required by Contractor
54	Other Terms and Conditions	As determined by County Attorney, may include: Headings, Construction, Survivability, Severability, Sovran Immunity, Remedies, Equal Opportunity Employment, etc.
55	Agreement Documents	Describe any associated documents that are part of the agreement (e.g., request for proposal, Contractor's proposal, attached maps)
56	Notice to Parties	Notices
57	Exhibits	Exhibits

4.6.2 Commercial License Agreement Terms

Sections that may be incorporated into Commercial Licenses are listed in Table 4-7.

Table 4-7
Outline of Commercial Contract Terms

Section	Title	Description
TOC	Table of Contents	
Intro.	Recitals	Whereas clauses providing background for agreement
1	Definitions	Listing of all defined terms used in the license
2	License	Describe the rights granted under the license (e.g., right to collect commercial solid waste), along with the limitations of the license
3	License Term	Define the time period of the license and any renewals
4	Service Area	Define the service area granted under the license and describe how adjustments will be made to the service area, if any
5	General Scope of Licensee's Duties	General description of Licensees responsibilities

Section	Title	Description
6	Licensee's Specific Collection Services	Detailed description of the scope of work to be performed by the Licensee. Need to be sure to identify any special collection circumstances that may exist (e.g., alley collection, small roadways, etc.)
7	Hours and Days of Collection Service	Define dates and time collection is allowed, identify any holidays
8	Proper Collection Procedures	Describe Licensee collection requirements
9	Restriction On collection of Mixed Loads	Describe any materials that must be collected separately (e.g., requirement that recyclables may not be collected with garbage)
10	Protection of Private Property	Describe Licensee responsibility to repair private property damages
11	Licensee's Access to Streets and Collection Containers	Grant Licensee right to access County streets to provide collection service
12	The County's Designated Facility	List the facilities where Licensees are required to deliver collected materials (e.g., Caja Landfill for solid waste)
13	Spillage and Litter	Require Licensee to clean up spills and litter it causes
14	Exempt Waste	List wastes that are not required to be picked up
15	Ownership of Solid Waste and Recyclable Materials	Define that ownership of materials transfers from customer to hauler at time of collection
16	Collection Containers	Describe the types of collection containers to be used, who owns the containers, how they are distributed, etc.
17	Licensee's Vehicles and Collection Equipment	Requirements for the operation and maintenance of equipment to be operated by Licensee. Describe any required markings, cleanliness, etc. Describe if County wants to inspect vehicles periodically
18	Licensee's Personnel	Requirements for experience of management, training requirements, identification of points of contact, how employees should conduct themselves, minimum attire, any labor law restrictions and requirements
19	Licensee's Office	Require local office
20	Customer Relations and Handling Customer Complaints	Describe how customer complaints will be handled, local phone number, including dispute resolution
21	Licensee Relationship with County	Describe access County should have to Licensee's contacts, define County Manager as responsible official for contract management, County's right to inspect Licensee's operations and records

Section	Title	Description
22	Contract for Collection Service	Licensee will contract directly with customers for service. Describe the contract that Licensee must enter into with customers served, County has right to review and approve contract used to assure conformance with this license, state terms for Licensee to bill customers, describe frequency of invoicing and whether invoicing is in advance or arrears, define circumstances for terminating service
23	Record Keeping and Reporting	List what reports the Licensee must make to the County and reporting frequency (e.g., monthly report listing number of customer served each month, quantities collected, recycled and disposed, complaints, property damage), explicitly state County's right to audit hauler's records
24	Public Notices and Educational Services	Identify what notices need to be provided to residents and when (e.g., commencement of service notification, annual notice of rates to customers, notices to new customers, notices required for changing collection days, holiday collection) and any educational support that must be provided to the County
25	Rates for Licensee's Service	Rates to be negotiated with customers
26	Payments to the County	Fee paid to County for administering the contract, and any other amounts due to the County (e.g., "Each Agreement Year, the Licensee shall pay to the County the sum of _____, which shall compensate the County for the administrative and other services provided by the County in connection with this Agreement.
27	Tipping Fees	Licensee responsible for paying all tipping fees
28	Administrative Charges	List of penalties that may be assessed to Licensee for failure to perform, describe the mutual agreement to penalties, procedure for assessing, appeal procedure, include penalties for failure to meet transition milestones,
29	Force Majeure	Describe force majeure
30	Breach and Termination	List grounds and procedure for breach and termination including failure to fulfil obligations, insolvency of Licensee, repeat violations
31	Operations During Dispute	Require Licensee to perform duties during a dispute
32	Dispute Resolution Procedures	Describe dispute resolution procedures
33	Indemnification and Hold Harmless	As determined by County Attorney
34	Licensee's Insurance	As determined by County
35	Assignment or Transfer of Agreement	Contract may be assigned or transferred by Licensee only with approval of the County
36	Amendments to Agreement	List conditions for amending agreement
37	Governing Law and Venue	As determined by County Attorney
38	Compliance with Regulations	Require Licensee to comply with all applicable laws and regulations

Section	Title	Description
39	Permits and Licenses	Describe permits and licenses required by Licensee
40	Other Terms and Conditions	As determined by County Attorney, may include: Headings, Construction, Survivability, Severability, Sovran Immunity, Remedies, Equal Opportunity Employment, etc.
41	Agreement Documents	Describe any associated documents that are part of the agreement (e.g., request for proposal, Licensee's proposal, attached maps)
42	Notice to Parties	Notices
43	Exhibits	Exhibits

4.7 RFP Outline

It is expected that the County would conduct a competitive procurement to award Residential Contracts and Commercial Licenses. Through an RFP process, the County could select the best qualified firms to provide solid waste collection services. The County's standard procurement processes, forms, and timetables would provide the basis for the RFP process. Developing the draft Residential Contract or Commercial License and including them in the residential and commercial RFPs respectively, will allow for a streamlined process and will reduce uncertainty on the part of prospective proposers. The final RFP developed will depend on particular requirements of the County's procurement process, but general issues that should be considered in the solid waste collection service procurements are outlined in Table 4-8.

Table 4-8
RFP Outline

RFP Element	Description
General County Procurement Elements	Include standard County procurement terms and conditions, standard procurement forms, insurance requirements, etc.
Schedule of Events	Procurement Timeline
Scope of Work	Provide a brief scope of work explanation
Draft Residential Contract or Commercial License	This will provide an explicit list of contractor performance expectations
Required Technical Submittals	To include, but not limited to: 1. Experience and qualifications 2. Approach (e.g., equipment, staffing, billing procedures, etc.) 3. Financial statements/Bonding 4. References for similar work 6. Exceptions taken 7. Litigation and compliance history 8. Price Proposal (not for Commercial License)
Unbalanced Proposals	The County should reserve the right to reject proposals that present pricing that is not fair and equitable

4.8 Evaluation Criteria

Different communities approach the evaluation of RFPs and selection of the "best" proposers in a number of different ways. In the case of awarding Residential Contracts, it is recommended that only one firm would be awarded a given Residential Service Area, and no solid waste hauler should be awarded contracts for more than two of the three Residential Service Areas. Also, price would need to be a factor in the evaluation of residential service proposals. For Commercial Licenses, multiple agreements would be awarded. The County would need to determine if all proposers that meet minimum criteria will be awarded Commercial Licenses, or if only a limited number of top proposers are awarded Commercial Licenses. A generic evaluation criteria model is shown in Table 4-9.

Table 4-9
Evaluation Criteria

Compliance with RFP	Mandatory
Cost	20 to 50%
Experience	10 to 30%
Approach	10 to 30%
Financial History	0 to 20%
References	10 to 30%

4.9 Impact on County Resources and Personnel

Implementing a solid waste management system will have an impact on County resources and personnel. The actual level of participation by County staff in overseeing the Residential Contracts will depend on the final terms developed for the program. Staff time will need to be committed to prepare the ordinance updates and develop the contract and RFP. Also, staff time will be required to conduct outreach efforts as the solid waste management system is being developed.

A monitoring program will be necessary to assure the solid waste haulers are conducting activities in accordance with their Residential Contracts and to receive periodic reports and monitor hauler performance. Typically, once the system is fully implemented, such program management will likely require no more effort than one-quarter of an employee's time on an annual basis.

4.10 Initial Discussions with Private Haulers

On January 28 and 29, 2014, representatives of Louis Berger and County staff met with representatives of solid waste hauling companies that operate in Santa Fe County. During the meetings, the County's potential approaches to implementing a solid waste management system, and in particular Residential Contracts as described in this section, were discussed with solid waste management firms. Firms that Louis Berger and the County met with were:

- Waste Management Inc.
- East Mountain Disposal
- MCT Waste Inc.
- Ibarra's Trash Service

Important issues that were identified during the meetings are listed below this paragraph. In performing the work for "Section 3, Wasteshed Analysis," Louis Berger entered into confidentiality agreements with the solid waste haulers. During the discussions, certain sensitive topics such as number of customers served, areas served, etc. were addressed. So, in keeping with the spirit of the confidentiality agreements, items listed below are not attributed to any particular hauler or representative.

Items of note identified during discussions:

- All haulers indicated general support of a Residential Contract system as described in this Section.
- Different haulers have vastly different sizes of operation. The smallest hauler serves several hundred residential customers, while the larger firms serve several thousand. The smallest haulers would find it challenging to offer a proposal to serve several thousand households. In creating residential collection areas as described in Section 4.4.1, the County may want to consider creating one smaller area that smaller haulers could offer proposals on.
- Haulers that currently collect recyclables curbside do not collect glass. Haulers recommended that any Residential Contract exclude glass from curbside recyclables collection. All haulers supported collecting paper and non-glass containers in a single stream.
- Haulers generally believed that recyclables could be collected every other week.
- All haulers were amenable to delivering collected materials to BuRRT or the Caja del Rio Landfill.
- Haulers recognized the need to provide special services to residents unable to place solid waste carts roadside due to medical limitations. Such special services could be provided at "no additional charge" if the County reviewed and approved requests from residents for special services based on a physician's recommendation or other appropriate documentation.
- Haulers did not agree on the number of different container sizes to include in the residential service. One hauler indicated that its collection vehicles could not easily accommodate different sized collection carts and only provided one size cart (96-gallon), while another indicated that it provides three different size carts (48 -, 64 -, and 96-gallon) to its customers. Louis Berger recommends that no more than two sizes (64- and 96-gallon) be made available to residents, with the system potentially allowing a smaller container at a later time.
- Some haulers indicated that they have existing contracts with homeowners associations (HOA) to provide service to all residents in the development. Louis Berger recommends that the County Attorney's office research and provide direction on how this issue should be addressed in the RFP and contracting process.

- Haulers were generally supportive of providing bulky item (e.g., furniture, white goods without Freon, etc.) collection, as long as reasonable limitations were placed on the program. Limitations should include the exclusion of contractor generated construction debris, limiting set-out amounts, requiring residents to call in to schedule collection, providing bulky item collection a limited number of times each years (e.g., monthly, quarterly, or semi-annually). The inclusion of bulky item collection will result in an increased cost to the resident (over refuse and recycling collection, only). One hauler uses a subcontractor to collect bulky waste from its current customers.
- All haulers interviewed would be interested in providing service in the areas discussed in this section.
- Haulers requested that the price paid to the hauler should increase at some inflation rate. It was noted that solid waste collection is heavily dependent on diesel fuel, so the inflation index should accommodate diesel fuel, labor, and costs particular to refuse collection (often referred to as a refuse rate index).
- One hauler asked if reporting gross receipts tax in Santa Fe County was an important consideration. The company indicated that it's understanding is that a company's trucks need to be physically housed in Santa Fe County for the County to collect the gross receipt tax. The County may want to consider requiring haulers to locate its operations headquarters in Santa Fe County to collect the tax.
- One hauler indicated that the company was transitioning to compressed natural gas (CNG) collection vehicles and asked if it could cooperate with the County on a fueling location for its trucks. Louis Berger recommends that the County assess its ability to share any fueling location with a private company.
- It was mentioned that private roads, unmaintained roads, and hazardous roads should be considered as reasons for exempting residences from collection. Haulers were advised that the County would expect that they have smaller collection vehicles available that would be able to provide service to difficult to serve areas.
- A discussion was held regarding New Mexico State Procurement Code 13-1-98. Exemptions from procurement code states: "The provision of the Procurement Code shall not apply to: . . . D. purchases of publicly provided or publicly regulated gas, electricity, water, sewer and refuse collection services; . . ." Louis Berger recommends that the County Attorney research this provision and provide an opinion concerning its applicability to any solid waste procurement process.
- One large hauler stated that it would prefer to be able to propose on all three service areas, and that if it was not able to be awarded at least two areas, it might not propose because it could not maintain a cost-effective operation.
- One hauler mentioned that allowing haulers to individually negotiate with residents to provide services in addition to basic refuse and recycling collection could allow a higher level of service to certain customers upon request. Elective services could include non-medical back-door service, collection on long driveways, excessive bulky waste collection, etc.

4.11 Findings and Recommendations

1. **If the implementation of a solid waste management system (i.e. contract, franchising) is approved by the BCC, the County should immediately move forward with planning the development of such a system.**

   The benefits of such a system are numerous:

   - Elimination of multiple vendors serving the same area (i.e. reduced wear and tear on County roads, reduced air emissions)
   - Provision of curbside recycling
   - Increased diversion rate
   - Increased pricing competition

Section 5
SUMMARY OF KEY RECOMMENDATIONS

Listed below is a summary of our key recommendations, summarized by section. Where applicable, we have provided a conservative estimate of the potential "Annual Cost Savings" and/or "One Time Cost Savings". For more information on a particular recommendation, refer back to the appropriate section.

Section 1: Cost of Service and Funding Options	
Recommendation	Benefit/Purpose
Create rate parity between senior and low income rates	There is no basis to have a variance between senior citizen rates and low income rates.
Eliminate the $.03 per pound rate	The elimination of this rate will not in any manner adversely impact the refuse services provided by the County. No one uses this rate.
Educate citizens about the County's CCC program	It is important for the long-term success of the County's rural CCC system to be viewed by County citizens as a valuable service, and one that must be paid for in an equitable manner.
Monitor monthly the purchase of permits, by type	This will allow the County to track its revenue and better understand the types of permits being purchased by its citizens.
Recommend a 30% recovery of costs through permit fees (see Attachment A)	Implementation of the rates in Attachment A will generate an additional $450,000 in permit revenue by FY 2018 and more equitably distribute the costs of the CCC system among users and non-users.

Section 2: Operational Assessment of County CCCs				
Recommendation	Location	Benefit	Priority Level	Implementation Time Frame
Develop and implement operational metrics to measure efficiency.	All CCCs	Improved operation	High	Now – 6 months
Improve customer accessibility to drop-off areas.	All CCCs	Improved operation, improved site safety	High	Now – 1 year
Optimize payloads to meet or exceed industry standard.	All CCCs	Increased efficiency	High	Now – 1 year
Modify rate structure.	All CCCs	Improved clarity, equality and cost recovery	High	Now – 1 year
Cancel purchase of one walking floor transfer trailer and one transfer trailer cab.	Eldorado and Jacona	Save $150,000	High	Now

Section 2: Operational Assessment of County CCCs (cont'd)				
Recommendation	Location	Benefit	Priority Level	Implementation Time Frame
Consider reducing days or hours of operation.	San Marcos	Save $10,000 - $30,000	High	Now – 1 year
Consider reducing days or hours of operation.	Stanley	Save $10,000 - $30,000	High	Now – 1 year
Close or relocate all CCCs currently on Pueblo land.	Jacona and Tesuque	Improved operation	High	Now – 2 years
Relocate current center to new site.	Jacona	Increased capacity and improved operation	High	Now – 2 years
Improve CCC signage.	All CCCs	Improved operation, less contamination	Medium	Now – 1 year
Expand HHW materials collected at specific CCC locations.	Eldorado and Jacona	Added service, capture more material	Medium	6 months – 1 year
Consider closure of center.	Nambe	Save $46,598	Medium	After opening of new Jacona center
Consider closure of center.	Tesuque	Save $65,616	Medium	After opening of new Jacona center
Paint all containers. Refuse – one color Recycling – one color	All CCCs	Improved perception, less contamination	Medium	In next 12 months
Potential Cost Savings: One Time: $150,000 Annual: $132,214 - $172,214				

Section 3: Wasteshed Analysis (County Service Levels and Material Flow)	
Recommendation	Benefit/Purpose
Consider implementing a solid waste management system in the unincorporated County.	Such a system will enhance the County's ability to gather data concerning solid waste management in the unincorporated County.
Develop a comprehensive data management system.	Such a system could be based on a comprehensive, web-based system, that would allow all three entities to seamlessly access and monitor information on the generation, flow, and disposal of refuse and recyclables in Santa Fe County.
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.	

Section 4: Solid Waste Management System	
Recommendation	Benefit/Purpose
If the implementation of a solid waste management system (i.e. contract, franchising) is approved by the BCC, the County should immediately move forward with planning the development of such a system.	The benefits of such a system are numerous: • Elimination of multiple vendors serving the same area (i.e. reduced wear and tear on County roads, reduced air emissions) • Provision of curbside recycling • Increased diversion rate • Increase pricing competition
Potential Cost Savings: The consultant has not provided a cost savings with these recommendations, to be conservative. However, decreased costs and/or increased revenues will result from implementing these recommendations, along with increased operational efficiencies.	

County - Overall Potential Cost Savings	
One Time:	$150,000
Annual:	$132,214 - $172,214

Attachment A

Table 1-9
Proposed Rates to Achieve 30% Recovery of the Cost of Service by FY 2018 through Permit Revenue (Option B)

	Current Rate	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2106	Year 4 FY 2017	Year 5 FY 2018	Cost Per Trip Year 5
1 Trip Permit	$15.00	$15.00	$16.00	$17.00	$18.00	$19.00	$19.00
6 Trip Permit	n/a	30.00	40.00	53.00	71.00	95.00	15.83
12 Trip Permit	n/a	50.00	65.00	85.00	111.00	145.00	12.08
24 Trip Permit	75.00	80.00	98.00	120.00	147.00	180.00	7.50
24 Trip Senior Citizen/Low Income	70.00	70.00	88.00	110.00	137.00	170.00	7.08
5 Bag Tags	5.00	5.00	6.00	7.00	8.00	9.00	1.80

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SANTA FE SOLID WASTE MANAGEMENT AGENCY
CITY OF SANTA FE AND SANTA FE COUNTY

Solid Waste Assessment & Management Study

Systemwide Section

FINAL REPORT | December 2014

NewGen Strategies & Solutions

Louis Berger

Solid Waste Assessment & Management Study

Santa Fe Solid Waste Management Agency
City of Santa Fe and Santa Fe County

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SANTA FE SYSTEMWIDE ISSUES

Introduction

As part of this study, Louis Berger was requested to address a number of issues that are interrelated across the three governmental entities within Santa Fe County that provide solid waste services. Based on our experience in dealing with solid waste utilities, we were asked to assess those issues that directly impact from a system perspective the effectiveness of these three solid waste utilities in serving their citizens in a cost effective and efficient manner, while meeting the goals that are set forth by the various governmental entities with regard to types of services offered, recycling goals, etc.

Based on the scope of services as developed at the beginning of this project, we have addressed in this section the following systemwide issues:

- Education and Outreach Programs
- Flow Control
- Consolidation Opportunities
- Recycling Goals
- Out-of-County Waste
- BuRRT Reverting Back to City Control
- Pay-As-You-Throw Rates

Education and Outreach Programs

At present, all three governmental entities are involved in education and outreach. While it is admirable to have all three "preaching the message" with regard to how to properly dispose of refuse, household hazardous waste, e-waste, and how to properly recycle, we have found inconsistencies in the "messaging" that is being provided. While fundamentally the messages are consistent, we have found for instance that the City, County, and Agency will sometimes have minor differences stated in brochures or signage with regard to the materials that are accepted for recycling. This can lead to frustrated citizens that either quit recycling or recycle improperly, leading to higher contamination rates at the MRF, and a potentially lower price for baled materials. This can also lead to a lower diversion rate if people stop recycling because they are confused.

Listed below are some recommendations with regard to education and outreach for the City, County, and Agency.

Education and Outreach Funding. Louis Berger has found that communities that have successful recycling programs are typically willing to spend the necessary funds to educate their citizens. We often times see that these communities spend on average $2 to $3 per citizen, per year. With approximately 145,000 citizens residing in Santa Fe County that would imply the three governmental entities should spend $290,000 to $435,000 per year on education.

Consistent Messaging and Signage. It is essential that the same materials are collected at the Citizen Convenience Centers (CCCs) in the unincorporated portions of the County as well as by the City, and at BuRRT. This will ensure that consistent messaging and signage is used at City, County and Agency facilities to avoid confusion as to "what facilities" take "what materials". If all facilities take all the same materials, this will reduce the confusion with regard to the messaging.[1]

Monthly Meetings and an Education/Outreach Manager. In discussions with the various governmental entities we found that there are not regularly scheduled meetings between the entities to discuss education and outreach issues. We would recommend that each entity have a person (and an alternate) that would attend a monthly meeting to address consistency in messaging, signage and how to increase recycling in a consistent manner. We would also recommend that at some point within the next 12 months someone be placed in charge to ensure that consistent messaging is occurring throughout the City, County and Agency. Our recommendation would be that this person be located in the Agency since they have a person that is primarily dedicated to this task. In addition, since the Agency is ultimately responsible for the disposal or proper diversion of all materials deposited at Agency operated facilities it allows them the best opportunity to monitor the success of the "messaging" as materials are brought in by City and County collection vehicles (both with regard to waste and recyclables). Louis Berger would recommend that some budget monies be set aside to retain an advertising/public outreach firm (similar to the City water and wastewater utility) to assist in consistency of the messaging.

Flow Control

One of the issues that Louis Berger was asked to address during the course of this Study was the issue of flow control and whether it should be considered as a potential tool to increase tonnage at the Caja del Rio Landfill. Louis Berger has extensive experience in helping communities that desire to implement a flow control mechanism do so in a legal manner. We are also aware of some of the pitfalls of implementing such a mechanism. Listed below is a brief summary on the topic of Flow Control and Louis Berger's ultimate recommendation concerning the use of such a mechanism.

Flow control is a controversial mechanism that has been battled in the court system since the mid 1990's. A recent example is a ruling in 2007, when the United States Supreme

[1] The one exception to this recommendation is that it is acknowledged that presently not all the CCCs collect the same materials for diversion due to the remoteness of some of the CCCs and/or the fact that the facilities are very small and take very little waste, so to be cost effective some of the facilities do not take green waste or oil & antifreeze (County Section – Table 2-3).

Court validated a flow control law favoring a public entity in the United Haulers Association v. Oneida-Herkimer Solid Waste Management Authority case. The Supreme Court decided that local "government's important responsibilities" include protecting the "health, safety and welfare of its citizens" and that "waste disposal is both typically and traditionally a local government function." (*United Haulers Ass'n, Inc. v. Oneida–Herkimer Solid Waste Mgmt. Auth.*, 127 S. Ct 1786, 1795 -96 (2007)).[2]

Flow control ordinances are a tool to assist local governments, such as the Santa Fe Solid Waste Management Agency (Agency) with waste management. *Flow control refers to state or local laws that direct where waste materials must be disposed or processed.* It should be noted that the South Central Solid Waste Authority just recently successfully implemented flow control for Dona Ana County, New Mexico. Listed below is a brief summary of the advantages and disadvantages of flow control as they apply to the flow of waste within Santa Fe County.

Advantages of Flow Control

Flow control provides numerous advantages to local governments in the management of waste. This section discusses the advantages of flow control and how they relate to the Agency.[3]

- **Allows better planning to ensure sufficient disposal capacity** – With a flow control ordinance, the Agency could proactively plan to accept residential and commercial waste that is currently disposed outside of the County. A flow control ordinance would allow the Agency to ensure long term landfill capacity for waste generated in the City of Santa Fe and in the unincorporated areas of the County and thus allow for proper long-term planning because the waste stream would be guaranteed.
- **Reduces costs and the environmental impacts of hauling solid waste long distances** – With a local disposal facility, there would be no need to transport the waste longer distances, which would therefore decrease costs and environmental impacts. This would positively impact air quality in Santa Fe County due to decreased emissions.
- **Provides convenient access to disposal** – The location of the Caja del Rio Landfill provides convenient access for disposal of waste by businesses and haulers operating in the City of Santa Fe area.
- **Ensures investment in landfill is recovered, keeping rates lower for all customers** – Ongoing capital improvements for a landfill are typical within the industry, and therefore knowing the amount of waste that is going to be landfilled is critical to planning in a cost effective manner. If the Agency were to make capital upgrades in anticipation of accepting additional material, but for some reason the waste were to be hauled to a landfill other than the Caja del Rio Landfill, the Agency would have to increase rates to residents and current landfill customers to recover the investment.

[2] Source: http://www.supremecourtsus.gov/opinions/06pdf/05-1345.pdf

[3] We will refer to the Agency since they operate the Caja del Rio Landfill. Ultimately the City, and perhaps the County, would need to support the use of such a mechanism via passage of an ordinance or resolution.

With flow control, the Agency would have the assurance that the additional waste will be disposed at the Caja del Rio Landfill, and can evenly spread these costs to all of the disposal customers.

- **Helps increase recycling –** Flow control can also help increase recycling rates since the City would be able to direct where waste would go. The Agency currently does not have any control concerning where materials go for disposal or recycling processing. Flow control would help the City to develop programs and/or partner with the private sector to increase the diversion of key components of the commercial waste stream (e.g. construction and demolition (C&D) materials, green waste, food waste). Specifically increasing the quantity of commercial waste being recycled will be important since the feasibility of commercial recycling systems become more viable when there is a greater quantity of material being processed.

Disadvantages of Flow Control

Generally, there are some potential disadvantages to flow control. As with all circumstances, it is important to see if and to what extent the general disadvantages apply to Santa Fe County's situation. The general disadvantages to flow control and a brief discussion on the relevance to the Agency are listed below.

- **Potential for legal challenges** – Historically, private solid waste companies have filed legal challenges opposing flow control regulations as interfering with interstate commerce. The U. S. Supreme Court decision in the United Haulers Association case in 2007 and subsequent case law has affirmed local government's ability to implement flow control ordinances. However, even in light of the Supreme Court decision, the City may still face constitutional and contractual legal challenges if the City chooses to enact a flow control ordinance.
- **Reduces choices for haulers** – If implemented, flow control would require waste generated within the City to be disposed at Caja del Rio Landfill. Haulers would no longer be able to haul waste to other landfills in New Mexico.
- **May require increased enforcement** – As with other regulations, flow control may require additional enforcement on the behalf of the City. The City may require increased enforcement to ensure solid waste material generated within the City is disposed at the Agency's landfill.
- **Clarification of the area covered by the flow control ordinance** – Because of the unique nature of the City, County, and Agency the issue would become does a flow control ordinance refer only to waste and recyclables collected within the City of Santa Fe, or does it also apply to materials collected in the northern part of the County, outside of the City. If a flow control ordinance were implemented for the entire County, it is very likely that the ordinance may be challenged because haulers within the southern portion of the County would have to haul their waste to the Caja del Rio Landfill when other more convenient options are available to them outside of the County.

Louis Berger's Recommendation

Pass a City Ordinance Requiring all construction and demolition waste to be landfilled at Caja del Rio Landfill. Louis Berger would recommend that the Agency not pursue a flow control ordinance, but rather we would recommend the City pass an ordinance requiring only construction and demolition (C&D) projects undertaken within the City be required to dispose of their waste at the Caja del Rio Landfill (for both governmental buildings – schools, city, county buildings; as well as for all private development). Louis Berger would emphasize that the vast majority of small private haulers are already bringing their waste to the Landfill, it is only some of the major haulers that are taking some of their C&D waste to other landfills in New Mexico. Finally, if the City moves forward with this recommendation, extensive outreach to the C&D haulers is required, and it is essential that all City related ordinances/permits issued regarding solid waste, building permits, land use, etc. are consistent with the flow control ordinance and specifically require all C&D waste be disposed of at the Caja del Rio Landfill.

Consolidation Opportunities

All three governmental entities are established to provide unique services to their respective customer base.

- **City** – solid waste services are structured to be provided to the citizens of the City of Santa Fe.
- **County** – solid waste services are structured to be provided to the citizens residing in both the rural and "urban" areas of the County, that are not within the city limits of Santa Fe.
- **Santa Fe Solid Waste Management Agency** – is focused on serving as a "consolidation point" for all refuse and recyclables from the City and County and then properly disposing of and/or recycling in the most cost effective manner.

While all three of these governmental entities provide different services, they do have some common overlapping "support" services. Some of these services include, but are not limited to: fleet services, customer service, human resources, budget/finance and certain managerial functions.

The question that has been posed by numerous individuals during the course of this Study is: "Does it make sense to consolidate the three solid waste services into one utility?"

In a consolidated municipal solid waste authority, such as the one shown in Figure 1, the economies of scale are best achieved when consolidating "common services" into one service function.

For instance, it makes sense to have all collection vehicles (both City and County vehicles) operated out of one "collection" function. This would allow to a certain extent the standardization of equipment (to the extent possible), which would potentially reduce the need for as many "back-up" vehicles, but more importantly would allow the service

function to share staff between both City and County collections services which will allow for great economies of scale when planning for sick time, vacation time, etc.

In such a scenario, it would be recommended that there be one manager for each of the three (3) service functions: Collection, Facilities, and Support Services. Therefore, there would be one manager to oversee the Citizen Convenience Centers, BuRRT and the Caja del Rio Landfill. This would eliminate some of the issues that are currently dealt with when residents from the County want to bring refuse to BuRRT for disposal but are not able to use their punch ticket. In a consolidated system, this would not be an issue.[4]

Two of the areas where potentially there would be the greatest savings would be in consolidating administrative services (customer service, budgeting, human resources, etc.) as well as fleet services. By consolidating these services there would be significant opportunity to consolidate certain overlapping staff. In addition, the ability to reduce the amount of fleet services inventory maintained for vehicle repair would potentially be material.

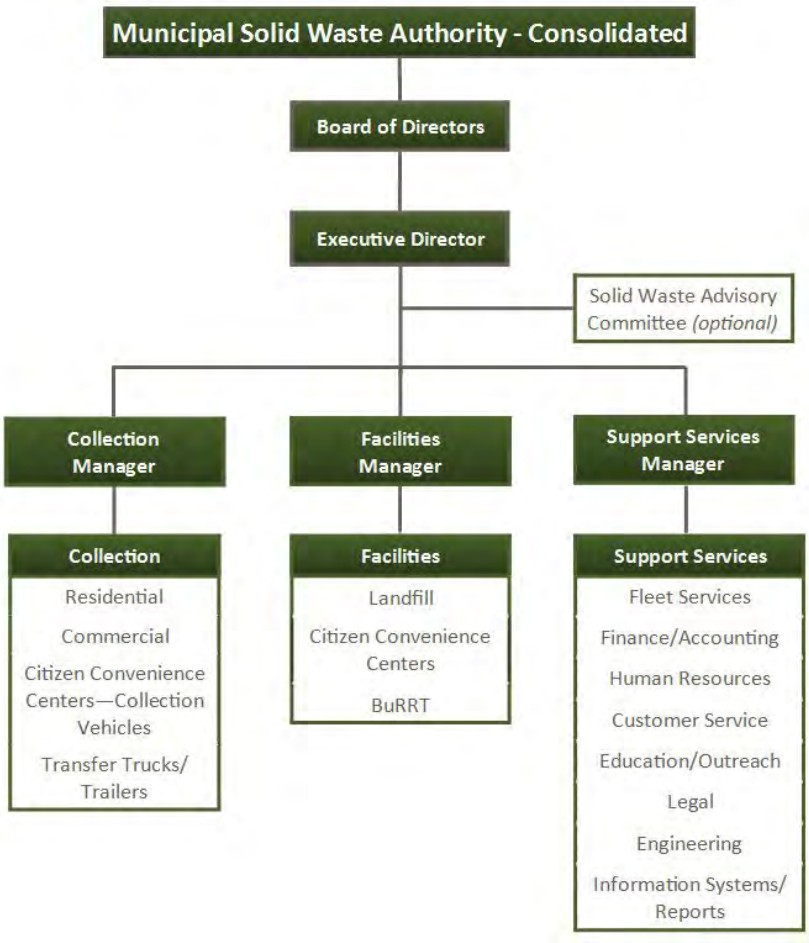

Figure 1. Consolidated Solid Waste Organization Chart

[4] The County and Agency are currently establishing a program to allow County punch tickets to be used at the BuRRT location.

While the opportunity for cost saving is real, the political reality associated with such an issue is most likely significant. In such a consolidation it would be necessary to transfer assets, personnel, etc. to one consolidated utility. To undertake such a transition would be a major commitment that both the City and County must be willing to undertake. In Louis Berger's opinion, we are not sure the commitment is there for such an undertaking.

Recycling Goals

One of the primary issues that has been brought up throughout the course of this Study by staff and citizens within the City and County is how to increase the overall diversion rate. As discussed within the City Sections (2.5.1 and 5.6) and County Section (3.5.2) of this Study, the overall recycling rate within the County is low by standards set within the State of New Mexico and what is being achieved at a national level within the United States.[5]

In February 2014, the U.S. EPA released its annual report, "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2012". The report states that in 2012, Americans generated approximately 251 million tons of trash, of which 65 million tons were recycled and 21 million tons were composted, equating to a 34.5% recovery rate.

So why is the City and County of Santa Fe stuck at 8 to 9%? Part of the reason is that Santa Fe County is somewhat removed from close proximity to the markets that demand these recycled materials. Transportation costs are one of the biggest costs and "limiting factors" when it comes to moving recyclable materials to markets where they are desired. That is why it is critical, as mentioned in the City Section of the report that the City focus on diverting materials in the most cost effective manner. That includes the implementation of automated cart collection for residential recycling and the expansion of the commercial cardboard recycling program. If those two items alone are implemented it is estimated that the City's recycling rate will increase from 8.5 – 9.0% to 16.0 to 20.0% (see Table 2-14 and Table 3-13 in the City Section). Coupled with the County moving to a franchised collection system in the "urbanized" areas of the County, which includes recycling, the overall recycling rate within the County will increase as well.

Based on our experience, with the implementation of automated recycling in the City and an expanded commercial recycling program; coupled with the County's franchising of collection within the urban areas of the County, an overall rate of 16 to 20% within the next 2 to 3 years is attainable in our opinion.

After those programs are implemented, a deeper examination of the opportunities with regard to food waste diversion from the "core areas" within the City of Santa Fe should be considered, but only after these other programs are effectively implemented. With food waste diversion added at a later date, it may be possible to reach 25 to 30% in a cost

[5] We would reference HM51 which recommends a task force develop recommendations for legislative and state agency actions to achieve the 50 percent recycling rate goal established in 1990 by the New Mexico Solid Waste Act.

effective manner by 2020 which would help strive toward meeting the goals stated in HM51.

Out-of-County Waste

The evaluation of out-of-county waste being brought into the Caja del Rio Landfill for disposal is discussed in detail in Section 5 of the Agency Report (Section 5.6). While bringing out-of-county waste into the Landfill would be managed by the Agency, it is important that the City and County recognize that from a systemwide standpoint it does have financial benefits for them. While the Agency is not likely to attract out-of-county waste on a long-term basis, at certain times, out-of-county customers contact the Agency with a request to deliver waste to the Landfill. Often these requests come from other area governments faced with operational issues related to high wind days, bad weather days, equipment down time, or similar problems. If the Agency was to charge current tip fees to such out-of-county customers, it could secure limited additional revenues without impacting current operations.

BuRRT Reverting Back to City Control

During the course of this Study there have been discussions by individuals within the City, as well as within the Agency that questioned whether the control and operation of BuRRT should revert back to the City. Listed below are some of the "reasons for" and "reasons against" the City operating and controlling BuRRT.

Reasons For City Control

- **City is the Largest User of BuRRT** – it makes sense that since the City provides the greatest amount of recyclables and waste to BuRRT that it be operated by the City.
- **BuRRT is Owned by the City and Leased to the Agency** – by the City taking over operation, they would no longer need to coordinate a lease with the Agency. There would be no debate over who is responsible for capital improvements, etc.
- **Encourage the City to Divert More Materials** – with the City operating BuRRT, there would be potentially a greater incentive for the City to divert more recyclables to BuRRT so the fixed costs of operating the MRF could be lowered, as well as less tipping fees paid to the Agency for landfill disposal.
- **Agency Could Lower its Tipping Fee at the Landfill** – with the Agency not required to cover the cost of operating BuRRT, the Agency could lower its tipping fee at the Landfill.

Reasons Against City Control

- **City Would have to Raise Solid Waste User Fees** – if the City were to take over operation of BuRRT, the City would need to raise its residential and commercial solid waste user fees to recover the costs of operating BuRRT, that are not currently covered by the user fees charged at BuRRT.

- **City may Need to Reimburse the Agency for Capital Improvements made by the Agency at BuRRT** – the Agency has invested significant funds in the MRF equipment and may require the City to reimburse the Agency for these costs. It is estimated that these costs may be $1 million to $2 million.[6]
- **A Transfer of Staff and Equipment from the Agency to the City Would Need to Occur** – this would require the transfer of staff and equipment from the Agency to the City and adjusting the City budget to reflect these additional capital and operating costs.
- **No Financial Benefit Would Likely Occur from a Change in Operational Control** – if this transfer of operational control from the Agency to the City were to occur, upon completion of this exercise, it is Louis Berger's opinion that very little would change from an operational standpoint or from a cost savings perspective.

Pay-As-You-Throw Rates

As discussed in the City Section of the Report, Cost of Service and Funding Options, Section 1.11, we would recommend the City move forward with the implementation of variable rates (i.e. Pay-As-You-Throw Rates). While this is a topic that is specific to the City and does not directly impact the County and the Agency, it is critical to the overall systemwide goal of increasing the recycling rate within Santa Fe County. Because a large percentage of the population of the overall County resides within the City, it is critical to motivate the citizens of the City of Santa Fe to increase the amount of material they recycle. Pay-As-You-Throw rates are commonly used throughout the United States to encourage recycling behavior, and is something the City of Santa Fe should implement no later than January 2016. Implementation of a variable rate structure will assist the City, County and Agency in increasing the overall recycling rate systemwide within the County.

[6] This is an approximate estimate, and further analysis would be necessary to finalize this number, however it is estimated to be in the range of the capital outlay by the Agency over the course of its operating BuRRT and the material recovery facility located at BuRRT.

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