City of Fayetteville Staff Review Form

2018-0070

Legistar File ID

2/6/2018

City Council Meeting Date - Agenda Item Only

N/A for Non-Agenda Item

Jeff Coles	1/19/2018	RECYCLING/TRASH COLLECTION (750)
Submitted By	**Submitted Date**	**Division / Department**

Action Recommendation:

A resolution to award RFP #17-16 and authorizing a contract with MSW Consultants for $47,932 for the development of a comprehensive rate study for the Recycling and Trash Collection Division and approving a ten percent (10%) Project and Contract Contingency.

Budget Impact:

5500.750.5080.5314.00	Solid Waste
Account Number	Fund
10004.1	Recycling and Trash Collection Rate Study
Project Number	Project Title

Budgeted Item?	Yes	Current Budget	$	150,000.00
		Funds Obligated	$	-
		Current Balance	**$**	**150,000.00**
Does item have a cost?	Yes	Item Cost	$	47,932.00
Budget Adjustment Attached?	NA	Budget Adjustment		
		Remaining Budget	**$**	**102,068.00**

V20140710

Previous Ordinance or Resolution # _____

Original Contract Number: _____ Approval Date: _____

Comments:

CITY OF FAYETTEVILLE ARKANSAS

CITY COUNCIL MEMO

MEETING OF FEBRUARY 6TH 2018

TO: Mayor and City Council

THRU: Peter Nierengarten, Sustainability and Resilience Director

FROM: Jeff Coles, Recycling and Trash Collection Director

DATE: January 18, 2018

SUBJECT: A resolution to award RFP #17-16 and authorizing a contract with MSW Consultants for $47,932 for the development of a comprehensive rate study for the Recycling and Trash Collection Division and approving a ten percent (10%) Project and Contract Contingency

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RECOMMENDATION:
Staff recommends the approval of a contract with MSW Consultants for the development of a comprehensive cost-of-service and rate study for the Recycling and Trash Collection Division.

BACKGROUND:
There has not been a comprehensive rate study conducted for Recycling and Trash Collection services since 1993.

DISCUSSION:
With extensive city growth, expansion of Recycling and Trash Collection services, and the recent adoption of the Waste Reduction, Diversion and Recycling Master Plan, staff believes that an updated rate structure is imperative to adequately fund existing and future solid waste services, foreseeable capital costs, and debt service. The recommended rate structures shall be based on cost of service, will be derived in an equitable and justifiable manner for existing and future Recycling and Trash Collections customers and shall be sufficient to meet the current and future revenue requirements of the City of Fayetteville's Recycling and Trash Division. The study will recommend rate structures that consider and make provisions for the following factors:

- Achieving the goals outlined in the Waste Reduction, Diversion and Recycling Master Plan adopted in February of 2017
- Current and future estimated costs to provide solid waste services in accordance with established and anticipated standards and regulations in addition to the adopted Solid Waste Reduction, Diversion and Recycling Master Plan.
- Future growth and demand
- Age and condition of the Recycling and Trash Collections fleet and other equipment

BUDGET/STAFF IMPACT:
Sufficient funds have been budgeted for the Recycling and Trash Collection Rate Study:
Acct # 5500.750.5080.5314.00 Project #10004.1

Attachments:
RFP 17-16 Contract with MSW Consultants

CITY OF FAYETTEVILLE ARKANSAS

Contract for Services:
Contract for Recycling and Trash Collection Rate Study
Between the City of Fayetteville, AR
AND MSW Consultants, LLC
Renewal Terms: N/A, Single Project

The agreement and contract for services is made this _____ day of _____, 2018 by and between the **City of Fayetteville, Arkansas (City)** located at 113 W. Mountain, Fayetteville, Arkansas 72701 and **MSW Consultants, LLC (MSW)** located at 11875 High Tech Avenue, Suite 150, Orlando, Florida 32817.

WITNESSETH:

WHEREAS, City has previously determined that it has a need for a professional to provide a rate study for the Recycling and Trash Collection Division; and

WHEREAS, City, after soliciting competitive proposals for recycling and trash collection rate study services pursuant to City of Fayetteville RFP 17-16 (herein after referred to as Request for Proposal or RFP), City hereby awards this Contract to MSW; and

WHEREAS, MSW has represented that it is able to satisfactorily provide these services according to the terms and conditions of the RFP, which are incorporated herein by reference, and the terms and conditions are contained herein; and

NOW THEREFORE, in consideration of the above and mutual covenants contained herein, the parties agree as follows:

1. Term: This Agreement shall be for a single project beginning with the effective date of this contract.
    a. This contract may be canceled by either party with thirty (30) days written notice.
    b. Services shall be performed in a timely manner.
    c. Failure of MSW to comply with any of the provisions of this Contract shall be considered a material breach of Contract and shall be cause for immediate termination of the Contract at the sole discretion of the City.
    d. In addition to all other legal remedies available to it, the City reserves the right to cancel or obtain from another source any services which have not been provided within the period of time stated in the proposal, or if no such time is stated, within a reasonable period of time from the date of order or request, as determined by the City.

2. Attachments: The Contract documents which comprise the contract between the City and MSW consist of this Contract and the following documents attached hereto, and made a part hereof:
    a. If there is a conflict between the terms of this Contract and the above referenced documents, the conflict shall be resolved as follows: the terms of this Contract shall prevail over the other documents, and the terms of the remaining documents shall be given preference in their above listed order.

i. Appendix A: Scope of Work
ii. Appendix B: The City's Request for Proposals, inclusive of all Addenda, RFP 17-16
iii. Appendix C: MSW's response to RFP 17-16

3. Insurance: MSW agrees to obtain, at its own expense, and to maintain at all times while work is being performed under this Agreement: Worker's Compensation as required by state law; Automobile Liability insurance on a per occurrence basis having aggregate of not less than $1,000,000; Commercial General Liability insurance on a per occurrence basis having an aggregate of not less than $1,000,000; and Professional Liability insurance of not less than $1,000,000.

4. Services to be Provided: MSW hereby agrees to provide the City with rate study services, as requested and more specifically outlined in the RFP, this Contract, and all subsequent documents that are incorporated into the terms and conditions and set forth the rights, duties and obligations of the parties pursuant to this Contract. During the terms of this Agreement, MSW shall:
   a. Maintain clear and open communication with the City on the progress of the rate study and activities provided under the scope of this contract;
   b. Provide all deliverables and services outlined in the attached Appendix A.

Standard of Care: MSW warrants that its services shall be performed by personnel possessing competency consistent with other professional consultants providing same or similar services. MSW shall exercise reasonable skill, care, and diligence in the performance of services and will carry out its responsibilities in accordance with customarily accepted professional practices.

5. Fees and Expenses: Total compensation for this contract shall be a not to exceed fee of $47,932 US DOLLARS. MSW shall track progress of the services identified in this contract and bill the City progress payments based on the percentage of work complete. The City shall make payment to MSW within thirty (30) calendar days of accepted invoice. At no time shall payments exceed the percentage of work completed.

6. Notices: Any notice required to be given under this Agreement to either party to the other shall be sufficient if addressed and mailed, certified mail, postage paid, delivery, e-mail or fax (receipt confirmed), or overnight courier.

7. Applicable Law: This Agreement shall be governed by and construed in accord with the laws of the State of Arkansas. Venue for all legal disputes shall be Washington County, Arkansas.

8. Entire Agreement: This Agreement sets forth the entire agreement and understanding between the parties on the subject matter of this Agreement. Neither party shall be bound by any conditions, definitions, representations or warranties with respect to the subject matter of this Agreement other than those as expressly provided herein.

9. Changes in Scope or Price: Changes, modifications, or amendments in scope, price, or fees to this Contract shall not be allowed without a prior formal amendment to the Contract approved by the Mayor and the City Council in advance of the change in scope, cost or fees.

10. Contract Administration: The Mayor or his/her Designated Representative shall be the Contract Administrator for this contract. MSW Principal or his/her Designated Representative shall be the primary contact for all matters pertaining to this contract. While it is understood that many facts pertaining to projects must be held in the strictest confidence, MSW's Principal or designee shall insure the Contract Administrator is kept abreast of details and progress made pertaining to the associated rate study to the greatest extent possible.

11. Freedom of Information Act: City contracts and documents prepared while performing city contractual work are subject to the Arkansas Freedom of Information Act. If a Freedom of Information Act request is presented to the City of Fayetteville, MSW will do everything possible to provide the documents in a prompt and timely manner as prescribed in the Arkansas Freedom of Information Act (A.C.A. §25-19-101 et. seq.), exempting those records that, "if disclosed would give advantage to competitors or bidders," as described in Section (b)(9)(A). Only legally authorized photocopying costs pursuant to the FOIA may be assessed for this compliance.

12. Assignment and Subcontracting: MSW shall perform this Contract. No assignment or subcontracting shall be allowed without the prior written consent of the City. In the event of a corporate acquisition and/or merger, MSW shall provide written notice to the City within thirty (30) business days of such notice of action or upon the occurrence of said action, whichever occurs first. The right to terminate this Contract, which shall not be unreasonably exercised by the City, shall include, but not be limited to, instances in which a corporate acquisition and/or merger represent a conflict of interest or are contrary to any local, state, or federal laws. Action by the City awarding a proposal to a Proposer, which has disclosed its intent to assign or subcontract in its response to the RFP, without exception shall constitute approval for purposes of this Agreement.

13. Independent Contractor: MSW is an independent contractor of the City and shall maintain complete responsibility for applicable state or federal law on unemployment insurance, withholding taxes, social security, or other industrial, labor or discrimination law for its employees. MSW is responsible for its agents, methods and operations.

14. Permits & Licenses: MSW shall secure and maintain any and all permits and licenses required to complete this Contract.

15. Indemnification: MSW shall indemnify, pay the cost of defense, including but not limited to attorneys' fees, and hold harmless the City from all suits, actions or claims of any character brought on account of any injuries or damages received or sustained by any person, persons, or property a result of or by, or in consequence of any neglect in safeguarding the work; or on account of any negligent acts, omissions, or willful misconduct of MSW; or by, or on account of, any claim or amounts recovered under the Workers' Compensation Law or of any other laws, by-laws, ordinances, order of decree, except only such injury or damage as shall have been occasioned by the sole negligence of the City of Fayetteville. The first ten

dollars ($10.00) of compensation received by MSW represents specific consideration for this indemnification obligation.

16. Special Conditions:
    a. N/A

IN WITNESS WHEREOF, the parties have executed this Agreement.

By:_____
Lioneld Jordan JORDAN, Mayor

By: John Culbertson
John Culbertson, Principal

ATTEST:

WITNESS: _____

By:_____
Sondra E. Smith, City Clerk/Treasurer

Date Signed: _____

Date Signed: 1/19/18

CONTRACT FOR RECYCLING AND TRASH COLLECTION SERVICES
APPENDIX A – SCOPE OF WORK

1. APPROACH

The broad objective of this agreement is to adequately fund existing solid waste services, foreseeable capital costs, and debt service that is derived in an equitable and justifiable manner from new and existing City Recycling and Trash customers.

Below is a brief outline of the expected tasks to be performed as part of this project. MSW Consultants (MSW) has developed a successful protocol for system evaluation and cost/rate studies. The phase and task list below attempt to concisely present MSW's approach to successfully complete the analysis. MSW shall remain available to modify and refine this approach based on input from the City.

The study shall include an assessment of the City's existing operations, to include at a minimum, an analysis of the City of Fayetteville's Recycling and Trash Collection user characteristics, a review of the City's current collection equipment, review of the City's current collection routes and timing, make recommendations for refinements and modifications to the collections system and provide feasibility level cost estimates for implementation of said recommendations.

The study is to be performed in conformance with the following policy directions:

A.) The recommended rate structures shall be based on cost of service and shall be sufficient to meet the current and future revenue requirements of the City of Fayetteville's Recycling and Trash Division.

B.) The study shall recommend rate structures that consider and make provisions for the following factors:

a. Achieving the goals outlined in the Recycling and Trash Collection Master Plan adopted in February of 2017

b. Current and future estimated costs to provide solid waste services in accordance with established and anticipated standards and regulations in addition to the adopted Solid Waste Reduction, Diversion and Recycling Master Plan.

c. Projected demands

d. Age and condition of the fleet

FUNDING REQUIREMENTS FOR FUTURE EQUIPMENT UPGRADESPHASE 1 PROJECT INITIATION & COLLECTION SYSTEM EVALUATION

Task 1.1 Information Request and Review of Data: MSW shall submit a written request for information to be provided by the City within 7-10 business days or as otherwise discussed. MSW will also review publicly available information provided on the City website. MSW will review the data collected by a previous City contractor as

provided by the City. A request for recent years' data to update and supplement existing data will include (but is not limited to) the following:

- Historical and projected operating expenses and revenues;
- Current rates and charges;
- Historical customer billing data;
- Capital asset and rolling stock lists;
- Capital Improvement Plans;
- Refuse, Recycling and Yard Waste route lists and maps; and
- Tonnage information for Trash, Recycling and Yard Waste Collection as well as tons received at the Transfer Station and Recycling Facility.

Task 1.2 Kick-off Meeting: MSW Consultants shall conduct a kick-off meeting to establish project expectations and schedules and review remaining data needs. Arrangements will be discussed and finalized regarding facility tours and asset assessment.

Task 1.3 Transfer Station, Recycling Center and Composting Facility Assessment: MSW professional staff will tour the Fayetteville Transfer Station, Material Recovery Facility and Composting Facility and assess current operations, configuration, condition and appropriateness of the facility equipment for supporting the current system and future needs. All parties are aware that MSW is not an engineering firm and will rely on the City's existing engineering plans and cost estimates as the basis for development of a financial model and rate schedule. MSW staff shall observe the condition of Transfer Station, MRF, Composting and Collections assets and fleet, for use in reviewing replacement schedules.

Task 1.4 Collection Operations Review: MSW Consultants shall conduct interviews and review routing, house count and tonnage information for the purpose of identifying and modeling current performance metrics relating to Residential Refuse, Residential Recycling, Commercial Refuse and Commercial Recycling. MSW Consultants shall provide on-route observations for select collection routes.

Evaluate Collection shall be inclusive of the following:

A. **Collection Evaluation:**
   a. Material by Program;
      i. Curbside Recyclables
      ii. Apartment Recyclables
      iii. Drop-Off Recyclables
      iv. Commercial Recyclables
      v. Residential Solid Waste
      vi. Commercial Solid Waste
      vii. Industrial Solid Waste
      viii. Yard Waste
   b. Bulk Item Pick-Up Program

c. Transfer Station Operation
d. Recycling Center Operation
e. Disposal of All Waste
f. Marketing and Processing of Recyclables
g. Yard Waste Composting Program
h. Food Waste Composting Program
i. Franchise Fees Collection and Administration
j. Planned Capital Improvements
k. Operations and Administration Program
l. Addition of Financial Analyst Positions

B. **Index Adjustments:** Recommendations shall also consider annual inflationary and indexed adjustments that address the overall policy direction outlined herein.

Task 1.5 Working Meeting: MSW Consultants shall assemble findings of the collection system evaluation and deliver a presentation to City staff. MSW Consultants shall compare the City's current recycling and trash collection services costs including but not limited to operations and capital improvements, against appropriate industry benchmarks. (It should be noted that this task does not include any specific research of specific cities, but rather identification of instances, if any, where City costs or operations deviate from what would be expected as a reasonable range.) MSW has budgeted and included for a web meeting to manage expenses, with the City arranging to review findings and provide feedback.

PHASE 2 COST AND RATE ANALYSIS

Task 2.1 Cost-of-Service Analysis: This task will develop a "bottom up" activity-based cost model. The activities to be modeled from the bottom up include all collection services differentiated by customer class, operation of the Transfer Station and disposal costs associated with the Eco Vista Landfill. A bottom-up model compiles the specific personnel, fleet, and management/administrative resources that are required to perform each of the activities of the Recycling and Trash Collection Division. These resources in turn have unit costs associated (capital and operating costs). The unit costs are organized by activity, and summed to generate a full system cost. The result of this effort is a line-item allocation of resources to functions, which in turn provides full costs of each function.

Task 2.2 Capital Improvement Program Review: A critical aspect of every solid waste management system is the maintenance of facilities, a functional collection fleet and container inventory. MSW shall review the City's capital replacement program and policies and develop a recommended capital replacement schedule for vehicles and equipment, as well as facilities (with input from applicable programs within the City's Recycling and Trash Division).

Task 2.3 Test Year Revenue Sufficiency Requirements: Under the current system, MSW shall develop test year revenue requirements and develop rates under the current rate structure that cover full costs.

Task 2.4 Rate Design Analysis: This exercise should define rate classes for residential and commercial customers, and provide the range of rate setting options available to recoup full costs. For the residential rates, it is expected that MSW will compare flat rates and a range of variable rate combinations. For commercial

collection, MSW shall calculate the appropriate container rate matrix, as well as the range of special service fees that are warranted using proprietary modeling.

Task 2.5 Working Meeting: MSW shall prepare and deliver a presentation to City staff to review key operational, cost-related, and rate-related findings, and to seek guidance on preferred rate modifications and a rate path.

PHASE 3 REPORTING/PRESENTATIONS

Task 3.1 Draft Report Finalizing Rates, Replacement Schedule and Recommendations: MSW shall incorporate the findings into a concise summary of the Analysis and developed Rate Path and replacement schedule for the City's programs with a Technical Report. The report shall include any recommendations for improvements to service levels, safety practices and administration of the system based on the findings and observations to this point, and provide at least two rate path alternatives along with a selection recommendation.

Task 3.1A: The recommend baseline rate structures shall provide and be inclusive of the following:

- Recommended rates shall be both quantifiable and descriptive
- Justification of differences in proposed rate structures for difference classes of customers shall be provided
- Recommended rate shall guarantee the sustainability of the City's recycling and trash services and provide for collection equipment upgrade and maintenance.
- Provide direct identification of revenues appropriated to major funded activities and infrastructure
- The benefits of proposed modifications shall be weighed against the financial impact on rate payers.
- The recommended rate structures shall result in no decrease in the stability of the revenue stream, as compared to the current structure. Consideration shall be given to finding past and future depreciation such as the necessary replacement or upgrade of facilities and equipment.
- The recommended rate structures shall be easy to administer, comprehendible and shall be fully compatible with the City's existing billing system.
- The recommended rate structure shall be provided through the next five calendar years, beginning with the year the rate is anticipated to be implemented.

Task 3.1B: In making rate structure recommendations, the final report shall explicitly include the following elements and analysis for the provided solid waste services:

- **Current Rate Structure** – Assess the current rate structure's performance as a baseline for comparing and justifying recommended changes.
- **Equity** – Assess the equity of recommended rate structures for all types of property ownership and user classes.
- **Sensitivity Analysis** – Assess the ability of the revenue stream generated by the recommended rate structures to continue to fully fund recycling and trash collection service costs. Include a sensitivity analysis where the long-term revenue generated under each alternative shall be

illustrated when confronted with the impacts of increased demand from growth or increased demand.

- **Rate Payer Education and Communication** – Recommend methods for communicating utility costs, including identification of actual costs of providing recycling and trash collection services.
- **Annual Enterprise Fund Balance Targets**
- **Annual Target Contingency Fund Balances and Level of Liquidity**
- **Budgeting Horizon and Cycle** – Assess the appropriate budgeting horizon and cycle needed to support recommended rate structures.
- **Comprehensive Summary of Recommended Rate Structures** – Assess the performance of each recommended rate structure over time and provide recommendations on the preferred rate structure.
- **Supporting Data** – Provide data supporting conclusions and observations made for each of the areas above and cite within the study.

The report shall contain supporting schedules in appendices. The report shall be discussed during conference call with key City staff or webinar meeting with key points highlighted.

Task 3.2 Final Report: Upon receiving comments back on the Draft Report, MSW Consultants will finalize the report and rate path for delivery to the City.

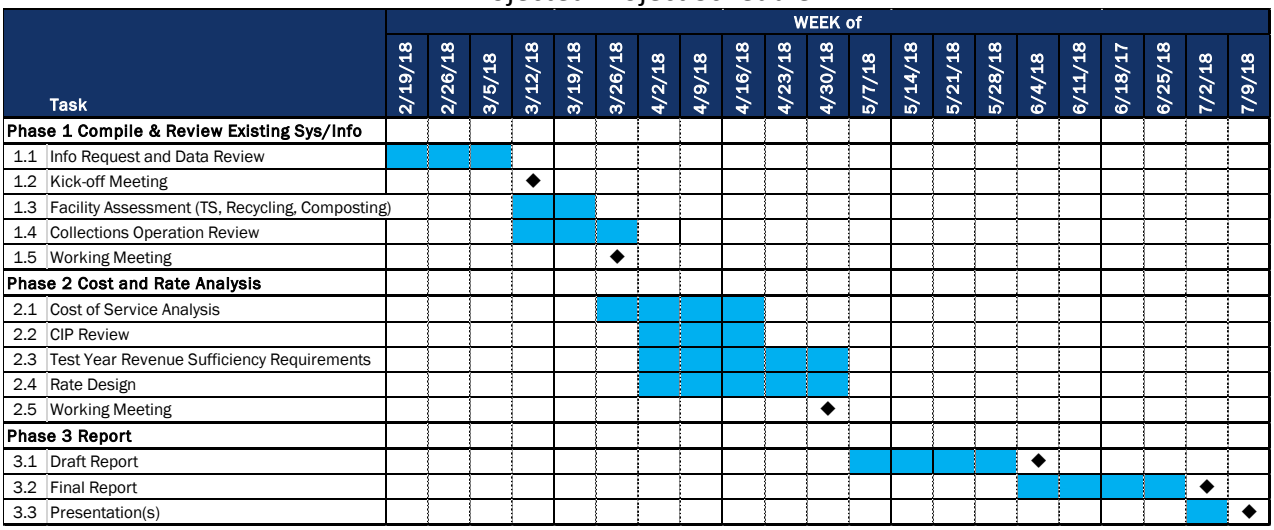
Task 3.3 Presentation(s): MSW professional staff would present a summary PowerPoint presentation to the Fayetteville City Administration and Council (if desired). For budgetary purposes, it is assumed presentations could be coordinated within a single traveling event.

2. BUDGET AND SCHEDULE

MSW Consultants has developed the following project schedule with consideration to existing project work. Project phases and tasks are projected to be completed over five months following receipt of a signed contract by both parties and an official Notice To Proceed. The key staff identified to perform this project have sufficient availability to meet this schedule.

APPENDIX A – SCOPE OF WORK

Projected Project Schedule



MSW Consultants shall provide the scope of services described for a total not to exceed price of $47,932, as shown by Task in the table below.

Budget

TASK		Hours	Labor Expense	Other Expenses	Subtotal by Task
1	Compile & Review Existing System/Information	92	$10,560	$3,636	$14,196
2	Cost and Rate Analysis	180	$20,500	$2,243	$22,743
3	Report [1]	80	$8,940	$2,053	$10,993
	Grand Total	**352**	**$40,000**	**$7,932**	**$47,932**

[1] Pricing assumes 1 travel event to cover the presentation(s) to Fayetteville management. Additional trips could be added at a cost of $2,680

3. **SERVICES TO BE PROVIDED BY THE CITY:**

City staff shall provide all reasonably available records and information, including, but not limited to financial reports, historical costs and budgets, demand and consumption data, and general community demographics. City staff shall also provide general staff support and assistance as required and agreed to in advance of the project.

CITY OF FAYETTEVILLE ARKANSAS

City of Fayetteville, Arkansas
Purchasing Division – Room 306
113 W. Mountain
Fayetteville, AR 72701
Phone: 479.575.8220
TDD (Telecommunication Device for the Deaf): 479.521.1316

RFP (REQUEST FOR PROPOSAL)

REQUEST FOR PROPOSAL: RFP 17-16, Recycling and Trash Collection Rate Study
DEADLINE: Thursday, November 09, 2017 before 2:00:00 PM, local time
RFP DELIVERY LOCATION: Room 306 – 113 W. Mountain, Fayetteville, AR 72701
PURCHASING AGENT: Les McGaugh, lmcgaugh@fayetteville-ar.gov
DATE OF ISSUE AND ADVERTISEMENT: Monday, October 16 & October 23, 2017

REQUEST FOR PROPOSAL
RFP 17-16, Recycling and Trash Collection Rate Study

No late proposals shall be accepted. RFP's shall be submitted in sealed envelopes labeled with the project number and name as well as the name and address of the firm.

All proposals shall be submitted in accordance with the attached City of Fayetteville specifications and bid documents attached hereto. Each Proposer is required to fill in every blank and shall supply all information requested; failure to do so may be used as basis of rejection. Any bid, proposal, or statements of qualification will be rejected that violates or conflicts with state, local, or federal laws, ordinances, or policies.

The undersigned hereby offers to furnish & deliver the articles or services as specified, at the prices & terms stated herein, and in strict accordance with the specifications and general conditions of submitting, all of which are made a part of this offer. This offer is not subject to withdrawal unless upon mutual written agreement by the Proposer/Bidder and City Purchasing Agent.

Name of Firm: _____

Contact Person: _____ Title: _____

E-Mail: _____ Phone: _____

Business Address: _____

City: _____ State: _____ Zip: _____

Signature: _____ Date: _____

City of Fayetteville, AR
Request for Proposal
RFP 17-16, Recycling and Trash Collection Rate Study

The City of Fayetteville, Arkansas is requesting proposals from qualified firms for services required to complete a comprehensive cost of service/rate study for the Recycling and Trash Collection Division of the City.

To be considered, sealed proposals shall be received at the City Administration Building, City Hall, Purchasing – Room 306, 113 West Mountain, Fayetteville, Arkansas, by Thursday, November 09, 2017 before 2:00:00 PM, local time. No late submittals shall be accepted.

Project documents & addendums can be obtained by request from the City of Fayetteville via request from Les McGaugh, Purchasing Agent at lmcgaugh@fayetteville-ar.gov or (479)575-8220. The invitation to bid, notice of and addenda issued will be made publically available at http://fayetteville-ar.gov/bids. All questions regarding the process should be directed to Les McGaugh.

Proposals submitted shall be qualified to do business and licensed in accordance with all applicable laws of the state and local governments where the project is located.

Pursuant to Arkansas Code Annotated §22-9-203 The City of Fayetteville encourages all *qualified* small, minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to *qualified* small, minority and women business enterprises.

The City of Fayetteville reserves the right to reject any or all proposals and to waive irregularities therein and all Proposers shall agree that such rejection shall be without liability on the part of the City of Fayetteville for any damage or claim brought by any Proposer because of such rejections, nor shall the Proposers seek any recourse of any kind against the City of Fayetteville because of such rejections. The filing of any Proposal in response to this invitation shall constitute an agreement of the Proposer to these conditions.

CITY OF FAYETTEVILLE, AR

By: Les McGaugh
Title: Purchasing Agent
Ad date: 10/16/17 and 10/23/17

1. SUBMISSION OF A PROPOSAL SHALL INCLUDE:

Each proposal shall contain the following at a minimum. Proposer must also address detailed requirements as specified in the Scope of Work.

a. A written narrative describing the method or manner in which the Proposer proposes to satisfy requirements of this RFP in the most cost-effective manner.

b. A description of the Proposer's experience in providing the same or similar services as outlined in the RFP. This description should include the names of the person(s) who will provide the services, their qualifications, and the years of experience in performing this type of work. Also, include the reference information requested in this RFP.

c. The complete fee and cost to the City for all services outlined in this RFP.

d. Statement should be no more than twenty-five (25) pages; single sided, standard, readable, print on standard 8.5x11 papers. Proposers shall also submit a three (3) page (maximum) executive summary. The following items will not count toward the page limitations: appendix, cover sheet, 3-page executive summary, resumes (resumes shall be no more than 1 page per person), and forms provided by the City for completion.

e. All Proposers shall submit six (6) identical sets of the proposal as well as one (1) electronic copy on a properly labeled CD or other electronic media device. **The electronic copy submitted should be contained into one (1) file.** The use of Adobe PDF documents is strongly recommended. Files contained on the CD or electronic media shall not be restricted against saving or printing. **The electronic copy shall be identical to the original papers submitted inclusive of City forms for completion**. Electronic copies shall not be submitted via e-mail to City employees by the Proposer.

f. Proposals will be reviewed following the stated deadline, as shown on the cover sheet of this document. Only the names of Proposers will be available after the deadline until a contract has been awarded by the Fayetteville City Council. All interested parties understand proposal documents will not be available until after a valid contract has been executed.

g. Proposers shall submit a proposal based on documentation published by the Fayetteville Purchasing Division.

h. Proposals shall be enclosed in sealed envelopes or packages addressed to the City of Fayetteville, Purchasing Division, Room 306, 113 W. Mountain, Fayetteville, AR 72701. The name, address of the firm and Bid, RFP, or RFQ number shall be on the outside of the packaging as well as on any packages enclosed in shipping containers or boxes.

i. Proposals must follow the format of the RFP. Proposers should structure their responses to follow the sequence of the RFP.

j. Proposers shall have experience in work of the same or similar nature, and must provide references that will satisfy the City of Fayetteville. Proposer shall furnish a reference list of

clients for whom they have performed similar services and must provide information as requested in this document.

k. Proposer is advised that exceptions to any of the terms contained in this RFP or the attached service agreement must be identified in its response to the RFP. Failure to do so may lead the City to declare any such term non-negotiable. Proposer's desire to take exception to a non-negotiable term will not disqualify it from consideration for award.

l. Local time shall be defined as the time in Fayetteville, Arkansas on the due date of the deadline. Documents shall be received before the deadline time as shown by the atomic clock located in the Purchasing Division Office.

2. WRITTEN REQUESTS FOR INTERPRETATIONS OR CLARIFICATION:

No oral interpretations will be made to any firms as to the meaning of specifications or any other contract documents. All questions pertaining to the terms and conditions or scope of work of this proposal must be sent in writing via e-mail to the Purchasing Department. Responses to questions may be handled as an addendum if the response would provide clarification to the requirements of the proposal. All such addenda shall become part of the contract documents. The City will not be responsible for any other explanation or interpretation of the proposed RFP made or given prior to the award of the contract.

DESCRIPTION OF SUPPLIES AND SERVICES:

Any manufacturer's names, trade name, brand name, catalog number, etc. used in specifications are for the purpose of describing and establishing general quality levels. Such references are NOT intended to be restrictive. Proposals shall be considered for all brands that meet the quality of the specifications listed for any items.

3. RIGHTS OF CITY OF FAYETTEVILLE IN REQUEST FOR PROPOSAL PROCESS:

In addition to all other rights of the City of Fayetteville, under state law, the City specifically reserves the following:

a. The City of Fayetteville reserves the right to rank firms and negotiate with the highest-ranking firm. Negotiation with an individual Proposer does not require negotiation with others.

b. The City reserves the right to select the proposal it believes will serve the best interest of the City.

c. The City of Fayetteville reserves the right to accept or reject any or all proposals.

d. The City of Fayetteville reserves the right to cancel the entire request for proposal.

e. The City of Fayetteville reserves the right to remedy or waive technical or immaterial errors in the request for proposal or in proposals submitted.

f. The City of Fayetteville reserves the right to request any necessary clarifications, additional information or proposal data without changing the terms of the proposal.

g. The City of Fayetteville reserves the right to make selection of the Proposer to perform the services required on the basis of the original proposals without negotiation.

4. EVALUATION CRITERIA:

The evaluation criterion defines the factors that will be used by the selection committee to evaluate and score responsive, responsible and qualified proposals. Proposers shall include sufficient information to allow the selection committee to thoroughly evaluate and score proposals. Each proposal submitted shall be evaluated and ranked by a selection committee. The contract will be awarded to the most qualified Proposer, per the evaluation criteria listed in this RFP. Proposers are not guaranteed to be ranked.

5. COSTS INCURRED BY PROPOSERS:

All expenses involved with the preparation and submission of proposals to the City, or any work performed in connection therewith, shall be borne solely by the Proposer(s). No payment will be made for any responses received, or for any other effort required of, or made by, the Proposer(s) prior to contract commencement.

6. ORAL PRESENTATION:

An oral presentation and/or interview may be requested of any firm, at the selection committee's discretion.

7. CONFLICT OF INTEREST:

a. The Proposer represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance or services required hereunder, as provided in City of Fayetteville Code Section 34.26 titled "Limited Authority of City Employee to Provide Services to the City".

b. The Proposer shall promptly notify Les McGaugh, City Purchasing Agent, in writing, of all potential conflicts of interest for any prospective business association, interest, or other circumstance which may influence or appear to influence the Proposer's judgment or quality of services being provided. Such written notification shall identify the prospective business association, interest or circumstance, the nature of which the Proposer may undertake and request an opinion to the City as to whether the association, interest or circumstance would, in the opinion of the City, constitute a conflict of interest if entered into by the Proposer. The City agrees to communicate with the Proposer its opinion via e-mail or first-class mail within thirty days of receipt of notification.

8. WITHDRAWAL OF PROPOSAL:

A proposal may be withdrawn prior to the time set for the proposal submittal based on a written request from an authorized representative of the firm; however, a proposal shall not be withdrawn after the time set for the proposal.

9. LATE PROPOSAL OR MODIFICATIONS:

a. Proposal and modifications received after the time set for the proposal submittal shall not be considered. Modifications in writing received prior to the deadline will be accepted. The City will not be responsible for misdirected bids. Proposers should call the Purchasing Division at

(479) 575-8220 to insure receipt of their submittal documents prior to opening time and date listed.

b. The time set for the deadline shall be local time for Fayetteville, AR on the date listed. All proposals shall be received in the Purchasing Division BEFORE the deadline stated. The official clock to determine local time shall be the atomic clock located in the Purchasing Division, Room 306 of City Hall, 113 W. Mountain, Fayetteville, AR.

10. LOCAL, STATE, AND FEDERAL COMPLIANCE REQUIREMENTS:

a. The laws of the State of Arkansas apply to any purchase made under this request for proposal. Proposers shall comply with all local, state, and federal directives, orders and laws as applicable to this proposal and subsequent contract(s) including but not limited to Equal Employment Opportunity (EEO), Disadvantaged Business Enterprises (DBE), & OSHA as applicable to this contract.

b. Pursuant to Arkansas Code Annotated §22-9-203 The City of Fayetteville encourages all *qualified* small, minority and women business enterprises to bid on and receive contracts for goods, services, and construction. Also, City of Fayetteville encourages all general contractors to subcontract portions of their contract to *qualified* small, minority and women business enterprises.

11. PROVISION FOR OTHER AGENCIES:

Unless otherwise stipulated by the Proposer, the Proposer agrees to make available to all Government agencies, departments, municipalities, and counties, the proposal prices submitted in accordance with said proposal terms and conditions therein, should any said governmental entity desire to buy under this proposal. Eligible users shall mean all state of Arkansas agencies, the legislative and judicial branches, political subdivisions (counties, local district school boards, community colleges, municipalities, counties, or other public agencies or authorities), which may desire to purchase under the terms and conditions of the contract.

12. COLLUSION:

The Proposer, by affixing his or her signature to this proposal, agrees to the following: "Proposer certifies that his proposal is made without previous understanding, agreement, or connection with any person, firm or corporation making a proposal for the same item(s) and/or services and is in all respects fair, without outside control, collusion, fraud, or otherwise illegal action."

13. RIGHT TO AUDIT, FOIA, AND JURISDICITON:

a. The City of Fayetteville reserves the privilege of auditing a vendor's records as such records relate to purchases between the City and said vendor.

b. Freedom of Information Act: City contracts and documents prepared while performing City contractual work are subject to the Arkansas Freedom of Information Act. If a Freedom of Information Act request is presented to the City of Fayetteville, the (contractor) will do everything possible to provide the documents in a prompt and timely manner as prescribed in the Arkansas Freedom of Information Act (A.C.A. §25-19-101 et. seq.). Only legally authorized photocopying costs pursuant to the FOIA may be assessed for this compliance.

c. Legal jurisdiction to resolve any disputes shall be Arkansas with Arkansas law applying to the case.

14. CITY INDEMNIFICATION:

The successful Proposer(s) agrees to indemnify the City and hold it harmless from and against all claims, liability, loss, damage or expense, including but not limited to counsel fees, arising from or by reason of any actual or claimed trademark, patent or copyright infringement or litigation based thereon, with respect to the services or any part thereof covered by this order, and such obligation shall survive acceptance of the services and payment thereof by the City.

15. VARIANCE FROM STANDARD TERMS & CONDITIONS:

All standard terms and conditions stated in this request for proposal apply to this contract except as specifically stated in the subsequent sections of this document, which take precedence, and should be fully understood by Proposers prior to submitting a proposal on this requirement.

16. ADA REQUIREMENT FOR PUBLIC NOTICES & TRANSLATION:

Persons with disabilities requiring reasonable accommodation to participate in this proceeding/event, should call 479.521.1316 (telecommunications device for the deaf), not later than seven days prior to the deadline. Persons needing translation of this document shall contact the City of Fayetteville, Purchasing Division, immediately.

17. CERTIFICATE OF INSURANCE:

The successful Proposer shall provide a Certificate of Insurance in accordance with specifications listed in this request for proposal, prior to commencement of any work. Such certificate shall list the City of Fayetteville as an additional insured. Insurance shall remain valid throughout project completion.

18. PAYMENTS AND INVOICING:

The Proposer must specify in their proposal the exact company name and address which must be the same as invoices submitted for payment as a result of award of this RFP. Further, the successful Proposer is responsible for immediately notifying the Purchasing Division of any company name change, which would cause invoicing to change from the name used at the time of the original RFP. Payment will be made within thirty days of invoice received. The City of Fayetteville is very credit worthy and will not pay any interest or penalty for untimely payments. **Payments can be processed through Proposer's acceptance of Visa at no additional costs to the City for expedited payment processing.** The City will not agree to allow any increase in hourly rates by the contract without PRIOR Fayetteville City Council approval.

19. CANCELLATION:

a. The City reserves the right to cancel this contract without cause by giving thirty (30) days prior notice to the Contractor in writing of the intention to cancel or with cause if at any time the Contractor fails to fulfill or abide by any of the terms or conditions specified.

b. Failure of the contractor to comply with any of the provisions of the contract shall be considered a material breach of contract and shall be cause for immediate termination of the contract at the discretion of the City of Fayetteville.

c. In addition to all other legal remedies available to the City of Fayetteville, the City reserves the right to cancel and obtain from another source, any items and/or services which have not been delivered within the period of time from the date of order as determined by the City of Fayetteville.

d. In the event sufficient budgeted funds are not available for a new fiscal period, the City shall notify the vendor of such occurrence and contract shall terminate of the last day of the current fiscal period without penalty or expense to the City.

20. ASSIGNMENT, SUBCONTRACTING, CORPORATE ACQUISITIONS AND/OR MERGERS:

a. The Contractor shall perform this contract. No assignment of subcontracting shall be allowed without prior written consent of the City. If a Proposer intends to subcontract a portion of this work, the Proposer shall disclose such intent in the proposal submitted as a result of this RFP.

b. In the event of a corporate acquisition and/or merger, the Contractor shall provide written notice to the City within thirty (30) calendar days of Contractor's notice of such action or upon the occurrence of said action, whichever occurs first. The right to terminate this contract, which shall not be unreasonably exercised by the City, shall include, but not be limited to, instances in which a corporate acquisition and/or merger represent a conflict of interest or are contrary to any local, state, or federal laws. Action by the City awarding a proposal to a firm that has disclosed its intent to assign or subcontract in its response to the RFP, without exception shall constitute approval for purpose of this Agreement.

21. NON-EXCLUSIVE CONTRACT:

Award of this RFP shall impose no obligation on the City to utilize the vendor for all work of this type, which may develop during the contract period. This is not an exclusive contract. The City specifically reserves the right to concurrently contract with other companies for similar work if it deems such an action to be in the City's best interest. In the case of multiple-phase contracts, this provision shall apply separately to each item.

22. LOBBYING:

Lobbying of selection committee members, City of Fayetteville employees, or elected officials regarding request for proposals, request for qualifications, bids or contracts, during the pendency of bid protest, by the bidder/proposer/protestor or any member of the bidder's/proposer's/protestor's staff, and agent of the bidder/proposer/protestor, or any person employed by any legal entity affiliated with or representing an organization that is responding to the request for proposal, request for qualification, bid or contract, or has a pending bid protest is strictly prohibited either upon advertisement or on a date established by the City of Fayetteville and shall be prohibited until either an award is final or the protest is finally resolved by the City of Fayetteville; provided, however, nothing herein shall prohibit a prospective/bidder/proposer from contacting the Purchasing Division to address situations such as clarification and/or questions related to the procurement process. For purposes of this provision lobbying activities shall include but not be limited to, influencing or attempting to influence action or non-action in connection with any request for proposal, request for qualification, bid or contract through direct or indirect oral or written communication or an attempt to obtain goodwill of persons and/or entities specified in this provision. Such actions may cause any request for proposal, request for qualification, bid or contract to be rejected.

23. ADDITIONAL REQUIREMENTS:

The City reserves the right to request additional services relating to this RFP from the Proposer. When approved by the City as an amendment to the contract and authorized in writing prior to work, the Contractor shall provide such additional requirements as may become necessary.

24. SERVICES AGREEMENT:

A written agreement, in substantially the form attached, incorporating the RFP and the successful proposal will be prepared by the City, signed by the successful Proposer and presented to the City of Fayetteville for approval and signature of the Mayor.

25. INTEGRITY OF REQUEST FOR PROPOSAL (RFP) DOCUMENTS:

Proposers shall use the original RFP form(s) provided by the Purchasing Division and enter information only in the spaces where a response is requested. Proposers may use an attachment as an addendum to the RFP form(s) if sufficient space is not available on the original form for the Proposer to enter a complete response. **Any modifications or alterations to the original RFP documents by the Proposer, whether intentional or otherwise, will constitute grounds for rejection of such RFP response.** Any such modifications or alterations a Proposer wishes to propose shall be clearly stated in the Proposer's RFP response and presented in the form of an addendum to the original RFP documents.

26. OTHER GENERAL CONDITIONS:

a. Proposers must provide the City with their proposals signed by an employee having legal authority to submit proposals on behalf of the Proposer. The entire cost of preparing and providing responses shall be borne by the Proposer.

b. The City reserves the right to request any additional information it deems necessary from any or all Proposers after the submission deadline.

c. This solicitation is not to be construed as an offer, a contract, or a commitment of any kind; nor does it commit the city to pay for any costs incurred by Proposer in preparation. It shall be clearly understood that any costs incurred by the Proposer in responding to this request for proposal is at the Proposer's own risk and expense as a cost of doing business. The City of Fayetteville shall not be liable for reimbursement to the Proposer for any expense so incurred, regardless of whether or not the proposal is accepted.

d. If products, components, or services other than those described in this solicitation document are proposed, the Proposer must include complete descriptive literature for each. All requests for additional information must be received within five working days following the request.

e. **Any uncertainties shall be brought to the attention to Les McGaugh immediately via telephone (479.575.8220) or e-mail (lmcgaugh@fayetteville-ar.gov). It is the intent and goal of the City of Fayetteville Purchasing Division to provide documents providing a clear and accurate understanding of the scope of work to be completed and/or goods to be provided. We encourage all interested parties to ask questions to result in all Proposers being on equal terms.**

f. Any inquiries or requests for explanation in regard to the City's requirements shall be made promptly to Les McGaugh, City of Fayetteville, Purchasing Agent via e-mail (lmcgaugh@fayetteville-ar.gov) or telephone (479.575.8220). No oral interpretation or clarifications will be given as to the meaning of any part of this request for proposal. All questions, clarifications, and requests, together with answers, if any, will be provided to all firms via written addendum. Names of firms submitting any questions, clarifications, or requests will not be disclosed until after a contract is in place.

g. At the discretion of the City, one or more firms may be asked for more detailed information before final ranking of the firms, which may also include oral interviews.

h. Any information provided herein is intended to assist the Proposer in the preparation of proposals necessary to properly respond to this RFP. The RFP is designed to provide qualified Proposers with sufficient basic information to submit proposals meeting minimum specifications and/or test requirements, but is not intended to limit a RFP's content or to exclude any relevant or essential data.

i. Proposers irrevocably consent that any legal action or proceeding against it under, arising out of or in any manner relating to this Contract shall be controlled by Arkansas law in Washington County. Proposer hereby expressly and irrevocably waives any claim or defense in any said action or proceeding based on any alleged lack of jurisdiction or improper venue or any similar basis.

j. The successful Proposer shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of City of Fayetteville. In case the successful Proposer assigns all or any part of any monies due or to become due under this Contract, the Instrument of assignment shall contain a clause substantially to the effect that is agreed that the right of the assignee in and to any monies due or to become due to the successful Proposer shall be subject to prior liens of all persons, firms, and corporations for services rendered or materials supplied for the performance of the services called for in this contract.

k. The successful Proposer's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the services shall apply to the contract throughout, and they will be deemed to be included in the contract as though written out in full herein. The successful Proposer shall keep himself/herself fully informed of all laws, ordinances and regulations of the Federal, State, and municipal governments or authorities in any manner affecting those engaged or employed in providing these services or in any way affecting the conduct of the services and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in these Contract Documents or in the specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, s/he shall herewith report the same in writing to the City of Fayetteville.

27. CONTRACT REQUIREMENTS: Any contract between the successful proposer and the City shall include the following:

a. Indemnification: The awarded Proposer shall indemnify and hold harmless City of Fayetteville and their agents and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the services, provided that any

such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the successful Proposer and anyone directly or indirectly employed by him/her or anyone for whose acts any of them may be liable. In any and all claims against City of Fayetteville or any of their agents or employees, by any employee of the successful Proposer, directly or indirectly employed by him/her, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the successful Proposer or under the Workers' Compensation Acts, Disability Benefits Acts or other employee benefits acts.

b. Suspension or Termination of Services: City of Fayetteville or awarded Proposer shall have the right to terminate this agreement at any time upon thirty (30) days advance written notice to the other party of its intention to terminate.

c. Laws and Regulations: The successful Proposer's attention is directed to the fact that all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the services shall apply to the contract throughout, and they will be deemed to be included in the contract as though written out in full herein. The successful Proposer shall keep himself/herself fully informed of all laws, ordinances and regulations of the Federal, State, and municipal governments or authorities in any manner affecting those engaged or employed in providing these services or in any way affecting the conduct of the services and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in these Contract Documents or in the specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, s/he shall herewith report the same in writing to City of Fayetteville.

    i. Proposer shall at all times observe and comply with all such existing and future laws, ordinances and regulations, and shall protect and indemnify City of Fayetteville and its agents against the violation of any such law, ordinance, regulation, order or decree, whether by himself/herself or by his/her employees. Licenses of a temporary nature, necessary for the prosecution of the services shall be secured and paid for by the successful Proposer.

d. Assignments: The successful Proposer shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of City of Fayetteville. In case the successful Proposer assigns all or any part of any monies due or to become due under this Contract, the Instrument of assignment shall contain a clause substantially to the effect that is agreed that the right of the assignee in and to any monies due or to become due to the successful Proposer shall be subject to prior liens of all persons, firms, and corporations for services rendered or materials supplied for the performance of the services called for in this contract.

e. Insurance: The successful Proposer shall not commence work under this contract until all insurance described below has been obtained, certificate listing the City as an additional insured, and such insurance has been approved by City of Fayetteville. Premiums for all insurance policies required shall be the responsibility of the Proposer. It is the City's intent to be listed as an additional insured

with the final Proposer after contract award. **Proposer should submit current insurance coverages with RFP submittal.**

f. **Payments:** If the Consultant has made application for payment as above, the Project Manager will issue a request for payment to the Accounting Department for such amount as is determined to be properly due, or state in writing the itemized and specific reasons for withholding a payment. The City intends to pay accepted invoice within thirty (30) calendar days. No payment shall constitute an acceptance of any services not in accordance with the Contract Documents.

   i. Final payment: Upon receipt of written notice from the Consultant that all contracted services are complete, the Project Manager will, within a reasonable time, review all services and reports. If the Project Manager finds the services and reports of the Consultant complete and acceptable in accordance with the provisions of the Contract Documents, s/he shall, within a reasonable time, process a pay request so that final payment can be made. The acceptance of final payment shall constitute a waiver of all claims by the Consultant except those previously made in writing and still unsettled.

g. **Freedom of Information Act**: City of Fayetteville contracts and documents prepared while performing city contractual work are subject to the Arkansas Freedom of Information Act. If a Freedom of Information Act request is presented to the City of Fayetteville, the contractor will do everything possible to provide the documents in a prompt and timely manner as prescribed in the Arkansas Freedom of Information Act (A.C.A. 25-19-101 et. Seq.). Only legally authorized photo coping costs pursuant to the FOIA may be assessed for this compliance.

h. **Changes in Scope or Price:** Changes, modifications, or amendments in scope, price or fees to this contract shall not be allowed without a prior formal contract amendment approved by the Mayor and the City Council **in advance** of the change in scope, cost or fees.

28. **APPENDIX DOCUMENTS:** The appendix documents below are included as part of this RFP:

a. Appendix A: Fayetteville Code of Ordinances – Chapter 50

b. Appendix B: Transportation Organizational Chart

c. Appendix C: Current RTC Rates

d. Appendix E: Fayetteville Master Plan

City of Fayetteville
RFP 17-16, Recycling and Trash Collection Rate Study
SECTION B: Vendor References

The following information is required from all firms so all statements of qualification may be reviewed and properly evaluated:

COMPANY NAME: _____

NUMBER OF YEARS IN BUSINESS: _____HOW LONG IN PRESENT LOCATION: _____

TOTAL NUMBER OF CURRENT EMPLOYEES: _____ FULL TIME _____ PART TIME

NUMBER OF EMPLOYEES PLANNED FOR THIS CONTRACT: _____ FULL TIME _____ PART TIME

PLEASE LIST FOUR (4) REFERENCES THAT YOU HAVE PREVIOUSLY PERFORMED CONTRACT SERVICES FOR WITHIN THE PAST FIVE (5) YEARS (All fields must be completed):

1. _____
COMPANY NAME

_____
CITY, STATE, ZIP

_____
CONTACT PERSON

_____
TELEPHONE

_____
FAX NUMBER

_____
E-MAIL ADDRESS

2. _____
COMPANY NAME

_____
CITY, STATE, ZIP

_____
CONTACT PERSON

_____
TELEPHONE

_____
FAX NUMBER

_____
E-MAIL ADDRESS

3. _____
COMPANY NAME

_____
CITY, STATE, ZIP

_____
CONTACT PERSON

_____
TELEPHONE

_____
FAX NUMBER

_____
E-MAIL ADDRESS

4. _____
COMPANY NAME

_____
CITY, STATE, ZIP

_____
CONTACT PERSON

_____
TELEPHONE

_____
FAX NUMBER

_____
E-MAIL ADDRESS

1. OVERVIEW:
    a. Fayetteville is a thriving community of 82,830 residents (2015 Census estimate). As the third largest city in Arkansas, Fayetteville provides all the resources and advantages of a large city while maintaining a quality of life that remains true to its unique heritage. Fayetteville is the county seat of Washington County, Arkansas.
    b. The Recycling and Trash Collection Division operates as and Enterprise fund within the City of Fayetteville. By ordinance, the City collects all residential and commercial waste in carts and dumpster service. The Division competes with licensed franchise holders for open top and compactor services. The City provides recycling and yard waste collection services to all single family residential units. The Division operates a Transfer Station, Recycling Center and Composting operation. The Division recently adopted a Solid Waste Diversion, Reduction and Recycling Master Plan in February of 2017 which directs the Division to put programs in place to divert 40% of the City's waste stream by 2027.

2. SCOPE OF WORK AND PROJECT CONDITIONS:

The broad objective of the study is to adequately fund existing solid waste services, foreseeable capital costs, and debt service that is derived in an equitable and justifiable manner from new and existing customers.

The study shall include an assessment of our existing operations, to include at a minimum, an analysis of the City of Fayetteville's Recycling and Trash Collection user characteristics, a review of the City's current collection equipment, review of the City's current collection routes and timing, make recommendations for refinements and modifications to the collections system and provide feasibility level cost estimates for implementation of said recommendations.

The study, at a minimum, shall address the following objectives:

a. Compare current recycling and trash collection service costs (operations, and capital improvements) against appropriate industry benchmarks.
b. Recommend baseline rate structures required to guarantee the sustainability of the City's recycling and trash services and provide for collection equipment upgrade and maintenance.
c. Evaluate Collection of:
    A.) Material by Program;
        1. Curbside Recyclables
        2. Apartment Recyclables
        3. Commercial Recyclables
        4. Residential Solid Waste
        5. Commercial Solid Waste
        6. Industrial Solid Waste

7. Yard Waste

B.) Bulk Item Pick.Up Program
C.) Transfer Station Operation
D.) Recycling Center Operation
E.) Disposal of All Waste
F.) Marketing and Processing of Recyclables
G.) Composting Program
H.) Franchise Fees Collection and Administration
I.) Planned Capital Improvements
J.) Operations and Administration Program
K.) Addition of Financial Analyst Positions

d. Recommendations shall also consider annual inflationary and indexed adjustments that address the overall policy direction outlined herein.

e. The study is to be performed in conformance with the following policy directions:

A.) The recommended rate structures shall be based on cost of service and shall be sufficient to meet the current and future revenue requirements of the City of Fayetteville's Recycling and Trash Division.

B.) The study shall recommend rate structures that consider and make provisions for the following factors:

1. Achieving the goals outlined in the Recycling and Trash Collection Master Plan adopted in February of 2017
2. Current and future estimated costs to provide solid waste services in accordance with established and anticipated standards and regulations in addition to the adopted Solid Waste Reduction, Diversion and Recycling Master Plan.
3. Projected demands
4. Age and condition of the fleet
5. Funding requirements for future equipment upgrades

C.) The recommended rate structures shall provide direct identification of revenues appropriated to major funded activities and infrastructure.

D.) The study shall provide at least two (2) recommended rate alternatives for solid waste services based upon standard rate practice that meet the criteria outlined above. The consultant will make recommendations as to which alternative best meets the criteria.

E.) The benefits of any proposed modifications shall be weighed against the financial impacts on rate payers.

F.) Justification of differences in proposed rate structures for different classes of customers shall be provided.

G.) The recommended rate structures shall result in no decrease in stability of the revenue stream, as compared to the current structure. Consideration shall be given to funding past and future depreciation such as the necessary replacement or upgrade of facilities/equipment.

H.) The recommended rate structures shall be easy to administer and understand and shall be fully compatible with the City's existing billing system.

I.) The recommended rate structure shall be provided through the next five years.

f. In making rate structure recommendations, the final report shall explicitly include the following elements and analysis for the provided solid waste services:

A.) Current Rate Structure – Assess the current rate structure's performance as a baseline for comparing and justifying recommended changes.

B.) Equity – Assess the equity of recommended rate structures for all types of property ownership and user classes.

C.) Sensitivity Analysis – Assess the ability of the revenue stream generated by the recommended rate structures to continue to fully fund recycling and trash collection service costs. Include a sensitivity analysis where the long-term revenue generated under each alternative shall be illustrated when confronted with the impacts of increased demand from growth or increased demand.

D.) Rate Payer Education and Communication – Recommend methods for communicating utility costs, including utility bill layout and how it might be used to identify actual costs of providing recycling and trash collection services.

E.) Annual Enterprise Fund Balance Targets

F.) Annual Target Contingency Fund Balances and Level of Liquidity

G.) Budgeting Horizon and Cycle – Assess the appropriate budgeting horizon and cycle needed to support recommended rate structures.

H.) Comprehensive Summary of Recommended Rate Structures – Assess the performance of each recommended rate structure over time and provide recommendations on the preferred rate structure.

I.) Supporting Data – Provide data supporting conclusions and observations made for each of the areas above and cite within the study.

3. SERVICES TO BE PROVIDED BY THE CITY:

a. City staff will provide all reasonably available records and information, including, but not limited to financial reports, historical costs and budgets, demand and consumption data, and general community demographics. City staff will also provide general staff support and assistance as required and agreed to in advance of the project.

4. SELECTION CRITERIA:

a) The City of Fayetteville professional selection policy provides for the procurement of professional services based upon selection criteria. A selection committee, consisting of the Chief Financial Officer or representative, designated Department Directors, or other designated City staff, shall review and rate the submitted proposals. The proposals/qualifications will be evaluated based upon a point system using the percentages indicated below. Proposals should be prepared simply and economically, providing a straight forward, concise description of the agency or firm's ability to meet the requirements for the contract. Emphasis should be placed on completeness and clarity of content. Proposals will be considered based upon the selection criteria established in this RFP.

b) The selection committee has established the following point levels with respect to this RFP. The relative weight of each requirement is indicated next to each item.

1) 25% **Qualifications in Relation to Specific Project to be Performed:** Information reflecting qualifications of the agency. Indicated specialized experience and technical competence of the firm in connection with the type and complexity of the service required. Subcontractors, if used, shall be listed with information on their organization and shall be provided with RFP response.

2) 25% **Experience, Competence, and Capacity for Performance:** Information reflecting the names, titles, and qualifications (including experience and technical competence) of the major personnel assigned to this specific project. Provide detailed breakdown of subcontractor's staff to be used and how they are to be used to supplement staff.

3) 10% **Proposed Method of Doing Work:** A proposed work plan (description of how the project would be conducted as well as other facts concerning approach to scope you wish to present) indicating methods and schedules for accomplishing each phase of work. Include with this the amount of work presently underway.

4) 25% **Past Performance:** Previous evaluations shall be considered a factor. If previous evaluations with the City are not available, the professional firm's past performance records with others will be used, including quality of work, timely performance, diligence, ability to meet past budgets, and any other pertinent information. Firm will provide a list of similar jobs performed and person whom we can contact for information.

5) 15% **Price**: The total amount of money, fees, charges, etc. to be paid by the City for the scope work identified in this RFP and proposed by the RFP response.

5. PROPOSAL CONTENT:

a. Proposals shall be submitted on the most favorable terms available by the Proposer.
b. In addition to understanding the proposals will be evaluated against the selection criteria, Proposers shall include the following with RFP response:

A.) General Information including
1. Name and address of the firm
2. Number of years the firm has been in business operating under its current name.
3. As applicable, other names, including parent company name(s) by which your organization has been known and the length of time known by each name.
4. Current insurance coverage

B.) Knowledge of Applicable Regulations and Local Conditions

C.) Understanding of Project and Proposed Project Approach and Desired Outcomes
1. Describe your anticipated approach to this project and any special ideas, techniques, or suggestions you think may add value to the project.

D.) Experience and Performance Records
1. Provide a history of the firm's experience providing services consistent with those described herein.
2. Provide names of municipal clients for which the firm has provided similar services in the last five (5) years.
3. Provide name and contact information for three (3) municipal references who can discuss your work on past plans, studies, or projects.

E.) Project Personnel Assignments and Qualifications
1. Identify, by name, the firm's primary contact and Project Manager for this project. The Project Manager will be required to be actively involved in all phases of the project and will function as the City's primary point of contact for the firm. Include title, resume, and contact information.
2. Provide the name, title, resume, contact information, skills, experience, credentials, and unique qualifications of key personnel that will be assigned to the project.
3. Provide an organizational chart depicting your expected relationships between key personnel described above and the City of Fayetteville.

F.) Ability to respond in a timely manner
1. Provide your plan/schedule for completing the work. A shorter timeline is preferred and will be given added value in the evaluation of the proposals.

G.) Cost
1. While cost will be an important consideration during proposal evaluation and firm choice, the City realizes that there are considerations other than low cost that provide value to the project outcome.

6. PERIOD OF CONTRACT:
    a. Initial contract period will be for a single project for the scope of work described in this RFP.

7. ANTICIPATED PROJECT TIMELINE: Subject to change

Action Item	Date	Note
RFP Released and Advertisement 1 of 2	Monday, October 16, 2017	City website and legal newspaper advertisement
Advertisement 2 of 2	Monday, October 23, 2017	legal newspaper advertisement
Deadline for RFP	**Thursday, November 09, 2017**	**Sealed and delivered before 2:00:00 PM, local time**
Inform short listed vendors of interview	Friday, November 17, 2017	By end of day - if applicable
Interviews with short listed vendors	Tuesday, November 28, 2017	If applicable
Deadline for contract negotiations with selected vendor	Thursday, November 30, 2017	Contract to be signed by vendor no later than 5 PM, electronic scan acceptable
City Council Agenda Deadline	Friday, December 01, 2017	(Internal Deadline) 4:00 PM - City Clerk
City Council Agenda Session	Tuesday, December 12, 2017	4:30:00 PM, City Hall, Room 326
City Council Meeting	Tuesday, December 19, 2017	Council to consider contract award, 5:30 PM, City Hall, Room 219
PO Issue Date	Friday, December 29, 2017	After receipt of Certificate of Insurance
Start date of Contract	Tuesday, January 02, 2018	

***Note:** **Though the timeline is considered tentative, the interview date set for this RFP is considered firm and is not flexible at this time. Contract negotiation period will be condensed. Vendors should allocate resources accordingly.**

Proposers shall include this form completed in its entirety with RFP response. This form shall not count towards page limitations set forth in the RFP.

1. DISCLOSURE INFORMATION

Proposer shall disclose any possible conflict of interest with the City of Fayetteville, including, but not limited to, any relationship with any City of Fayetteville employee. Proposer response must disclose if a known relationship exists between any principal or employee of your firm and any City of Fayetteville employee or elected City of Fayetteville official.

If, to your knowledge, no relationship exists, this should also be stated in your response. Failure to disclose such a relationship may result in cancellation of a purchase and/or contract as a result of your response. This form must be completed and returned in order for your bid/proposal to be eligible for consideration.

PLEASE CHECK ONE OF THE FOLLOWING TWO OPTIONS, AS IT APPROPRIATELY APPLIES TO YOUR FIRM:

_____1) NO KNOWN RELATIONSHIP EXISTS

_____2) RELATIONSHIP EXISTS (Please explain):_____

I certify that; as an officer of this organization, or per the attached letter of authorization, am duly authorized to certify the information provided herein are accurate and true; and my organization shall comply with all State and Federal Equal Opportunity and Non-Discrimination requirements and conditions of employment.

2. PRIMARY CONTACT INFORMATION

At the discretion of the City, one or more firms may be asked for more detailed information before final ranking of the firms, which may also include oral interviews. NOTE: Each Proposer shall submit to the City a primary contact name, e-mail address, and phone number (preferably a cell phone number) where the City selection committee can call for clarification or interview via telephone.

Corporate Name of Firm: _____

Primary Contact: _____ Title of Primary Contact: _____

Phone#1 (cell preferred): _____Phone#2: _____

E-Mail Address: _____

3. ACKNOWLEDGEMENT OF ADDENDA

Acknowledge receipt of addenda for this invitation to bid, request for proposal, or request for qualification by signing and dating below. All addendums are hereby made a part of the bid or RFP documents to the same extent as though it were originally included therein. Proposers/Bidders should indicate their receipt of same in the appropriate blank listed herein. Failure to do so may subject vendor to disqualification.

ADDENDUM NO.	SIGNATURE AND PRINTED NAME	DATE ACKNOWLEDGED

4. PRICING:
Pricing shall be attached as a separate form. Reference RFP for details on what all pricing shall include.

5. DEBARMENT CERTIFICATION:
As an interested party on this project, you are required to provide debarment/suspension certification indicating in compliance with the below Federal Executive Order. Certification can be done by completing and signing this form.

Federal Executive Order (E.O.) 12549 "Debarment and Suspension" requires that all contractors receiving individual awards, using federal funds, and all sub-recipients certify that the organization and its principals are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency from doing business with the Federal Government.

Signature certifies that neither you nor your principal is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

Questions regarding this form should be directed to the City of Fayetteville Purchasing Division.

NAME OF COMPANY: _____

PHYSICAL ADDRESS: _____

MAILING ADDRESS: _____

PRINTED NAME: _____

PHONE: _____ FAX: _____

E-MAIL: _____

SIGNATURE: _____

TITLE: _____ DATE: _____

DUNS#: _____ TAX ID: _____

CHAPTER 50: - RECYLING AND TRASH COLLECTION

ARTICLE I - GENERAL PROVISIONS

50.01 - Definitions

For the purpose of this chapter the following definitions shall apply unless the context clearly indicates or requires a different meaning:

Biodegradable bag. A bag capable of being decomposed by natural micro-organic processes, to be used for the disposal of yard waste; and having a capacity of no more than 35 gallons.

Brush. Shrubbery, bush, and tree trimmings under 3 inches in diameter.

Bulk brush. Brush, under 3 inches in diameter, that is cut in lengths of 4 feet or less and tied in bundles that one (1) person can handle.

Bulky waste. Items too large for collection in city-issued residential garbage carts, such as appliances, furniture, large limbs, etc. Customers should contact the Recycling and Trash Collection for specific requirements.

Commercial service. The collection and removal of garbage and trash from any establishment other than single-family residences, duplexes or multi-family complexes. Commercial service shall include, but not be limited to: office buildings, private institutions, professional buildings, restaurants, or as otherwise determined by the Recycling and Trash Collection Manager.

Curbside. The edge of the public roadway directly in front of a residence. On corner lots curbside may be construed as the edge of the roadway directly alongside of the residence. In areas where garbage and trash collection is provided along alleys, curbside shall refer to the edge of the pavement of said alley. In either case, placement shall be no more than 6 feet from the public roadway. Garbage and trash placed at curbside must not impede the flow of traffic on the roadway or public sidewalk in any way.

Exemption to curbside. Exemption to the mandatory curbside placement of garbage and trash will be granted to persons who are disabled to the extent that they cannot reasonably meet the curbside requirement, and that have no one residing on premises greater than twelve (12) years of age that can meet the requirement for them.

Garbage. All waste accumulations of animal, fruit, or vegetable matter that attend the preparation, use, cooking, dealing in, or storage of meat, fowl, fish, fruits, or vegetables, tin cans, or other containers originally used for food stuffs. The term "garbage" shall not include mineral wastes or manufacturing or

processing wastes.

Garbage disposal area. A place or places designated by the city for the purpose of disposing of refuse, including incinerator and other dumping areas.

Limbs. Tree trimmings over 3 inches in diameter.

Person. Any individual, firm, or corporation.

Premises. Any flat, dwelling, rooming house, apartment house, hospital, school, hotel, club, restaurant, boardinghouse, eating place, shop, church, place of business, manufacturing establishment, courthouse, jail, city hall, post office or other building.

Recycling and Trash Collection Manager. The Manager of Recycling and Trash Collection.

Residential multi-family service. The collection and removal of garbage and trash from all residential multi-family complexes of three (3) or more units, mobile home parks, or as otherwise determined by the Recycling and Trash Collection Manager.

Residential single-family/duplex service. The collection and removal of garbage and trash from all single-family residences and duplexes located on public roadways within the City of Fayetteville, or as otherwise determined by the Recycling and Trash Collection Manager. Collection of garbage and trash from residents on private roadways will be at the discretion of the city. The city shall only collect garbage and trash contained in city-issued carts and bags with the appropriate city permit sticker attached.

Sanitation service. The collection, removal, and disposal of waste, refuse, garbage, trash, and rubbish; the insecticidal fogging and/or spraying performed by the city; animal control and such other functions contained herein that are necessary for the preservation of health, safety, and welfare of the community.

Specialized customer. A customer that requires specialized services for the collection of garbage and trash and/or cardboard recycling that the city cannot provide.

Trash. All nonputrescible solid wastes, consisting of both combustible and noncombustible wastes such as paper, cardboard, glass, crockery, excelsior, cloth and similar materials. The term "trash" shall not include mineral waste or manufacturing or processing wastes.

(Code 1965, §10-1; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Ord. No. 3581, 12-3-91; Ord. No. 3755, §1, 2, 12-21-93; Ord. No. 3842, §1, 11-16-94; Ord. No. 4111, §§ 1-3, 8-4-98; Ord. No. 4341, 10-2-01; Ord. No. 4415, § 1, 2, 9-17-02; Code 1991, §50.01; Ord. No. 5565, 02-19-13; Ord. No. 5691, 6-03-14)

50.02 - Recycling And Trash Collection To Administer Collection And Removal

(A) In order, among other functions, to satisfactorily collect and remove garbage and trash and

accomplish the other purposes of this chapter, there is hereby created a Recycling and Trash Collection for the city.

(B) The Recycling and Trash Collection shall be under the direction of the Recycling and Trash Collection Manager who in turn is subject to the general direction of the Mayor.

(Code 1965, §10-2; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.02; Ord. No. 5691, 6-03-14)

50.03 - Dumping Prohibited; Garbage Disposal Areas

Dumping within any area within the city, except garbage disposal areas as defined by §50.01, is prohibited.

(Code 1965, §10-6; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.03)

50.04 - Depositing On Vacant Lots

It shall be unlawful for any person to dump, throw or otherwise deposit any garbage or trash or accumulations of the same on any vacant lot in the city.

(Code 1965, §10-12; Ord. No. 1194, 4-6-59; Code 1991, §50.04)

50.05 - Depositing On Streets, Alleys, Or Sidewalks

It shall be unlawful for any person to throw, place, dump, litter, or otherwise deposit any garbage, trash, or refuse upon any public street, alley, or sidewalk of this city, except in receptacles placed upon such streets, alleys or sidewalks with approval of the city Recycling and Trash Collection Division.

(Code 1965, §10-13; Ord. No. 1149, 10-14-57; Ord. No. 1194, 4-6-59; Code 1991, §50.05; Ord. No. 5691, 6-03-14)

50.06 - Burning Of Garbage And Trash

It shall be deemed a violation of this Code for any person to burn trash or garbage except in incinerators that have been approved by the County Health Department, Recycling and Trash Collection, and Fire Department of the city.

(Code 1965, §10-17; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.06; Ord. No. 5691, 6-03-14)

50.07—50.19 - Reserved

ARTICLE II - COLLECTION PROCEDURE

50.20 - Service Requirements

(A) Commercial Service.

(1) Containers Required. Each owner, occupant, tenant, or lessee using or occupying any house, building, structure or portion thereof shall provide and maintain containers of sufficient number and size to contain the garbage and/or trash that will accumulate on the premises. This obligation begins upon issuance of a certificate of occupancy or upon actual occupancy. In the case of multiple dwellings or multiple occupancy, this duty shall be upon the owner of the premises. Said containers shall be covered at all times except when refuse is being placed in or removed from them. The city shall not be required to remove garbage or other litter not placed in containers or that is placed on top of or around the containers.

(2) Container Specifications. Such containers shall meet specifications and be of such size as set forth by the Recycling and Trash Collection Manager, and shall be compatible for automated commercial collection by city vehicles. Containers of volume less than 2 cubic yards shall be issued through the city for a purchase price of container cost plus taxes and delivery charges.

(3) Maintenance of Containers. It shall be the duty of such person to replace unserviceable containers and to keep them clean at all times. Notice of unserviceable or unsanitary condition of containers will be served upon such person by the city, at which time such person shall take prompt action to correct the existing conditions.

(4) Location of Containers. The placement and location of containers for commercial service and for apartments and apartment buildings shall be negotiated between the user and the Recycling and Trash Collection Manager. The city assumes no liability for the loss of items placed on or near the containers; the owner and/or occupant assumes the risk of loss of such items. Further, the city assumes no responsibility for lost or stolen containers.

(B) Residential Single-Family/Duplex Service and Residential Multi-Family Service.

(1) Residential Garbage Carts Required. Each owner, occupant, tenant, or lessee of any house, building, structure or portion thereof in the city limits shall obtain containers from the City of Fayetteville of sufficient size, as determined by the Recycling and Trash Collection Manager, to contain garbage and/or trash. This obligation begins upon issuance of a certificate of occupancy or upon actual occupancy. Customers receiving residential single-family/duplex service shall use only the residential garbage carts provided by the city. Customers receiving residential multi-family service shall only use the garbage or trash container provided by the city. The city shall only collect garbage and trash placed in

residential garbage carts and containers or bags with the appropriate city permit sticker attached.

(a) Additional Garbage Bag Pickup. On the collection day, an additional garbage bag (not to exceed 35 gallons in capacity, or 50 pounds in weight), with an attached city permit sticker may be left beside the garbage cart, and shall be picked up without additional charge. Each residential garbage cart customer shall receive four (4) free city permit stickers per year.

(b) Additional Collection. Residential customers may request additional garbage cart collection by appointment. Again, trash shall be placed in the garbage cart, and an additional bag, not to exceed 35 gallons in capacity, may be placed beside the garbage cart. An additional collection fee of $6.00, plus the actual disposal cost based on carts size, shall be billed to the customer at the next billing cycle. Bags placed outside of the garbage cart without city permit stickers shall not be collected.

(2) Location of Residential Garbage Carts. Residential garbage carts shall be placed at a single collection point within 3 feet of the curb, street, or alley line, where applicable, by 6:00 a.m. on mornings regularly scheduled for garbage and trash collection, provided however, that garbage carts shall not be placed at the curb, street, or alley more than twelve (12) hours before regular pickup, and shall be removed within twelve (12) hours thereafter. Alternate collection points may be specified at the discretion of the city.

(3) Exemptions. Residential customers who wish to apply for an exemption of the required location of residential garbage carts may contact the Recycling and Trash Collection for an application. Final determination of exemption status shall be made by the Recycling and Trash Collection Manager, or his designated representative.

(4) Rental Property Cart Service. Rental property owners listed on major owner list maintained by the City of Fayetteville Business Office, shall be permitted 10 days of service immediately following the vacation of the rental property for one-third (1/3) the normal monthly rate for the cart at the residence. The landlord shall be responsible to contact the Recycling and Trash Collection if the cart is discovered missing during cleanup activities. The landlord shall be responsible for the cart during these ten (10) days and shall be required to contact the Recycling and Trash Collection to arrange for cart pickup.

(5) Storage/Maintenance. Residential garbage carts shall be stored and maintained in a manner not likely to create a fire hazard, provide nesting space for rodents and other vermin, or breeding sites for insects.

(C) Yard Waste. Only biodegradable bags, as defined herein, shall be acceptable for the disposal of yard waste.

(D) Determining Classification of Required Service. Certain properties have mixed-uses or otherwise

have certain specific conditions, lease agreements between the landlord and tenant, land ownership arrangements, geography, topography, street layout, sidewalk access, private drive conditions, access and/or general layout of structures or individual units, or number thereof, particularly multi-family residential buildings, or cottage developments, or a combination of any of the above, which make the provision of the service the property would otherwise qualify for impossible or impractical to provide. In such circumstances, the Recycling and Trash Collection Manager shall make an objective determination, based on the above-listed factors and other factors which directly bear on the provision of recycling and trash collection service, as to whether a particular customer must be served by commercial service, residential single-family/duplex service or residential multi-family service.

(Code 1965, §10-3; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Ord. No. 3581, 12-3-91; Ord. No. 3842, §2, 11-16-94; Ord. No. 4111, §4, 8-4-98; Ord. No. 4270, 9-5-00; Ord. No. 4341, 10-2-01; Ord. No. 4415, §3, 9-17-02; Code 1991, §50.20; Ord. No. 5565, 02-19-13; Ord. No. 5691, 6-03-14)

50.21 - Access To Garbage And Trash Containers

(A) In the event that an exemption to curbside placement of garbage and trash is granted, it shall be incumbent upon the tenants, lessees, occupants, or owners of the premises where garbage or trash is generated to provide a safe and convenient entrance to and through the premises for the purposes of collecting same.

(1) All vicious animals shall either be confined, or garbage and trash containers placed at a point where collectors may service same without attack from said animals.

(2) Where commercial collections are made from alleys and access ways, said approaches shall be maintained in such manner as not to be a hazard to Recycling and Trash Collection personnel or equipment.

(B) Failure to comply with the provisions of this section after notification by the Recycling and Trash Collection will result in discontinuance of service until such condition is corrected.

(Code 1965, §10-4; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Ord. No. 3581, 12-3-91; Code 1991, §50.21; Ord. No. 5691, 6-03-14)

50.22 - Placing Garbage And Trash In Same Receptacle; Wet Garbage

(A) Garbage and trash may be placed in the same garbage receptacle, provided that all the provisions contained in this chapter are complied with.

(B) No liquid garbage shall be deposited with any garbage or trash. Kitchen garbage and any or all wet garbage shall be drained of all moisture and wrapped in paper before being placed in the garbage receptacle provided for in this chapter.

(Code 1965, §§10-7, 10-8; Ord. No. 1194, 4-6-59; Code 1991, §50.22)

50.23 - Bulk Brush Collection And Disposal Service

(A) Bulk brush collection service is provided on a call basis to residential service customers, not to commercial service customers, and is not to be construed as a service to remove wood, building debris, and the like, as defined in §50.24. The removal of such items is the responsibility of the owner, occupant, tenant, or lessee. Bulk brush collection from residential service customers shall be scheduled as other work permits.

(B) Bulk brush should be placed at curbside, as defined in §50.01, clear of any power lines, gas meters, or other hazards, no earlier than twenty-four (24) hours before their scheduled pickup.

(C) Residents, businesses and nonresidents may bring brush to the city's composting facility for disposal.

(Code 1965, §10-9; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Ord. No. 3755, §5, 12-21-93; Code 1991, §50.23)

50.24 - City Not Obligated To Collect And Remove Construction Refuse And Wood

This chapter shall not in any way require nor obligate city employees or city trucks to collect and remove refuse or debris resulting from construction on property where buildings are being repaired, remodeled, razed, or are under construction, nor to collect and remove wood and limbs resulting from the removal of trees on private property, nor to clean out incinerators, nor to render any other service unless specifically provided for in this chapter.

(Code 1965, §10-10; Ord. No. 1194, 4-6-59; Code 1991, §50.24)

50.25 - Collection And Removal Of Mineral, Manufacturing And Processing Wastes

Mineral, manufacturing or processing wastes to include sawdust and like residue, shall not be considered garbage or trash as defined or outlined in this Code. The service of collecting, removing, and disposing of mineral, manufacturing or processing waste to include sawdust and like residue shall not be rendered by the city Recycling and Trash Collection, unless a written contract between the owner, occupant, tenant, or lessee desiring the service and the city has been negotiated.

(Code 1965, §10-11; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.25; Ord. No. 5691, 6-03-14)

50.26 - Bulk Hauling

Failure to comply with the provisions of §50.20, resulting in special or additional garbage or trash service

will result in additional charges to the user at the rate specified in §§50.40 through 50.45.

(Code 1965, §10-14; Ord. No. 1619, 8-19-68; Code 1991, §50.26)

50.27 - Separation, Collection, Or Removal Of Materials At Disposal Grounds

All junk and other materials placed on the city disposal grounds shall be the property of the city, and no person shall be allowed to separate, collect, carry off or dispose of same, except under the written direction of the Mayor.

(Code 1965, §10-15; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.27)

50.28 - Application Of Collection And Removal To Service Outside City Limits

If garbage and trash collection and removal service by the city is extended to include owners, occupants, tenants, or lessees of residences, commercial, public, or private institutions, business establishments, or any other buildings or structures occupied or used for any other purpose not herein stated, and located outside the corporate limits of the city, such service shall be subject to all the provisions of this chapter.

(Code 1965, §10-16; Ord. No. 1194, 4-6-59; Code 1991, §50.28)

50.29 - Private Collectors; Contract With City Required

No person, except a duly authorized agent or employee of the city, shall empty garbage or trash receptacles, or convey or transport garbage or trash on the streets or public thoroughfares of the city, without a written contract with the city.

(Code 1965, §10-46; Ord. No. 1194, 4-6-59; Code 1991, §50.29)

50.30 - Bulky Waste/Community Cleanups

(A) Bulky Waste Pickup. Each customer shall be entitled to one bulky waste pickup per year. Customers shall arrange for bulky waste pickup by contacting the Recycling and Trash Collection to reserve a collection date. Mobile home parks and apartment complexes consisting of four or more units shall not be eligible.

(B) Community Cleanups.

(1) City-wide Earth Week Cleanup. During Earth Week of each year, customers may dispose of normal residential waste at the Recycling and Trash Collection Facility free of charge.

(2) Neighborhood Association/Ward Cleanups. Each City Council ward shall be eligible for up to four (4) community cleanups per year, provided however, that each cleanup shall be

coordinated by at least one (1) neighborhood association, under the sponsorship of both of the ward's alderperson(s). The city shall collect everything except normal residential garbage and hazardous waste free of charge.

(Ord. No. 4415, §4, 9-17-02; Code 1991, §50.30; Ord. No. 5691, 6-03-14)

50.31—50.39 - Reserved

ARTICLE III - COLLECTION CHARGES; BILLING

50.40 - Rates For Services

(A) Residential Single-Family/Duplex Service. Garbage and trash shall be collected from residential single-family/duplex customers one time each week for the following rates:

Garbage/Trash User Fee Schedule

Container Volume	Fixed Fee	Graduated Volume Fee	Cart Replacement	Monthly Rate
32	$6.13	$2.19	$0.43	$8.75
64	$6.13	$6.68	$0.54	$13.35
96	$6.13	$12.13	$0.70	$18.96

(1) There shall be no charge for the collection of residential yard waste.

(2) Residential single-family/duplex service customers shall receive bulk collection at no charge one time per year.

(3) If a residential single-family/duplex customer wishes to exchange to a larger residential garbage cart size, the customer shall be assessed a $20.00 cart exchange fee. No fee shall be assessed for customers wishing to exchange to a smaller cart.

(4) The Garbage/Trash User Fee shall be adjusted annually based upon the Consumer Price Index (CPI) as published by the U.S. Department of Labor, unless specifically waived by City Council

resolution.

(B) Residential Multi-family Service. Trash shall be collected from residential multi-family customers one time each week at a rate of $9.25 per dwelling unit per month unless the owner of the multi-family complex requests greater volume/frequency of service than the minimum required service as determined by the Recycling and Trash Collection Manager. Additionally, when recycling service is provided to a residential multi-family service customer, an additional rate of $0.95 per dwelling unit per month shall apply. When requests for greater volume/frequency of service by an owner are made, rates shall be determined by the prevailing commercial service rate divided by the number of dwelling units.

(C) Commercial Service. Trash shall be collected from commercial customers as shown below.

(1) The monthly commercial rate shall be:

Commercial User Fee Schedule

Commercial Container Size	Rate Per Pickup
95 Gallon Cart	$15.90
2 cubic yards	$32.76
4 cubic yards	$65.52
6 cubic yards	$98.28
8 cubic yards	$131.04

(2) Commercial 95-gallon carts have a maximum of four (4) pickups per week, Monday through Thursday. Larger commercial containers shall be serviced a minimum of once per week and a maximum of six (6) times per week, Monday through Saturday, except authorized holidays for city employees and unavoidable inclement weather.

(3) The rate for providing extra collection of any 95-gallon cart shall be twice the monthly

collection rate based on the number of collections per week as established by §50.40(B)(1). The rate for providing extra collection of any commercial loadall type container shall be $8.19 per cubic yard.

(4) The rate for providing cardboard and paper recycling service shall be $8.19 per cubic yard.

(5) Container rental is a flat fee per month.

Container Rental/Dumpster Lease Fee Schedule

Container Size (Cubic Yards)	Monthly Rate
2 yd	$12.89
4 yd	$14.73
6 yd	$17.14
8 yd	$20.24

(6) A residential multi-family complex office shall pay an additional $0.95 per month to its recycling and trash collection bill as if it were an individual unit when the residential multi-family complex is receiving recycling service.

(D) Loadall Type Container Service. The monthly rate for one pickup per week for any commercial establishment using loadall type containers for collection of garbage shall be $16.38 per cubic yard collected.

(E) Commercial Recycling. Limited commercial recycling is offered per the table below.

Size	Once Per Week
4 yd cardboard	$32.76
6 yd cardboard	$49.14

8 yd cardboard	$65.52
4 yd paper	$32.76
18 gal recycle bin (up to five bins)	$5.88

(F) Use of Composting Facility.

(1) Businesses, including commercial landscapers and tree trimmers, and nonresidents that bring brush to the city's composting facility for disposal will be charged as follows:

Composting User Fee Schedule

Size	Rate
Compact pickup trucks	$5.00
Full size pickup trucks	$8.00
Trailers up to 14 feet long	$10.00
Trailers greater than 14 feet long	$15.00

(Code 1965, §§10-28, 10-29, 10-29.1; Ord. No. 1194, 4-6-59; Ord. No. 1443, 4-26-65; Ord. No. 2587, 12-18-79; Ord. No. 2751, 8-18-81; Ord. No. 2767, 10-20-81; Ord. No. 2855, 9-21-82; Ord. No. 2886, 1-18-83; Ord. No. 3626, 8-4-92; Ord. No. 3755, §§3, 4, 12-21-93; Ord. No. 3841, §1, 11-16-94; Ord. No. 3842, §3, 11-16-94; Ord. No. 3993, §§1—5, 9-17-96; Ord. No. 4111, §5, 8-4-98: Ord. No. 4349, 11-6-01; Ord. No. 4382, 3-19-02; Ord. No. 4415, §5, 9-17-02; Code 1991, §50.40, Ord. No. 4457 §50.40, 01-21-03; Ord. No. 4765, 09-20-05; Ord. No. 5278, 10-05-09; Ord. No. 5299, 12-15-09; Ord. No. 5470, 12-20-11; Ord. No. 5565, 02-19-13; Ord. No. 5691, 6-03-14)

50.41 - Rates For Service Outside City Limits

In the event garbage and trash collection and removal service is rendered by the city for buildings, structure or premises located outside the corporate limits of the city, as provided for in §50.28, the monthly charge for such service shall be as prescribed in §50.40(A) and (B), plus 50%.

(Code 1965, §10-30; Ord. No. 1194, 4-6-59; Code 1991, §50.41)

50.42 - Higher Rate To Control In Case Of Uncertainty, Contradiction Or Duplication

In case of uncertainty, contradiction or duplication of rates prescribed in this article, the higher rate shall control.

(Code 1965, §10-31; Ord. No. 1194, 4-6-59; Code 1991, §50.42)

50.43 - Adjustment Of Rates; Exemptions

Appeal for adjustment of rates for charges prescribed by this article may be directed in writing to the Recycling and Trash Collection Manager and the Mayor. Appeal from their decision shall be directly to the City Council, and shall be in writing and filed with the City Clerk within thirty (30) days of the date written notice of the decision of the Recycling and Trash Collection Manager and the Mayor is given. Exemptions from sanitation charges may be granted by the City Council upon written request only, for a just cause.

(Code 1965, §10-32; Ord. No. 1194, 4-6-59; Ord. No. 1619, 8-19-68; Code 1991, §50.43; Ord. No. 5691, 6-03-14)

50.44 - Billing; When Payment Due

The billing for services hereby provided shall be included in the bill rendered monthly to each user of city water, or such services may be billed by any other practicable means of collection. All bills for services shall be rendered in the net amount due. Bills are due and payable on or before the 20th day following the billing date stated on the bill.

(Code 1965, §10-33; Ord. No. 1194, 4-6-59; Ord. No. 1443, 4-26-65; Ord. No. 1555, 7-17-67; Ord. No. 1619, 8-19-68; Ord. No. 3739, §1, 11-16-93; Code 1991, §50.44)

50.45 - Delinquent Accounts

(A) In the event that the billing for services provided for herein are not paid by the due date on the bill, they shall be considered delinquent and an additional charge of 10% of the total bill shall be levied. Such penalty shall become a part of and be collected with the regular billing for services heretofore levied. Said penalty may be waived for elderly or handicapped utility customer pursuant to a

penalty waiver program approved by the City Council.

(B) Termination of Service. The city shall discontinue service in accordance with §51.140, water billing procedures.

(Code 1965, §10-34; Ord. No. 1194, 4-6-59; Ord. No. 1443, 4-26-65; Ord. No. 1555, 7-17-67; Ord. No. 3739, §2, 11-16-93; Code 1991, §50.45)

50.46 - Service Deposits

A service deposit shall be made with each application for service. The service deposit shall be retained in trust, without interest, by the city's finance division. When service to the depositor is discontinued permanently, said service deposit shall be applied to the final billing and the remainder, if any, returned to the depositor.

(A) All consumers that receive water service and have made a service deposit on the dwelling in accordance with §51.135 shall not be required to make an additional service deposit as required by this section.

(1) The service deposit made under §51.135 shall include an adequate amount to cover all services received at the dwelling.

(2) Any service deposit covered under §51.135 shall follow all requirements as prescribed in said section.

(B) All consumers that have not made a service deposit in accordance with subsection (A) above, shall be required to make a minimum service deposit of $50.00, or that equal to the highest one-month bill, whichever is greater.

(1) The service deposit amount required may be increased up to two and one-half (2½) times the estimated maximum bill, as determined by the water and sewer services superintendent, or his designated agent, if the customer has a history of delinquent payment or nonpayment of his bill. Increased service deposits may be required of all consumers whether residential, commercial, or industrial.

(2) Each customer shall be required to make an additional $10.00 service deposit each time the service is discontinued for nonpayment of their water bill.

(C) The water and sewer services superintendent, or his official representative, may waive such service deposit requirements as may be considered justified in the opinion of said superintendent or his official representative.

(1) In determining whether a service deposit may be waived, the water and sewer services superintendent, or his official representative, shall take into consideration property ownership, credit experience with the consumer, payment record of the consumer, and status of current service deposit(s) the consumer presently has active with the city on other utility

accounts.

(D) The water and sewer services superintendent, or his/her official representative, shall determine with each application for service whether the service deposit shall be paid at the time of application, or if said deposit may be billed to the consumer, in part or in whole, on the first month's billing or spread over several months' billings.

(1) In determining the required method of payment for the service deposit, the water and sewer services superintendent, or his/her official representative, shall take into consideration property ownership, credit experience with the consumer, payment record of the consumer, and status of current service deposit(s) the consumer presently has active with the city on other utility accounts.

(Ord. No. 3739, §3, 11-16-93; Code 1991, §50.46)

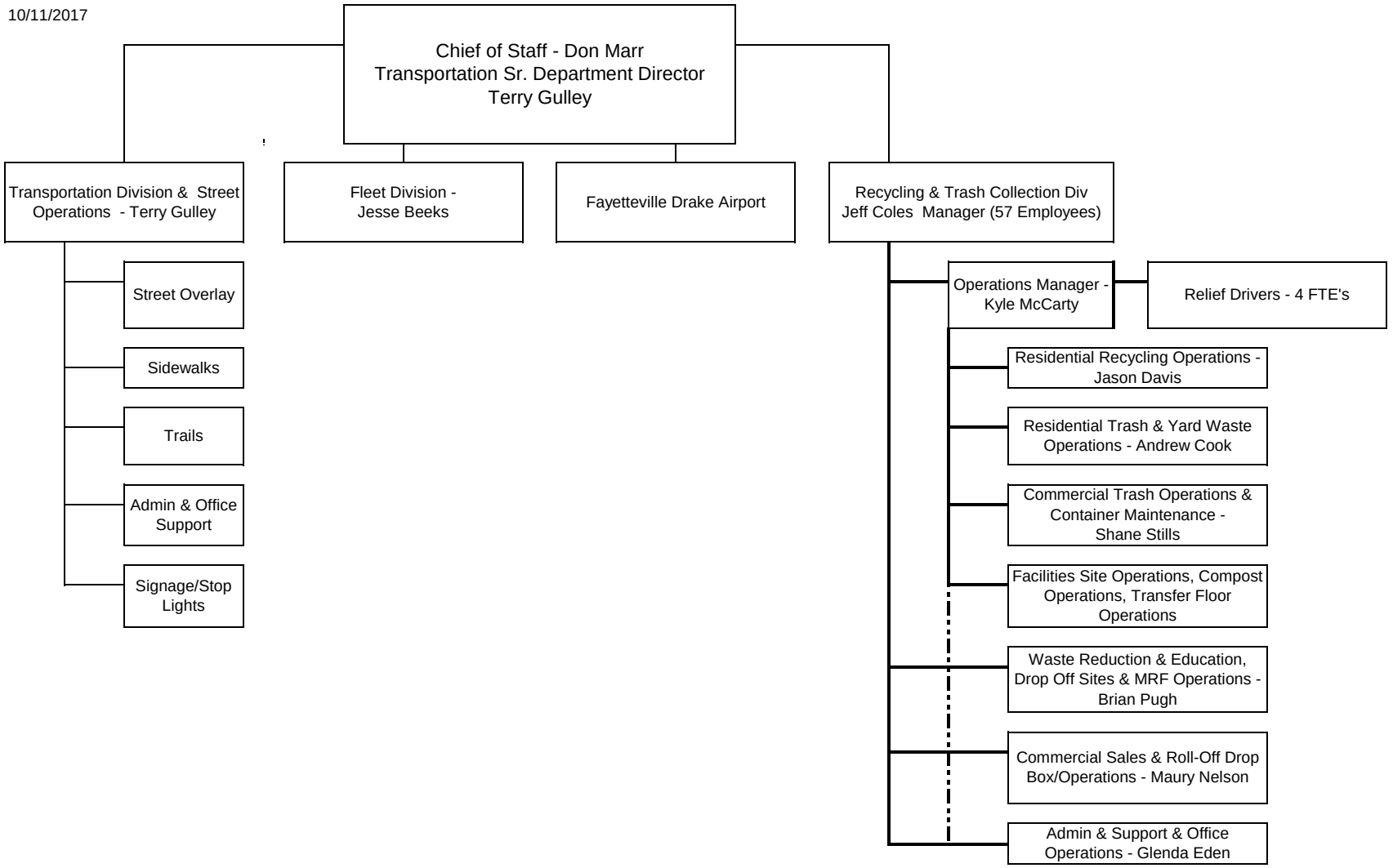
50.47—50.99 - Reserved

CITY OF FAYETTEVILLE ARKANSAS

Transportation Department Organization Chart

RFP 17-16, Appendix B

10/11/2017



RFP 17-16, Appendix C - Current RTC Rates

YARDWASTE - COMMERCIAL	
COMPACT	$5.00
FULL SIZE	$8.00
TRAILER(>14)	$10.00
TRAILER(<14)	$15.00

Scale Fees		
$ 29.95	Minimum	
$ 46.80	PER TON	

Apartment Rate		
APT	$	9.51
Growth	$	14.27

		INSIDE CITY LIMITS			OUTSIDE CITY LIMITS
RESIDENTIAL SERVICE		32	$	9.47	$14.21
		64	$	14.46	$21.69
		96	$	20.52	$30.78
EXTRA BAG CHARGE	per 32 gal bag		$	6.26	
RECYCLING BIN	(2) bins free		$	10.50	
NEWSPAPER BAG			$	4.25	
Event Boxes			$	4.25	
Bulk	(1) free bulk, 5 items		$	45.00	
Freon Appliance	per unit		$	30.00	

TRASH

95 GALLON CARTS (one cart)

Collections Per Week	Monthly Fee	Extra Dump
(1) Cart	$ 15.90	$31.80
(2) Carts	$ 31.80	
(3) Carts	$ 47.70	
(4) Carts	$ 63.60	
(5) Carts	$ 79.50	

2 YARD CONTAINERS (lease: $12.89)

Collections Per Week	Monthly Fee	Extra Dump
1 Per Week	$ 32.76	$16.38
2 Per Week	$ 65.52	
3 Per Week	$ 98.28	
4 Per Week	$ 131.04	
5 Per Week	$ 163.80	
6 Per Week	$ 196.56	

4 YARD CONTAINERS (lease: $14.73)

Collections Per Week	Monthly Fee	Extra Dump
1 Per Week	$ 65.52	$32.76
2 Per Week	$ 131.04	
3 Per Week	$ 196.56	
4 Per Week	$ 262.08	
5 Per Week	$ 327.60	
6 Per Week	$ 393.12	

6 YARD CONTAINER (lease: $17.14)

Collections Per Week	Monthly Fee	Extra Dump
1 Per Week	$ 98.28	$49.14
2 Per Week	$ 196.56	
3 Per Week	$ 294.84	
4 Per Week	$ 393.12	
5 Per Week	$ 491.40	
6 Per Week	$ 589.68	

8 YARD CONTAINERS (lease: $20.24)

Collections Per Week	Monthly Fee	Extra Dump
1 Per Week	$ 131.04	$65.52
2 Per Week	$ 262.08	
3 Per Week	$ 393.12	
4 Per Week	$ 524.16	
5 Per Week	$ 655.20	
6 Per Week	$ 786.24	

ROLL OFF CONTAINERS

>> Delivery Fee	$50.00	One time fee
>> Pull Charges		
20 yard	$220.00	+ disposal/delivery
30 yard	$230.00	+ disposal/delivery
40 yard	$240.00	+ disposal/delivery
CONTRACTOR'S RATE (MULTI. LOADS @ SAME SITE)	$210.00	+ disposal/delivery
Cardboard Only Rate		1/2 Pull Charge rate
>> Disposal	$38.25	Per ton
>> Tax	9.75%	

EXTRA CHARGES: not common

Daily Rental - Containers over 30 days		
20, 30 , 40 yd	$ 2.00	per day
20, 30 , 40 yd	$ 60.00	monthly lease
RELOCATION	$ 50.00	per trip
DEAD HEAD TRIP		1/2 Pull Charge rate

CARDBOARD , GLASS, PAPER - recycling dumpsters

4 YARD CONTAINER

Collections Per Week	Monthly Fee
1 Per Week	$ 32.76
2 Per Week	$ 65.52
3 Per Week	$ 98.28
4 Per Week	$ 131.04
5 Per Week	$ 163.80

6 YARD CONTAINER

Collections Per Week	Monthly Fee
1 Per Week	$ 49.14
2 Per Week	$ 98.28
3 Per Week	$ 147.42
4 Per Week	$ 196.56
5 Per Week	$ 245.70

8 YARD CONTAINER

Collections Per Week	Monthly Fee
1 Per Week	$ 65.52
2 Per Week	$ 131.04
3 Per Week	$ 196.56
4 Per Week	$ 262.08
5 Per Week	$ 327.60

PAPER DUMPSTER- 4yd	$	14.73	LEASE
	$	32.76	1X PER WEEK
COMMERCIAL BIN RECYLING	$	5.88	5 BINS/per month
APARTMENT RECYCLING	$	0.98	per unit

Temporary 6 yards - 7 day containers

>> Delivery & Pull	$	155.00	(includes deliveryl) + Disposal
>> Lease Fee			
	$	2.00	per day (over 10 days)
	$	60.00	per month
Extra Dump	$	80.00	+ Disposal
>>Tax		9.75%	
Disposal Costs			
Class 1 , 4	$	35.58	minimum per ton

CITY OF FAYETTEVILLE, AR

SOLID WASTE REDUCTION, DIVERSION, AND RECYCLING MASTER PLAN

SEPTEMBER 2016

Prepared for:

City of Fayetteville
Recycling & Trash Division
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Fayetteville, AR 72701

Submitted by:

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Kessler Consulting, Inc. is a proud member of or was awarded the following:

green BUSINESS PARTNER In association with Sarasota County

Earth Charter Sustainable Business Award Winner 2008

EPA GREEN POWER PARTNER

EPA WASTE WISE

PARTNER Carbonfree Carbonfund.org

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Section 1
Introduction

1.1 Goals and Objectives

In December 2013, the City Council of the City of Fayetteville, AR (City) passed Resolution No. 260-13, which established a goal to achieve an 80% diversion rate of solid waste generated by residents and businesses within the City to be attained by January 1, 2025. The resolution also called for enlisting a consulting firm to assist in developing a plan to achieve this goal. The City subsequently hired Kessler Consulting, Inc. (KCI) to assist in the planning process and in developing the Master Plan provided herein.

This primary objective of this Master Plan is to provide policy, program, and facility recommendations for the City to develop an efficient, cost-effective solid waste system that maximizes waste reduction and recycling and puts the City on a path to attaining its goal of 80% waste diversion. The Master Plan was developed with a 10-year planning period.

The City is keenly aware of the difference between what is collected for recycling and what is actually recycled. In 2011, the City Council passed Resolution No. 19-11, recommending that the City's Recycling and Trash Collection Division post quarterly reports regarding the volumes of materials collected for recycling and the primary or end-use of those materials. The resolution also acknowledged that technology is constantly changing, and encouraged staff to seek new markets and cost-effective ways to increase the materials diverted from the waste stream.

Although a quantitative statewide recycling goal does not exist, in 1991, the Arkansas Legislature passed Act 749, making it the policy of the state "to encourage and promote recycling in order to conserve natural resources, conserve energy and preserve landfill space." The Arkansas Department of Environmental Quality (ADEQ) prepares an annual State of Recycling report. In 2015, ADEQ reported a statewide recycling rate of 45.5%, an increase over the 2014 rate of 30%.[1]

1.2 About Fayetteville

Fayetteville covers a geographic area of 55.2 square miles in northwestern Arkansas. According to the U.S. Census Bureau, the City is the third-largest in the state and the fastest growing with a population of 80,621 (July 2014).[2] The City is the county seat of Washington County and is part of the Boston Mountain Solid Waste District (SWD), which encompasses Washington and Madison counties.

[1] Arkansas Department of Environmental Quality, *State of Recycling in Arkansas – 2015*, November 2015.
[2] U.S. Census Bureau, Quick Facts for Fayetteville, AR.

The City is home to the University of Arkansas, the state's largest university, with a student enrollment of 26,754 (Fall 2015) and employment of 1,384 faculty and 2,035 staff.[3] The large student population is reflected in the relatively low level of home ownership (41.4%) and high number of housing units with five or more units per structure (34.2%).[4]

In 2016, *US News & World Report* ranked the Fayetteville Metropolitan Statistical Area (MSA) as the third best place to live in the US, noting that the area "has transformed from a small town to a center of higher education, culture, commerce and entrepreneurialism."[5] In 2015, *Forbes* listed the MSA as one of the 25 best places for business and careers in the US.[6] Wal-Mart Stores and Tyson Foods are headquartered in the neighboring cities of Bentonville and Springdale, respectively. Hundreds of companies, including Procter & Gamble, Coca-Cola, and Rubbermaid, have offices located in the area to be close to Wal-Mart.

The City boasts numerous amenities, including parks, playgrounds, and walking trails. The Fayetteville Farmers Market draws visitors to the downtown square from April through November.[7] Dickson Street, running through the center of the City to the University of Arkansas campus, is a hub for shopping and dining. The Walton Arts Center is a first-class performing arts center, which is supplemented by numerous other entertainment venues, festivals, and cultural events.

The City's Recycling and Trash Division provides waste management and recycling services throughout the City. These services are discussed in Section 2.

1.3 Sustainable Materials Management

Sustainable materials management is a systematic approach to using and reusing materials more productively over their entire lifecycles (see Figure 1-1). It is an important concept when striving for 80% waste diversion and is also consistent with the City's participation in the Sustainability Tools for Assessing and Rating (STAR) Communities program.

The STAR program is a voluntary, self-reporting framework for evaluating, quantifying, and improving the livability and sustainability of communities in the United States. Waste minimization is one element of

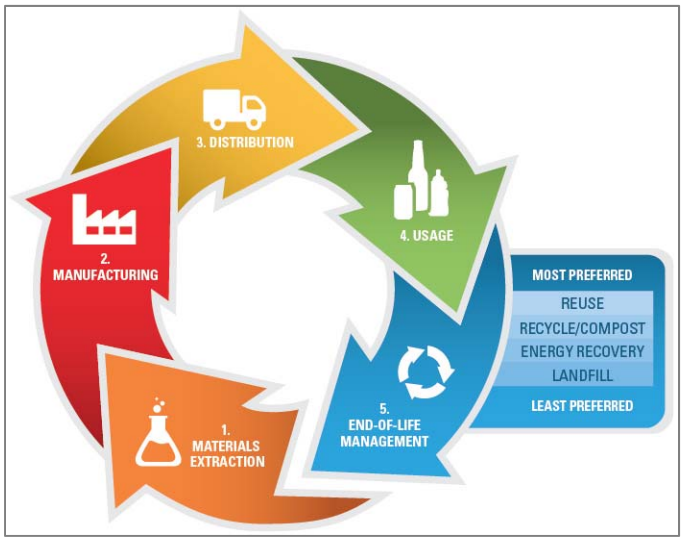


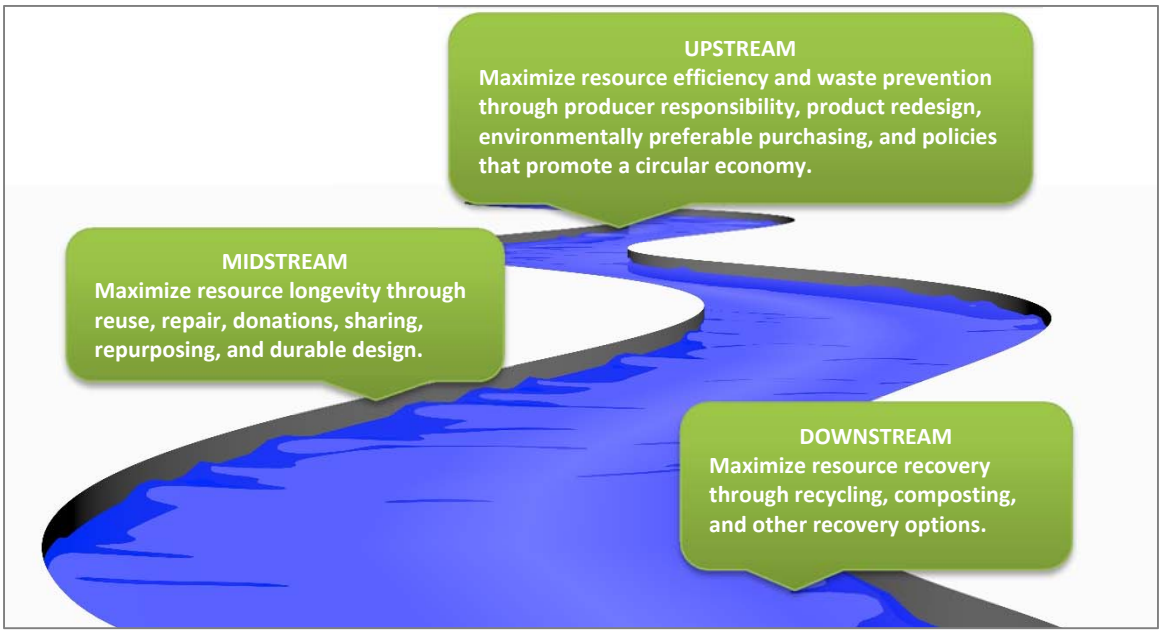
Figure 1-1: US EPA Sustainable Materials Management Diagram

[3] https://admissions.uark.edu/apply/abouttheuofa.php.
[4] U.S. Census Bureau, Selected Housing Characteristics for Fayetteville, AR.
[5] *US News & World Report*, "Best Places to Live" (http://realestate.usnews.com/places/rankings-best-places-to-live).
[6] *Forbes Magazine*, "The Best Places For Business and Careers" (http://www.forbes.com/best-places-for-business/list/).
[7] http://www.fayettevillefarmersmarket.org/.

the STAR climate and energy goals. The City has used the STAR structure to measure overall sustainability and as a gap analysis for future initiatives.

Sustainable materials management goes beyond simply recovering materials through recycling and composting practices. It involves all stages of the entire materials management system. Sustainable management strategies are often categorized as upstream, midstream, and downstream to reflect which segment of the material lifecycle is being impacted (see Figure 1-2).

Figure 1-2: Upstream, Midstream, and Downstream Materials Management



- **Upstream** strategies address resource extraction and product or packaging manufacturing. The objective is to conserve resources and prevent downstream waste by effecting actions at this stage. Upstream strategies include producer responsibility, product redesign, environmentally preferable purchasing, and other similar policies.
- **Midstream** strategies address extending the longevity of product use. These strategies include reuse, repair, donations, sharing, and durable design.
- **Downstream** strategies strive to maximize the recovery of resources from the items we discard. These strategies include recycling, composting, and various other material and energy recovery technologies.

Many of the upstream policies are more appropriate for state or national level consideration; therefore, primary focus during the planning process for the Master Plan was placed on midstream and downstream strategies.

Sustainable materials management considers not just the financial costs of collection and disposal, but also what is known in sustainable business practices as the “triple bottom line.”

The triple bottom line incorporates three areas of business performance: financial, social, and environmental (also referred to as the three Ps – people, planet, and profits).

- **Social** factors relate to the standard of living, human health, employment opportunities, education, and community or people.
- **Environmental** factors relate to natural resources, pollution prevention, and the natural environment or planet.
- **Financial** factors relate to the cost of services and facilities, avoided costs, revenues, savings, economic growth, and product development or profits.

When evaluating various waste diversion scenarios, the analysis included not only the financial impacts to the City, but also environmental (e.g., waste diversion). Social measures are difficult to assign appropriate means of measurement, but were considered as well.

1.4 Stakeholder Input

Early on in the planning process, the project team sought input from various stakeholders through meetings and surveys.

1.4.1 Stakeholder Meetings

In April and June of 2015, the project team met with various stakeholders to discuss the planning process and to seek input.

- **Public Meeting:** In April 2015, an advertised public meeting was held at Woodland Junior High School with more than 50 residents in attendance. Following a brief presentation by KCI, the public was encouraged to share their thoughts on current and potential future waste diversion opportunities for the City. Quite a few individuals spoke to the need for more multi-family recycling. Support was expressed for a wide range of recycling options, from more drop-offs to dual stream to single stream recycling, as well as for food waste recovery and recycling in public areas.
- **Multi-Family Property Managers:** Also in April 2015, a meeting was held with multi-family property managers. Although numerous property management companies were notified of the meeting, only five individuals attended. Two individuals were with Lindsey Management, two with Specialized Real Estate Group, and one individual manages various smaller properties. Both of the larger management companies have complexes currently participating in the City's recycling program. Key comments included the following:
    - The partitioned recycling roll-off container (referred to as the "battleship") requires up to 11 parking spaces (including space needed to service the container), so it needs to be located out of the way, but then it is not convenient.
    - Having only one container per complex is not convenient, especially in large complexes, and many residents therefore do not use it.

  - One company refused to distribute the 6-gallon bins offered by the City for residents to carry recyclables from their apartment to the recycling container, because they felt it would be "one more thing to worry about" during move-outs. The other company includes the bin on a move-out checklist, charging the tenant if the bin is not left behind.
  - Providing recycling can be considered an amenity offered to tenants.
  - At least one individual did not feel that social media and emails were a good way to communicate important information. Some complexes send monthly calendars to tenants.

- **Chamber of Commerce:** The project team also met briefly with the Chamber's Director of Economic Development to get a business perspective on commercial recycling in the City. The Chamber participates in recycling and promotes it to other businesses. Chamber of Commerce representatives also participated in the regional stakeholder meetings discussed below.

- **University of Arkansas:** In April 2015, the project team met with the University of Arkansas Associate Vice Chancellor for Facilities and representatives from the Office for Sustainability, University Housing, Athletics, and Arkansas Union to discuss results of the University's waste composition study and the potential for working jointly on waste diversion and organics recovery efforts. University representatives expressed interest in jointly working on food waste composting and later participated in the City's food waste pilot program, but may also be considering delivering food waste to an anaerobic digestion facility under development in Missouri.

- **City Council:** In June 2015, the project team met one-on-one with interested Council Members to provide an update on the project, gauge interest in conducting commercial food waste and residential single stream recycling pilot programs, and obtain input on what each felt were key solid waste and recycling issues to be addressed in the Master Plan.

- **Regional Stakeholder Meetings:** The project team participated in several meetings with regional stakeholders to gauge interest in regional recycling cooperation, especially as it pertains to developing a state-of-the-art single stream material recovery facility (MRF). In addition to the project team, meetings were attended by representatives from Northwest Arkansas Regional Planning Commission (NWARPC), Boston Mountain SWD, Benton County SWD, Fayetteville Chamber of Commerce, municipal representatives, University of Arkansas, and Closed Loop Fund.

1.4.2 Resident Survey

In April 2015, an online survey was conducted to allow the residents to provide input on existing solid waste practices and future trash diversion and recycling in the City. Responses were received from 447 individuals. For a survey of this type, this is a very high response rate and demonstrates the level of public interest in this topic. Results of the survey are summarized below, with complete results provided in Appendix A.

Approximately 74% of respondents resided in single-family homes, but a number of individuals wrote in comments asking for better opportunities to recycle in apartments and other multi-family complexes. Key responses included the following:

- Respondents expressed broad support for the City's 80% diversion goal (94% strongly support/support).
- The main reasons respondents gave for not recycling more were:
  - Inconvenient (26%)
  - Not sure what items are recyclable (21%)
  - Takes up too much space to store (13%)
  - Don't like having to sort materials (13%)
- The main things that would encourage respondents to recycle more were:
  - Getting an additional or larger recycling container (51%)
  - Rewards or incentive program (45%)
  - Not having to separate recyclable paper from containers (33%)
  - Receiving printed instructions on what to recycle and how (30%)
  - Knowing where to find instructions on the web (20%)
- Respondents' preferred methods for receiving information on recycling were:
  - Internet, such as City website and YouTube videos (54%)
  - Water/utility bill (46%)
  - E-mails (44%)
  - Social media, such as Twitter and Facebook (37%)
  - Printed materials, such as brochures, flyers, and newsletters (22%)
  - Mail (15%)
- The majority of respondents supported or strongly supported utilizing the following policies and programs to help achieve the City's 80% diversion goal:
  - Adding more types of recyclable materials to the curbside program (97%)
  - Construction and demolition debris recycling program (85%)

QUOTES FROM RESIDENT SURVEY

"The biggest barrier to recycling at home…is the need to separate materials. If the process is simple and everything can be placed in one bin to be separated later, I believe more people would participate."

"Getting 3-7 plastics is a huge one for our family. Typically the only trash we are generating are these types of food containers."

"No recycling at our apartment. We're lucky to live near the Marion Orton Recycling Center, but our neighbors are probably not as willing to go through the inconvenience as we are."

"I would suggest putting more recycling bins in public places (ideally, one next to every municipal trash can)."

"We have the ability to be a leader in sustainable practices for the state, and the region. Let's work hard to build upon what we have already done, and show others that it can be done here and it can be done well. "

- Curbside single stream recycling (81%)
- Mandatory commercial business recycling (70%)
- Residential food waste collection program (68%)
- Banning the use of certain problematic materials, such as retail plastic bags and Styrofoam™-type food ware (62%)
- Banning the landfilling of certain types of materials such as paper or recyclable containers (60%)
- Mandatory residential recycling (60%)

1.4.3 Business Survey

Concurrent with the residential survey, a business survey was conducted to enable businesses to provide input on current recycling practices and future commercial waste diversion and recycling in the City. Of the 32 respondents, the majority were professional service/office (39%) and food service (21%) businesses. The remaining respondents were a mix of business types, including retail, manufacturing/warehouse, medical, veterinary, education, multi-family complex, transportation, janitorial, and nonprofit.

A majority (73%) of respondents were already recycling on a regular basis and an additional 20% recycled occasionally.

Results of the business survey are provided in Appendix B. Key responses included the following:

- Business respondents expressed broad support for the City's 80% diversion goal (97% strongly support/support).
- The main reasons business respondents gave for not recycling were:
  - Inconvenient (60%)
  - Drop-offs are too inconvenient (60%)
  - Not enough space (60%)
  - Have to sort material (20%)
  - Too costly (20%)
- The main things that would encourage business respondents to recycle or recycle more were:
  - Free recycling containers (74%)
  - Recycling service included in basic waste collection fees (48%)
  - Green Business program to receive recognition for recycling (45%)
  - Not having to separate recyclable paper from containers (35%)
  - Various write-in comments were received that related to convenience, including the ability to share recycling receptacles, curbside collection, bigger containers, and Monday pick-ups
- The majority of business respondents (67%) would participate in food waste composting if the City provided and serviced a container, while only 1 respondent indicated a willingness to take food waste to a drop-off center.

- The majority of business respondents supported or strongly supported utilizing the following policies and programs to help achieve the City's 80% diversion goal:
  - Adding more types of recyclable materials to the program (91%)
  - Single stream recycling (87%)
  - Construction and demolition debris recycling program (78%)
  - Commercial food waste collection program (69%)
  - Mandatory commercial recycling (69%)
  - Banning the use of certain problematic materials, such as retail plastic bags and Styrofoam™-type food ware (66%)
  - Banning the landfilling of certain types of materials such as paper or recyclable containers (61%)

1.4.4 Vendor Meetings

The project team met with the companies listed below to discuss the current processing infrastructure in the region and the potential for future partnership with the City on various waste diversion programs.

- **GP Harmon Recycling (GP):** GP operates a recycling facility in Fayetteville, processing about 2,000 tons of commercial recyclables monthly. GP representatives expressed interest in constructing a MRF should the City transition to single stream recycling, as well as a willingness to process single stream recyclables during a pilot program.
- **Waste Management of Arkansas (WMA) and Marck Recycling (Marck):** Marck leases a recycling facility, located in Rogers, from WMA. Marck currently receives single stream recyclables (excluding glass) from various cities (e.g., Springdale, Rogers, Bentonville, and Bella Vista) and processes the material with limited automation. Marck did not indicate having any plans to increase mechanization of its MRF or to accept glass in the future. WMA did not indicate an intent to develop recyclables processing capacity in Northwest Arkansas.
- **Carbon Cycle and Carbon Transport:** Carbon Cycle is developing an anaerobic digestion facility to be constructed near Pineville, MO, approximately 60

QUOTES FROM BUSINESS SURVEY

"We currently transport our recycling to the ONF dumpsters, it is getting to be a hassle, it would be great if we could place provided recycle boxes on curb when the weekly trash is picked up."

"Our school cannot afford additional costs for recycling. Although there are benefits to students learning about recycling, students must give up time in class in order to pick up and sort our recyclables. I am not convinced this is the best use of their time."

"We work on Sunbridge and we would like to establish a shared commercial recycling receptacle for our business area. Let's do this!!"

"Our biggest drawbacks currently are 1) the time and effort it takes as busy business owners 2) flies. We need something more secure than the residential recycling bins, something that closes tightly to minimize flies. "

"Make recycling easier and more efficient."

miles from the City, and was seeking commitments of food waste. Carbon Transport was offering to transport materials to the facility.

1.5 Planning Process

Developing this Master Plan involved an organized process of information review and analysis, input from various stakeholders, and actual piloting of several potential waste diversion programs. Provided below is a summary of the steps involved in this planning process.

- **Waste composition study:** A composition study was conducted of waste received at the City's transfer station for disposal, the results of which are provided in Section 2.3 and Appendix C (Technical Memorandum No. 1) of this plan. This study helped to identify the opportunities for additional material recovery. A waste composition study was also conducted of waste disposed by the University of Arkansas, the results of which were provided in Technical Memorandum No. 2 submitted to the City on April 20, 2015.[8]
- **Baseline and operational assessment of current system:** This step benchmarked existing operations and waste diversion rates, which are summarized in Section 2 of this Master Plan.[9] KCI also conducted an operational assessment of the City's collection operations and City-owned and operated transfer station, recycling facility, and compost facility. Findings and recommendations were provided in Technical Memorandum No. 4 submitted to the City on May 22, 2015.[10]
- **Community input:** Early on in the planning process, community input was obtained through a public meeting and online surveys, as well as meetings with various stakeholder groups and vendors. These meetings and surveys are further discussed in Section 1.4 and Appendices A and B of this plan.
- **Reduction and diversion options:** Based on the waste composition study and analysis of the City's current system, opportunities and options were identified that offered the greatest potential to increase material recovery and waste reduction/diversion. These options are summarized in Section 3 of this plan.
- **Pilot programs:** Two waste diversion options that were initially identified as having the potential to substantially increase waste diversion were single stream recycling and organics recovery. To assist in evaluating the feasibility of these options, commercial food waste composting and residential (curbside and multi-family) single stream recycling pilot programs were developed and implemented. The results of these pilot programs are provided in Section 4 and Appendices D (Technical Memorandum No. 5) and E (Technical Memorandum No. 6) of this plan.

[8] All technical memoranda developed in conjunction with this project are provided on the City's website (http://www.fayetteville-ar.gov/1907/Recycling-Master-Plan). Because the City is not directly involved in collecting or managing the University of Arkansas waste at this time, Technical Memorandum No. 2 is not included as an appendix to this plan.

[9] The system summary was initially submitted as Technical Memorandum No. 3, which has been updated and is included as Section 2 of this plan.

[10] Technical Memorandum No. 4 can be found on the City's website (http://www.fayetteville-ar.gov/1907/Recycling-Master-Plan).

- **Scenario modeling:** Following discussions regarding the various waste diversion options identified, the project team selected diversion scenarios to be further evaluated through modeling. Results of the scenario modeling are presented in Section 5 of this plan.
- **Master Plan:** This Master Plan is the culmination of the tasks outlined above, as well as ongoing review and discussions with City staff. The proposed action plan outlined in Section 6 provides a phased approach toward more sustainable materials management and the City's 80% waste diversion goal.

Section 2
Existing Materials Management System

2.1 Recycling and Trash Division

The City's Recycling and Trash Collection Division (Division) provides solid waste and recyclables collection services to City residents and businesses. All materials are delivered to the City-owned and Division-operated facility located on South Happy Hollow Road where solid waste is transferred for disposal, recyclables are baled or prepared for market, and yard waste and brush is mulched or composted.

Figure 2-1 depicts the sources and quantities of materials received at the City's facility in 2015. This figure includes non-city waste, or waste that is not generated within the City but is accepted and transferred by the City for disposal. Non-city waste represents approximately 18% of all materials received at the facility and 21% of trash/garbage received.

The City has no direct influence or control over waste generated outside of its borders; therefore, discussions in this plan related to waste reduction and recycling generally do not include this non-city waste. However, receipt of non-city waste impacts operations; therefore, this waste was included in the scenario modeling, which is further discussed in Section 5.

The Division operates through an enterprise fund, the Recycling and Trash Collection Fund. Revenues for the fund are derived from fees levied for trash collection, recycling revenue, and container sales and leases. Based on final 2015 financial information provided by the City, Figures 2-2 and 2-3 summarize revenues and expenses for that year. In 2015, operational expenses exceeded revenues by nearly $1.2 million, which was covered by fund reserves.

In 2015, capital improvements were made totaling $4,428,262. These improvements included building upgrades, solid waste compactors and containers, and office and transfer station expansion.

Figure 2-1: Materials Managed at City Facilities, 2015

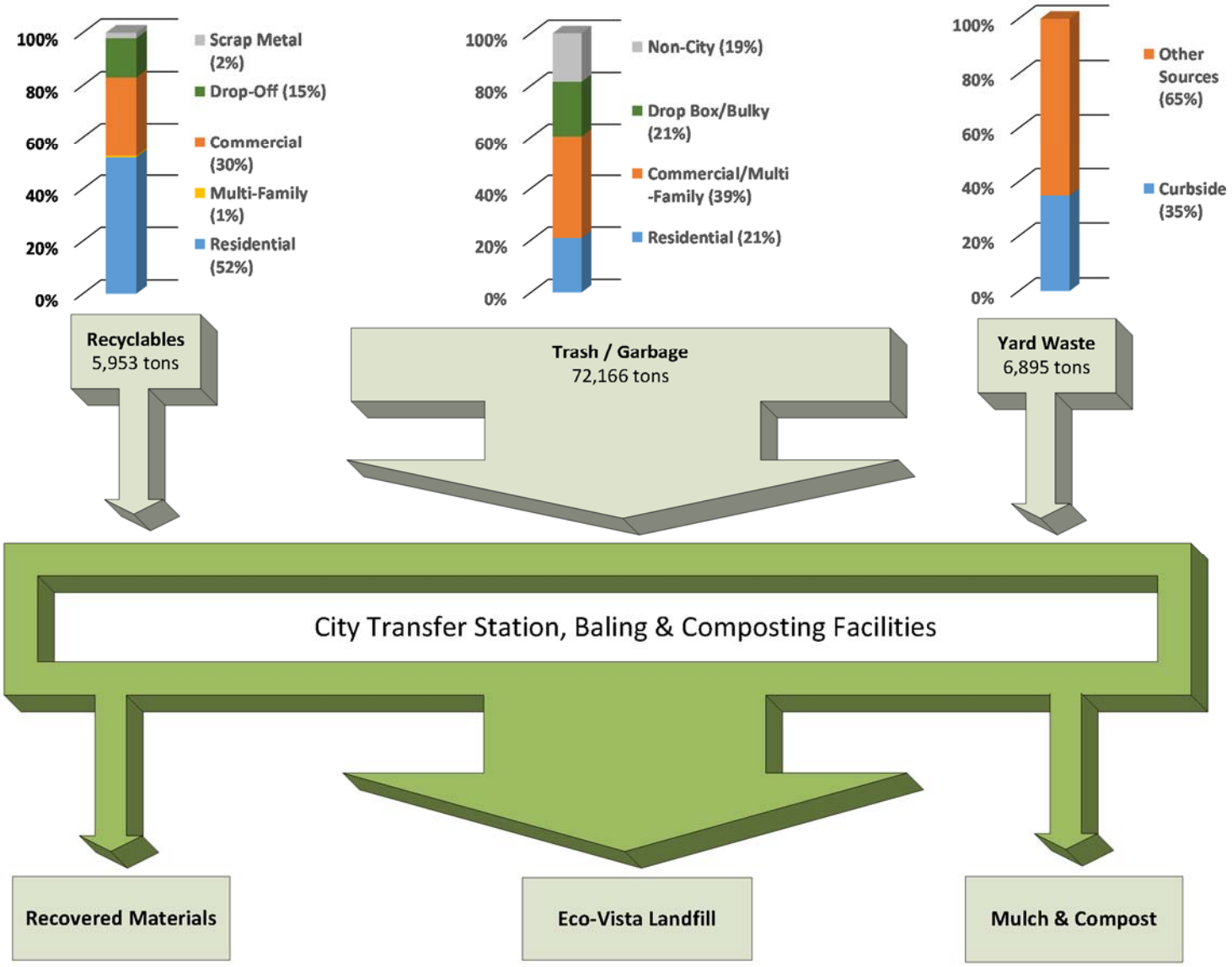


Figure 2-2: Operating Revenues, 2015

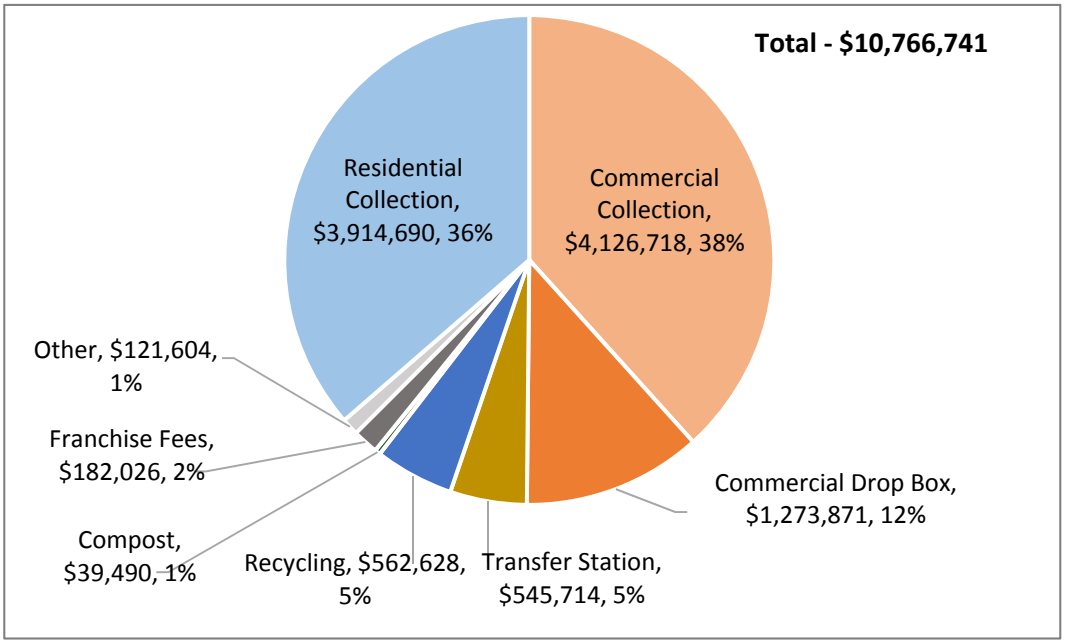
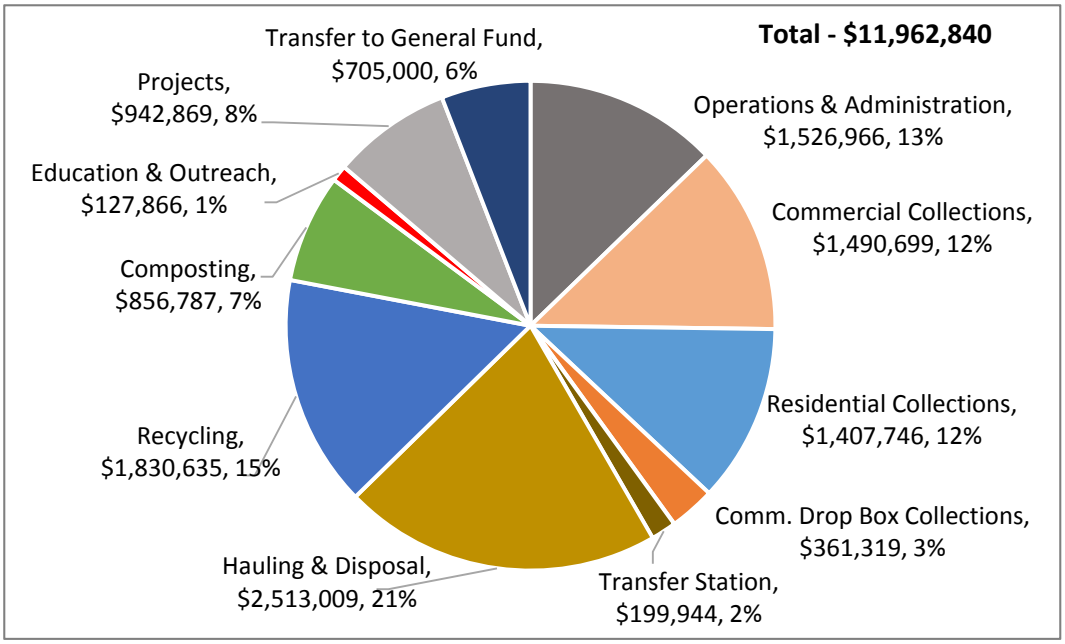


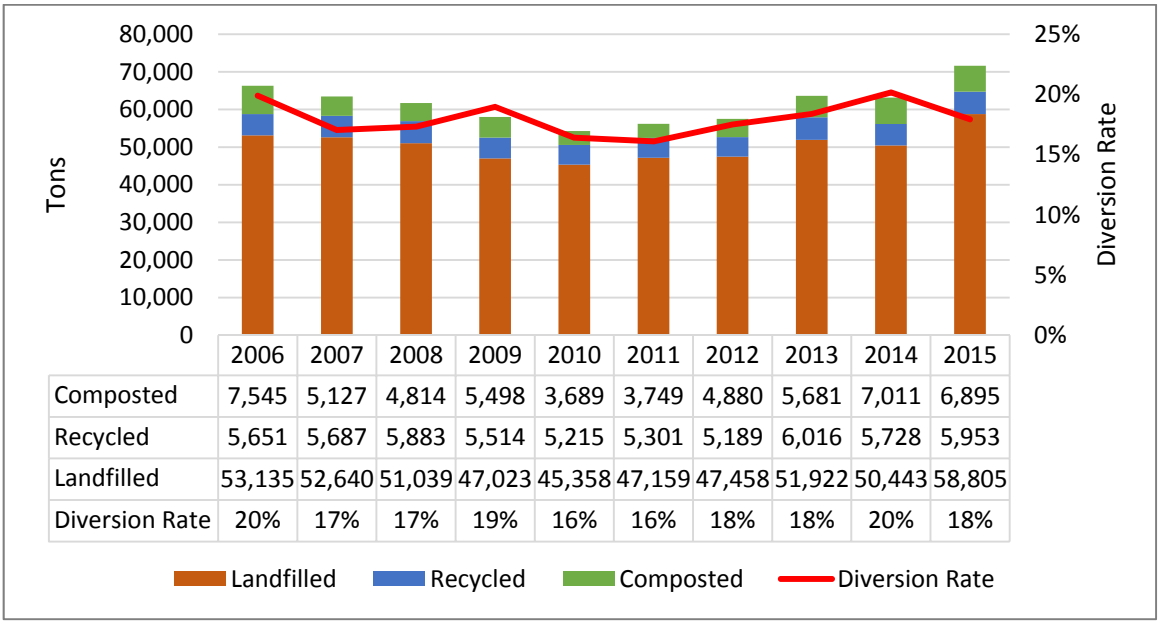
Figure 2-3: Operating Expenses, 2015



2.2 Waste Generation and Diversion

Figure 2-4 provides the quantities of waste landfilled, recycled, or composted by the City during the last 10 years. It does not include non-city waste managed by the City or waste generated in the City but not managed by the City. In 2015, the City managed 71,653 tons of material generated within the City, 5,953 tons of which were recycled (8%), 6,895 tons composted (10%), and the remainder landfilled.[11] The waste diversion rate has ranged from 16-20% over the last 10 years, with an 18% diversion rate in 2015.

Figure 2-4: Waste Landfilled, Recycled, and Composted, 2006-2015 (tons)



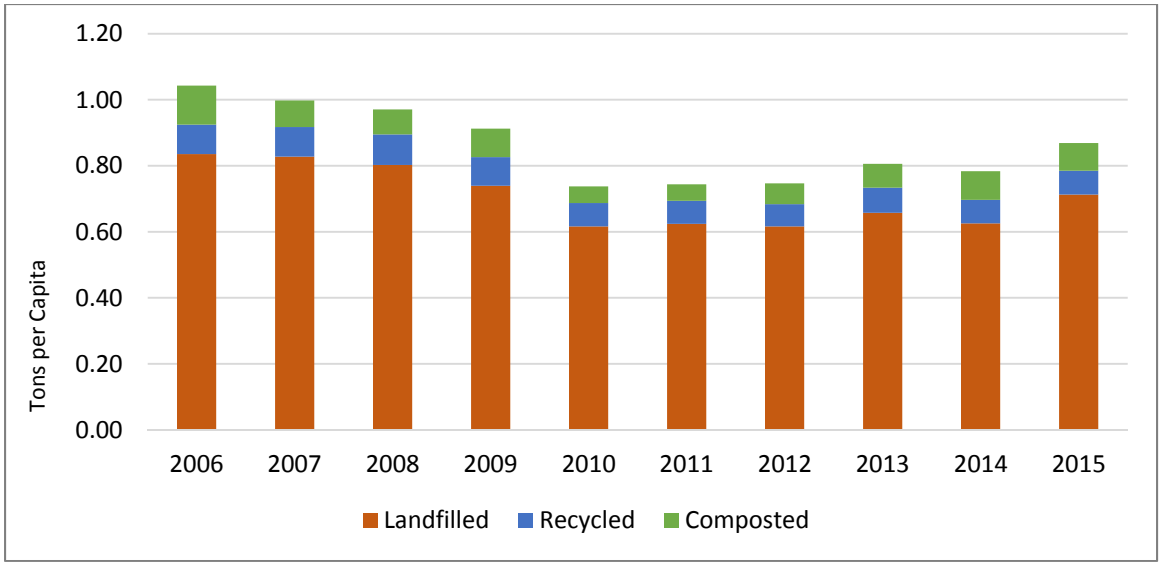
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Composted	7,545	5,127	4,814	5,498	3,689	3,749	4,880	5,681	7,011	6,895
Recycled	5,651	5,687	5,883	5,514	5,215	5,301	5,189	6,016	5,728	5,953
Landfilled	53,135	52,640	51,039	47,023	45,358	47,159	47,458	51,922	50,443	58,805
Diversion Rate	20%	17%	17%	19%	16%	16%	18%	18%	20%	18%

Table Note: Landfilled data does not include non-City waste and, therefore, does not match the Trash/Garbage tons in Figure 2-1.

[11] Recycling tonnage is based on materials marketed. Composting tonnage is estimated by the City based on type of materials received, approximate cubic yards, and conversion factors.

Figure 2-5 depicts waste generation (residential and commercial) on a per capita basis during the same time period. Per capita waste generation declined during the recessionary years of 2008 through 2011, which was the trend nationally, and began increasing again in 2012.

Figure 2-5: Tons per Capita Generation



2.3 Waste Composition

As part of the planning process, a waste composition study was conducted in January 2015. Appendix C provides Technical Memorandum No. 1 that details the study results.

Figure 2-6 depicts the composition of residential and commercial/multi-family waste that was landfilled.[12] As can be seen by these pie charts, substantial opportunities exist to increase recycling. These opportunities include recyclable materials that are currently landfilled but could have been collected in the City's existing recycling program (27% of residential waste and 30% of commercial waste). Compostable materials, food waste in particular, also represent an important opportunity to divert additional materials from the landfill.

During the composition study, bulky waste received at the transfer station was visually audited to estimate the types and percentages of materials in this waste stream. Figure 2-7 depicts the composition of construction and demolition (C&D) and bulky waste as a percentage by volume and percentage by weight. Substantial diversion opportunities also exist in bulky waste, with more than half the material by weight consisting of wood waste.

[12] Multi-family waste placed in dumpsters is collected as part of commercial waste.

Figure 2-6: Composition of Materials Landfilled (% by weight)

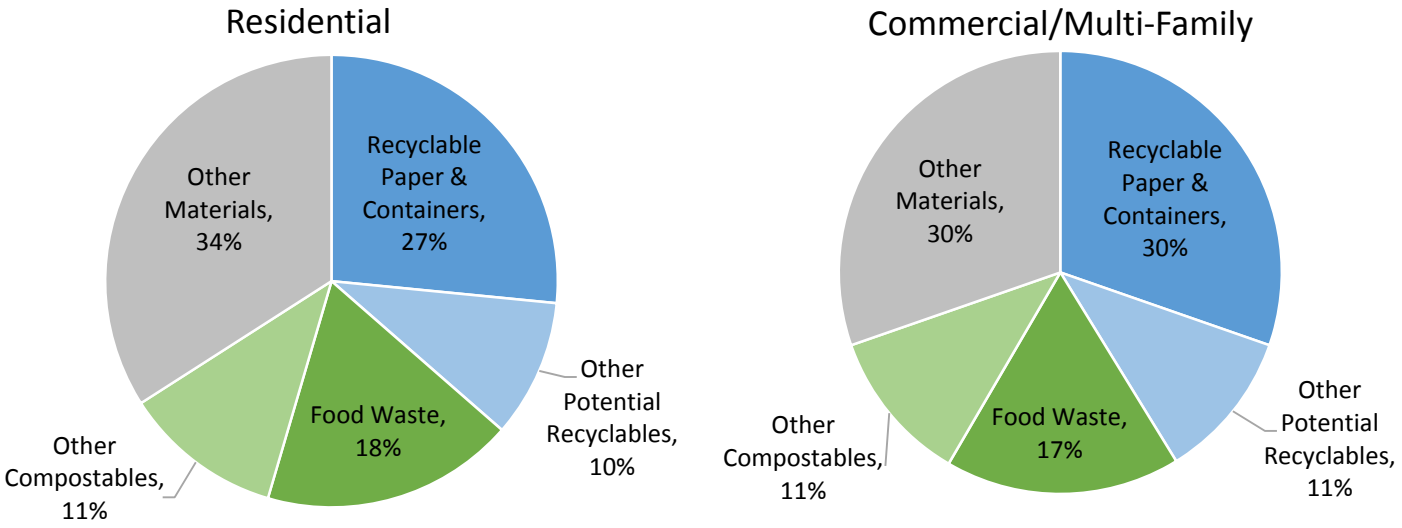
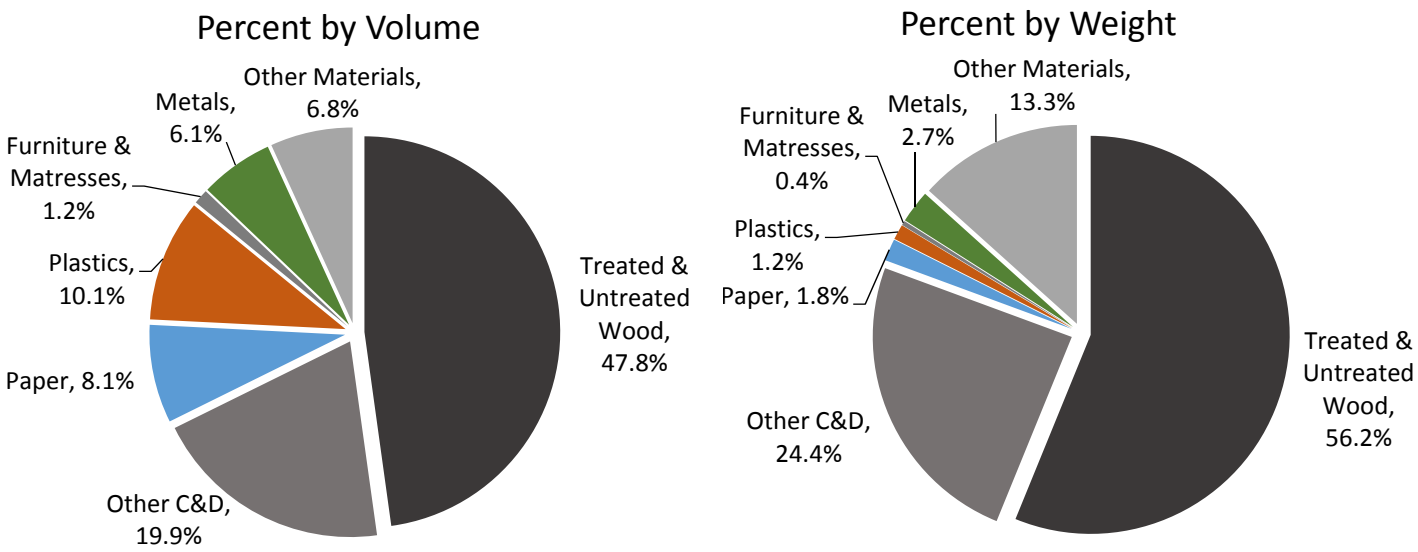


Figure 2-7: Composition of C&D and Bulky Waste Landfilled



2.4 Collection

The City has the exclusive right to collect solid waste and recyclables generated within the City limits, but franchises (grants the right to) private haulers to provide some services.

2.4.1 Residential Curbside Collection

In March 2003, the City implemented a Pay-As-You-Throw (PAYT) curbside residential collection program. Waste, recyclables, and yard waste are collected once per week and on the same day of the week.

Picture 2-1: Curbside Residential Trash, Recyclables and Yard Waste

- **Waste** – Residents may choose from the following three cart sizes:
  - 32-gallon - $9.37 per month service fee
  - 64-gallon - $14.30 per month service fee
  - 95-gallon - $20.31 per month service fee

Residents may switch to a larger cart size for a $20 service fee; switching to a smaller size cart may be done at no additional cost. In addition, each residential unit may place up to four additional bags of waste curbside annually for no additional fee, after which they are charged $6.20 per bag.

Picture 2-2: Sorting Recyclables Curbside

- **Recyclables** – Recyclables are collected in 18-gallon plastic recycling bins with lids and manually sorted at the curb into multiple compartments in the collection truck (curb-sort). Materials accepted in the recycling program include newspaper, mixed paper, corrugated cardboard, paperboard or chipboard, plastic #1 and #2 bottles, aluminum cans, steel or tin cans, and glass bottles and jars of all colors. In 2015, the City collected 3,103 tons of recyclables curbside, which averaged approximately 280 pounds per residential unit annually.[13]
- **Yard waste** – Grass clippings and leaves must be bagged in compostable brown paper yard waste bags, not to exceed 50 pounds each, or placed in a trash can visibly marked as "Yard Waste." Brush must be bundled and tied, and is restricted to no more than 4 feet in length, limbs no greater than 5 inches in diameter, and bundles no more than 50 pounds in weight. Currently, an unlimited amount of yard waste is accepted.

[13] The number of customer accounts fluctuates throughout the year. This figure is based on the number of active residential accounts (18,150) and number of commercial businesses participating in curbside recycling (276) as of April 2015. Businesses using 18-gallon recycling bins are serviced as part of curbside residential recycling routes.

- **Bulky waste** – Bulky waste is divided into three categories: household, metal, and yard waste. Each residence if offered one free bulky waste pickup per year consisting of no more than 5 items within the same category. Additional bulky waste pickups of up to 5 items within the same category may be scheduled for a fee of $45. Multiple items in different categories must be picked up on different days and each collection is counted as a separate bulky waste pickup.

  Alternatively, residents may self-haul up to 5 accepted bulky items in multiple categories to the City's transfer station in lieu of the free bulky waste pickup. In addition, the City conducts free cleanup events for bulky waste in the 4 wards of the City twice per year, spring and fall. Residents may also deliver yard waste to the City's compost facility for free.

2.4.2 Multi-Family Collection

City crews also collect multi-family residential waste and recyclables.

In the fall of 2011, the City implemented a multi-family recycling program targeting apartment complexes with 100 or more units. The program is dependent on the apartment complex's ability to provide space for a partitioned roll-off container. Residents are required to sort recyclable materials before placing them in the appropriate compartment.

Picture 2-3: Partitioned Recycling Roll-off at Multi-Family Complex

The City has since expanded the multi-family recycling program to smaller complexes as well. In addition, the City obtained a grant to offer 6-gallon recycling buckets or bags to assist residents in participating complexes with collecting and transporting recyclables to the roll-off container. Six complexes are currently participating in the multi-family recycling program.

In 2015, 40 tons of recyclables were collected from the 6 participating multi-family complexes, which equates to approximately 40 pounds annually per residential unit. Even given the fact that units are not occupied all of the time, this low recovery rate reflects the lack of convenience and therefore participation in this collection system.

2.4.3 Commercial Collection

The City has the exclusive right to collect commercial waste within the City limits, except for collection services franchised to private haulers. The City also provides collection of recyclables.

The City's commercial recycling program consists of 3 key programs as outlined below. Separate routes are run to collect each of these recycling streams, which requires multiple passes by businesses that recycle more than one of these material streams.

- **Cardboard and paper recycling program:** Segregated cardboard collection is a long-standing program and the paper program was implemented in October 2008. The City uses a front-load collection vehicle to service about 175 cardboard dumpsters and 25 paper dumpsters.
- **Curbside recycling program:** Established In 2009, approximately311 small businesses utilize up to 5 18-gallon recycling bins each, which are serviced by the City in similar manner and on the same routes as the residential curb-sort program.
- **Glass recycling program:** Initiated in July 2013, the City places and services roll carts at businesses in the entertainment district along Dickson Street and several other locations to collect glass. This program was made feasible by the City's contract with Ripple Glass, which allows various colors of glass to be recycled together. Currently, 50 roll carts are in use.

Picture 2-4: Commercial Glass Recycling Carts

The City operates a dropbox program. Six-yard dumpsters are available to rent for small cleanup projects, and 20-40 cubic yard roll-offs are available for large projects such as construction and remodeling.

The City franchises with 3 private companies (Hog Box, Waste Management, and Allied Waste) to provide the services listed below, some of which are provided in competition to the City.

- Collection of solid waste generated from industrial, large commercial, or construction/ demolition activities in roll-off containers (open-top or compactors) of 20 cubic yards or greater in size.
- Collection of special waste such as hazardous waste, grease, or any other type of solid waste requiring special handling or disposal.
- Collection of recyclables outside the residential recycling program. Recyclables must be separated by type, with two exceptions. Contractors are allowed to collect commingled recyclables as part of C&D debris and commingled containers collected at University of Arkansas events.

The companies are not required to deliver waste or recyclables to the City's transfer station or recycling facility. They are required to pay franchise fees of 10% of gross revenue received for solid waste hauling services, but not for revenue received for recycling services. The agreements were originally approved in August 2012.

2.4.4 Drop-Off Collection

The City provides two community recycling drop-off sites. The drop-offs are open to everyone, not just Fayetteville residents. The same materials accepted in the residential recycling program are accepted at the drop-off sites.

Picture 2-5: Happy Hollow Road Drop-Off Recycling Center

- Marion Orton Recycling Center (located at 735 W. North Street) – This staffed center is open on Monday through Saturday from 6:00 am – 5:00 pm, except Thursday when it is open until 7:00 pm. It received 311 tons of recyclables in 2015.
- City of Fayetteville Recycling Center (located on Happy Hollow Road near the transfer station) – This center is open 24 hours a day, 7 days per week, and is staffed 25-30 hours per week. It received 549 tons of recyclables in 2015.

The City also services a recycling drop-off center installed by Ozark Natural Foods (1554 N. College Avenue) that is accessible 24 hours per day. Approximately 25 tons of recyclables were collected at this drop-off location in 2015.

2.5 Materials Recovery

2.5.1 Recycling

City collection crews deliver curb-sorted recyclables to the City's recycling facility where they are tipped by material type. Paper is tipped by grade into bunkers located inside of the building. Vehicles then travel outside to a raised platform and tip containers, by type, into roll-offs abutting the platform. The City bales the recovered materials, with the exception of glass.

Picture 2-6: Collection Vehicle Tipping Paper at Recycling Facility

Once a sufficient quantity of baled material is stockpiled, the City markets the material. The City contracts with Ripple Glass of Kansas City, MO to haul and recycle glass bottles and containers at no cost to the City.

In 2011, the City Council passed a resolution recommending that the Division post quarterly reports on the types of materials collected for recycling and the primary or end-use markets for those materials. The Division posts this information on its webpage.

Table 2-1 provides the quantity of each type of recovered material sold annually during the last 10 years. Changes in the amount of certain material types reflect national trends in product packaging and online shopping and news outlets.

For example, the substantial drop in recovered newspaper is likely a result of reduced readership and downsizing of printed newspapers that have been experienced nationwide. The increase in cardboard is likely in part because of increased online shopping, as well as the combining with chipboard. Plastics gradually increased as they claim a greater share of product packaging; however, glass has also been on the rise.

Picture 2-7: Collection Vehicle Tipping Containers at Recycling Facility

Picture 2-8: Baling Paper at Recycling Facility

Table 2-1: Recovered Materials Marketed (tons)

Year	Glass	Alum. Cans	Mixed Paper	News	Card-board (OCC)	Chip-board	Steel Cans	Plastic Bottles	Scrap Metal	Concrete	E-Waste	Total
2015	1,315	75	951	633	2,507	with OCC	108	292	124	43	26	6,074
2014	1,297	59	962	722	2,134	69	112	324	75	136	3	5,893
2013	1,357	57	952	754	1,925	206	110	252	68			5,681
2012	1,058	65	932	767	1,160	791	87	267	62			5,189
2011	1,010	73	848	892	1,175	827	110	252	114			5,301
2010	997	70	899	915	1,135	743	112	232	112			5,215
2009	1,144	63	867	1,096	1,113	727	112	266	126			5,514
2008	967	62	880	1,548	1,284	670	92	247	133			5,883
2007	897	48	773	1,749	1,153	718	102	247				5,687
2006	897	74	824	1,580	1,133	799	103	241				5,651
Avg.	**1,094**	**65**	**889**	**1,066**	**1,472**	**555**	**105**	**262**	**102**	**89**	**14**	**5,609**

Table 2-2 summarizes the average revenue received by the City for each material type and Figure 2-8 depicts the variability of pricing for several of these recovered commodities. Market values fluctuate over time and markets for most commodities experienced a significant drop in 2008-2010. Table 3-2 also provides the average commodity market price in the Southeast United States in 2015 according to an industry pricing index (RecyclingMarket.net). The City's revenue exceeded the market index for glass and all fiber commodities, but was slightly less than the index for other container types.

Table 2-2: Average Revenue by Recovered Commodity ($/ton)

Year	Glass	Aluminum	Mixed Paper	News	Cardboard (OCC)	Chipboard	Steel Cans	Plastic Bottles	Scrap Metal
Avg. 2015 Index*	($17.50)	$1,260.39	$53.10	$59.74	$88.45	no index	$57.84	$425.99	$106.20
2015	$0.00	$977.77	$59.16	$67.09	$88.69	with OCC	$32.00	$356.58	$133.93
2014	$0.00	$1,559.05	$50.63	$70.65	$92.54	$49.84	$221.81	$400.07	$204.07
2013	$0.00	$1,720.82	$33.50	$66.86	$108.31	$20.81	$221.53	$424.93	$162.79
2012	$0.00	$1,564.12	$43.62	$68.42	$96.94	$32.91	$344.72	$447.04	$189.71
2011	$32.94	$1,404.51	$78.57	$112.40	$127.76	$81.36	$240.44	$585.25	$175.55
2010	$36.22	$1,498.44	$55.44	$94.62	$135.21	$0.00	$204.03	$410.45	$136.60
2009	$33.65	$1,048.03	$23.50	$49.97	$138.59	$0.00	$60.23	$238.69	$41.64
2008	$38.26	$1,686.92	$54.21	$107.39	$168.51	$0.00	$264.23	$423.46	$62.00
2007	$33.91	$1,727.29	$56.50	$87.34	$180.18	$0.00	$164.14	$426.63	-
2006	$30.70	$1,637.41	$29.38	$70.98	$138.28	$0.00	$80.12	$371.17	-
Avg.	$20.57	$1,482.44	$48.45	$79.57	$127.50	$20.55	$183.32	$408.43	$138.29

* Pricing based on RecyclingMarkets.net.

Figure 2-8: Average Revenue per Ton for Various Recovered Commodities ($/ton)

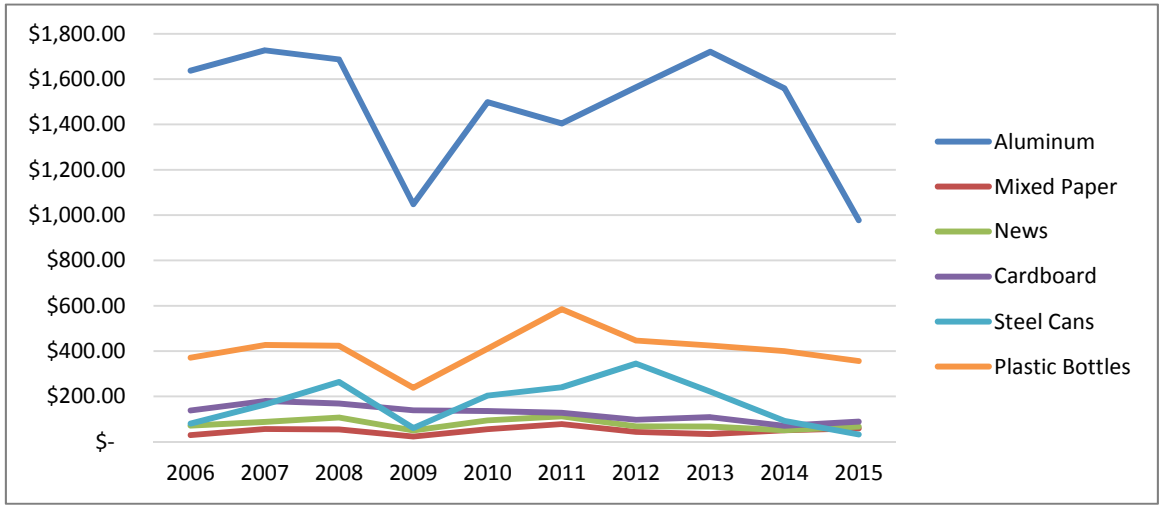


Figure Note: Figure is intended to provide a general understanding of fluctuations in the value of recovered commodities. It does not include all recovered commodities sold by the City because of scale differences.

2.5.2 Composting

The City owns and operates a Class CY Compost Site, meaning it is permitted to receive only yard waste and other woody wastes.[14] The City processes yard waste collected curbside from residents, as well as yard waste delivered directly to the site. City residents may deliver yard waste at no charge; commercial businesses and non-residents are charged a fee.

Picture 2-9: Windrow Turner at Composting Facility

In 2015, the City estimated receiving 6,895 tons of yard waste; however, this is an estimate since no scales are used at the compost facility. The compost facility offers mulch (wood chips) throughout the year for purchase by residents and non-residents. A portion of the organic waste is also composted. The composting process takes approximately 4-6 months and the City has compost samples tested each April by a lab to determine quality of the end-product. Only City residents are allowed to purchase compost and quantities are limited.

2.5.3 Other Related Programs

The City sponsors or participates in other programs to collect and manage solid waste and recyclables, including the following:

- **Festival Recycling:** The City supports recycling programs for festivals by providing recycling guidelines and working with event coordinators to implement recycling. For small events, the City offers ClearStream™ recycling stands at no charge and event organizers deliver bagged recyclables to the City when they return the stands. For

[14] In Arkansas, composting facilities are classified according to the type of waste authorized for composting:

- Type "CY" facilities may accept only yard waste and other woody wastes. Type "CY" facilities qualify for coverage under a general permit in which permit coverage is granted within 30 days of receiving a complete application.
- Type "CO" facilities may accept any source separated organic wastes such as paper, sewage sludge, food processing wastes or other specific organic wastes, including type "CY" wastes.
- Type "CS" facilities may receive all types of suitable solid waste for composting including household garbage, commercial wastes, suitable industrial wastes, and all type "CO" and "CY" wastes.

larger events, the City offers to provide and service carts or other recycling containers for a fee.

- **Household Hazardous Waste (HHW) & Electronics (e-waste):** The Washington County Environmental Affairs Office, located at 2615 Brink Drive in Fayetteville, operates an HHW Collection Center where City residents may drop off HHW for free. In addition, the center accepts household e-waste and tires. Coupons waiving the e-waste fee are available to City residents through the Division. City residents may bring in four passenger tires for free and a $2.00 fee is charged for each additional tire. In addition, the City began accepting e-waste during the ward cleanups if delivered to the Recycling and Trash Facility on Happy Hollow Road. Boston Mountain SWD provides a trailer for e-waste collection and recycles the collected e-waste through its contractor.

- **Adopt-A-Street:** In this City-sponsored program, individuals or groups adopt a street and are responsible for picking up litter on that street at least four times annually. The City posts a sign displaying the group's name and provides all materials and supplies (e.g., trash bags, gloves, and safety vests) needed for the cleanups. Groups are asked to complete an activity form and record the amount of material collected. Currently, 62 areas covering nearly 40 miles of streets are included in the program.

Picture 2-10:Adopt-A-Street Volunteers

- **Keep Fayetteville Beautiful (KFB):** KFB is an affiliate of Keep America Beautiful and Keep Arkansas Beautiful. The organization coordinates volunteers for the Adopt-A-Street program, to assist with site cleanup and education at the recycling drop-off centers, and to generally assist with City beautification projects. Each spring and fall, KFB partners with the Lake Fayetteville Watershed Partnership to sponsor a lake cleanup at Lake Fayetteville. In addition, KFB spearheaded an anti-graffiti program in cooperation with the Police Department in which select utility boxes throughout the City are painted.

- **Public School Waste Reduction:** Each public school has dumpsters for paper and cardboard and 18-gallon bins for containers that are serviced by the City. Green Teams at many schools also hand out reusable bags to replace disposable plastic bags and are working to reduce waste in cafeterias. Ten schools have onsite gardens and compost plant debris associated with those gardens.

2.6 Transfer and Disposal

The City's transfer station is intended to serve the City and south Washington County and is permitted to receive and transfer 80,000 tons of materials annually. In 2015, the transfer station received 72,166 tons of waste (including 13,361 tons of non-city waste) for an average of about 260 tons per day.

Picture 2-11:City Transfer Station

Facility modifications were initiated in 2014 for an additional administration office, a larger reception area with an information center, an expanded break/training room, and more storage.

City staff operates the transfer station and loads the transfer trailers. The City contracts with Waste Management of Arkansas (WMA) to transport waste from the transfer station and dispose of it at Eco-Vista Landfill located in Tontitown, Arkansas, approximately 15 miles from Fayetteville. WMA provides standard walking floor trailers with a capacity of 115 cubic yards capable of containing at least 20 tons of solid waste. This contract was recently renewed and expires November 2, 2019. In 2015, the City paid WMA $8.00 per ton to haul waste to the landfill and $26.80 per ton to dispose of it (total of $34.80 per ton). In 2016, the haul rate remained the same, but the disposal fee increased to $27.58 per ton (total of $35.58 per ton). The City currently charges a tipping fee of $46.80 per ton.

2.7 Education and Outreach

The City utilizes an array of media to distribute information to residents and businesses regarding recycling and proper waste management, including the following:

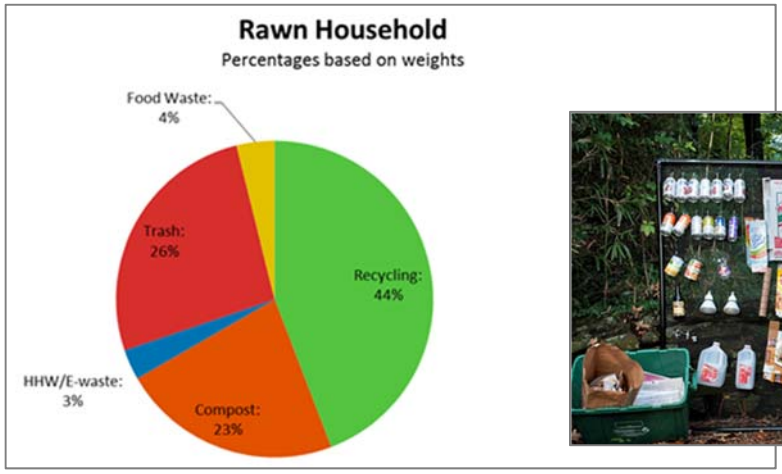
- **City Website:** The Division has extensive information on its webpage regarding all aspects of its recycling and solid waste programs. Links are provided to flyers, brochures, instructional videos, and reports.
- **Recycle Something Campaign:** The City's recycling slogan is "Recycle Something." The campaign's website (www.recyclesomething.org) defines the types of recyclables accepted in the City's program, options for collecting them, and other related information. It also includes YouTube videos and printed informational materials.
- **Social Media:** The City has both a Facebook page and a Twitter account on which important information, actions, events, and reminders can be posted.

Picture 2-12:Recycle Something Logo

- **Printed Materials:** The City has printed brochures and flyers available to residents covering a variety of topics, including the PAYT program; curbside, apartment, and business recycling; drop-off facilities; yard waste composting; and bulky waste cleanups.
- **Recycling Mascot:** The City has a recycling mascot called Rooty the Recycling Pig. Rooty attends special events, does school programs for pre-school through elementary grades, and periodically walks around town creating recycling awareness.
- **Door-to-Door Recycling Outreach:** In 2012, the City initiated a door-to-door outreach program. This community-based social marketing program includes asking residents to complete a survey and sign a recycling pledge, as well as handing out recycling educational materials. Several door-to-door outreach events have been conducted, including those in the Walnut Grove neighborhoods and the Walker Park area.

Picture 2-13:Recycling Mascot, Rooty

- **Waste Saving Campaign:** The City conducted a PAYT Waste-Saving educational campaign. During this program, eight households volunteered to save their household garbage and recycling for a full week. At the end of the week, the waste and recyclables were weighed and categorized. Volunteers were photographed with their waste. The program was designed to encourage residents to think about their waste habits and to inform them of ways to reduce waste and make the most of the PAYT program.



Picture 2-14:Participating Family in Waste-Saving Educational Campaign

2.8 University of Arkansas

As part of its sustainability goals, the University of Arkansas is striving to become a zero waste institution (90% diversion) by the year 2021. The Office for Sustainability is developing a Zero Waste Action Plan, which will lay out motivations, goals, and strategies for reducing waste within a framework of continual improvement.

The City currently has no direct involvement in managing the waste or recyclables generated at the University. The University contracts with WMA for waste collection services, which does not utilize the City's transfer station.

Razorback Recycling is the University's central recycling operation. They collect cardboard, white paper, mixed paper, aluminum and steel cans, plastic and glass bottles, and organics using a desk-side quad system and a network of outdoor containers. Table 2-3 provides the quantity of University waste that was landfilled, recycled, and composted in 2014, broken down by the 4 primary sectors and based on data provided by University staff. This data does not include C&D debris or other types of special waste such as hazardous waste. In addition, the quantity of waste landfilled is estimated by the contracted haulers and, therefore, might be underestimated.

Picture 2-15:Razorback Recycling Logo

Table 2-3: University of Arkansas Waste Landfilled, Recycled, and Composted, 2014

Sector	Landfilled (tons)	Recycled (tons)	Composted (tons)	Total (tons)	Diversion Rate
Facilities Management	1,412.53	341.77	0.00	1,754.30	19%
Housing	923.89	77.84	1.94	1,003.67	8%
Arkansas Union	245.42	58.65	0.00	304.07	19%
Athletics	305.45	139.81	0.00	445.26	31%
Total Tons/Average Rate	**2,887.29**	**618.07**	**1.94**	**3,507.30**	**18%**

As mentioned above, the City currently has no involvement in collecting or managing waste or recyclables generated on the University campus. As the City develops additional recycling and composting infrastructure, opportunities to partner with the University should be explored to take advantage of economies of scale.

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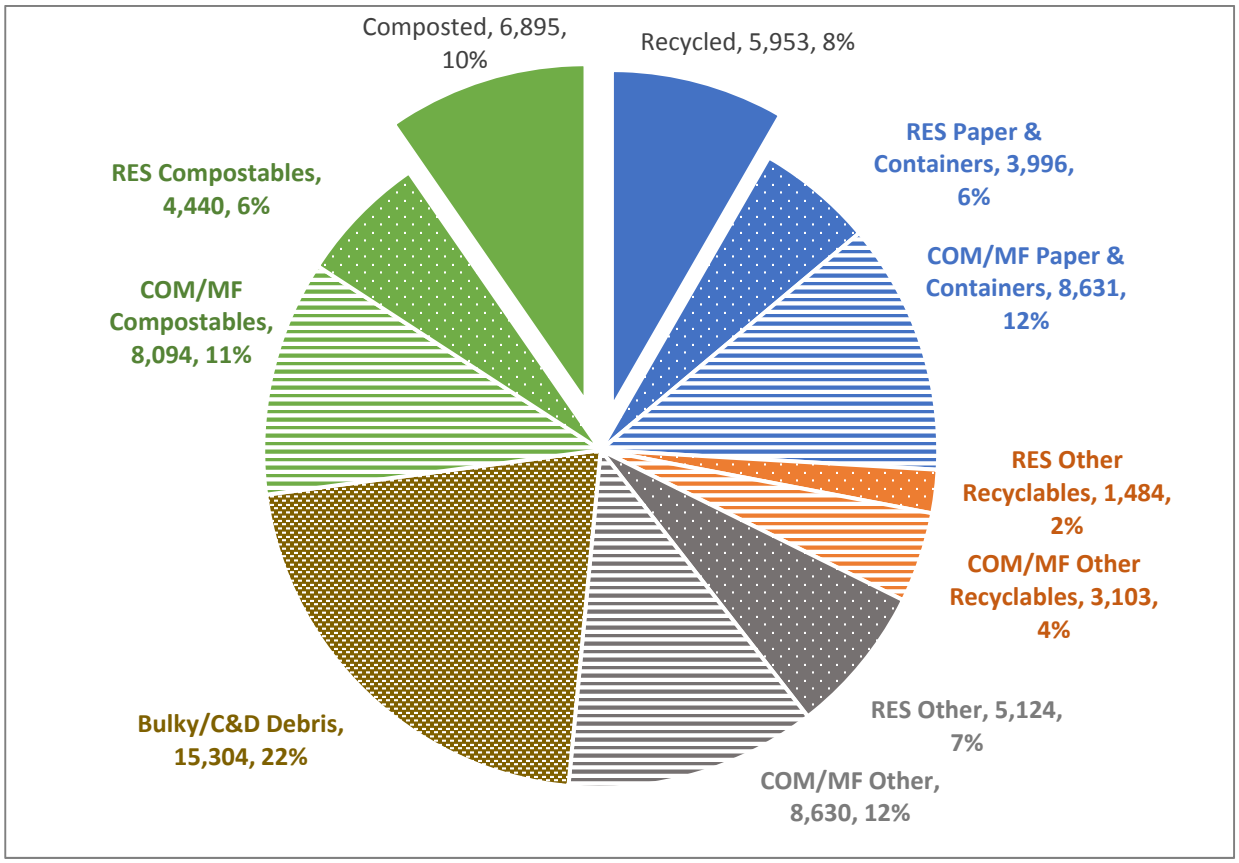
Section 3
Diversion Opportunities and Options

3.1 Overview of Opportunities and Options

Results of the waste composition study were applied to 2015 tonnage data to provide a more comprehensive understanding of the materials managed by the City. Figure 3-1 depicts the overall composition, including materials that were recycled, composted, and landfilled. This figure helps identify the greatest opportunities for increasing waste diversion.

Figure 3-1: Composition of Materials Managed by the City in 2015 (tons, % by weight)



Note: For the purpose of this chart:

- RES=Residential; COM/MF = Commercial/Multi-Family.
- Paper & Containers includes newspaper, corrugated containers, office paper, other recyclable paper, PET and HDPE bottles, tin/steel and aluminum cans, and glass containers.
- Other Recyclables includes aseptic containers, non-bottles plastics #1 and #2, other plastic containers, bulky rigid plastics, EPS food service and packaging, white goods/small appliances, ferrous and nonferrous metals, and electronics.
- Compostables includes low-grade paper, clean wood waste, yard waste, and food waste.
- Waste includes retail bags, plastic film, all other plastics, other glass, textiles, special wastes, household batteries, treated wood waste, tires, and rubber, all other garbage, grit, and liquids.

As depicted in Figure 3-1, the City diverted nearly 18% of materials it managed from disposal in 2015. This includes materials that were recycled or composted (solid blue and green wedges). The greatest opportunities for increasing diversion include the following:

- **Recyclables materials:** Recyclable materials currently accepted by the City in its existing program comprise approximately 18% of waste that was landfilled. Residential recyclables (dotted blue wedge) represent 6% and commercial/multi-family recyclables (striped blue wedge) the remaining 12%.
- **Compostable materials:** Compostable materials comprise approximately 17% of waste that was landfilled. Residential compostables (dotted green wedge) represent 6% and commercial compostables (striped green wedge) represent 11%. More than 60% of this compostable material is food waste. The remaining is low-grade paper, clean wood waste, and yard waste.
- **C&D debris:** C&D and bulky wastes make up about 22% of the material managed by the City. Based on visual audits, more than half of this material consists of wood, in addition to other types of material that are potentially recyclable (e.g., metals, paper, plastic, etc.).
- **Other recyclables:** Other types of materials that could potentially be recycled if the infrastructure were developed to collect and process these materials (dotted and striped orange wedges) represent an additional 6% of waste that was landfilled. This includes various types of plastics, metals, aseptic containers, and electronics.

To progress from 18% to 80% diversion, or even to 50% diversion, in the next 10 years will require a fundamental change in how materials are managed. It will require putting the necessary policies, programs, and facilities in place to bring about this change.

Table 3-1 lists options that were identified as having the potential to divert additional waste from the landfill. These various options and their potential application to the City of Fayetteville are discussed in this section.

Table 3-1: Potential Waste Diversion Options

Residential	Commercial/Multi-Family	Bulky Waste/C&D Debris
• **Carted single stream recycling** • **Expanded organics recovery** • **Revitalized education and outreach** • **Incentives** • **Bans or mandates**	• Single stream recycling • Organics recovery • Education and outreach • Technical assistance • Incentives • Green City program (lead by example) • Bans or mandates	• Processing after collection • Source separation prior to collection o Incentives o Education and technical assistance o Bans or mandates

3.2 Single Stream Recycling

Over 2,500 communities servicing more than 75% of the urban American population reportedly utilize single stream recycling. The growth of single stream over the last 20 years is a result of the benefits it provides, including collection efficiencies, customer convenience, and higher material recovery.

According to the five leading MRF equipment manufacturers, nearly all medium- or large-scale MRFs constructed in the United States in last 5 years have been single stream MRFs. In the last 10 years, more than 127 single stream MRFs have been built in the United States.[15] These MRFs vary in terms of the types and sophistication of equipment, which has a direct impact on the recovery of marketable materials and level of processing residue.

Carted (usually wheeled 64- or 96-gallon carts) single stream recycling offers the following advantages:

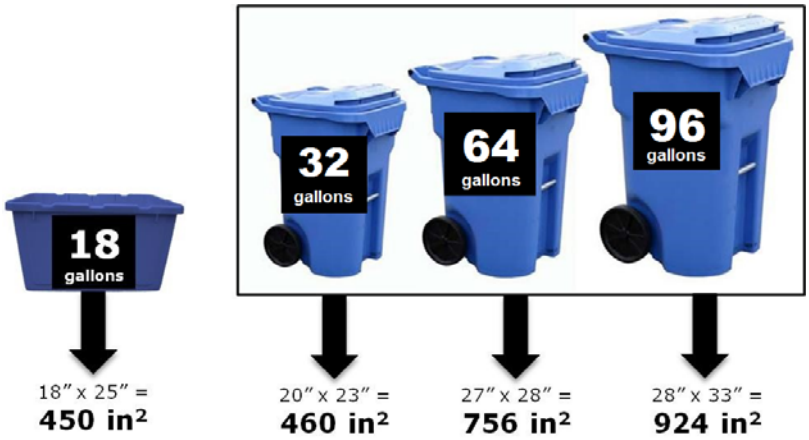
- **Increased recycling tonnage:** Communities that convert to single stream recycling generally report recycling tonnage increases ranging from 25% to more than 100%, depending on the effectiveness of the previously established program. During the City's single stream pilot program, the quantity of recyclables collected curbside increased by 94% and the quantity collected in the multi-family complex that had been participating in the City's recycling program increased by 126% (see Section 4.2). Even adjusting these figures for potential loss due to contamination or processing residue, this still represents at least a 69% increase in curbside recyclables and 83% increase in multi-family recyclables.
- **Enhanced collection efficiency:** Servicing a single cart requires significantly less time than sorting recyclables curbside. This was also clearly demonstrated during the single stream pilot program during which the collection time at each household was reduced from 1 minute during the pre-pilot (curb-sort) to 7 seconds during the pilot (carted single stream). For businesses, single stream allows all recyclables to be collected on the same route, eliminating the need for multiple passes by different vehicles for each material type.
- **Increased worker safety:** Rather than curb-sorting recyclables during all types of weather and traffic conditions, workers can remain inside the truck, which substantially increases worker safety. Sorting recyclables curbside is difficult work resulting in worker injuries and high employee turnover.
- **Increased customer convenience:** For curbside customers, only one trip to the curb is needed and carts are easily rolled to the curb instead of being lifted or carried, which can be difficult for physically challenged or elderly residents. At multi-family complexes, the single large partitioned roll-off can be replaced by other types of smaller collection containers (carts or dumpsters) placed throughout the complex, ideally adjacent to all trash containers, making them more convenient and accessible to residents. Businesses would no longer need to place glass in carts, place paper in one bin and containers in another, and stack cardboard separately; all materials could be commingled in the same containers. In the pilot surveys, 97% of curbside respondents and 100% of the multi-family respondents

[15] Berenyi, Eileen, *Resource Recycling,* "What Comes After Single Stream?" January 2015, p.22.

cited convenience as one of the main benefits they experienced with single stream recycling.

- **Program expansion:** Eliminating the need for separate containers or compartments on the vehicle for each material type enables additional material types to be added to the program, such as plastics #3-7 and aseptic containers. In the pilot program surveys, 92% of curbside respondents and 89% of multi-family respondents considered this a key benefit of single stream.
- **Greater capacity with similar or smaller footprint:** As depicted in Figure 3-2, a 64-gallon cart (the size typically used for curbside recycling) provides nearly double the capacity of two 18-gallon recycling bins, but with a smaller footprint (approximately 756 square inches) than two side-by-side bins (approximately 900 square inches). For businesses, because separate containers are not needed for cardboard, paper, glass, and other containers, less space is required.

Figure 3-2: Recycling Bin and Recycling Cart Volumes and Footprints



- **Improved aesthetics:** For curbside collection, larger standardized carts eliminate multiple and/or overflowing recycling bins. Servicing these carts also creates less noise than sorting materials into the truck at the curb. For businesses, because separate containers are not needed for cardboard, paper, glass, and other containers; less space is required; and material would no longer be piled on the ground, thereby improving street-side aesthetics.

Concerns about the City converting from curb-sorting to single stream recycling have been expressed in public meetings, newspaper articles, and on the internet. Provided below is a discussion of potential disadvantages or challenges with carted single stream recycling, as well as other concerns that have been raised.

- **Contamination:** Customers can become overly exuberant and try to recycle materials that are not accepted in the program. An education campaign and clear instructions are critical. Recycling carts and dumpsters typically are not inspected for contamination prior to collection.

- **Higher processing costs and lower net revenue:** Processing single stream recyclables requires more sophisticated processing equipment; therefore, processing costs will be higher. Once processed in a modern MRF, the sorted material is of comparable quality to the existing program and bears similar revenue on a per ton basis. The net revenue per ton will be lower because of the higher processing costs; however, total revenue will increase because of the substantial increase in tons collected and recovered in a single stream program. If the City contracts with a private processor, the competitive procurement process would determine the processing fee paid and revenue share received by the City.
- **Higher processing residue:** Processing single stream recyclables will result in higher residue levels than the current curb-sort program. Depending on materials collected, level of contamination, and type of processing equipment, processing residue of approximately 15% of inbound material is reasonable in a state-of-the-art single stream MRF. The substantial increase in the quantity of materials collected in a single stream program more than offsets the processing residue, resulting in a significant net increase in the quantity of materials recycled.
- **Cart size:** During the pilot, 88.2% of survey respondents stated the 64-gallon cart was a good size, 8.3% felt it was too big, 2.4% considered it too small, 0.7% had no opinion, and 0.4% preferred the recycling bin. Cart size can be addressed by offering smaller (32-gallon) or larger (96-gallon) carts as options.
- **Safety issues:** Concerns have been raised about worker safety in MRFs. Safety is constantly an issue of concern in all aspects of the solid waste industry (collection, processing, and disposal). In fact, refuse and recyclable material collectors rank fifth among American workers with the highest fatality (27 fatalities in 2014).[16] In 2014, refuse and recyclable material collectors accounted for two-thirds of fatalities in the solid waste industry.[17] While state-of-the-art MRFs utilize equipment for much of the sorting, they also require some manual sorting. Potential dangers to workers can be minimized through personnel training and oversight; personal protective equipment; air filtration/ventilation systems; enclosed, temperature-controlled sorting areas; established health and safety reporting/response procedures; and other similar actions.
- **Worker wages:** MRF operators must follow minimum wage requirements established by the local, state, or federal government. The minimum wage in Arkansas is currently $8.00 per hour and will increase to $8.50 per hour on January 1, 2017. This exceeds the federal minimum wage of $7.25 per hour. Twenty-nine local governments in the United States have established minimum wage requirements that exceed their state minimum wage. That option is available to the City if the state level is considered inadequate to be a living wage.
- **Lack of state-of-the-art processing infrastructure:** No state-of-the-art single stream MRF currently exists in Northwest Arkansas. Therefore, converting to single stream would

[16] U.S. Bureau of Labor Statistics, *News Release: National Census of Fatal Occupational Injuries in 2014*, September 17, 2015. Note: U.S. Bureau of Labor Statistics has not yet released 2015 fatality data. Occupations with higher fatality rates than refuse and recyclable material collectors were logging workers, fishers and related fishing workers, aircraft pilots and flight engineers, and roofers.

[17] Bodamer, David, *Waste 360*, "What the Final 2014 Occupational Fatality Data Means for the Waste & Recycling Industry," April 22, 2016.

require either a competitive procurement to determine private sector interest in developing a regional state-of-the art single stream MRF or development by the City of a small or "mini" single stream MRF to process the recyclables.

To assist in evaluating the viability of single stream recycling, a pilot program was conducted, the results of which are discussed in Section 4.2.

3.3 Organic Material Recovery

Food waste represents one of the greatest opportunities for the City to increase its diversion rate. Nearly 30% of residential and commercial waste collected by the City consists of potentially compostable material (see Table 3-2). As noted in the table, approximately 60% of this compostable material is food waste.

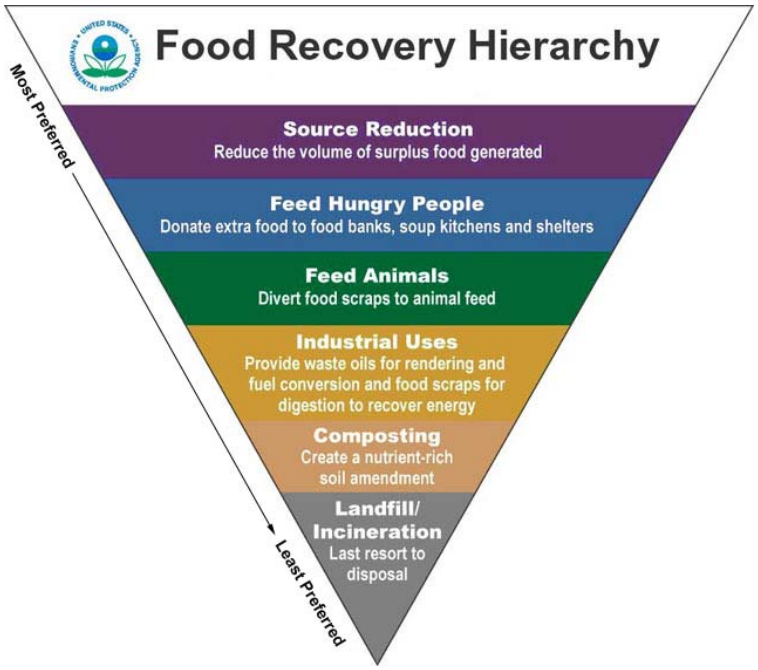
Table 3-2: Potentially Compostable Materials Disposed, 2015

	Residential		Multi-Family/ Commercial	
	% of Waste Disposed	Estimated Tons per Year	% of Waste Disposed	Estimated Tons per Year
Food Waste	18.1%	2,725	17.2%	4,890
Low-Grade Paper	9.4%	1,413	8.6%	2,453
Yard Waste*	1.4%	207	1.0%	294
Clean Wood Waste	0.6%	96	1.6%	456
Total Compostables	**29.5%**	**4,440**	**28.4%**	**8,094**

*Arkansas law bans the landfilling of yard waste, except for fugitive amounts. This small percentage of yard waste would be considered fugitive.
Source: KCI, Technical Memorandum No. 1: Waste Composition Study, April 20, 2015; applied to 2015 tonnage.

In September 2015, the U.S. Department of Agriculture (USDA) and U.S. Environmental Protection Agency (EPA) announced a national goal to reduce food waste by 50% by 2030. The EPA Food Recovery Hierarchy (Figure 3-3) recommends first reducing the volume of food wasted, followed by feeding hungry people and animals, then options such composting and digestion, with disposal as the last resort.

Figure 3-3: EPA's Food Recovery Hierarchy



Solutions that prevent or recover edible food from being wasted provide the greatest economic benefit on a per pound basis.[18] A local government's role in prevention and recovery of edible food waste generally takes the form of consumer education and promotion or facilitation of donation programs.

Feed Fayetteville is a local organization founded in 2011 to promote programs to reduce hunger and food insecurity in the Fayetteville area. According to Feed Fayetteville, 27.6% of Arkansas children are food insecure, 37% of Washington County children live in a hungry home, and Washington County has the third highest food insecurity in the State.[19] Fayetteville also has a number of food banks, including Northwest Arkansas Food Bank, Lifesource International, Cooperative Emergency Outreach, and Full Circle Food Pantry on the University of Arkansas campus.

One of the most commonly cited barriers to food donation is the perceived risk of liability. To alleviate this concern, Congress enacted the Bill Emerson Good Samaritan Food Donation Act in 1996, which absolves an entity that donates food from criminal or civil liability except in cases of gross negligence or intentional misconduct.

In 2012, the University of Arkansas Law School, with support from the Women's Giving Circle, initiated the Food Recovery Project to spread awareness of the opportunity of "food recovery as a key tool for waste reduction and hunger amelioration." The project developed two documents on the legal implications of food donations and the Good Samaritan Act: *The Legal Guide to the Bill Emerson Good Samaritan Food Donation Act* and *Food Recovery: A Legal Guide*.

[18] ReThink Food Waste through Economics and Data (ReFED), *A Roadmap to Reduce U.S. Food Wastes by 20 Percent*, 2016.
[19] Feed Fayetteville, Hunger Data: http://www.feedfayetteville.org/about/hunger-data/.

Donating edible food can benefit businesses financially. In addition to potential disposal cost savings, Section 170 of the Internal Revenue Code allows some businesses to earn an enhanced tax deduction for donating selected surplus property, including food. The Code provides that wholesome food that is properly saved, donated to an approved agency, and properly receipted is eligible for an enhanced tax deduction.

Opportunities for the City to take a more active role in educating consumers about food waste reduction and facilitating partnerships between commercial edible food waste generators and organizations that accept food to feed people are further covered in the Education and Outreach and Technical Assistance discussions later in this section.

Solutions that recycle food waste offer the highest diversion potential.[20] Local governments have a greater role to play in food waste recycling than they do in prevention or recovery. Collection and processing of food waste and other organic materials is increasing throughout the United States. In the past decade, the number of communities in the United States with curbside food waste collection has grown by over 700%, from 24 municipalities in 2005 to 198 in 2014. The number of households these programs serve has increased from less than 600,000 in 2005 to 2.7 million in 2014.[21]

Collecting commercial food waste, especially from large food waste generators, is often the first step in initiating a food waste recycling program. It enables a community to focus on a smaller number of generators and to help ensure a relatively clean stream of source-separated food waste. Residential food waste is generally more challenging to collect than commercial food waste, especially from multi-family units.

Below are a few examples of cities that have implemented comprehensive organics collection programs.

- **Portland, OR**: Portland collects organic materials curbside from single-family and small multi-family (2-4 units) residential properties on a weekly basis using 60-gallon roll carts. Accepted organic materials include all food wastes (including meat and bones), food-soiled or compostable paper (e.g., napkins and paper towels), and yard waste. Certified compostable bags are allowed to line carts or in-home collection containers. The city also collects food waste from multi-family and commercial properties, but not compostable paper or yard waste. Organic materials collected in the residential program are sent to a compost facility that can handle the non-food materials, while commercial food waste is sent to either an anaerobic digestion facility or another compost facility that processes only food waste. By implementing organics collection, the city was able to transition to every-other-week or every-four-week curbside collection of garbage. In addition, Portland has a PAYT rate

Picture 3-1: Trash, Recycling, and Green Waste Containers Placed Curbside in Portland, OR

[20] ReThink Food Waste through Economics and Data (ReFED), *A Roadmap to Reduce U.S. Food Wastes by 20 Percent*, 2016.
[21] Yepsen, Rhodes, *BioCycle:* "BioCycle Nationwide Survey: Residential Food Waste Collection in the U.S.," January 2015, p. 53.

schedule to incentivize recycling and composting. The residential curbside program collected an average of 1,089 pounds of organics per household in 2014, compared to 815 pounds of garbage and 776 pounds of recyclables per household in the same year.[22]

- **Seattle, WA**: In 2014, Seattle banned food waste and food-soiled paper from residential and commercial garbage, in addition to a 1989 ban on yard waste. All residential properties in the city are required to have weekly curbside collection of organic waste, with an exception for approved backyard composting. The city offers 13-, 32-, and 96-gallon carts for $5.45, $8.20, and $10.50/month, respectively. Commercial and multi-family properties with more than 10% food waste in their waste stream must also have organics collection service (64- or 96-gallon carts). Accepted materials include all food waste, food-soiled paper, yard waste, compostable bags, and other certified compostable plastics. Initially, the city was to impose a $1 fine on single-family residential households and $50 on commercial and multi-family properties that were found to have more than 10% food waste in their garbage containers upon visual inspection; however, the fine on single-family residents was suspended in early 2015. In 2014, the city reported a recycling rate of 57.1% overall and 71.1% for the single family residential sector.[23] Nearly 137,000 tons of organic material were composted in 2014, which represented approximately 19% of the waste stream.[24]
- **Austin, TX:** Austin implemented a residential curbside organics collection pilot at 14,000 households as part of its Master Plan to reach zero waste (90% diversion) by 2040. Organics, including all types of food waste, food-soiled paper, and yard waste, are collected weekly in 96-gallon roll carts. The city does not accept any compostable plastics, including compostable bags, but encourages participants to line kitchen collection bins with paper and layer food waste with paper and yard waste in the cart. Austin also has a PAYT rate schedule that helps to incentivize organics diversion. In FY 2015, the pilot collected 4,219 tons of organics[25], which equates to approximately 600 pounds per household per year. For commercial and multi-family properties, the city enacted a Universal Recycling Ordinance in 2010 that requires food enterprises with some form of food permit (distributor, processor, retailer, etc.) to implement an organics diversion program on a graduated schedule based on property size, with all applicable properties required to have diversion by 2018. To assist with this, the city offers rebates of up to $1,800 to reimburse program implementation costs.

The City, with assistance from KCI, conducted a commercial food waste pilot program to evaluate the feasibility of composting food waste at the City's existing facility utilizing the Modified Static Aerobic Pile (MSAP) method, which uses a microbial inoculant to enhance the compost process. The pilot program, results of which are discussed in Section 4.1, was very

[22] City of Portland, *Residential Curbside Collection Service Rate Study for Rates Effective July 1, 2015*, 2015 (https://www.portlandoregon.gov/bps/article/404493).
[23] Seattle Public Utilities, *2014 Recycling Rate Report*, 2014 (http://www.seattle.gov/Util/cs/groups/public/@spu/@garbage/documents/webcontent/1_040673.pdf).
[24] Seattle Public Utilities, *Organics Report, 3rd Quarter 2015*, 2015 (http://www.seattle.gov/Util/cs/groups/public/@spu/@garbage/documents/webcontent/1_039051.pdf).
[25] Beniot, Erin, Records, Analyst, Austin Resource Recovery, email communication on March 7, 2016.

successful and the City is in the process of applying for a Type CO permit that will allow co-composting of food waste and yard waste at the compost facility using the MSAP method.

The City has also been approached by a private company that is developing an anaerobic digestion (AD) facility in southern Missouri. AD is a biological process in which microorganisms digest organic material in an oxygen-free environment. AD produces biogas that can be combusted to produce power or refined to produce a compressed biogas for transportation fuel; liquid digestate commonly used as a fertilizer; and solid digestate for subsequent composting and/or beneficial use as a soil amendment.

Based on initial discussion with the company developing this AD facility, they are not able to accept and process yard waste. Therefore, the City would need to continue operating its compost facility to process yard waste. Processing food waste with yard waste at the City's facility is likely more cost-effective, provides economies of scale by more fully utilizing the facility's capacity, and produces a better compost end-product by improving the carbon to nitrogen ratio.[26]

3.4 Education and Outreach

The City employs a full-time Waste Reduction Coordinator, shares a recycling education position with Washington County, and engages the assistance of Keep Fayetteville Beautiful to conduct waste reduction and recycling education and outreach (E&O). The City utilizes an array of media, from printed materials to electronic media to door-to-door surveys/pledges. The E&O program is more fully discussed in Section 2.7.

Clear and effective E&O is an ongoing and integral part of any successful recycling program. Transition periods, such as initiating new or expanding existing programs, offer ideal times to reinvigorate these campaigns and revamp E&O materials. An effective E&O campaign utilizes a full array of communication tools (audio, video, text, and graphics) and provides multiple "touches" of all affected parties.

For an individual to absorb a message, a general rule of thumb has been that 5-7 touches, or points of information receipt, are required. However, because of the increasing number of sources and types of information we are bombarded with daily, some industry experts believe that 9-12 touches may now be required to impact behavior change.

Opportunities that were identified to enhance E&O efforts include the following:

- **Distribution methods:** The resident survey results in Table 3-3 provide valuable information for prioritizing outreach efforts and program budget. Many residents expressed a preference to have information conveyed to them through internet interfaces such as the City's webpage, social media, and email. While social media provides a useful outlet for reaching more individuals, marketing specialists caution not to abandon the printed word. Approximately 46% of survey respondents expressed a desire to receive information about recycling in their water/utility bill inserts, and 22% expressed interest in other types of printed materials such as brochures, flyers, and newsletters.

[26] Food waste provides a valuable nitrogen source to help achieve the ideal carbon to nitrogen ratio of 3:1.

Table 3-3: Resident Preferences for Information Distribution Methods

Information Distribution Method	% of Residents
Internet (City website, YouTube videos)	54%
Water/utility bill	46%
Emails	44%
Social media (Twitter, Facebook)	37%
Printed materials (brochures, flyers, newsletters)	22%
Mail	15%
Television	12%
Newspaper	11%
Radio	10%
Special events	8%
Other (ex., in person, Farmers Market, movie theaters, refrigerator magnets, signage on vehicles and in public places)	6%

Facebook, Instagram, and Twitter offer venues for the City to reach its audience on a daily basis. The City currently utilizes these various social media channels, but could benefit from a scheduled campaign. A well-run Facebook page can generate daily interest in the City's programs. Linking the page to the website and including the page on printed literature will help garner a Facebook audience; however, the best way to increase readership is for your current audience to share City posts with their "friends." Municipalities that do not have the budget and time to maintain a social media campaign can utilize internship positions to attract young talent. This would be an opportunity for the City to partner with the University of Arkansas. While students might only intern for a semester, as long as the City plans seasonal posts and campaigns ahead of time, the campaign should remain relatively consistent even if the internship position changes each semester.

- **Recycling webpages:** The City has made improvements during the past year to better integrate its recycling website (recyclesomething.org) into the City's main website (fayetteville-ar.gov). In addition, the City's Communication Department is visually redesigning the City website, which is scheduled to launch in February 2017. Possible enhancements to make the website more interactive and better promote recycling include the following:
  - The website should ideally be dynamic with modifications made on a regular basis to continually provide new messages and resources. The website could showcase the ongoing efforts of City staff to increase recycling.
  - Program information such as City waste reduction and recycling goals, current recycling rate, waste composition data, program participation rates, and tonnages (landfilled and recycled) could be provided in a format that visually shows program progress. For example, a visual display of the City's recycling progress could be a feature element of the Recycling & Trash Service main page. When individuals perceive that their

community's recycling program is active and well supported, a greater number of people will want to participate.

- Infographics should be used to the extent possible to visually present data and information.
- A blog or newsletter scroll could highlight new information, popular recycling stories, and featured events.

- **Rebranding:** The City has branded its program with the slogan "Recycle Something: Be Big, Start Small." This slogan has been effective in raising awareness of recycling and encouraging residents to take the first steps in recycling. However, with an ambitious goal of 80% recycling, this is an opportune time for the City to revitalize its E&O with a slogan that reflects the encompassing nature of the program and desire for residents and businesses to participate in recycling programs to the greatest extent possible. Slogans from Athens-Clark County, GA; Mid-America Regional Council, MO; and the Solid Waste Agency of Lake County, IL are provided in Picture 3-2 as examples that convey a message to maximize recycling and minimize disposal. These communities updated their branding when they launched new recycling campaigns.

Picture 3-2: Recycling Slogan Examples

- **Community-based social marketing:** Community-based social marketing (CBSM) seeks to develop and integrate marketing concepts with other approaches to influence sustainable behaviors that benefit individuals and communities for the greater social good. CBSM principles are more hands-on and grassroot efforts to foster sustainable behavior. CBSM typically requires buy-in from participants that what they are doing will make a change or their action will contribute to an environmental benefit locally. People tend to gravitate to actions that have high benefits and for which there are few barriers. CBSM strategies, such as peer-to-peer education, block leaders, and pledges, while more resource intensive, tend to be more effective than simply information distribution. The City has implemented such strategies through its door-to-door recycling outreach and the Waste Saving Campaign.

- **Food waste education:** Incorporating food waste reduction into the City's E&O campaigns will increase awareness of wasteful practices and help promote an ethic of conscious materials management and sustainability. Numerous resources are available, including the programs and app mentioned below that were developed by EPA and USDA.

  - Food Too Good To Waste (FTGTW; http://westcoastclimateforum.com/food) challenge and toolkit – Developed by EPA with input from the West Coast Climate and Materials Management Forum, the FTGTW program is designed for families and individuals to reduce wasted food at home. The toolkit is made up of simple strategies and tips.

- Foodkeeper App – This USDA app provides consumers with easy access to clear, scientific information on food storage, proper storage temperatures, food product dating, and expiration dates. It also provides guidance to manufacturers on donating misbranded or sub-spec foods and research on innovative technologies to make reducing food loss and waste cost-effective.

3.5 Technical Assistance

Enlisting more multi-family complexes, businesses, and institutions to participate in recycling will require not only a concerted effort to educate them about recycling, but also a comprehensive technical assistance program to provide the tools and knowledge to help them set up effective recycling systems.

Approximately 34% of the City's housing units are in complexes with five or more units per structure.[27] With the presence of the University of Arkansas and its student population, many of these multi-family complexes likely have high turnover rates. The City will need to work with property owners, managers, and tenants on an ongoing basis to actively engage this sector in waste reduction and recycling.

An effective technical assistance program should help establish a simple recycling system with clear instructions and provide property owners/managers with the tools needed to encourage proper participation. Key elements of a technical assistance program include the following:

- **Dedicated staff:** Communities with high-performing multi-family and commercial recycling programs nearly always have in-house staff specifically dedicated to working with these sectors. To develop and implement a comprehensive and effective commercial technical assistance program, a full-time staff person, in addition to the City's full-time Waste Reduction Coordinator, would be needed.
- **Property owner and manager training:** Property owners/managers typically are the individuals responsible for executing the recycling program onsite. Having their buy-in and cooperation is critical to the success of a program.
- **"Toolkit" for recycling program development:** A good toolkit should complement recycling staff's efforts. It should include step-by-step instructions for setting up a recycling program, as well as waste audit instructions, a list of recyclables to target, information on how to request collection service, and sample E&O materials. Toolkits should be available in hard copy or online.
- **"Toolkit" for food waste reduction and recycling:** A toolkit on food waste reduction, donations, and recycling can assist businesses and institutions that generate substantial quantities of food waste. Waste reduction actions that could be encouraged include proper portioning at schools and institutions and selling misshapen or soon-to-expire produce for reduced prices at grocery stores. The toolkit should also educate businesses and institutions about the benefits of making food donations and the liability protection of the Bill Emerson Good Samaritan Food Donation Act.

[27] U.S. Census Bureau, Selected Housing Characteristics for Fayetteville, AR.

- **Hands-on technical assistance:** Providing hands-on technical assistance to property owners/managers is generally more effective than training alone. Such assistance might include waste audits, development of in-house collection logistics, and container placement. The City currently provides waste audits for businesses, but is limited by the availability of staff time.
- **Tenant or employee training:** City staff can assist property owners/managers with educating their tenants and employees about the program. This should be structured as a "train the trainer" session, with the understanding that the property owner/manager would be responsible for this in the future.
- **Reusable tote bags or plastic mini-bins:** Providing a small bin or tote bag for multi-family complex residents to accumulate recyclables in the home and transport them to the collection container increases convenience. The City currently provides mini-bins to some participating multi-family complexes. Some property managers consider these bins an integral part of the unit and charge for replacement if a tenant takes the bin during move-out.
- **Food donation facilitation:** The City could proactively work to make connections between businesses with edible food to donate and existing organizations seeking food for human consumption. For example, a list or database could be developed of food banks or other entities looking for food. This could essentially be a digital food clearinghouse and could even be developed as a mobile app for real-time updates on what food is available and what food is needed. For example, Food Connect in Philadelphia has an app that connects donors to people needing food.[28]
- **Food challenge programs:** Businesses could be encouraged to participate in the U.S. Food Waste Challenge and/or Food Recovery Challenge. The City could lead by example by also joining.
    - U.S. Food Waste Challenge (FWC; http://www.usda.gov/oce/foodwaste/index.htm) – FWC is for organizations in the food chain that create food waste, including producer groups, processors, manufacturers, distributors, retailers, food service, industry groups, nongovernmental organizations, government entities, and Federal agencies. By joining the FWC, organizations and businesses demonstrate their commitment to reducing food waste, helping to feed the hungry in their communities, and reducing the environmental impact of wasted food. The FWC's inventory of activities help disseminate information about best practices to reduce, recover, and recycle food waste and stimulate development of more of these practices.
    - EPA Food Recovery Challenge (FRC; http://www.epa.gov/sustainable-management-food/food-recovery-challenge-frc) – FRC is part of EPA's Sustainable Materials Management Program. It provides participants access to data management software and technical assistance to help them quantify and improve their sustainable food management practices. Participants enter goals and report food waste diversion data annually into EPA's data management system. They then receive an annual climate profile report that translates their food diversion data results into greenhouse gas

[28] Food Connect also picks up and delivers food, a role that is not recommended for the City (http://www.foodconnectgroup.com/).

reductions, as well as other measures such as "cars off the road," to help participants communicate the benefits of activities implemented.

- **Right-sizing assistance:** Commercial, institutional, and multi-family trash service is typically based on container size and frequency of service. If a business or complex initiates a recycling program, it then follows that the quantity of trash generated and level (and cost) of trash service needed should decrease. Property owners/managers do not always realize a potential savings exists and may need help in determining a reasonable service adjustment and subsequent savings. The savings in trash collection and disposal can sometimes more than offset the additional cost for recycling.
- **Partnerships with business groups:** Business organizations, such as the local Chamber of Commerce, can be an important ally in encouraging waste reduction and recycling. They can assist in networking within the business community; make businesses aware of the resources and assistance available from the City; and possibly create peer-to-peer mentoring opportunities to set up recycling programs. In 2010, the Fayetteville Chamber of Commerce launched the greeNWay Initiative, a fee-based program that identifies, assesses, and certifies businesses that operate in a sustainable manner. Waste management is one of 6 categories that are examined. Currently, 33 businesses are certified.
- **Program monitoring:** The City should monitor and record waste reduction activities and any recycling conducted by entities other than the City. For example, donating food that would otherwise be discarded is diverting this organic "waste" from the landfill and should therefore be tracked and included in the City's diversion rate. Likewise, recyclable materials recovered and managed outside of the City's solid waste system, by the franchised haulers or individual businesses, should also be included in the City's diversion rate.

3.6 Incentives

Incentives to reduce waste or recycle can take myriad forms and can be financial or non-financial in nature.

3.6.1 Financial Incentives

One of the best types of financial incentives is a Pay-As-You-Throw (PAYT) system, which the City has already implemented. This system could be modified to create an even greater incentive or other incentive tools could be utilized. Examples of these options are discussed below. Some apply to residents and other to businesses and multi-family complexes, and are grouped accordingly.

- **Adjust residential PAYT fee structure:** Various studies indicate that implementing a PAYT system is one of the most effective mechanisms to reduce waste disposal and increase recycling. The difference in service fees between various sizes of carts is believed to impact the resulting level of waste reduction and recycling. One study indicated that fee differentials of at least 50-80% for double the service capacity are most effective, with a bias toward the higher levels, and may result in recycling

increases of 4-8%.[29] Table 3-4 provides the City's current pricing structure, indicating that the percentage increase for doubling of capacity is 53% for a 64-gallon cart and 84% for a 96-gallon cart.[30] These are total service fees with recycling and yard trash collection services embedded. Table 3-4 also calculates the fees if an 80% increase was applied for each doubling of cart capacity. If an 80% increase were applied, existing service fees for 64-gallon and 96-gallon carts would increase 18% and 16%, respectively. While adjusting the current pricing structure to further increase the fee differential for larger cart sizes would likely provide a greater incentive for residents to reduce waste and recycle, any new service fee structure must continue to provide the necessary revenue to support the Division's operations.

Table 3-4: PAYT Service Fee Analysis

Cart Size (gallons)	Current Fees ($/month)	% Increase per Doubling of Capacity	Fees Assuming 80% Increase per Doubling of Capacity	% Increase over Current Fees
32	$9.37		$9.37	
64	$14.30	53%	$16.87	18%
96	$20.31	84%	$23.62	16%

Table Note: Above calculations take into account that an increase from 64-gallons to 96-gallons is only a 50% increase in capacity, not a doubling of capacity.

- **Privately operated residential recycling rewards program:** Several privately operated recycling rewards programs exist, but perhaps the most well-known is Recyclebank. It rewards residents for recycling with points that can be redeemed for discounts or deals at local businesses and major national brands. Recyclebank's fees vary based on the program type, services provided, and a jurisdiction's negotiating skills. Pricing models vary and may include a flat annual fee, recycling revenue share, disposal avoidance share, or a combination of the three. A survey of Recyclebank programs revealed fees ranging from $0.30 to $4.00 per household per month, depending on the services included.[31] The company reports working in more than 300 communities in the Unites States and claims to increase recycling rates by 15% in communities that have made no other infrastructure changes.[32]

  In a comparison study of three Massachusetts cities working simultaneously to increase recycling, one using PAYT and two implementing Recyclebank, the PAYT community realized three times the diversion increase over the communities that implemented Recyclebank.[33] According to a nationwide study, the relative cost per ton of material

[29] Skumatz Economic Research Associates, *Getting to More: Review of Options for an Area with Robust Recycling*, December 5, 2014.
[30] Note: This calculation takes into account that an increase from 64-gallons to 96-gallons is a 50% capacity increase, not a doubling of capacity.
[31] Skumatz, Lisa, et. al., *Resource Recycling*, "Recycling Incentives: Part 1," February 2011, p. 20.
[32] Recyclebank, *2013 A Year in Review*.
[33] U.S. EPA, *Pay-As-You-Throw Spring 2009 Bulletin*, p. 5.

diverted for a PAYT program ranged from $0.10 to $10.00, but the cost per ton diverted in a Recyclebank program ranged from $6.00 to $300.00.[34]

Other rewards programs are also available for purchase, such as Recycling Perks and programs offered by individual collection service providers. A common criticism is that recycling rewards programs establish an expectation that one should be rewarded for recycling and perpetuate the erroneous idea that recycling results in net revenue.

- **City-operated residential recycling rewards program:** Some communities have developed their own monetary rewards program to encourage citizens to recycle. Each week, month, or other specified time interval, a household is randomly selected and rewarded for its recycling efforts. The intent is to encourage residents to participate in recycling weekly in hopes of winning. In addition, coverage of the reward winners provides free advertising through public media such as local newspapers, radio, and television. Numerous examples of municipally run rewards programs exist. For example, Morehead City, NC randomly selects ten customers each month. The first one "caught" recycling is awarded a $50 cash voucher that is credited to their solid waste bill. At the end of each year, all monthly winners' names are placed into a hat. The first three names drawn receive $500, $200, and $100 cash prizes, respectively. Although the city could not provide quantitative information regarding the effectiveness of this rewards program, a city representative indicated that converting from recycling bins to biweekly carted collection of single stream recyclables had a far greater impact (approximately 42% increase in recycling tonnage) than the rewards program.[35]
- **Universal commercial recycling or all-inclusive fee structure:** Similar to universal residential recycling in which all residents pay for collection and processing of recyclables and yard waste as part of their base solid waste fee, recycling fees can be included in the base cost of commercial waste services. Collection cost is thereby eliminated as a factor in deciding whether or not to participate in recycling. All multi-family complexes, businesses, and institutions would pay for recycling service as part of a base service fee.
- **Commercial recycling rebates:** Some communities provide a rebate on solid waste fees to commercial customers that document they are recycling. The structure of rebate systems need to be carefully developed to ensure service fees less rebates are sufficient to cover the cost of service. Rebates are often based on business type, square footage, and/or level of trash service.
- **Commercial advance disposal fee:** Another alternative is to assess an advance disposal fee (ADF) to commercial customers that are not recycling. As with rebates, an ADF would is often based on business type, square footage, and/or service level.

To increase residential recycling, the City would be better served by first focusing on programmatic and infrastructure improvements (e.g., single stream recycling and organics

[34] Skumatz, Lisa, et. al., *Resource Recycling*, "Recycling Incentives: Part 1," February 2011, p. 20.
[35] Gollehon, Robin, conversation on August 21, 2015.

recovery) and revitalizing its E&O program. If recycling targets are not achieved, a rewards program might then be pursued.

To increase commercial recycling, programmatic and infrastructure improvements, as well as technical assistance, are critical first steps. However, all businesses care about their financial bottom line. Therefore, an incentive program could help eliminate the perceived financial burden of recycling and increase participation and material recovery. The City has control over collection of commercial recyclables, by providing such services directly or issuing franchises to other companies to provide such service. Therefore, establishing universal commercial recycling (all-inclusive fee structure) might be the most direct approach that would also help ensure sufficient funding for the City to provide commercial recycling services.

3.6.2 Non-Financial Incentives

Some local governments utilize non-financial incentives to encourage businesses to participate in waste reduction and recycling. The Fayetteville Chamber of Commerce greeNWay Initiative, which certifies and acknowledges businesses that operate in a sustainable manner, is a good example of such an incentive program. As mentioned previously, waste management is one of 6 elements that are examined.

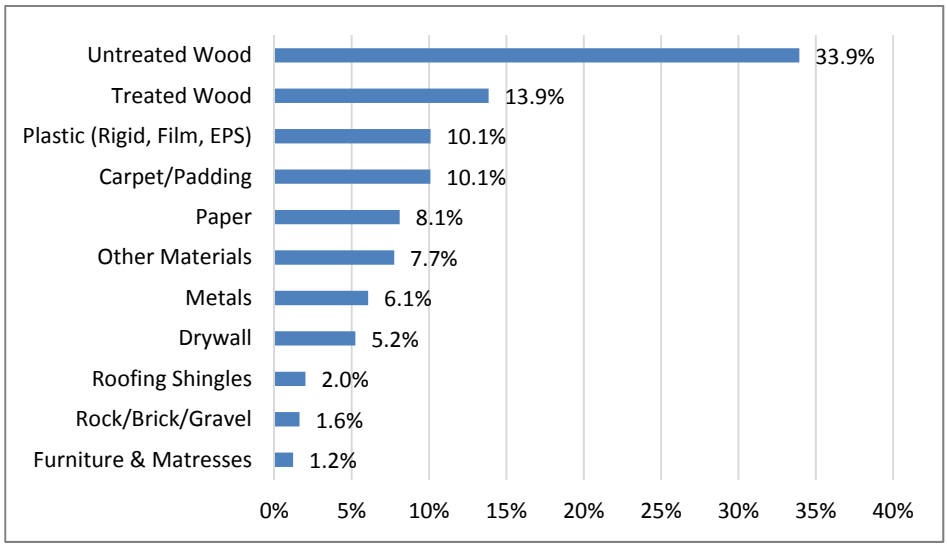
Limited information is available on the effectiveness of these types of incentive programs to substantially increase a community's waste diversion or recycling rate. While some business owners might find operating their business in a sustainable manner a worthy objective, others might only be inclined to do so if a benefit will be realized. Likewise, some consumers might utilize a green business over other businesses, but for many consumers, price may be a greater factor. The City's resources would initially be better utilized pursuing other program and infrastructure options for increasing commercial waste reduction and recycling. However, the City could promote the greeNWay Initiative as part of its technical assistance to businesses.

3.7 C&D Debris Reuse and Recycling

The City collected approximately 15,300 tons of construction and demolition (C&D) and bulky waste in 2015, which represented about 22% of all waste managed in the City's system (see Figure 3-1). This is nearly 60% more C&D and bulky waste than was received in 2014 (9,600 tons). Additional C&D debris is collected by private haulers that have nonexclusive franchises with the City to collect this material. These franchisees likely direct haul the waste to the Eco-Vista Landfill. The City has the potential to control the collection and disposal of C&D debris generated within the City through these nonexclusive collection franchises.

The composition of bulky waste can be highly variable. Figure 3-4 depicts the composition based on the 2015 visual audit. Nearly half of the bulky waste by volume consisted of wood. Various types of plastics, carpet/padding, paper, metals, drywall, roofing shingles, rock/gravel, and mattresses are some of the other materials received that have the potential to be recycled if viable markets exist.

Figure 3-4: Bulky Waste Visual Audit Results (% by volume)



KCI researched local outlets or options for managing C&D debris. Currently, most of the C&D debris generated in the area is disposed at Waste Management's Eco-Vista Class 4 Landfill. A search of the ADEQ facility database revealed only one permitted C&D Recovery Facility in the state, Delta Recycling Services located 250 miles away in Jefferson County. Delta Recycling is a hauler and processor that claims a 70% diversion rate through processing commingled materials and offers discounted rates for source-separated materials.

As of mid-September 2016, the ADEQ facility database listed 2 pending C&D Recovery Facility permit applications in Northwest Arkansas:

- USA Metal Recycling in Lowell
- Kansas E3 LLC in Bentonville

According to ADEQ staff, permits for these facilities will be issued as soon as the required financial assurance is received.

At the Boston Mountain Transfer Station (BMTS) in Prairie Grove, manual labor and loaders are sometimes used to pull pallets, corrugated cardboard, metals, plastics, wood, and other reusable building materials from the tip floor. This occurs only when time permits. BMTS sells the pallets, metals, corrugated cardboard, and plastics, and donates the wood and reusable building materials to the local Habitat for Humanity ReStore.

Recovery of materials from C&D debris can occur by either source-separating recyclable or reusable materials prior to collection or by processing mixed C&D debris after collection. Either approach can be effective, but they require different policies and infrastructure for implementation.

Source-separation places the responsibility on the generator to separate recyclable or reusable materials by type, usually at the job site. The generator can either market these materials individually or hire a single entity to manage them. This deconstruction usually requires more upfront resources (labor and containers) to recover material for reuse and recycling than simple demolition, but can reduce disposal costs.

Alternatively, mixed C&D debris can be processed and materials recovered for recycling/reuse after it is collected. The type of operation depends on the types and quantities of materials received. Small-scale operations can be initiated at any transfer or disposal location by diverting select materials (usually materials that are easily separated and/or have market value) from incoming loads through the use of a small loader and/or manual labor. This requires low capital investment and minimal space requirements; however, recovery rates are generally low, limited by the number of materials targeted and the ability of the operator to recover and market those materials. Larger-scale operations involve some level of mechanized processing, as well as a manual processing line. Capital investment depends on the degree of mechanization. Material recovery rates are substantially higher than with manual operations.

Various policies and programs can be implemented to encourage or require reuse or recycling of C&D debris. They fall into three general categories: education, incentives, or regulation. Table 3-5 summarizes some of the mechanisms used to increase C&D debris recycling under each of these categories.

Table 3-5: Mechanisms Utilized to Increase C&D Debris Reuse and Recycling

Education	Incentives	Regulation
o Education and technical assistance o Educate by example through government building projects o Voluntary Green Building programs	o Diversion security deposits o Differential tip fees for segregated materials o Material exchanges o Grants or low interest loans	o Disposal bans o Mandatory recycling o Permit requirements o Require C&D processing facilities meet recycling targets o Mandatory Green Building standards

Approaches are often combined. For example, a number of large cities (e.g., Portland, OR; San Jose, CA; San Francisco, CA) require C&D debris to be delivered to a certified or registered recycling facility and require these certified/registered C&D recycling facilities to achieve certain material recovery rates. Given the lack of C&D recycling infrastructure in Northwest Arkansas, this type of program is not feasible at this time.

Provided below are just a few examples of how other local governments are striving to increase C&D debris recovery.

- **Lee County, FL:** Lee County requires contractors of significant projects (construction projects greater than $90,000 and remodels/alterations greater than $10,000) to submit a C&D management plan prior to construction. Demonstration of diversion/disposal of all C&D materials is required as a check-off prior to final inspection. If 50% of C&D debris has not been recycled, the contractor incurs a diversion fee based on the type and size of the project. In 2015, the county reported a 62% recycling rate for C&D debris, not including clean concrete repurposed as fill.[36] Lee County has also constructed a C&D MRF to recover reusable or recyclable materials from mixed loads of C&D debris. While the facility has the capacity to process 500 tons per day (TPD) of C&D debris, it currently processes about 300 TPD operating a single shift 4-5 days per week. Approximately 34% of the material

[36] Howard, Keith, Solid Waste Director, Lee County, FL, telephone interview, November 2015.

processed is recovered for recycling or beneficial use and 46% used as fuel for the county's waste-to-energy plant. The facility is projected to meet its return on investment within 5 years.

- **Horry County, SC:** To extend the life of its landfill, Horry County Solid Waste Authority built a basic C&D processing facility in 2012. In fiscal year (FY) 2015, the facility processed just over 14,000 tons of C&D debris and recovered 72% of these materials, more than half of which was wood. The Authority also charges a reduced tipping fee for segregated C&D materials to encourage source-separation. Although the tonnage is relatively low, the Authority reports the operation is breaking even.

Based on the current status of C&D recovery in Northwest Arkansas, approaches the City might consider include the following:

- **Reduced tipping fee for source-separated materials:** The City could establish a lower tipping fee for segregated wood and other recyclable or reusable materials to encourage customers to source-separate these materials prior to delivery to the transfer station. The tipping fee would need to be low enough to not only compete with the Eco-Vista Landfill, but also provide an incentive for contractors to separately collect and haul these materials. The City would then market these materials for recycling or reuse.
- **Diversion targets:** A more proactive approach would be to establish recycling/diversion targets for C&D projects and link these targets to the permitting process. Recycling of materials would become part of the planning process for all construction, demolition, and renovation projects. One of the main benefits of this approach is that it would apply to all building projects regardless of who collects the material or where the material is processed or disposed. Building contractors would potentially have the option of selling source-separated recyclables themselves, hiring the City or one of the City's franchised haulers to collect and market source-separated materials, or hiring the City or a franchised hauler to deliver mixed C&D debris to a C&D Recovery Facility if one is permitted in the area.
- **Contracting for C&D recycling services:** If a pending C&D Recovery Facility permit is issued to one or more of the facilities in Northwest Arkansas, the City could explore the feasibility of delivering C&D debris collected or received by the City to such a facility for processing to recover recyclables. The feasibility would depend on a number of factors, including the ability of the facility to accept third-party materials, processing fees, and transportation costs. This option would be limited to only materials managed by the City and would not impact C&D debris collected by franchised haulers.
- **Manual C&D recovery:** A small-scale recovery operation at the transfer station could be considered, although space is a major constraint. Utilizing a small loader with grapple bucket, staff could separate corrugated cardboard, ferrous and non-ferrous metals, and rigid plastics from incoming bulky waste loads for recycling. Dimensional lumber and reusable building materials could be separated and marketed for reuse.
- **Basic mechanized C&D material recovery:** The 15,000 tons of bulky waste received at the transfer station in 2015 is a marginal amount to warrant a mechanized C&D material recovery system. However, the City could require its franchised haulers to deliver C&D debris generated within the City to a City-owned recycling facility or could secure the

exclusive right to collect C&D debris. Materials that might be recovered include untreated wood waste, which could be reused or composted, and treated wood waste, which could potentially be ground and sold for boiler fuel. Other commodities could be marketed and clean aggregate used as fill material.

3.8 Reuse, Repair and Repurposing

Fostering reuse, repair, and repurposing not only helps reduce overall waste generation, but also engages community members to participate in other waste diversion programs. The City encourages donation programs and partnerships, including the following:

- The Second Chance School Supplies program works with teachers during the summer to collect gently used school supplies, which are then donated to smaller rural schools. The City estimates that 400 pounds of crayons, markers, binders, notebooks, books, and other miscellaneous supplies were donated in 2015.
- The City also helped facilitate a donation relationship between two apartment complexes and Habitat ReStore. When residents move out, they can call the Habitat ReStore directly to pick up unwanted items. Habitat ReStore estimates that 6,000-7,000 pounds of usable furniture and washing machines were collected from this apartment donation/reuse program in 2015.

In addition to Habitat ReStore, Fayetteville is home to other donation and reuse entities, including Salvation Army, Goodwill, and numerous consignment shops. Habitat ReStore accepts donations of household goods, furniture, appliances and building materials. Goodwill and Salvation Army accept household goods, appliances, electronics, automobiles, furniture, clothing, and domestic supplies. They accept textiles of all types, including fabric remnants. Textiles that are not resold in their stores are usually sold to textile recyclers.

Other types of businesses might also accept materials for reuse, such as packing and shipping service companies that accept and reuse cardboard boxes and packaging materials. In addition, repair shops exist for a variety of products.

Substantial quantities of potentially reusable items are likely disposed when students move-in and move-out between semesters. This is common in university towns, but various communities have developed programs to help facilitate reuse of these items. Several examples are provided below.

- **Goodwill Denver:** Goodwill Denver partners with the University of Denver, University of Colorado (Boulder), Regis University, Colorado School of Mines, and Johnson & Wales University to host on-campus donation drives as students move out of their dorms and apartments for the summer. Goodwill donation bins allow students to donate unwanted items instead of disposing of them. In 2013, at the University of Colorado alone, Goodwill collected 31,000 pounds of donations. In 2012, 25% of all donations received by Goodwill Denver came from college campus drives.

- **University of Denver:** The University partners with three different non-profit organizations for its move-out program. Goodwill accepts clothes, shoes, furniture, appliances, and other goods. Goodwill provides rolling carts to collect soft goods (clothes, shoes, etc.) and coordinates daily pickups the week of move-out. The Community Ministry Food Bank accepts and sorts through donated food items. St. Francis accepts donated open cleaning supplies and toiletries. By partnering with all three organizations, the University can donate most of the unwanted items generated during move-out. In 2014, more than 15,000 pounds of items were donated.

Picture 3-3: University of Denver Move-Out Program Sign

- **Northwestern University:** Every June, the Office of Sustainability offers the "Take it or Leave it" program. Boxes are placed in the lobby/entry of each residential building to collect nonperishable food items, clothing, sheets, and small household items. Food is donated to Campus Kitchen, a student-run kitchen that accepts donated food and turns it into meals for those struggling with food insecurity. Clothing and household items are donated to local charities. "Take it or Leave it" donates more than 10,000 pounds of reusables to charity annually.

Opportunities for the City to encourage or enhance midstream sustainable materials management include the following:

- **Promote the use of existing outlets:** At a minimum, the City could promote donation and reuse opportunities in its E&O materials. This would include educating businesses and residents about the benefits of donating gently used goods, and providing a comprehensive list of outlets for these goods.
- **Facilitate partnerships:** The City could take a more active role to facilitate partnerships between the University, off-campus student housing locations, and local reuse nonprofits to strengthen the move-out donation drive. Providing collection containers or carts at the move-out location would make reuse a more convenient option.
- **Swap shop:** Washington County accepts HHW from county residents and has a reuse shelf at the HHW facility for products that can still be used. The City could strive to increase community awareness of this program through its education and outreach program.

3.9 Supporting Policies

In addition to the opportunities and options already discussed in this section, additional policies were identified that help support or encourage waste reduction and recycling.

- **Nonexclusive franchises:** The City currently has the exclusive right to collect most residential and commercial materials, but franchises several private companies to collect commercial recyclables and waste in large roll-off containers. Commercial recyclables collected by the franchisees are not reported to the City and, therefore, are not included in the City's diversion rate. At a minimum, the City should require these franchisees to report the quantities of materials collected within the City and where these materials are delivered to gain a more complete picture of how all waste generated within the City is managed.
- **Material flow:** Increasing waste diversion will require an investment by the City in equipment and facilities. The City should ensure that sufficient materials are received to ensure full utilization of this investment. Depending on development of future programs and facilities, the City may want to designate facilities to which materials collected by franchisees must be delivered.
- **Building codes:** A common reason for not recycling at multi-family complexes or commercial businesses is a lack of space for recycling containers. To eliminate this concern in new developments, building code requirements should be modified to require new multi-family and commercial developments to provide adequate space and access for recycling.
- **Green City Program:** Green government programs can serve as models to other businesses. This includes establishing comprehensive recycling programs in government facilities, parks, and other public venues and places. For example, "twinning the bins" (pairing all trash containers with recycling containers) in all public buildings and places would ensure that recycling is widely available and always an option. Highly visible recycling in public areas helps instill an ethos of sustainability and encourages recycling at home, work, and play.
- **Environmentally preferable purchasing**: The City adopted an Environmental Purchasing Policy (EPP) in 2008. The EPP established a Task Force to identify opportunities to implement the policy and measure progress. One of the initial priorities defined in the EPP was the purchase of recycled content products. Proactive implementation of the EPP for not only City purchases, but also contractor actions on behalf of the City, is critical for the policy to be effective.
- **Disposal bans:** Statewide disposal bans are common for materials or products that have the potential to cause harm if landfilled or not properly managed. Some states have also banned the landfilling or disposal of certain materials to help drive recovery of these materials. At least 47 states ban the disposal of one or more items.[37] Included is Arkansas,

[37] The Northeast Recycling Council, Inc. (NERC), *Disposal Bans and Mandatory Recycling in the United States*, June 24, 2011, p.1.

which bans the landfilling of lead-acid batteries and yard waste.[38] In addition, 19 states mandate the recycling of at least one commodity.[39]

Communities with some of the highest reported recycling rates have employed disposal bans or recycling mandates to help them achieve these rates. Examples includes the following:

- **Seattle, WA:** Seattle has banned disposal of residential yard debris since 1989. In 2005, the city passed an ordinance prohibiting single-family and multi-family homes from disposing of "significant amounts" of aluminum, paper, cardboard, glass, plastic bottles, and plastic jars. Before the disposal ban, Seattle reported diverting 58.9% of residential waste from disposal; by 2014, that figure increased to 71.1%. As of January 2015, the city also bans disposal of food waste and compostable paper. Because this ban became effective so recently, its impact has not yet been measured. Violators first receive warnings, but are then subject to fines.
- **Fresno, CA:** Fresno had offered recycling services to commercial customers, but most were not taking advantage of the opportunity. In 2005, the city mandated commercial recycling. Prior to enactment, the citywide diversion rate was 32%. Following implementation of mandatory commercial recycling, the rate climbed to 62%.
- **Lee County, FL:** Lee County implemented mandatory business recycling in 2008. All business owners are required to establish an onsite recycling program that includes a service agreement for recycling collection, internal collection containers, documented education program, and documentation that a minimum of one recyclable material that makes up the largest portion of the business' waste stream is being recycled. For the first offense of non-compliance, county staff issues a warning and provides educational material and assistance in setting up a recycling program. Upon a second offense, an advance disposal fee (ADF) may be assessed monthly until the business is compliant. The ADF varies based on business classification. Elected officials and business groups, such as the Chamber of Commerce, were supportive of the program. Lee County reports nearly 100% of businesses are in compliance, with the exception of new businesses. To date, the county has not had to assess ADFs.[40]
- **Portland, OR:** Commercial businesses and multi-family complexes of five or more units are required to recycle paper and containers. If found to be in violation, a business has 30 days to come into compliance before fines are issued. Fines are $200 per month for the first infraction; subsequent infractions increase by $200 each month. Enforcement has historically been complaint-based and penalties have rarely been levied because businesses typically respond within 30 days. The city estimates that 85-90% of the commercial sector recycles to some extent.[41]

Disposal bans and mandates are utilized in jurisdictions with established infrastructure and mature programs if voluntary programs have failed to achieve desired diversion rates. In addition, jurisdictions implementing such bans and mandates also utilize other tools, such

[38] NERC, p.10.
[39] NERC, p. 1
[40] Smith, Emory, Lee County, FL, personal communication, January 2016.
[41] Bureau of Planning and Sustainability, *City of Portland 2015 Recycling Program Summary*, 2015.

as single stream recycling, technical assistance, and incentives in support of their recycling programs. Most bans and mandates are phased in over time, preferring to use notifications and technical assistance to encourage compliance first. After an initial grace period, they then utilize Code Enforcement staff to monitor compliance and have the ability to impose fines or fees on non-compliant businesses.

- **Product or packaging bans:** Such bans prohibit or place a fee on the use of certain types of products or packaging. Two products that have been targeted are single-use carryout plastic bags and expanded polystyrene (EPS) food-ware. In addition to recycling challenges, both products have negative impacts to wildlife if released into the environment and ingested. Based on the waste composition study, EPS food-ware and retail plastic bags each constitute approximately 1% of the waste received at the transfer station for disposal. While this may seem inconsequential, it should be noted that other materials, such as aluminum cans and HDPE plastic containers also constitute about 1% of waste disposed. In addition, striving to reach 80% diversion requires incremental gains.
- **Extended producer responsibility (EPR):** EPR legislation and programs place responsibility for managing end-of-life products and packaging on manufacturers, which in turn provides an incentive for them to develop more sustainable products and packaging. EPR legislation is typically enacted at the state level.

Section 4
Pilot Programs

Based on an initial identification of diversion opportunities, two pilot programs were conducted to assist in evaluating potential implications to the City: (1) commercial food waste collection and composting and (2) residential single stream recycling. Provided below are summaries of the results of the pilot programs. More detailed reports regarding the pilots are provided in Appendices D and E.

4.1 Commercial Food Waste Composting Pilot

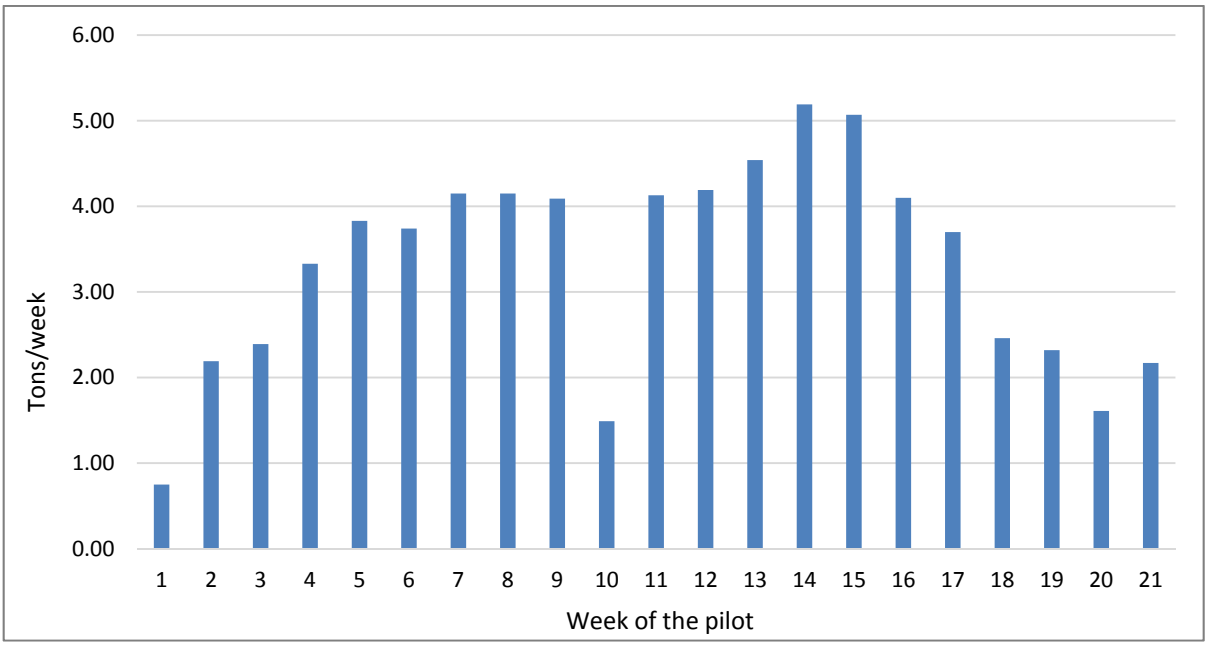
The purpose of this pilot program was to evaluate the collection logistics and composting of food waste to better determine the feasibility of a citywide commercial food waste program. The City collected food waste from 9 pilot participants during a 21-week period, from January 20, 2016 through June 10, 2016. The participants included 6 restaurants, an elementary school, the Fayetteville Senior Activity and Wellness Center, and University of Arkansas (4 locations). The City provided each participant with an appropriate number of 64-gallon carts and serviced these carts 3 times per week. Several participants were also provided with compostable bags to line the carts; others were requested to rinse the carts regularly to keep them clean.

The City obtained permission from ADEQ, through a Memorandum of Agreement, to compost the food waste at the City's compost facility located at 1560 S. Happy Hollow Road. The City used the Modified Static Aerobic Pile (MSAP) composting method, instead of the traditional turned windrow method they had been using for yard waste composting. The MSAP method utilizes a proprietary microbial inoculant that expedites the composting process.

Picture 4-1: Food Waste Tipped at Compost Facility

A total of 69.3 tons of food waste was collected during the pilot. Figure 4-1 shows the tonnage collected each week of the pilot. After the initial ramp up during the first few weeks, tonnages remained fairly consistent at 3-5 tons per week, with a few exceptions. A dip occurred in week 10 during spring break at the University. Weekly tonnages declined after week 17, when only minimal food waste was collected from the University as it entered the summer term and several participants were under the impression the pilot had ended and stopped collecting food waste.

Figure 4-1: Food Waste Collected Weekly (tons)



The pilot demonstrated the effectiveness of the MSAP method for composting commercial food waste at the City's compost facility.

- **Quality compost:** The temperature profiles indicated a healthy compost system and the laboratory tests showed a high quality, clean compost.
- **Faster composting:** The MSAP method provided a faster composting process than the turned windrow method currently used by the City, which requires 4-6 months. Using the MSAP method for composting food waste and yard waste, active compost required only about 60 days. Faster composting time allows more material to be processed on the existing site annually.
- **Less turning:** Because the inoculant pulls air into the windrow, fewer turnings were required compared to the turned windrow method, which requires about 12 turns on average for a full composting cycle. The MSAP method only required 2 turns per cycle.
- **Odor control:** The MSAP method appeared to successfully control odors. The greatest potential for odor release occurs when a windrow is turned. Because the MSAP method only required 2 turnings and the first turning did not occur until after day 30, the potential for odor release was reduced. In addition, the capping layer is intended to act as an in-situ biofilter to prevent releases of odors during active composting.
- **Potential cost savings:** Because of the faster composting time and reduced number of turnings, the MSAP method should result in reduced labor, operational, and maintenance costs than traditional windrow composting, even factoring in the cost of the inoculant.

The pilot also demonstrated the success of the commercial food waste collection system. Feedback was solicited from participants through an online survey, to which all 9 participants responded. Key results are as follows:

- All participants rated their experience as positive or somewhat positive.
- Most participants estimated they decreased the volume of disposed garbage by 25-50% during the pilot, while two participants estimated their waste reduction was more than 50%.
- All participants would continue to collect food waste if it was at no additional cost or if the cost was offset by a decrease in garbage collection costs. Two participates would continue if it cost 10% more.
- All participants would support a citywide mandate requiring food waste separation by businesses generating a substantial amount of food waste.
- Some suggestions from participants to make food waste collection easier included more roll carts, more frequent collection, assistance with employee and customer training and marketing materials, City-provided in-house collection containers, and use of compostable bags.
- Concerns expressed by some participants included not having sufficient space for carts or collection containers, odor, people not properly sorting food waste, having to rinse the carts, or issues with compostable bags.

The pilot also provided valuable information regarding future considerations in developing a citywide food waste collection and composting program. These include the use of compostable bags, potential equipment modifications, controlling contamination, and cost considerations. Based on the overall results of the pilot, pursuing a full-scale citywide food waste program appeared feasible and was therefore modeled as a potential waste diversion program. The success of the pilot was underlined by the fact that the City is in the process of applying for a Typo CO permit for its compost facility that will enable acceptance and composting of food waste. Additional details regarding the food waste pilot program are provided in Appendix D.

QUOTES FROM FOOD WASTE PILOT PARTICIPANTS

"The whole experience was positive for our business. Composting food waste will be nothing but beneficial for the city and the environment. It really is the only smart option."

"We are keeping our fingers crossed that the program can become a permanent part of Fayetteville Waste."

"Thank you for including FPS in the food waste pilot and including the opportunity for students to tour the compost facility! We're hopeful this expands and all schools can participate in the future."

"We would really like this program to continue, please be in touch if there is anything we can do to make this happen."

"Lots of positive feedback from customers on social media, it is well supported in our community."

"They (customers) like that we are a part of the program. They gained a lot of respect for us as a company that we were doing this."

4.2 Residential Single Stream Recycling Pilot

The purpose of the residential single stream pilot was to evaluate the potential impacts of converting from the City's existing recycling program, in which materials are curb-sorted by type from recycling bins or collected by individual material stream on separate routes or in partitioned roll-off containers, to single stream recycling. In a single stream program, all recyclables are commingled in the same collection container and then sorted by type at a processing facility. The pilot program included two generator sectors: curbside residential and multi-family residential.

The curbside residential pilot was conducted for 14 weeks, February 18-May 19, 2016. The City selected a curbside route of approximately 1,010 households located in the southeastern part of the City for the pilot. It aligned with an existing garbage route, but combined the majority of 2 existing curbside recycling routes.

The City first gathered 6 weeks of pre-pilot data for this pilot area. The City then provided each residence with a 64-gallon recycling cart with a blue lid to differentiate the cart from the garbage cart. A City sanitation crew serviced the recycling carts each Thursday, the same service day residents were already accustomed to, using automated side-load vehicles. The City notified residents in the pilot area of the pilot program through a direct-mail postcard, utility bill stuffer, newspaper ads, brochure, and the City's website.

The multi-family residential pilot was conducted for 12 weeks, April 5-June 28, 2016. The City selected two apartment complexes to participate in the pilot:

- At The Cliffs II, recycling containers were placed throughout the complex parking lot adjacent to the existing garbage dumpsters. These new recycling containers replaced the single large roll-off recycling container previously located in the parking lot that had separate storage compartments for each type of recyclable material.
- At The Academy at Frisco, the recycling chute was used. Prior to the pilot, the recycling chute was utilized as a second garbage chute. Residents wishing to recycle had to take their recyclables to one of the City's recycling drop-off centers. During the pilot, this chute was clearly labeled for recycling.

City staff met with the property managers at these two complexes several times to discuss the pilot and to provide education on the single stream program. Educational materials were provided, including brochures, posters, and container signs.

Single stream processing could not be evaluated as part of this pilot program because a state-of-the-art single stream MRF that accepts a full range of commingled recyclables does not currently exist in Northwest Arkansas. The City entered into an agreement with GP Harmon to accept and manually sort the single stream recyclables collected during the pilot at GP Harmon's facility located at 1421 E. 15th Street in Fayetteville.

GP Harmon chose to hand sort recyclables off of the tip floor. Recovered materials were weighed and recorded by material type. The remaining residue, which consisted of non-recyclable materials and recyclables that were not recovered by this rudimentary manual sorting system, was also weighed and recorded. To determine what percentage of this residue

consisted of recyclables versus contaminants, GP Harmon staff conducted a second sort of residue from four loads. The residue was placed on a table with a 1.75" x 0.75" screen. Recyclable materials that did not fall through the screen were hand-sorted.

Table 4-1 provides a comparison of the pre-pilot and pilot averages for the metrics that were monitored and recorded for curbside residential collection in the pilot area. Figure 4-2 depicts the percentage of households in the pilot area that placed their recycling cart curbside during each week of the pilot program as compared to the average pre-pilot recycling bin setout rate. Figure 4-3 depicts the quantity of recyclable materials collected during each week of the pilot as compared to the average weekly tonnage during the pre-pilot.

Collection efficiency improved dramatically during the pilot program. Collection times at each household dropped from just over 1 minute during the pre-pilot to an average of 7 seconds during the pilot. Collection time for the entire pilot area dropped from more than 12.5 hours for the curb-sort program to 5.25 hours for automated single stream collection, a 58% reduction.

Table 4-1: Curbside Single Stream Collection Pre-Pilot and Pilot Data

Pilot Metrics	Pre-Pilot Average	Pilot Average	Percent Increase/ (Decrease)
Number of Setouts per Week	444	678	53%
Setout Rate	44%	67%	52%
Tons Collected per Week	2.14	4.20	96%
Pounds/Setout	9.66	12.50	29%
Collection Time per Unit*	0:01:04	0:00:07	(89%)
Time Between Stops*	0:00:38	0:00:21	(44%)
Time In Pilot Area*	12:32:35	5:16:37	(58%)
Total Pilot Households	1,006	1,010.2**	
Average lbs./household/week	4.3	8.3	94%
Average lbs./household/year (est.)	222	433	94%

*Time is recorded as hours, minutes, seconds (i.e., hh:mm:ss).
**Number of households in pilot area increased as additional units became occupied; therefore, and average was used.

The percentage of households placing a recycling container curbside for collection each week increased by nearly 53% and the average quantity of materials collected each week increased by approximately 96%. Extrapolated to an annual basis, conversion to single stream recycling would be expected to increase the quantity of recyclables collected per household in the pilot area from 222 pounds per year to 433 pounds per year, or approximately 94%. This is consistent with reported increases in various other communities that have converted to single stream recycling. In addition, communities striving for high diversion rates often target per household recycling rates of 400-600 pounds per year.

Figure 4-2: Weekly Recycling Container Setout Rates

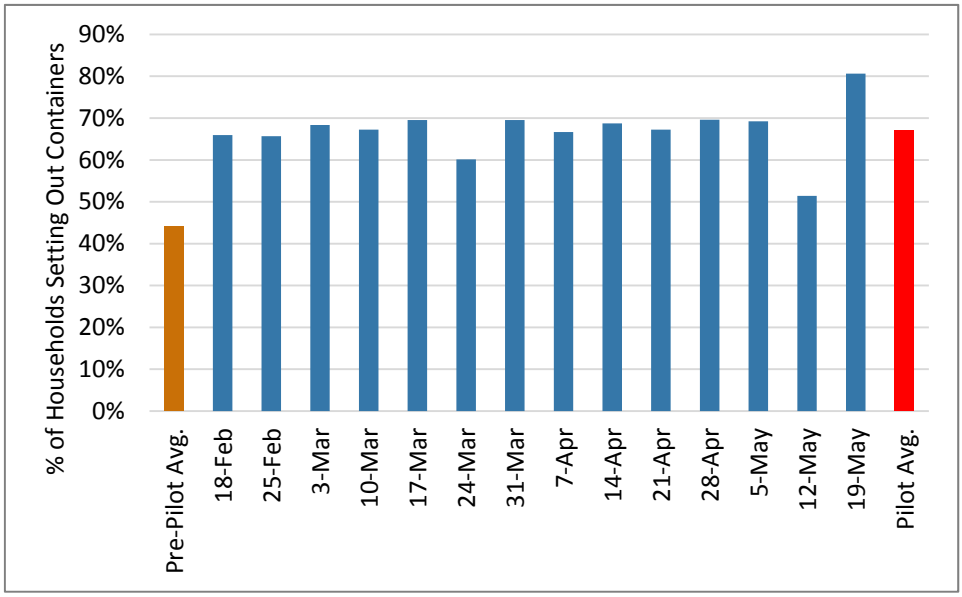


Figure 4-3: Tons of Recyclables Collected per Week

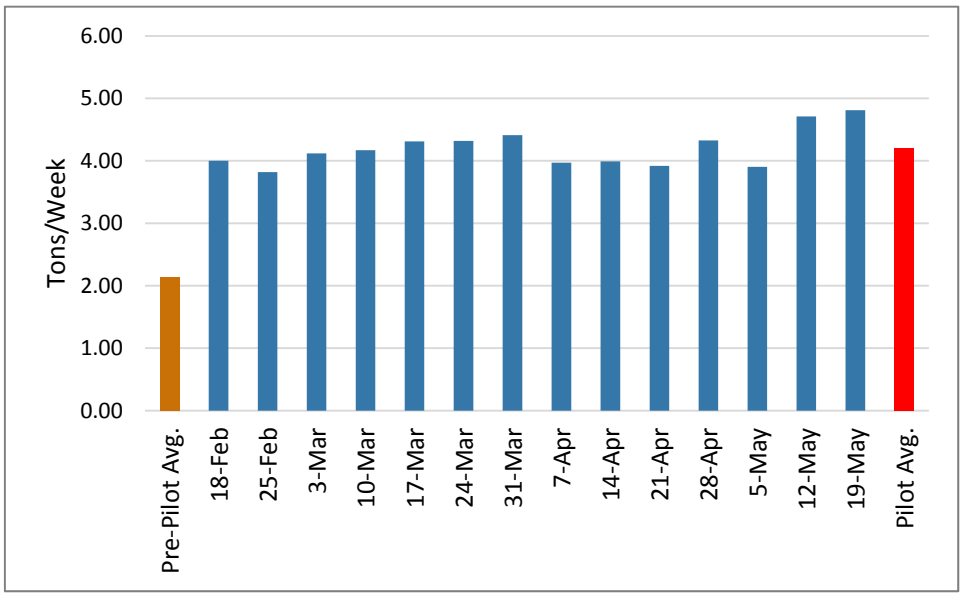


Table 4-2 provides a summary of the data provided by GP Harmon. The table includes the types and percentages of materials recovered from the initial manual floor sort of all materials collected during the pilot. It also provides the total percentage of materials recovered from loads #7-#10 during the initial floor sort and a secondary sort using a rudimentary screen. Although the pilot was not intended to evaluate processing, the initial floor sort recovered an average of 87% of the materials. During the secondary sort, GP Harmon estimated that approximately 90% of the large grit (i.e., materials that did not pass through the screen but was

not manually sorted) consisted of recyclable glass. Therefore, Table 4-2 provides data for Loads #7-#10 in two ways, one counting all large grit as residue and the other counting 90% of large grit as glass.

Table 4-2: Summary of Manual Processing of Curbside Recyclables (% by weight)

Material	All Loads - Initial Sort	Loads #7-#10 - All Grit as Residue	Loads #7-#10 - 90% of Large Grit Recovered
Cardboard	25%	26%	26%
Newspaper	13%	11%	11%
Mixed Paper	18%	20%	20%
#1 PET Bottles	5%	5%	5%
#2 HDPE Bottles	3%	3%	3%
Plastic #3-#7	2%	2%	2%
Aluminum Cans	2%	2%	2%
Steel Cans	3%	3%	3%
Scrap Metal	0%	0%	0%
Mixed Glass	15%	16%	20%
Total Recovered	**87%**	**88%**	**92%**
Unaccepted Materials		3%	3%
Small Grit		5%	5%
Large Grit		4%	0%
Residue	**13%**	**12%**	**8%**
Total Processed	**100%**	**100%**	**100%**

An average residue rate of 15% is realistic to assume for a single stream MRF. Applying a 15% residue rate to the quantity of recyclables collected during the pilot program results in an average of 7.1 pounds per household per week, a net increase of 64% over the existing bin program.

The City conducted a participant survey to obtain feedback about the curbside residential pilot program. Nearly 29% of households in the pilot area responded to the survey (288 responses). These responses reflected overwhelming support for the carted recycling system. Survey results are summarized below:

- Prior to the pilot, only 69% of respondents placed their recycling bins curbside each week and more than 10% stated that they rarely or never placed their bins curbside. During the pilot, 81% placed their cart at the curb every week.
- 92% of respondents stated they recycled more materials during the pilot than they had previously.
- 88% found the 64-gallon cart to be a good size.

- The majority of respondents were excited (72%) or interested (26%) to participate in the single stream pilot.
- When asked what benefits they experienced from single stream recycling:
  - 97% stated convenience, putting all materials into a single cart.
  - 92% stated more recyclables, recycling the additional plastics.
  - 90% stated convenience, cart easier to roll to the curb for collection.
  - 83% stated the larger cart allowed them to recycle more.
  - 69% stated neighborhood aesthetics, no open bins or recyclables lost in the wind.
  - 56% stated collection service was quicker/less bothersome.
- 98% of respondents believe single stream should be available to households citywide.

The survey also requested general comments from respondents and over 200 comments were received, the overwhelming majority of which expressed support for the program. Most of the negative comments raised concerns about contamination levels. The City also received unsolicited comments about the pilot program via email. Just a few of these comments are provided in the sidebar.

Table 4-3 presents the results of the pilot program at the two multi-family residential complexes, as well as pre-pilot data for The Cliffs II and the City's overall multi-family recycling program. Prior to the pilot program, The Cliffs II collected an average of 0.91 pounds of recyclables per unit per week. The City's overall multi-family recycling program averaged 1.11 pound of recyclables per unit per week. This latter figure was increased by more than two-fold during the pilot program. In fact, the tonnage of materials collected from the two complexes during the pilot program was only 100 pounds less than all multi-family recyclables collected in 2015.

Table 4-4 provides a summary of the multi-family materials data provided by GP Harmon, including the types and percentages of materials recovered.

QUOTES FROM SINGLE STREAM PILOT PARTICIPANTS

"Working families where time is severely constrained will benefit since it involves less time and less space to recycle."

"I am a disabled Veteran and it is a lot easier to roll out a bin on rollers than it is to carry out two containers by hand. "

"I recycled significantly more with single stream due to ease of use as well as more materials that were allowed."

"(W)heeled cart is easier to get to the curb than the green box."

"I do miss the early morning sounds of a diesel engine idling, idling, idling away as the bottles and cans crash against the steel sides of the truck. Well OK maybe not."

"I would be unhappy to go back to the old way."

"It was probably safer for the drivers. This road is busy and for people to have to get out of their trucks could be dangerous."

"Now my trash container is way too big!"

Table 4-3: Comparison of Multi-Family Data Results

Pilot Metrics	The Cliffs II Pre-Pilot Average	Multi-Family 2015 Average	Pilot Average
Number of Units	360	1,392	579
Pounds/Week	326	1,548	1,451
Pounds/Unit/Week	0.91	1.11	2.51
Pounds/Unit/Year (est.)	47	58	130

*No pre-pilot data available for The Academy at Frisco

Table 4-4: Summary of Manual Processing of Multi-Family Recyclables (% by weight)

Material	Multi-Family Materials
Cardboard	29%
Newspaper	6%
Mixed Paper	22%
#1 PET Bottles	4%
#2 HDPE Bottles	2%
Plastic #3-#7	2%
Aluminum Cans	1%
Steel Cans	1%
Scrap Metal	0%
Mixed Glass	13%
Total Recovered	**81%**
Residue	**19%**
Total Processed	**100%**

Depending on the level of contamination of inbound material, a state-of-the-art single stream MRF should achieve more than an 81% recovery rate. However, even assuming 19% of the multi-family materials collected were lost as residue, the pilot resulted in an average of 2.03 pounds of recyclables per unit per week, an 83% increase over the 2015 multi-family average.

A survey was also conducted of residents in the participating multi-family complexes. Only 18 surveys were completed, 15 by residents of The Cliffs II and 3 by residents of The Academy at Frisco. Survey results are summarized below:

- Prior to the pilot, 89% of respondents recycled at least once per month. During the pilot, all respondents recycled at least once per month.
- 89% of respondents reported recycling more during the pilot than they had previously.
- Prior to the pilot, 56% utilized the recycling roll-off at The Cliffs II to recycle and 17% utilized the Happy Hollow Recycling Center.

- When asked what benefits they experienced from single stream recycling:
  - 100% stated convenience, putting all materials into a single container.
  - 89% stated more recyclables, the additional plastics.
  - 89% stated convenience, location of containers/recycling chute.
- All respondents (100%) stated that the program should be available to apartment complexes citywide.

Results of both the curbside and multi-family residential pilot programs were very promising in terms of participation, tonnage, and collection efficiencies. These results were utilized to further evaluate and model citywide conversion to single stream recycling and the potential implications to the City. Additional details regarding the single stream pilot program are provided in Appendix E.

Section 5
Scenario Modeling

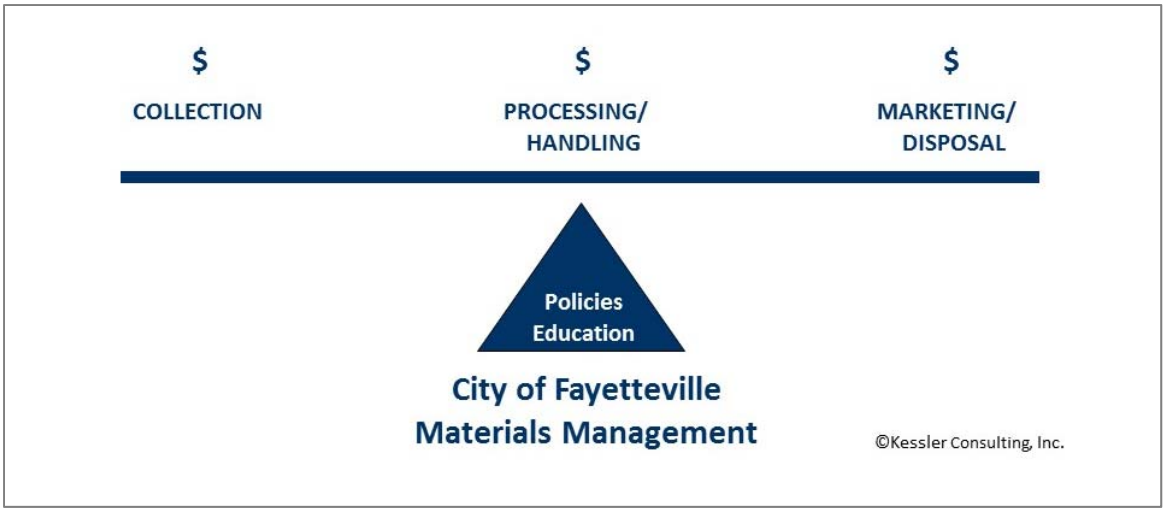
5.1 Introduction to System Model

Based on the initial assessment of the City's materials management system and results of the waste composition study, various options were identified with the potential to increase waste diversion (see Section 3). Several of these options were further explored through pilot programs (see Section 4). The project team then selected waste diversion scenarios that warranted conceptual modeling to further evaluate the potential waste diversion and economic implications to the City.

System modeling is a tool to estimate and project potential costs, revenues, diversion rates, and other impacts of programmatic and infrastructure changes that may be implemented over the planning period. How these changes are implemented can be highly variable and numerous decisions made throughout the process can significantly alter the end results. Therefore, modeling of this type with so many variables and assumptions is not an exact science, but rather a guide post. Results can provide an understanding of the relative costs of a system and comparisons between options.

Collection, processing/handling, and marketing/disposal are interrelated elements of a materials management system (see Figure 5-1). All three elements have a cost and are critical to maintaining a balanced, sustainable management system. Changes to one of these elements will impact the others; therefore, the model links all three elements to ensure implications to the overall materials management system are factored in.

Figure 5-1: Balancing the Business Components of Materials Management



The system model stratifies the City's various waste streams by collection program (residential, multi-family, commercial, dropbox, and various drop-off options). The change in tonnage calculates the associated operational costs for the collection, processing, hauling, and disposal of the City's various material streams, as well as revenue. Collection infrastructure modules calculate the routes required based on projected tonnage and customers and the associated collection costs. Processing, hauling, and disposal modules identify fixed and variable costs and calculate projected costs based on the shift in materials. Because service rates are policy-driven, the system model only identifies projected revenue based on the sale of recyclable materials, compost, and mulch.

Population and waste generation projections for the 10-year planning period were first calculated. A baseline model of the City's existing system was then developed and served as the foundation for modeling the diversion scenarios listed below.

- Two recyclable materials recovery scenarios:
  - Establishing a network of drop-off centers that would primarily service multi-family residents, businesses, and institutions.
  - Converting to single stream collection and processing for residential, commercial, and institutional recyclable materials.
- Organics recovery: Phasing in collection of food waste and other compostable materials generated by businesses, institutions, and residents with curbside collection service.
- C&D debris processing: Establishing a processing system to recover reusable or recyclable materials from mixed C&D debris collected or received by the City.
- Combined recovery efforts: Combines single stream recycling, organics recovery, and C&D debris processing.

The remainder of this section discusses the results of these analyses and various scenario models.

5.2 Population and Waste Generation Projections

The first step was to project population and waste generation over the 10-year planning period (2016-2025). Figure 5-2 depicts the City's population and total waste generation during the last 10 years and also projects population growth and total waste generation over the next 10 years. Table 5-1 provides the population and waste generation projections for the next 10 years. Population is assumed to increase at 2.3% annually (average rate of increase since the 2010 census) and to exceed 103,500 residents by 2025.[42]

Per capita waste generation declined during the recessionary years of 2007 through 2010, which was the trend nationally, and began increasing again in 2011. Future waste generation is estimated based on the average per capita waste generation during the last 10 years (0.83 tons

[42] The Northwest Arkansas Planning Commission estimates the 2025 population of Fayetteville at 97,191 (per communication with Jeff Hawkins, October 28, 2014).

per capita annually). Based on these assumptions, nearly 86,000 tons of materials will be generated in 2025.

Figure 5-2: Population and Waste Generation Data and Projections, 2006-2025

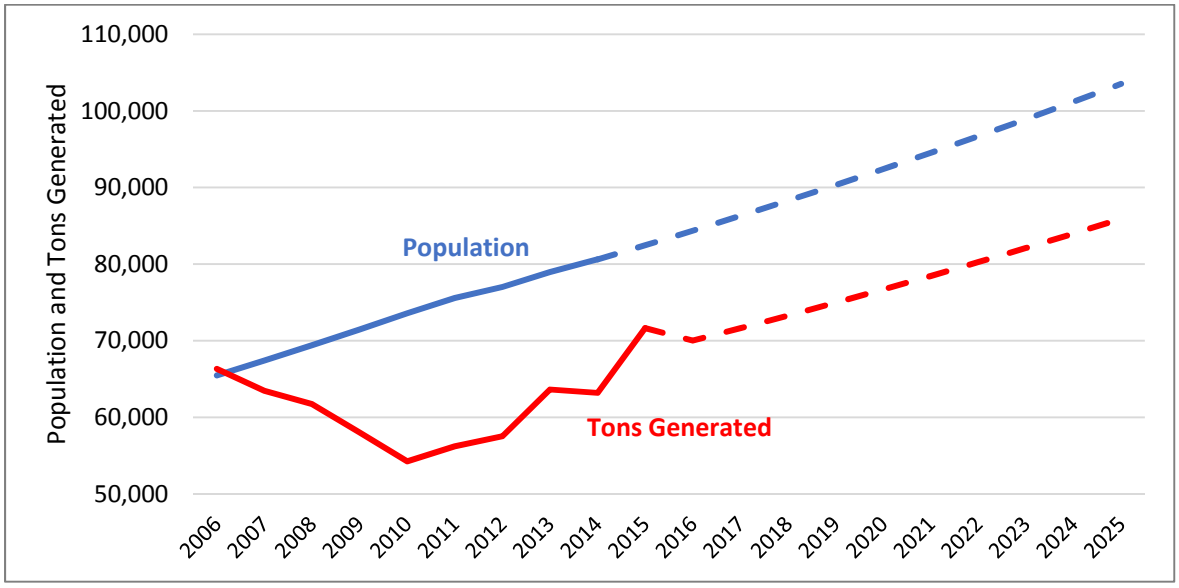


Table 5-1: Projected Population and Waste Generation

Year	Projected Population	Projected Waste Generation (tons)
2016	84,372	70,029
2017	86,313	71,640
2018	88,298	73,287
2019	90,329	74,973
2020	92,407	76,698
2021	94,532	78,462
2022	96,706	80,266
2023	98,930	82,112
2024	101,205	84,000
2025	103,533	85,932

5.3 Baseline

The baseline scenario assumes the status quo is maintained with no program or infrastructure changes other than that required to accommodate population growth and associated increases in waste disposal and material recovery. This scenario is the foundation upon which other scenarios were built and is useful for comparison purposes to understand the impact of the other scenarios throughout the planning period.

Actual expenses and material revenues for 2015 were utilized to develop the baseline and to allocate expenses and revenues by service or line of business. These allocations were made based on how service is provided rather than who is generating the material. The following cost allocations are worth noting and apply to the tables provided in the remainder of this section:

- As noted in Table 5-1, waste generation projections for 2016 and 2017 (70,029 tons and 71,640 tons, respectively) were lower than the actual quantity of waste generated in 2015 (71,653 tons). For modeling purposes, no drop is tonnage was assumed for 2016 or 2017 (71,653 tons were assumed for both years). For subsequent years, the waste generation projections in Table 5-1 were utilized.
- Residential municipal solid waste (MSW) includes waste collected curbside in carts, as well as residential bulk waste collected curbside and commercial solid waste collected in roll carts.
- Commercial/Multi-Family MSW includes commercial and multi-family waste collected in dumpsters or roll-offs and the 6-cubic yard dumpster service, of which approximately 90% was estimated to service residential customers.
- Commercial/Multi-Family Recyclables includes cardboard, mixed paper, and glass collected from businesses; commercial recyclables collected in recycling bins are included in residential curbside recycling.
- Multi-Family Recyclables includes recyclables collected in the partitioned roll-offs placed at multi-family complexes.
- Drop-Off MSW and Organics are solid waste and vegetative waste dropped off at the City's solid waste facility, not the recycling drop-off centers, and therefore do not incur any collection costs.
- Drop-Off Recyclables includes scrap metal delivered to the City's facility and materials collected at Ozark Natural Foods drop-off site in order to capture these additional recyclable materials in the model.
- Dropbox/C&D Debris includes C&D and bulky waste collected by the City through its dropbox program.
- Non-City Collected MSW is included in the model for cost analysis purposes, but is not included in waste diversion calculations.
- A capital reserve for facility improvements was built into the model absorbing some of the building and solid waste improvement costs expended as special projects in 2015.

- Costs associated with administration, education and outreach, special projects, and transfers to the general fund were compiled from direct operational costs. These costs are noted as General and Administrative on the tables provided throughout this section. The net cost per ton for these expenses was calculated based on the total tons managed in the system.

The following assumptions were made in modeling the baseline scenario, and were carried through to all scenarios unless otherwise indicated in subsequent scenario discussions:

- Non-City waste managed by the City's system was estimated using the most recent four-year average, with no increase over time assumed.
- The material compositions for residential curbside recycling and recycling drop-off facilities were calculated based on 2015 actual tonnage. The estimated average market value per ton for each stream was then calculated based on these compositions and the five-year average of an industry-accepted market index for individual commodities. Based on City information, residential curbside recycling was assumed to have a 2.5% contamination rate and recycling drop-offs were assumed to have a 5% contamination rate.
- Compost revenue was based on 2015 actual compost revenue divided by inbound tons of yard waste. Outbound tons, or tons sold, were assumed to be 65% of inbound tons to account for decomposition that occurs during the composting process.
- Education and outreach expenses for 2015 were divided by the estimated population to determine the expenditure per capita ($1.55 per capita) and increased annually in relationship to population.
- An annual inflation rate of 2.0% was assumed and applied to all costs.

Table 5-2 provides the baseline model results for the planning period, including net costs (estimated expenses less revenues) and net cost per ton by line of business and for the system overall. Based on the cost allocations and assumptions outlined above, key findings of the baseline model include the following:

- The most costly program on a per-ton basis is the multi-family recycling program. This was expected given that these partitioned roll-offs are serviced when one compartment is full; therefore, payload is not maximized. In addition, this program yielded only 40 tons of recyclables in 2015.
- The second most costly program is the curbside residential recycling program primarily because of the time and cost of sorting recyclables at the curb.
- Because the baseline scenario assumes the status quo, no changes in waste diversion are anticipated. Recyclable materials provide an 8% diversion rate and compostable materials a 10% rate, for a total of diversion rate of 18%.

Table 5-2: Baseline Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$2,020,797	$2,075,148	$2,131,307	$2,189,229	$2,248,967	$2,310,595	$2,374,179	$2,439,788	$2,507,502
	Recyclables	$957,459	$983,710	$1,010,486	$1,032,737	$1,055,501	$1,078,834	$1,102,755	$1,127,279	$1,152,425	$1,178,211	$1,204,655
	Organics	$549,647	$560,916	$572,411	$586,280	$600,551	$615,219	$630,296	$645,796	$661,733	$678,120	$694,974
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,571,265	$2,649,511	$2,730,708	$2,814,760	$2,901,761	$2,991,838	$3,085,109	$3,181,696	$3,281,741
	Recyclables	$162,335	$168,883	$175,563	$180,375	$185,333	$190,458	$195,759	$201,242	$206,914	$212,782	$218,853
	Organics											
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$19,844	$20,268	$20,702	$21,146	$21,601	$22,067	$22,543	$23,031
Drop-Off	MSW	$1,479	$1,509	$1,539	$1,605	$1,675	$1,748	$1,824	$1,903	$1,986	$2,072	$2,162
	Recyclables	$106,596	$110,354	$114,188	$117,232	$120,367	$123,605	$126,949	$130,402	$133,971	$137,657	$141,467
	Organics	$163,515	$167,299	$171,159	$179,092	$187,413	$196,109	$205,194	$214,688	$224,606	$234,970	$245,799
Ward Cleanup	MSW	$38,524	$39,295	$40,081	$41,089	$42,127	$43,197	$44,297	$45,429	$46,595	$47,796	$49,032
Dropbox/C&D Debris	MSW	$903,255	$921,320	$939,747	$972,965	$1,007,594	$1,043,577	$1,080,961	$1,119,812	$1,160,188	$1,202,152	$1,245,777
	Recovered											
Non-City Collected	MSW	$421,510	$429,941	$438,539	$447,310	$456,256	$465,382	$474,689	$484,183	$493,867	$503,744	$513,819
General & Admin.	All tons	$2,944,818	$3,009,383	$3,072,700	$3,137,356	$3,203,379	$3,270,798	$3,339,642	$3,409,942	$3,481,729	$3,555,033	$3,629,889
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$11,147,904**	**$11,440,545**	**$11,742,482**	**$12,053,617**	**$12,374,241**	**$12,704,710**	**$13,045,366**	**$13,396,564**	**$13,758,701**
NET COST PER TON												
Residential	MSW	$131	$134	$137	$137	$138	$138	$139	$139	$140	$141	$141
	Recyclables	$309	$317	$326	$325	$325	$325	$325	$324	$324	$324	$324
	Organics	$228	$233	$238	$238	$238	$239	$239	$239	$240	$240	$241
Commercial/ Multi-Family	MSW	$87	$89	$90	$91	$92	$92	$93	$94	$95	$95	$96
	Recyclables	$90	$94	$97	$98	$98	$99	$99	$100	$100	$101	$101
	Organics											
Multi-Family	Recyclables	$462	$474	$486	$485	$484	$484	$483	$482	$481	$481	$480
Drop-Off	MSW	$39	$40	$40	$41	$42	$43	$44	$45	$46	$47	$47
	Recyclables	$106	$109	$113	$114	$114	$114	$115	$115	$116	$116	$117
	Organics	$36	$37	$38	$39	$40	$41	$42	$43	$44	$45	$46
Ward Cleanup	MSW	$176	$179	$183	$183	$184	$184	$185	$185	$186	$186	$187
Dropbox/C&D Debris	MSW	$59	$60	$61	$62	$63	$64	$65	$65	$66	$67	$68
	Recovered											
Non-City Collected	MSW	$39	$40	$40	$41	$42	$43	$44	$45	$46	$47	$47
General & Admin.	All tons	$36	$36	$37	$37	$37	$37	$37	$37	$37	$37	$38
Total System Net Cost per Ton		**$130**	**$132**	**$135**	**$136**	**$137**	**$138**	**$139**	**$139**	**$140**	**$141**	**$142**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Compostable Materials		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
C&D Debris		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total System Estimated Diversion		**18%**	**18%**	**18%**	**18%**	**18%**	**18%**	**18%**	**18%**	**18%**	**18%**	**18%**

5.4 Material Recovery

Capturing recyclable materials that are currently landfilled as part of the City's MSW stream has the potential to increase the City's diversion rate by up to 20%. Following a discussion of various options to increase recovery of these materials, the City requested that two scenarios be modeled:

- **Recycling drop-offs:** This scenario assumes that a network of recycling drop-off centers are developed throughout the City for use primarily by multi-family residents, businesses, and institutions. The City requested this scenario be included because of an apparent interest on the part of some local stakeholders.
- **Single stream recycling:** This scenario assumes that single stream recycling is implemented for residential curbside, multi-family complexes, businesses, and institutions.

5.4.1 Recycling Drop-Offs

The drop-off center scenario assumes that a network of eight additional recycling drop-offs would be established throughout the City, two per ward, and serviced by the City. The model was based on the following assumptions:

- The centers would be developed and constructed in 2017 and would become operational in 2018. Based on information provided by the City, the assumed costs to develop and service the centers were as follows:
  - Capital and site development were assumed at $500,000 per site, financed over 20 years with a 3% finance rate.
  - Based on the anticipated tonnage of recyclables, each site was assumed to have 5 receiving boxes (roll-offs) with a purchase cost of $6,500 each, straight-lined over ten years. These roll-offs would be partitioned to accommodate the various types of segregated materials accepted in the program.
  - Operational costs include utilities, lawn service, and container maintenance and replacement costs. The City provided costs for utilities and lawn service; KCI applied industry standard costs for container maintenance and repair.
  - A part-time attendant was assumed at each site.
  - Servicing receiving boxes was estimated based on the percentage of pulls to tons in 2015 for the Marion Orton drop-off and an average round-trip transportation time of two hours, including tipping. This cost included labor, operational expenses, and vehicle replacement cost. It, therefore, factored in the need to purchase another vehicle to service the roll-off containers.
- Curbside recycling would continue; therefore, these drop-offs would primarily be utilized by multi-family residents, businesses, and institutions. It was assumed that approximately 10% of the recyclable materials currently disposed by these generators would be collected through the expanded drop-off network. For multi-family complexes, this would equate to an estimated 61 pounds of recyclables materials

recovered per multi-family unit annually, which exceeds the 58 pounds per unit collected at the multi-family complexes that participated in recycling in 2015. Since use of drop-off centers would be less convenient than a recycling roll-off located on a multi-family complex premises, a 10% recovery rate is likely optimistic.

- It was also assumed that the existing multi-family recycling program (partitioned roll-offs) and commercial recycling program (collection of recyclables by type) would continue at the current level.

Table 5-3 provides the drop-off center model results, including net costs and net cost per ton for each line of business and for the system overall, as well as projected diversion rates. Key findings of the drop-off scenario model include the following:

- Although more drop-off centers increase convenience, they do not offer the convenience of collection at a business or multi-family complex location. Based on industry experience, high participation and recovery rates are not anticipated for a drop-off program in an urban city such as Fayetteville. This scenario is projected to increase the diversion rate to 20%.
- The cost per-ton to operate the drop-off recycling centers (Drop-Off Recyclables) increases substantially in this scenario because of the cost to establish each center and the low participation traditionally associated with drop-off programs. Establishing fewer additional drop-offs would lower costs, but would still result in low recovery rates.

Table 5-3: Drop-Off Center Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$2,020,797	$2,064,828	$2,120,539	$2,177,992	$2,237,242	$2,298,361	$2,361,413	$2,426,467	$2,493,602
	Recyclables	$957,459	$983,710	$1,010,486	$1,022,229	$1,044,536	$1,067,392	$1,090,816	$1,114,821	$1,139,426	$1,164,647	$1,190,502
	Organics	$549,647	$560,916	$572,411	$586,280	$600,551	$615,219	$630,296	$645,796	$661,733	$678,120	$694,974
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,571,265	$2,473,424	$2,549,353	$2,627,984	$2,709,395	$2,793,640	$2,880,977	$2,971,302	$3,064,978
	Recyclables	$162,335	$168,883	$175,563	$172,639	$177,299	$182,115	$187,093	$192,240	$197,562	$203,066	$208,759
	Organics											
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$19,708	$20,127	$20,555	$20,992	$21,440	$21,899	$22,368	$22,849
Drop-Off	MSW	$1,479	$1,509	$1,539	$1,579	$1,648	$1,719	$1,794	$1,872	$1,953	$2,038	$2,127
	Recyclables	$106,596	$110,354	$114,188	$738,392	$754,760	$771,587	$788,766	$806,429	$824,512	$843,068	$862,075
	Organics	$163,515	$167,299	$171,159	$179,092	$187,413	$196,109	$205,194	$214,688	$224,606	$234,970	$245,799
Ward Cleanup	MSW	$38,524	$39,295	$40,081	$40,936	$41,968	$43,030	$44,123	$45,248	$46,406	$47,598	$48,826
Dropbox/C&D Debris	MSW	$903,255	$921,320	$939,747	$962,284	$996,448	$1,031,947	$1,068,825	$1,107,149	$1,146,975	$1,188,365	$1,231,390
	Recovered											
Non-City Collected	MSW	$421,510	$429,941	$438,539	$439,921	$448,719	$457,693	$466,847	$476,184	$485,708	$495,422	$505,330
General & Admin.	All tons	$2,944,818	$3,009,383	$3,349,662	$3,137,356	$3,203,379	$3,270,798	$3,339,642	$3,409,942	$3,481,729	$3,555,033	$3,629,889
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$11,424,865**	**$11,838,668**	**$12,146,741**	**$12,464,141**	**$12,791,028**	**$13,127,810**	**$13,474,898**	**$13,832,464**	**$14,201,098**
NET COST PER TON												
Residential	MSW	$131	$134	$137	$137	$137	$138	$138	$139	$139	$140	$141
	Recyclables	$309	$317	$326	$322	$322	$321	$321	$321	$320	$320	$320
	Organics	$228	$233	$238	$238	$238	$239	$239	$239	$240	$240	$241
Commercial/ Multi-Family	MSW	$87	$89	$90	$89	$90	$90	$91	$92	$92	$93	$94
	Recyclables	$90	$94	$97	$94	$94	$94	$95	$95	$96	$96	$97
	Organics											
Multi-Family	Recyclables	$462	$474	$486	$482	$481	$480	$479	$478	$478	$477	$476
Drop-Off	MSW	$39	$40	$40	$41	$41	$42	$43	$44	$45	$46	$47
	Recyclables	$106	$109	$113	$316	$316	$315	$315	$315	$315	$315	$315
	Organics	$36	$37	$38	$39	$40	$41	$42	$43	$44	$45	$46
Ward Cleanup	MSW	$176	$179	$183	$183	$183	$184	$184	$184	$185	$185	$186
Dropbox/C&D Debris	MSW	$59	$60	$61	$61	$62	$63	$64	$65	$65	$66	$67
	Recovered											
Non-City Collected	MSW	$39	$40	$40	$41	$41	$42	$43	$44	$45	$46	$47
General & Admin.	All tons	$36	$36	$41	$37	$37	$37	$37	$37	$37	$37	$38
Total System Net Cost per Ton		**$130**	**$132**	**$135**	**$136**	**$137**	**$138**	**$139**	**$139**	**$140**	**$141**	**$142**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	10%	10%	10%	10%	10%	10%	10%	10%
Compostable Materials		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
C&D Debris		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total System Estimated Diversion		**18%**	**18%**	**18%**	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**	**20%**

5.4.2 Single Stream Recycling

The single stream recycling scenario assumed that recyclable paper and containers would be collected in a single container and sorted by commodity at a single stream MRF and marketed. Single stream recycling would be provided to residents receiving curbside service, multi-family complexes, businesses, and institutions.

The model is based on the following assumptions:

- A state-of-the-art single stream MRF does not currently exist in Northwest Arkansas. Therefore, this scenario was based on the City developing a small-scale MRF designed to process 10-15 tons of recyclables per hour (mini-MRF). If a decision is made to convert to single stream recycling, the City would likely conduct a competitive procurement to determine private sector interest in developing a privately owned, regional, state-of-the-art single stream MRF. If private sector interest does not exist, the City could contract for construction of a City-owned state-of-the-art mini-MRF. For modeling purposes, the costs to develop and operate a mini-MRF could more accurately be estimated. Therefore, it was assumed a mini-MRF would be constructed in 2017 and operational in 2018. The following assumptions were used for mini-MRF development and operation:
  - Capital costs for site and facility development assuming the use of City-owned land ready to develop ($550,000) and primary equipment ($2.8 million) were assumed for a total of $3,350,000, financed over 20 years with a 3% finance rate. In addition, secondary equipment (rolling stock and baler) costs were assumed at $510,000, financed over 7 years with a 3% finance rate.
  - Operating costs, which included labor, were assumed at a variable rate of $60.00 per ton, and maintenance and repair costs for the facility, primary equipment, and secondary equipment were assumed at a variable rate of $6.00 per ton.
- The composition of single stream recyclables was estimated based on KCI's experience conducting municipal single stream recycling composition studies over the past two years. An estimated average per-ton market value for this mix of materials was then calculated based on the five-year average of an industry-accepted market index for individual commodities. The current market index for glass, rather than the 5-year index average, was used for a more conservative estimate. A 15% residue rate was assumed and haul and disposal costs were applied to the residue tonnage.
- Curbside residential recycling was assumed to utilize 65-gallon roll carts at a cost of $50.00 per cart, which was straight-lined over 10 years. Collection of carted curbside single stream recyclables would be conducted similar to existing collection of carted solid waste. During the single stream pilot, carts were emptied in an average of 7 seconds; however, for modeling purposes a more conservative estimate of 10 seconds was used.
- Multi-family and commercial recyclables would be collected on the same routes. It was assumed that 50% of these recyclables would be collected in carts and 50% in

dumpsters. Carted collection was assumed to use 95-gallon carts at a cost of $55.00 per cart, which was also straight-lined over 10 years. Servicing carted recyclables at multi-family complexes, businesses, and institutions typically takes longer than servicing residential curbside carts since the carts often need to be rolled out to the truck and the density of customers is lower. Therefore, assumptions were adjusted to reflect the more time-intensive collection.

- The model calculates the number of new vehicles needed to collect single stream recyclables based on the projected quantity of recyclables and number of customers. The cost of these new vehicles was straight-lined over 8 years. In addition, future replacement costs were included in accordance with the City's motor pool replacement calculations. The resale or scrap value of the existing partitioned curbside recycling vehicles was not included in the model, again providing a more conservative cost estimate.
- Education and outreach costs for 2018 and 2019 were increased by 10% to fund a comprehensive campaign for the rollout and implementation of single stream recycling for residential, multi-family, and commercial/institutional customers.
- A commercial recycling coordinator would be hired in 2017 to develop a technical assistance program and assist businesses, institutions, and multi-family complexes with implementing single stream recycling.
- During the single stream pilot, recycling tonnage in the curbside pilot community increased by 94%; however, the model assumed a more conservative estimate of 67% increase in the first year and gradually increased over time.
- The model assumes the City would establish universal commercial recycling in which the base service fee for multi-family complexes and businesses would include recycling service. This is similar to the existing fee structure for curbside residential service. Including recycling service as part of the basic service fee would help minimize cost as a barrier to program participation. The model assumed a voluntary single stream program would grow until approximately 25% of multi-family recyclables and 50% of commercial recyclables were recovered.
- If needed to further increase material recovery, the model assumed that a disposal ban on traditional recyclable materials (e.g., cardboard, paper, containers) would be established in 2022. The disposal ban, along with technical assistance and enforcement, was assumed to recover an additional 25% of multi-family recyclables and an additional 20% of commercial recyclables.

Table 5-4 provides the single stream recycling model results, including net costs and net cost per ton for each line of business and for the system overall, as well as projected diversion rates. Key findings of the single stream recycling scenario model include the following:

- Based on the model, converting to single stream recycling reduced the net per-ton cost of collecting, processing, and marketing curbside recyclables by 40-50%. In other words, the savings of converting from curb-sorting to carted collection more than offset

the additional processing and marketing costs. In addition, the model utilized more conservative assumptions for collecting single stream recyclables than were demonstrated during the pilot program.

- The cost to collect single stream multi-family recyclables, whether in dumpsters or carts, was projected to be less costly on a per-ton basis than the existing system that uses the partitioned roll-offs.
- The per-ton cost to collect single stream commercial recyclables, again whether in dumpsters or carts, was projected to be slightly higher than the baseline. This is primarily because the cost for Commercial Recyclables in the baseline included only collection of paper grades in dumpsters (servicing commercial recycling bins was included with Residential Recyclables in the baseline model).
- Based on the relatively conservative diversion assumptions utilized in the model, voluntary single stream recycling would increase the City's diversion rate to 23% and establishing a disposal ban on recyclable materials would increase that rate to 28%. The 15% processing residue assumption mentioned above was not included in the diversion calculations, but was counted as disposal.

Table 5-4: Single Stream Recycling Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$2,020,797	$1,674,577	$1,703,268	$1,750,344	$1,798,919	$1,828,863	$1,858,801	$1,910,401	$1,963,678
	Recyclables	$957,459	$983,710	$1,010,486	$970,505	$988,423	$1,007,891	$1,029,012	$1,046,159	$1,233,098	$1,264,089	$1,297,309
	Organics	$549,647	$560,916	$572,411	$559,042	$572,741	$586,853	$601,392	$616,285	$631,673	$647,437	$663,680
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,571,265	$2,335,969	$2,382,497	$2,417,663	$2,462,733	$2,485,863	$2,520,898	$2,555,960	$2,549,205
	Recyclables	$162,335	$168,883	$175,563	$231,521	$277,990	$326,610	$333,890	$382,165	$433,650	$489,034	$549,449
	Organics											
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$357,060	$368,272	$380,583	$551,195	$539,284	$714,177	$732,983	$924,453
Drop-Off	MSW	$1,479	$1,509	$1,539	$1,625	$1,696	$1,769	$1,846	$1,926	$2,010	$2,097	$2,189
	Recyclables	$106,596	$110,354	$114,188	$67,747	$60,192	$61,041	$62,039	$62,213	$63,117	$64,733	$66,575
	Organics	$163,515	$167,299	$171,159	$179,092	$187,413	$196,109	$205,196	$214,691	$224,612	$234,977	$245,807
Ward Cleanup	MSW	$38,524	$39,295	$40,081	$41,138	$42,182	$43,257	$44,364	$45,502	$46,675	$47,884	$49,127
Dropbox/C&D Debris	MSW	$903,255	$921,320	$939,747	$976,406	$1,011,431	$1,047,797	$1,085,622	$1,124,900	$1,165,764	$1,208,279	$1,252,440
	Recovered											
Non-City Collected	MSW	$421,510	$429,941	$438,539	$449,691	$458,851	$468,171	$477,701	$487,397	$497,310	$507,442	$517,751
General & Admin.	All tons	$2,944,818	$3,009,383	$3,381,274	$3,527,710	$3,600,008	$3,673,827	$3,416,260	$3,486,560	$3,558,347	$3,631,652	$3,706,507
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$11,456,477**	**$11,372,084**	**$11,654,965**	**$11,961,915**	**$12,070,170**	**$12,321,810**	**$12,950,131**	**$13,296,968**	**$13,788,168**
NET COST PER TON												
Residential	MSW	$131	$134	$137	$129	$132	$133	$133	$137	$141	$142	$142
	Recyclables	$309	$317	$326	$183	$169	$169	$168	$156	$169	$169	$170
	Organics	$228	$233	$238	$227	$227	$228	$228	$228	$229	$229	$230
Commercial/ Multi-Family (dumpsters)	MSW	$87	$89	$90	$85	$86	$87	$89	$91	$93	$94	$95
	Recyclables	$90	$94	$97	$158	$162	$165	$149	$151	$154	$157	$160
	Organics											
Comm./Multi-Family (carts)	Recyclables	$462	$474	$486	$185	$149	$127	$155	$122	$142	$130	$146
Drop-Off	MSW	$39	$40	$40	$42	$43	$43	$44	$45	$46	$47	$48
	Recyclables	$106	$109	$113	$66	$82	$82	$81	$80	$79	$79	$79
	Organics	$36	$37	$38	$39	$40	$41	$42	$43	$44	$45	$46
Ward Cleanup	MSW	$176	$179	$183	$184	$184	$185	$185	$185	$186	$187	$187
Dropbox/C&D Debris	MSW	$59	$60	$61	$62	$63	$64	$65	$66	$66	$67	$68
	Recovered											
Non-City Collected	MSW	$39	$40	$40	$42	$42	$43	$44	$45	$46	$47	$48
General & Admin.	All tons	$36	$36	$41	$42	$42	$42	$38	$38	$38	$38	$38
Total System Net Cost per Ton		**$130**	**$132**	**$139**	**$135**	**$136**	**$137**	**$135**	**$135**	**$139**	**$140**	**$142**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	11%	12%	13%	14%	15%	17%	17%	18%
Compostable Materials		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
C&D Debris		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total System Estimated Diversion		**18%**	**18%**	**18%**	**21%**	**22%**	**23%**	**23%**	**25%**	**26%**	**27%**	**28%**

5.4.3 Comparison of Material Recovery Results

Figure 5-3 compares the net system costs for the baseline and the two material recovery scenarios over the course of the planning period, and Figure 5-4 provides the projected diversion rates for each of the three scenarios. The difference in total system costs between the three scenarios for any given year is less than 10% of the total cost. For a modeling tool of this type, this would not be considered significant. However, the single stream model is projected to achieve a substantially higher diversion rate.

Figure 5-3: Projected System Net Costs for Baseline, Drop-Off, and Single Stream Scenarios

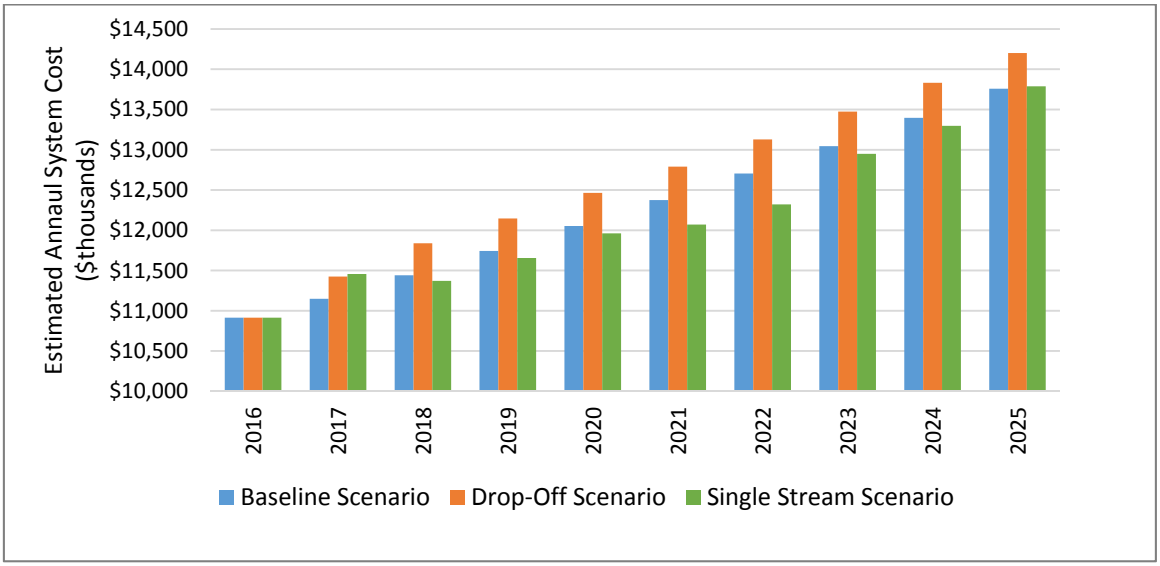
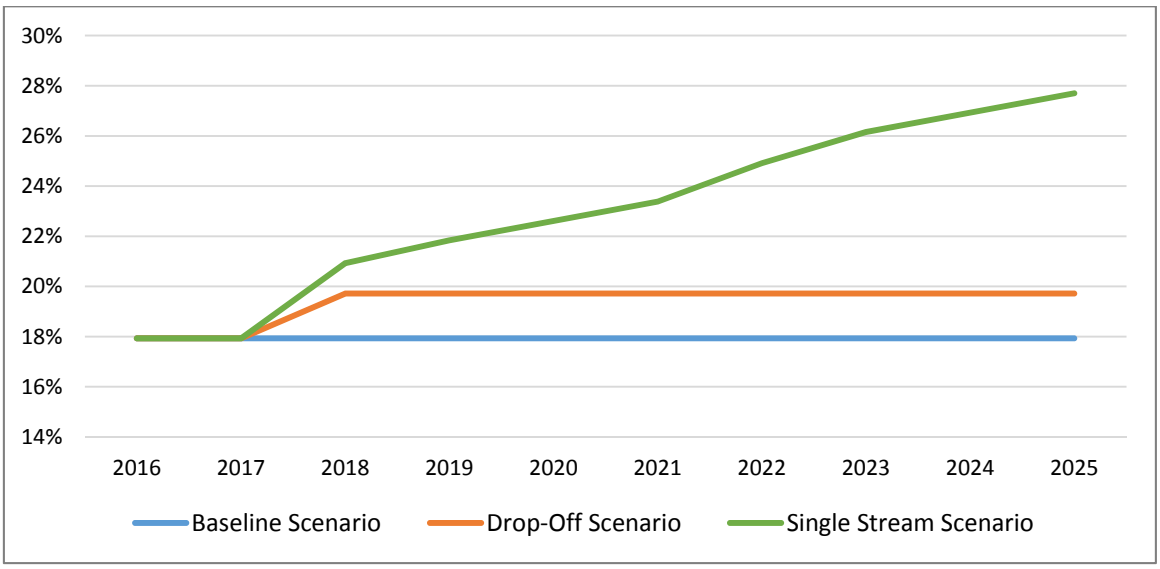


Figure 5-4: Projected Diversion Rates for Baseline, Drop-Off, and Single Stream Scenarios



5.5 Organic Material Recovery

Capturing food waste that is currently landfilled has the potential to increase the City's diversion rate by up to 11%; including other organic materials such as low-grade paper in the recovery program could divert up to an additional 6%. A program and infrastructure to target these organic materials was modeled based on the following assumptions:

- A voluntary recovery program for commercial food waste and low-grade paper would be initiated in 2017. The program would target large commercial and institutional food waste generators, such as schools, supermarkets, and restaurants. A modest recovery rate of 10% of compostable materials was assumed.
- Since the City would likely be focusing on efforts to divert more recyclable materials from disposal during the 2017-2018 timeframe, it was assumed that additional organic material recovery efforts would not be initiated until 2019. At that time, it was assumed that a residential curbside food waste program would be initiated, with food waste and low-grade paper collected curbside with yard waste. A modest recovery rate of 10% of compostable materials generated by curbside residents was also assumed in that year, and was assumed to grow to 30% over time under a voluntary program.
- It was also assumed that service fees for businesses and institutions generating substantial amounts of organic waste would be adjusted in 2019 to include collection and processing of this organic material in the base service fee. As mentioned above under single stream recycling, this fee structure eliminates cost as a factor and encourages participation in the organics recovery program. The model assumes the recovery rate for commercially generated compostable materials would grow to 35% under this voluntary program.
- Curbside yard waste routes were adjusted to accommodate the anticipated increase in participation and tonnage resulting from the addition of food waste and low-grade paper to the collection program.
- It was assumed that commercial customers would use 95-gallon roll carts to collect food waste and other compostable materials. The cost of purchasing and servicing these carts was modeled similar to carted commercial single stream recyclables.
- Based on the very successful pilot program, all food waste would be processed at the City's compost facility using the MSAP composting method (see Sections 3.3 and 4.1). Because the MSAP method composts material in 60 days instead of the 4-6 months required by the current windrow composting process, more material could be composted on the same amount of land. Therefore, the City's existing compost pad was determined to be sufficient to compost the estimated volume of organics collected through 2025.
- No new equipment would be required for composting operations. Replacement costs for existing equipment were accounted for in the existing equipment replacement schedule.
- Operation and maintenance costs for the compost facility were based on standard industry estimates. For a conservative estimate, it was assumed that all operations would be accomplished by 2 full-time employees, although both employees would not be needed at all times. Compost would be tested every other month to ensure quality.

- Yard waste, grass, leaves, food waste, and low-grade paper would be composted and sold as finished compost. As in the baseline model, it was assumed that approximately 50% of outbound tons would be mulch and 50% compost, and that the City would use about 40% of material produced. Premium compost made with food waste could be sold at a higher price point than the City's existing compost made with yard waste only; therefore, anticipated revenue per ton was adjusted accordingly.
- If needed to further increase organics recovery, the model assumed that a disposal ban on curbside residential and commercial yard waste and food waste would be established in 2023. Recovery rates for compostable materials generated by curbside residents was assumed to increase to 50% and that generated by businesses and institutions was assumed to increase to 65%.

Table 5-5 provides the organics recovery model results, including net costs and net cost per ton for each line of business and for the system overall, as well as projected diversion rates. Key findings of the organics recovery scenario model include the following:

- The cost of collecting and processing commercial organics was projected to initially be high because of the relatively small quantity of organics assumed to be collected in the first year, but decreased over time as participation and the quantity of organics recovered increased.
- Likewise, the initial cost of adding food waste and low-grade paper to the curbside yard waste program initially increased the per ton cost, which also dropped as participation and tonnage grew.
- Based on the model, development of a voluntary organics recovery program was projected to increase the diversion rate to 22%. Implementation of a food waste disposal ban was projected to increase that rate to 26%.

Table 5-5: Organics Recovery Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$1,957,370	$2,008,976	$1,872,931	$1,906,932	$1,941,033	$1,993,365	$2,028,503	$2,063,541	$2,119,362
	Recyclables	$957,459	$983,710	$1,010,486	$1,032,737	$1,192,453	$1,212,996	$1,234,539	$1,252,693	$1,274,334	$1,299,481	$1,325,733
	Organics	$549,647	$560,916	$553,328	$558,027	$923,318	$944,560	$1,165,188	$1,187,356	$1,413,023	$1,443,498	$1,470,126
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,429,761	$2,481,717	$2,534,477	$2,598,999	$2,676,648	$2,756,924	$2,802,521	$2,860,734	$2,933,263
	Recyclables	$162,335	$168,883	$175,563	$180,375	$185,333	$190,458	$195,759	$201,242	$206,914	$212,782	$218,853
	Organics			$163,492	$185,103	$203,969	$211,851	$208,662	$208,378	$393,566	$413,875	$417,884
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$19,844	$20,268	$20,702	$21,146	$21,601	$22,067	$22,543	$23,031
Drop-Off	MSW	$1,479	$1,509	$1,380	$1,439	$1,502	$1,567	$1,635	$1,706	$1,779	$1,857	$1,937
	Recyclables	$106,596	$110,354	$114,188	$117,232	$120,367	$123,605	$126,949	$130,402	$133,971	$137,657	$141,467
	Organics	$163,515	$167,299	$135,624	$126,479	$111,902	$103,826	$99,711	$100,335	$88,636	$84,467	$83,924
Ward Cleanup	MSW	$38,524	$39,295	$39,145	$40,113	$41,109	$42,133	$43,187	$44,271	$45,387	$46,534	$47,715
Dropbox/C&D Debris	MSW	$903,255	$921,320	$874,098	$904,475	$936,127	$969,003	$1,003,147	$1,038,616	$1,075,463	$1,113,745	$1,153,527
	Recovered											
Non-City Collected	MSW	$421,510	$429,941	$392,087	$399,928	$407,927	$416,085	$424,407	$432,895	$441,552	$450,383	$459,391
General & Admin.	All tons	$2,944,818	$3,009,383	$3,072,700	$3,137,356	$3,203,379	$3,270,798	$3,339,642	$3,409,942	$3,481,729	$3,555,033	$3,629,889
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$10,938,651**	**$11,193,802**	**$11,755,063**	**$12,013,515**	**$12,481,653**	**$12,779,725**	**$13,409,444**	**$13,706,132**	**$14,026,103**
NET COST PER TON												
Residential	MSW	$131	$134	$132	$133	$125	$128	$131	$132	$135	$139	$139
	Recyclables	$309	$317	$326	$325	$367	$365	$363	$360	$358	$357	$356
	Organics	$228	$233	$230	$226	$306	$268	$287	$286	$300	$273	$271
Commercial/ Multi-Family	MSW	$87	$89	$87	$89	$90	$91	$92	$93	$95	$97	$98
	Recyclables	$90	$94	$97	$98	$98	$99	$99	$100	$100	$101	$101
	Organics			$306	$169	$121	$106	$102	$99	$128	$110	$100
Multi-Family	Recyclables	$462	$474	$486	$485	$484	$484	$483	$482	$481	$481	$480
Drop-Off	MSW	$39	$40	$36	$37	$38	$39	$39	$40	$41	$42	$43
	Recyclables	$106	$109	$113	$114	$114	$114	$115	$115	$116	$116	$117
	Organics	$36	$37	$30	$28	$24	$22	$20	$20	$17	$16	$16
Ward Cleanup	MSW	$176	$179	$179	$179	$179	$180	$180	$180	$181	$181	$182
Dropbox/C&D Debris	MSW	$59	$60	$57	$58	$58	$59	$60	$61	$61	$62	$63
	Recovered											
Non-City Collected	MSW	$39	$40	$36	$37	$38	$38	$39	$40	$41	$42	$42
General & Admin.	All tons	$36	$36	$37	$37	$37	$37	$37	$37	$37	$37	$38
Total System Net Cost per Ton		**$130**	**$132**	**$133**	**$133**	**$137**	**$137**	**$140**	**$140**	**$144**	**$145**	**$145**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Compostable Materials		10%	10%	10%	11%	13%	13%	14%	14%	16%	17%	17%
C&D Debris		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total System Estimated Diversion		**18%**	**18%**	**19%**	**19%**	**21%**	**22%**	**22%**	**22%**	**24%**	**25%**	**26%**

5.6 C&D Debris Recovery

Approximately 15,000 tons of C&D debris and other bulky wastes were collected and landfilled by the City in 2015. Over the last decade, the quantity of material managed by the City through its dropbox program has averaged nearly 9,500 tons annually, with the 2015 tonnage being the highest of any year. Given the growth of residential and commercial development in Fayetteville and Northwest Arkansas in general,[43] the potential exists for C&D debris tonnage to remain high. An unknown quantity of C&D debris is also collected by private haulers franchised by the City.

Based on the visual audit conducted in January 2015, at least 70% of the C&D and bulky waste collected by the City consisted of material that could potentially have been recycled.

As mentioned in Section 3.7, material recovery from C&D debris can occur by source separating materials at the job site prior to collection or recovering materials after collection at a processing facility or through manual floor sorting. Communities that have reported the greatest success with source separation programs generally mandate and/or provide a substantial financial incentive for separating materials. The success of a voluntary program can be highly variable.

Regarding recovery after collection, a permitted C&D recovery facility does not currently exist in Northwest Arkansas and floor sorting of C&D debris typically recovers a relatively small percentage of the inbound waste stream. Therefore, for modeling purposes, it was assumed that the City would establish a very basic C&D processing line. To maximize the throughput and therefore the efficiency of the C&D system, the City could potentially expand its C&D collection services or require franchised haulers to deliver C&D debris to the City's processing site. However, for the purposes of the model, it was assumed that only the current tonnage would be processed by the City, adjusted over time to reflect growth.

The C&D recovery scenario was modeled based on the following assumptions:

- Since the City's priorities are on diverting more residential and commercial MSW from disposal, it was assumed that these would be the primary focus in 2017-2019. To further evaluate the feasibility of a C&D debris processing facility, it was assumed that a manual floor sorting pilot program would be conducted in 2019. It was further assumed that this pilot would be conducted utilizing existing staff and would divert approximately 5% of the C&D debris received.
- Assuming the pilot program is a success, a C&D MRF would then be initiated in 2019 based on the following assumptions:
    - The capital costs for land, site development, facility, and primary equipment were assumed at $1,750,000, financed over 20 years with a 3% finance rate. Secondary equipment (rolling stock) costs were assumed at $110,000, financed over 7 years with a 3% finance rate.

[43] Souza, Kim, "Northwest Arkansas Construction Permits Up 103% through June," *Talk Business & Politics*, August 1, 2016 (https://talkbusiness.net/2016/08/northwest-arkansas-construction-permits-up-103-through-june/).

- Operating costs, which included labor, were assumed at a variable rate of $30.00 per ton, and maintenance and repair costs for the facility, primary equipment, and secondary equipment were assumed at a variable rate of $3.00 per ton.

- Because markets for recovered C&D materials can be highly variable based on local conditions, no revenue was assumed in the model to provide a conservative estimate.
- The model assumed an initial diversion rate of approximately 50% of C&D and bulky waste received, which was increased to 70% over time.

Table 5-6 provides the C&D debris recovery model results, including net costs and net cost per ton for each line of business and for the system overall, as well as projected diversion rates. Key findings of the C&D debris recovery scenario model include the following:

- Based on the model, the average cost of collecting and processing C&D debris to recover materials ranged from $82-$85 per ton (weighted average of Dropbox/C&D MSW and Dropbox/C&D Recovered). This cost was $14-$20 more per ton than simply transferring and disposing of this material; however, the model did not attempt to predict revenue for the recovered materials. As mentioned above, revenue for recovered C&D materials would depend on local markets, but average revenue in the range of $20-30 per ton is not uncommon for a facility of this type.
- The model assumed that the quantity of C&D debris collected or received by the City would continue to grow. If that does not occur, the per-ton cost to process this material would be higher than projected. Alternatively, the per-ton cost would be reduced if a greater amount of C&D debris were processed at the facility. Because the City controls the management of all waste generated within the City, the potential exists to direct additional C&D debris to a City-owned processing facility.
- Based on the material recovery rates assumed in the model, recovery of reusable and recyclable materials from C&D debris was projected to increase the City's diversion rate to 33% over the planning period.

Table 5-6: C&D Debris Recovery Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$2,020,797	$2,075,148	$2,131,307	$2,189,229	$2,248,967	$2,310,595	$2,374,179	$2,439,788	$2,507,502
	Recyclables	$957,459	$983,710	$1,010,486	$1,032,737	$1,055,501	$1,078,834	$1,102,755	$1,127,279	$1,152,425	$1,178,211	$1,204,655
	Organics	$549,647	$560,916	$572,411	$586,280	$600,551	$615,219	$630,296	$645,796	$661,733	$678,120	$694,974
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,571,265	$2,649,511	$2,730,708	$2,814,760	$2,901,761	$2,991,838	$3,085,109	$3,181,696	$3,281,741
	Recyclables	$162,335	$168,883	$175,563	$180,375	$185,333	$190,458	$195,759	$201,242	$206,914	$212,782	$218,853
	Organics											
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$19,844	$20,268	$20,702	$21,146	$21,601	$22,067	$22,543	$23,031
Drop-Off	MSW	$1,479	$1,509	$1,539	$1,605	$1,685	$1,738	$1,810	$1,885	$1,964	$2,045	$2,130
	Recyclables	$106,596	$110,354	$114,188	$117,232	$120,367	$123,605	$126,949	$130,402	$133,971	$137,657	$141,467
	Organics	$163,515	$167,299	$171,159	$179,092	$187,413	$196,109	$205,194	$214,688	$224,606	$234,970	$245,799
Ward Cleanup	MSW	$38,524	$39,295	$40,081	$41,138	$42,182	$43,142	$44,219	$45,327	$46,466	$47,639	$48,846
Dropbox/C&D Debris	MSW	$903,255	$921,320	$939,747	$972,965	$970,338	$827,002	$791,718	$753,065	$710,367	$663,337	$612,165
	Recovered					$62,308	$560,895	$620,798	$684,237	$751,188	$821,514	$896,337
Non-City Collected	MSW	$421,510	$429,941	$438,539	$449,691	$458,851	$462,845	$471,175	$479,648	$488,307	$497,153	$506,151
General & Admin.	All tons	$2,944,818	$3,009,383	$3,072,700	$3,137,356	$3,270,798	$3,270,798	$3,339,642	$3,409,942	$3,481,729	$3,555,033	$3,629,889
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$11,147,904**	**$11,442,975**	**$11,837,612**	**$12,395,337**	**$12,702,191**	**$13,017,544**	**$13,341,023**	**$13,672,488**	**$14,013,541**
NET COST PER TON												
Residential	MSW	$131	$134	$137	$137	$138	$138	$139	$139	$140	$141	$141
	Recyclables	$309	$317	$326	$325	$325	$325	$325	$324	$324	$324	$324
	Organics	$228	$233	$238	$238	$238	$239	$239	$239	$240	$240	$241
Commercial/ Multi-Family	MSW	$87	$89	$90	$91	$92	$92	$93	$94	$95	$95	$96
	Recyclables	$90	$94	$97	$98	$98	$99	$99	$100	$100	$101	$101
	Organics											
Multi-Family	Recyclables	$462	$474	$486	$485	$484	$484	$483	$482	$481	$481	$480
Drop-Off	MSW	$39	$40	$40	$41	$42	$43	$44	$44	$45	$46	$47
	Recyclables	$106	$109	$113	$114	$114	$114	$115	$115	$116	$116	$117
	Organics	$36	$37	$38	$39	$40	$41	$42	$43	$44	$45	$46
Ward Cleanup	MSW	$176	$179	$183	$184	$184	$184	$184	$185	$185	$186	$186
Dropbox/C&D Debris	MSW	$59	$60	$61	$62	$63	$105	$106	$107	$109	$110	$112
	Recovered					$105	$66	$67	$67	$68	$69	$70
Non-City Collected	MSW	$39	$40	$40	$42	$42	$43	$44	$44	$45	$46	$47
General & Admin.	All tons	$36	$36	$37	$37	$38	$37	$37	$37	$37	$37	$38
Total System Net Cost per Ton		**$130**	**$132**	**$135**	**$136**	**$138**	**$142**	**$142**	**$143**	**$144**	**$144**	**$145**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Compostable Materials		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
C&D Debris		0%	0%	0%	0%	1%	11%	12%	13%	13%	14%	15%
Total System Estimated Diversion		**18%**	**18%**	**18%**	**18%**	**19%**	**29%**	**30%**	**31%**	**31%**	**32%**	**33%**

5.7 Combined Scenario Analysis

Based on the results of the various scenarios outlined above, a combined analysis was conducted of those scenarios deemed to be most promising in helping the City strive toward its 80% diversion goal. These included the following;

- Single stream recycling
- Organic material recovery
- C&D debris recovery

The same assumptions for each of these elements was used in this combined scenario analysis as in the individual scenario models. Table 5-7 provides the results of this analysis. Figure 5-5 compares the projected total system net costs and diversion rates for the baseline and combined scenario.

Figure 5-5: Projected System Net Costs of Baseline and Cumulative Scenarios

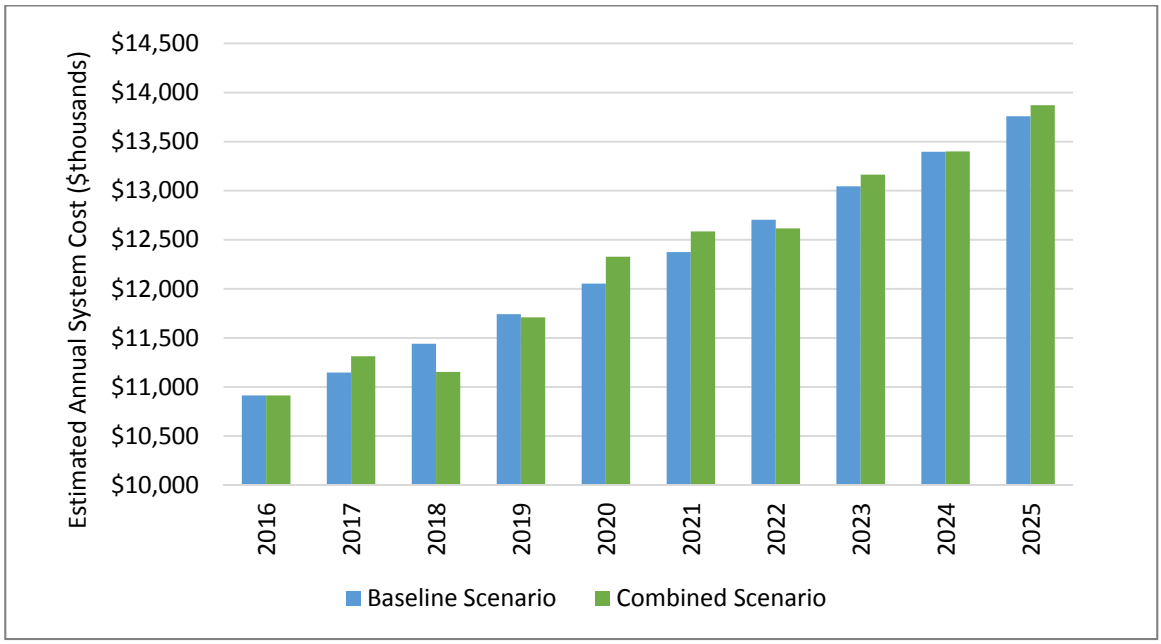


Table 5-7: Combined Single Stream, Organics, and C&D Debris Recovery Scenario Results

		FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
NET COSTS												
Residential	MSW	$1,942,327	$1,981,174	$1,957,370	$1,614,853	$1,472,296	$1,650,508	$1,677,091	$1,543,024	$1,547,504	$1,569,346	$1,611,508
	Recyclables	$957,459	$983,710	$1,010,486	$970,505	$988,423	$1,007,891	$1,029,012	$1,046,159	$1,069,110	$1,096,821	$1,126,696
	Organics	$549,647	$560,916	$553,328	$530,787	$923,318	$944,560	$1,165,188	$1,187,356	$1,207,821	$1,234,193	$1,256,634
Commercial/ Multi-Family	MSW	$2,471,420	$2,520,848	$2,429,761	$2,125,497	$2,144,315	$2,124,761	$2,162,553	$2,139,923	$2,128,727	$2,085,813	$2,094,691
	Recyclables	$162,335	$168,883	$175,563	$233,116	$279,795	$330,709	$338,071	$389,148	$441,098	$499,808	$558,112
	Organics			$163,492	$185,103	$203,969	$211,851	$208,662	$208,378	$393,566	$413,875	$417,884
Multi-Family	Recyclables	$18,497	$18,958	$19,429	$357,060	$368,272	$380,583	$551,195	$539,284	$714,177	$732,983	$924,453
Drop-Off	MSW	$1,479	$1,509	$1,380	$1,440	$1,502	$1,567	$1,635	$1,706	$1,780	$1,857	$1,938
	Recyclables	$106,596	$110,354	$114,188	$67,748	$60,192	$61,041	$62,039	$62,213	$63,117	$64,733	$66,575
	Organics	$163,515	$167,299	$135,624	$126,479	$111,902	$103,826	$99,711	$100,335	$88,636	$84,467	$83,924
Ward Cleanup	MSW	$38,524	$39,295	$39,145	$40,113	$41,109	$42,134	$43,188	$44,272	$45,387	$46,535	$47,716
Dropbox/C&D Debris	MSW	$903,255	$921,320	$939,747	$972,965	$970,338	$818,099	$786,084	$750,650	$710,979	$666,854	$618,296
	Recovered					$62,308	$560,895	$620,798	$684,237	$751,188	$821,514	$896,337
Non-City Collected	MSW	$421,510	$429,941	$392,087	$399,929	$407,927	$416,086	$424,407	$432,895	$441,553	$450,384	$459,392
General & Admin.	All tons	$2,944,818	$3,009,383	$3,381,274	$3,527,710	$3,673,827	$3,673,827	$3,416,260	$3,486,560	$3,558,347	$3,631,652	$3,706,507
Total System Net Costs		**$10,681,382**	**$10,913,590**	**$11,312,874**	**$11,153,304**	**$11,709,494**	**$12,328,337**	**$12,585,895**	**$12,616,140**	**$13,162,992**	**$13,400,835**	**$13,870,663**
NET COST PER TON												
Residential	MSW	$131	$134	$132	$124	$119	$135	$139	$130	$138	$142	$143
	Recyclables	$309	$317	$326	$183	$169	$169	$168	$156	$146	$147	$147
	Organics	$228	$233	$230	$215	$306	$268	$287	$286	$257	$233	$232
Commercial/ Multi-Family	MSW	$87	$89	$87	$80	$82	$82	$84	$85	$88	$89	$92
	Recyclables	$90	$94	$97	$159	$163	$167	$151	$154	$156	$160	$162
	Organics			$306	$169	$121	$106	$102	$99	$128	$110	$100
Multi-Family	Recyclables	$462	$474	$486	$185	$149	$127	$155	$122	$142	$130	$146
Drop-Off	MSW	$39	$40	$36	$37	$38	$39	$39	$40	$41	$42	$43
	Recyclables	$106	$109	$113	$66	$82	$82	$81	$80	$79	$79	$79
	Organics	$36	$37	$30	$28	$24	$22	$20	$20	$17	$16	$16
Ward Cleanup	MSW	$176	$179	$179	$179	$179	$180	$180	$180	$181	$181	$182
Dropbox/C&D Debris	MSW	$59	$60	$61	$62	$63	$103	$105	$107	$109	$111	$113
	Recovered					$105	$66	$67	$67	$68	$69	$70
Non-City Collected	MSW	$39	$40	$36	$37	$38	$38	$39	$40	$41	$42	$42
General & Admin.	All tons	$36	$36	$41	$42	$43	$42	$38	$38	$38	$38	$38
Total System Net Cost per Ton		**$130**	**$132**	**$137**	**$133**	**$136**	**$141**	**$141**	**$138**	**$142**	**$141**	**$143**
ESTIMATED DIVERSION RATE												
Recyclable Materials		8%	8%	8%	11%	12%	13%	14%	15%	17%	17%	18%
Compostable Materials		10%	10%	10%	11%	13%	13%	14%	14%	16%	17%	17%
C&D Debris		0%	0%	0%	0%	1%	11%	12%	13%	13%	14%	15%
Total System Estimated Diversion		**18%**	**18%**	**19%**	**22%**	**26%**	**38%**	**40%**	**42%**	**46%**	**49%**	**50%**

Key findings of this combined scenario model include the following:

- The combined scenarios of single stream recycling, organics recovery, and C&D debris processing resulted in projected total system costs that were comparable to the baseline. Significant savings would be realized in some collection programs, most notably eliminating sorting residential recyclables at the curb and use of partitioned roll-offs to service multi-family complexes. These savings were projected to offset the costs of processing single stream materials.
- The combined scenario projected achieving approximately 40% diversion through voluntary programs with an increase to at least 50% should disposal bans on select materials be established. These diversion rates are based on the relatively conservative assumptions utilized in the model. Depending on how programs are implemented, the effectiveness of education and outreach, and the efficiency of recovery facilities that are established, higher diversion should be achievable.

System models, such as that utilized to evaluate these various diversion scenarios, are tools for planning purposes. They estimate and project potential costs, revenues, and diversion rates based on a set of variables and assumptions derived from industry knowledge and standards. System models are not intended to take the place of more detailed implementation plans for specific programs and facilities the City might wish to develop. Decisions made during the planning and implementation process will determine the overall costs and effectiveness of the resulting recovery program or facility.

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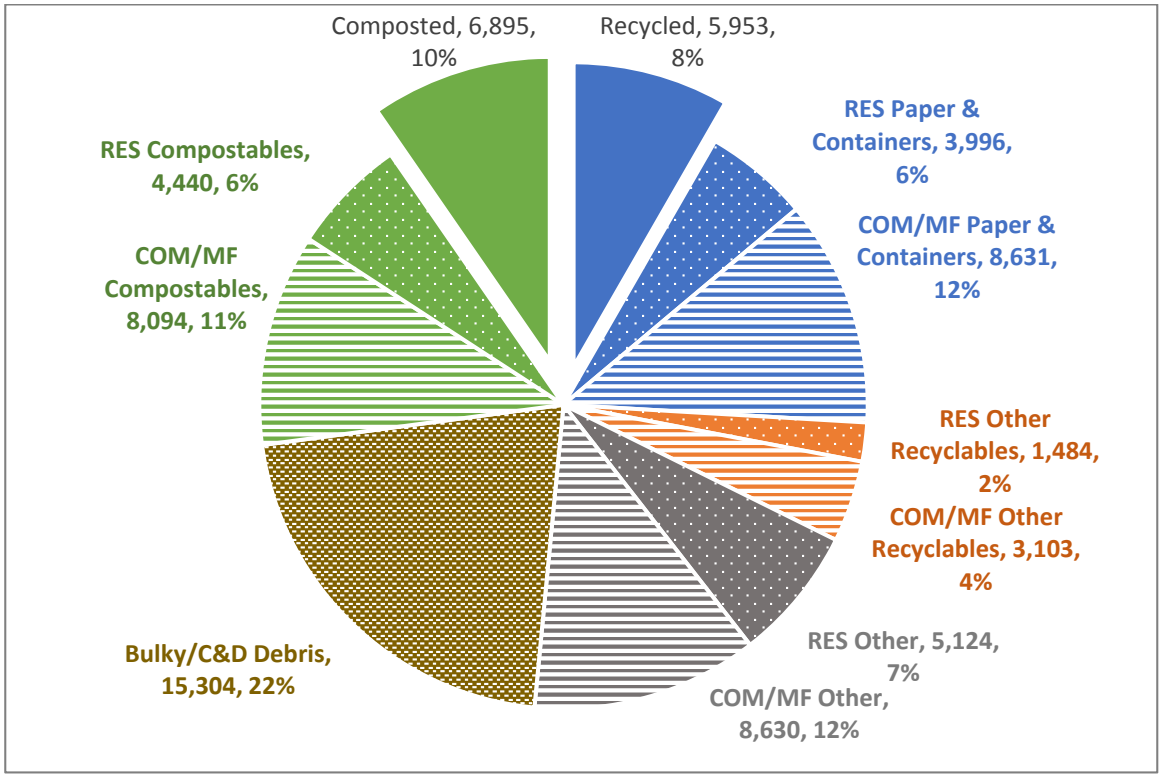
Section 6
Proposed Action Plan

6.1 Phased Plan

Figure 6-1 depicts the quantities and types of material streams managed by the City in 2015, excluding out-of-city waste received at the transfer station. Approximately 18% of the materials managed was recycled or composted and the remaining 82% was landfilled. The figure also breaks down the landfilled materials by type, based on results of a waste composition study, to identify the greatest opportunities for the City to strive toward its goal of 80% diversion. These key opportunities are as follows:

1) Commercial and multi-family residential recyclables materials (blue and orange striped slices) – up to 11,734 tons (16% increased diversion potential)
2) Organic materials (green dotted and striped slices) – up to 12,534 tons (17% increased diversion potential)
3) C&D debris (brown slice) – up to 10,713 tons, assuming 70% of bulky waste/C&D debris consists of recyclable material (15% increased diversion potential)

Figure 6-1: Composition of Materials Managed by the City in 2015 (tons, % by weight)



RES=Residential; COM/MF = Commercial/Multi-Family

During the planning process, various diversion options were identified, pilot programs to evaluate a commercial food waste program and single stream recycling were conducted, and various diversion scenarios were modeled. In addition, stakeholder input was obtained through surveys; public meetings; and meetings with property managers, private sector companies, interested citizens, and elected officials.

The results of this planning process are summarized in this document and have resulted in the proposed plan of action outlined in this section. A phased plan is proposed in order to focus on specific generator sectors and material streams to make incremental progress toward the 80% diversion goal.

The three phases of the proposed plan are as follows:

- Phase 1 focuses on establishing the facilities, programs, and policies needed to more effectively and efficiently recover recyclable materials from businesses and residents, as well as to establish an organics program that includes food waste and other compostable materials.
- Phase 2 continues to build upon and grow the Phase 1 programs, and also targets recovering recyclable materials in the C&D and bulky waste stream.
- Phase 3 offers policy options to further incentivize material recovery should the City's goals not be met, as well as policies to help ensure the long-term financial viability of infrastructure developed by the City.

The policies, programs, and facilities envisioned in each phase of the plan are detailed in Tables 6-1, 6-2, and 6-3, with additional discussion and explanation in the remainder of this section. This is intended to be a dynamic plan. Various decisions will need to be made when implementing each element of the plan. These decisions have the potential to affect other elements of the plan. System effectiveness should continuously be monitored, progress toward accomplishing City goals evaluated, and adjustments made as needed.

Table 6-1: Phase 1 Proposed Action Plan

		Policies	Programs	Facilities	Diversion Target
PHASE 1	2017	• Require new multi-family and commercial developments to provide adequate space and access for recycling • Require franchised haulers to report source, tonnage, and recycling/ disposal of all materials collected in the City	• Hire commercial/multi-family recycling program coordinator • Implement voluntary commercial organics recovery program, focusing on large food waste generators • Develop and initiate new communications plan • Develop technical assistance materials for businesses and multi-family complexes • Initiate Green City Program	• Obtain Type CO permit for compost facility • Implement MSAP composting method and begin accepting commercial organics • RFP/contract for single stream processing services; if sufficient interest does not exist, then RFP for mini-MRF development	19%
	2018	• Establish universal commercial and multi-family recycling (base service fee includes the cost of recycling service) • If City mini-MRF is developed, require franchised haulers to deliver recyclables collected within the City to the MRF	• Implement residential and commercial/multi-family single stream recycling; add material types • Provide technical assistance to businesses and multi-family complexes to implement universal recycling • Continue to expand commercial organics recovery • Expand Green City Program • Continue implementing communications plan	• Deliver recyclables to private single stream MRF or initiate processing single stream recyclables at City-owned mini-MRF	22%
	2019	• Establish universal commercial organics recovery for large commercial food waste generators (base service fee includes the cost of organics recovery)	• Implement voluntary curbside residential organics recovery • Provide technical assistance to implement universal commercial organics recovery • Continue Green City Program • Continue implementing communications plan • Possibly conduct C&D debris recovery pilot program	• Begin composting residential organics at compost facility • Evaluate status of regional C&D recovery facilities • RFP for C&D debris recycling (by contractor or develop facility)	26%

Table 6-2: Phase 2 Proposed Action Plan

		Policies	Programs	Facilities	Diversion Target
PHASE 2	2020	• If City does not develop a C&D MRF, establish recycling/diversion standards for C&D projects and link them to permitting process • If City develops a C&D MRF, require franchised haulers to deliver C&D debris collected within the City to this facility	• If C&D recycling/diversion standards are established, develop and execute an implementation plan • Evaluate and update technical assistance to businesses and multi-family complexes • Evaluate, update, and implement communications plan to increase full program participation • Continue to monitor and enhance Green City Program	• Contract with private C&D MRF or • Contract for and initiate operating City-owned C&D MRF	38%
	2021		• Continue implementing communications plan • Continue technical assistance to businesses and multi-family complexes • Continue to monitor and enhance Green City Program	• Monitor and implement operational efficiencies at all facilities (mini-MRF, compost facility, C&D facility, transfer station)	40%

Table 6-3: Phase 3 Proposed Action Plan

		Policies	Programs	Facilities	Diversion Target
PHASE 3	2022	• Establish recyclable material disposal ban	• Continue implementing communications plan • Continue technical assistance to businesses and multi-family complexes • Continue Green City Program	• Monitor and implement operational efficiencies at all facilities (mini-MRF, compost facility, C&D facility, transfer station)	42%
	2023	• Establish food waste disposal ban	• Enforce recyclable material disposal ban • Continue implementing communications plan • Continue technical assistance to businesses and multi-family complexes • Continue Green City Program	• Monitor and implement operational efficiencies at all facilities (mini-MRF, compost facility, C&D facility, transfer station)	46%
	2024-2025	• Evaluate every other week waste collection and other policies to increase efficiency, lower costs, and encourage waste diversion • Evaluate other policies, such as product bans, that would minimize generation of non-recyclable or non-compostable waste	• Enforce recyclable material and yard waste disposal bans • Continue implementing communications plan • Continue technical assistance to businesses and multi-family complexes • Continue Green City Program	• Monitor and implement operational efficiencies at all facilities (mini-MRF, compost facility, C&D facility, transfer station)	50%

6.2 Implementation of Key Elements

This section summarizes the key elements in the three-phase plan aimed at maximizing material recovery and reducing the amount of waste landfilled. The proposed facilities, programs, and policies to implement each of these key elements are discussed.

6.2.1 Single Stream Recycling

Based on the pilot program and industry trends nationally, single stream recycling is a key element to capture additional recyclable materials generated by all sectors. It is therefore included in Phase 1 of the plan.

Converting to single stream recycling will allow more efficient and effective collection of recyclables from businesses and multi-family complexes. It will enable the City to implement more cohesive and comprehensive commercial and multi-family recycling programs that do not present the burden of multiple or partitioned containers or the inconvenience of having to separate recyclables by type. In addition, the single stream pilot program demonstrated that participation and recovered material tonnage in the curbside residential program will also increase. At the same time, curbside collection efficiency and worker safety will be significantly improved compared to the existing curb-sort system. Additional discussion of single stream recycling is provided in Section 3.2 and results of the single stream pilot program can be found in Section 4.2.

Facility

Picture 6-1: Example of 10 TPH Mini-MRF in Maryland

Because a state-of-the-art single stream MRF does not currently exist in Northwest Arkansas, developing such a facility would be the first step if a decision is made to pursue single stream recycling. The City would likely want to first explore private sector interest in developing a privately owned, regional, state-of-the-art single stream MRF through a Request for Proposals (RFP) process. If a private sector option is not viable, the City could then pursue developing a City-owned modern mini-MRF. A mini-MRF is designed to process approximately 10-15 tons of recyclables per hour (20,000-30,000 tons per year with 1 shift), which would provide sufficient capacity for the City to more than quadruple the quantity of recyclables currently collected.

If the City chooses to build a mini-MRF, it will be the first modern single stream MRF in Northwest Arkansas. Therefore, the City should be able to source materials from other communities through inter-local agreements to fully utilize MRF capacity. A second shift could be added to increase capacity if needed.

Programs

More detailed program plans will need to be developed and implemented for the three primary generator sectors: curbside residents, multi-family complex residents, and businesses/institutions. These plans will more clearly define equipment and vehicle needs, implementation schedules, communication strategies, and technical assistance to customers. Summarized below are some of the main items that should be addressed in these program plans.

1) Curbside residents: Converting curbside residents to single stream recycling should be fairly straight-forward since a curbside recycling program is already in place. Key items in the program plan include the following:

Picture 6-2: Trash and Recycling Carts during Fayetteville Pilot

   - Existing curb-sort collection vehicles will need to be sold or traded in, and additional automated side-load vehicles purchased.
   - Recycling carts will need to be purchased, assembled, and distributed.
   - New collection routes will need to be developed to service more houses per routes. These routes could potentially be aligned with trash routes.
   - A communications strategy for notifying residents of the new system will be a critical component of the program plan.

   The City could potentially phase in single stream recycling, but this would need to be balanced against providing sufficient tonnage for MRF operations. In addition, once carts are distributed in one neighborhood, residents in other neighborhoods typically start asking for them.

2) Businesses/institutions: The program plan for rolling out single stream recycling to businesses and institutions should strive to provide this service to all entities that generate recyclable materials. As mentioned below under policies, universal commercial recycling is proposed in which the base service fee for businesses and institutions would include the cost of recycling. Therefore, the program plan should encourage and assume high participation. Key items to address in the program plan include the following:

   - A technical assistance program to assist property owners or managers in establishing recycling programs will be critical. The technical assistance program, which is discussed in greater detail in Section 3.5, should include helping entities to right-size their waste collection services once an effective recycling program is established.
   - A full-time commercial/multi-family recycling coordinator is called for in the plan to develop and implement the hands-on technical assistance program.

- Additional collection containers will be needed. Some combination of carts and dumpsters will likely be utilized for collection depending on the size, type, and space availability of the business or institution.
- Some additional collection vehicles might be needed; however, right-sizing trash collection services should help keep this to a minimum. The quantity of materials collected is not changing, just the manner in which they are sorted and collected.
- Commercial/institutional recycling and trash routes will need to be reconfigured to maximize efficiency.

3) Multi-family complexes: Establishing effective recycling programs for multi-family complexes is especially challenging. As with businesses, the program plan should envision working with property owners or managers of individual complexes to identify appropriate containers and container placement. Recycling containers should ideally be placed adjacent to waste containers for resident convenience. Space limitations are often a factor, which makes right-sizing waste containers especially important. Educating a diverse and often transient population about the recycling program is critical to its success. The program plan for multi-family complexes will include the same elements as the commercial plan. It should be developed concurrently with the commercial plan since collection services will likely be provided on the same routes.

Policies

The decision to convert to single stream recycling is in itself a policy decision to be made by the City Council. Additional policies that are proposed to support the recycling program include the following:

1) Modify building codes to require new commercial and multi-family developments to provide adequate space and access for recycling. Lack of space for recycling containers is a reason often given by businesses and complexes for not recycling. Space and access for recycling should be an integral part of all new developments.

2) Establish universal recycling for businesses, institutions, and multi-family complexes in which the cost of recycling service is included in the base service fee. This is similar to residential pricing in that all residents pay for collection and processing of recyclables and yard waste as part of their base solid waste fee. This would eliminate cost as a factor in deciding whether or not to participate in recycling.

3) Revise and reissue nonexclusive franchises. Franchise agreements with private companies allowing them to collect commercial recyclables and waste in large roll-off containers should be updated and reissued. Two suggested revisions include (a) requirement to report services provided within the City, quantity of materials collected, and facility to which materials were delivered for recycling or disposal and (b) authority for the City to designate facilities for material delivery if so desired. The first revision will provide the City with a more complete understanding of how all waste generated within the City is managed, as well as help ensure that all waste diversion is being counted. The latter revision will enable the City to direct materials to facilities that might be developed by the City, such as the mini-MRF mentioned above. Increasing

waste diversion will require an investment by the City in equipment and facilities; therefore, the City should ensure that sufficient materials are received to fully utilize this investment.

6.2.2 Organics Program

A program to divert food waste and other organics from disposal and to compost these materials using the modified static aerobic pile (MSAP) method at the City compost facility is another key element of the proposed plan. This is also included in Phase 1.

The food waste pilot program demonstrated the feasibility of utilizing the MSAP method to compost food waste along with yard waste at the facility. Because of the shorter composting time required with the MSAP method (60 days versus 4-6 months with the existing windrow composting system), more material can be composted on the same amount of land. The estimated capacity of the City's 3.2-acre composting pad using the MSAP method should be more than adequate to manage the additional organic materials anticipated if the City expands its organics program to include food waste and other compostable materials. The pilot program also demonstrated the feasibility of collecting food waste from businesses and institutions utilizing roll carts.

Picture 6-3: Food Waste in Compost Pile during Fayetteville Pilot

Picture 6-4: Turning Food Waste into Compost Pile

Facility

The first step is to obtain a Type CO permit to allow composting of food waste and other organic materials at the City's compost facility. The City has already initiated the permit application process. Because the existing facility would be utilized, no new equipment should be required for composting operations, and existing equipment would be replaced on the previously established schedule. An operational plan has already been developed for the permit application. Food stock generally produces a higher quality compost, so the City should explore additional markets for this finished product to maximize revenue.

Programs

As with single stream recycling, more detailed program plans will need to be developed and implemented for the three main generator sectors. Because the City's compost facility is established and operational, the plan proposes initiating a commercial and institutional food waste program fairly quickly.

Picture 6-5: Screening Finished Compost

1) Commercial sector: The initial focus of a food waste program should be on large commercial food waste generators, such as supermarkets, restaurants, and institutions. The proposed plan includes initiating a voluntary commercial food waste and low-grade paper collection and composting program in 2017. The program plan should initially focus on these large generators, but also include a strategy for expanding the program over time.

   The technical assistance program mentioned above should be a comprehensive program that works with property owners and managers to establish not only recycling, but also organics collection programs. Likewise, the full-time commercial/multi-family recycling coordinator mentioned above will lead this effort. Food waste is typically collected in carts.

2) Curbside residents: Roll-out of a residential food waste program is proposed for 2019 after single stream recycling has been established. This timeframe can be adjusted based on the City's priorities. To minimize collection costs, the plan proposes collecting food waste and low-grade paper with yard waste in compostable bags or resident-provided containers. The City could also consider providing carts for organic materials. The organics program will need to be an integral part of the communications plan and education materials provided to residents.

3) Multi-family complexes: The plan does not include collecting food waste from multi-family complexes because of the inherent difficulties in educating an often transient population to ensure a clean material stream for composting.

Policies

The proposed policies to support the organics program are similar to those outlined above for single stream recycling. They include the following:

1) Modify building codes to require new commercial developments that are expected to generate substantial quantities of food waste to provide adequate space and access for food waste collection containers.

2) Establish universal organics recovery for commercial businesses and institutions that generate substantial quantities of food waste in which the cost of organic materials collection and composting would be include in the base service fee.

3) Require private haulers of segregated food waste to report to the City. During the food waste pilot program, several businesses indicated they were already collecting food waste which was being collected by a private company for use as animal feed. City Code (Section 50.29) prohibits emptying garbage or trash receptacles or conveying garbage or trash on the streets or public thoroughfares of the City without the City's authorization. Therefore, these companies likely require some form of authorization or franchise from the City. At a minimum, the City should require these private companies to report the quantities of food waste collected within the City and where it is delivered so this material can be included in the City's diversion rate.

6.2.3 C&D Debris Processing

In 2015, the City managed approximately 15,000 tons of C&D debris and other bulky waste, more than 70% of which consisted of materials that could potentially be recycled based on a visual audit. Development within the City has been increasing, which gives reason to believe that this tonnage may remain at this level or continue to increase. Additional C&D debris is collected by private companies franchised by the City. These franchisees typically do not deliver C&D debris to the City's transfer station.

The proposed plan places priority on residential and commercial recycling and composting programs first, after which C&D debris is addressed. This prioritization can be adjusted as needed and as Division staff is able to expand its focus.

The C&D material recovery industry is evolving in Northwest Arkansas. Although no C&D MRF is currently operating, permits are pending for 2 privately owned facilities. The City should monitor the activities of these facilities and any other local or regional C&D MRFs that might develop to determine the best course of action when ready to address C&D debris.

The proposed plan considers 2 approaches depending on whether private C&D material processing capacity develops in the region or if the City decides to develop a C&D MRF.

- If the City does not develop a C&D MRF but private processing capacity exists, the proposed plan recommends establishing C&D debris recycling and waste diversion (includes reduction and reuse) standards, and linking these standards to the permitting process.
- If the City develops a C&D MRF, the proposed plan recommends establishing policies that would help ensure the financial viability and operational efficiency of such a facility.

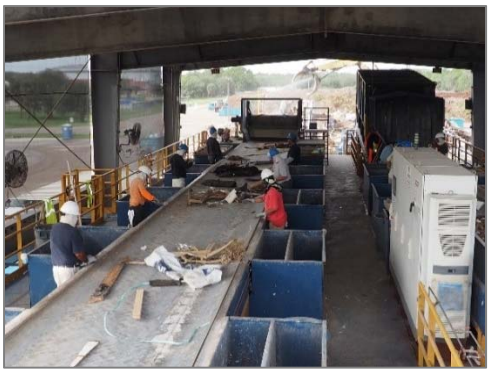
These approaches are not mutually exclusive, but both might not be needed depending on the policies the City is willing to establish to implement each approach. This is further discussed below.

Facility

If one or more privately owned C&D MRFs become permitted and operational in Northwest Arkansas, the City should meet with facility representatives to determine the role each might play in maximizing recycling of C&D debris generated in the City. An analysis would be needed regarding the feasibility of contracting with a private C&D MRF to process C&D and bulky waste collected or received by the City. Factors such as facility location and transportation and processing fees would need to be considered.

Picture 6-6: Vibrating Finger Screen at C&D MRF

If no privately owned C&D MRF becomes permitted, the City should consider developing a City-owned facility. Under this option, the proposed plan includes a C&D debris recycling pilot program in 2019 to manually recover recyclable materials at the transfer station. This pilot would provide a more accurate understanding of the types and quantities of materials in the C&D and bulky waste received at the transfer station.



Picture 6-7: Manual Sorting Line at C&D MRF

Should the pilot confirm the presence of substantial quantities of recyclable materials, the plan includes development of a basic C&D MRF. Although the quantity of C&D and bulky waste collected by the City is relatively low to justify this investment, the City has the potential to grow this business or to designate, through its collection franchises, where C&D debris collected by franchisees is delivered (see policies below).

C&D MRFs utilize a combination of equipment and manual labor. Generally the larger the tonnage throughput, the more financially viable to have a more highly mechanized system. Depending on the composition of the infeed materials and local markets, recovery rates of at least 70% are typically achieved.

While specific equipment varies, a basic C&D debris processing line utilizes screening/separating equipment to sort material by size; a conveyor with bunkers for manually sorting recyclable materials such as scrap metal, wood, yard waste, shingles, cardboard, etc.; and a magnetic separator to recover ferrous metals. The City currently has markets for metals and cardboard, but would need to identify markets for wood and other recovered materials. Clean, untreated wood could be reused, with the remainder potentially ground for fuel.

Programs

If the City does not develop a C&D MRF, the proposed plan recommends developing a program to implement C&D recycling and waste diversion standards (as discussed in the policies below). The program would establish a system for those seeking permits to submit diversion plans for review, define the documentation needed to demonstrate diversion, and set fees if diversion standards are not met. It would also involve working with the franchised haulers to inform them of the C&D diversion standards and program.

C&D diversion standards could be established even if the City develops a C&D MRF; however, an alternate approach would be to establish policies that direct C&D generated within the City to the City's MRF (see policies below), which would ensure all C&D debris would be processed for material recovery.

Policies

If the City does not develop a C&D MRF, the proposed plan recommends establishing C&D recycling and waste diversion standards to be met by all projects requiring a permit for construction, demolition, or renovation. Permittees could segregate materials at the work site or contract with the City or a franchised hauler to collect mixed C&D debris and deliver it to a C&D MRF for processing. Permittees would need to document how the material was handled and how much was reused, recycled, and disposed.

If the City develops a C&D MRF, policies to help maximize the operational efficiency and ensure the financial viability of the facility include the following:

- Designation of a processing facility for C&D debris in collection franchises: The City could increase tonnage to the MRF by revising its franchise agreements to require delivery of all C&D debris collected within the City to the MRF.
- Lower tipping fee for source-separated C&D materials: To further enhance material recovery and improve operational efficiencies, the City could offer a lower tipping fee for source-segregated C&D materials such as wood, metals, etc. This would encourage do-it-yourselfers and contractors to separate materials prior to delivery to the City. It would also provide the City with materials that require minimal processing prior to marketing.
- Lower tipping fee for C&D debris: If the City does not wish to require franchised haulers to deliver C&D debris to a City-owned MRF, the City could offer a lower tipping fee for C&D debris to entice private haulers to deliver C&D debris to the City's facility rather than to the landfill. A more detailed analysis would be needed to determine a viable tipping fee that attracts more material, but also ensures the financial stability of the facility and program.

6.2.4 Communications and Technical Assistance

A well-planned and executed communications plan is an integral part of any effective materials management program. The plan should utilize an array of communication tools

(audio, video, text, graphics, social media). For an individual to absorb a message, a general rule of thumb has been that 5-7 touches, or points of information receipt, were required. However, because of the increasing number and types of sources of information we are bombarded with daily, some industry experts believe that 9-12 touches may be required to impact behavior change.

Specific recommendations on enhancing the City's existing communications program are provided in Section 3.4.

A technical assistance program goes hand-in-hand with a communications plan. Owners or managers of businesses, institutions, and multi-family complexes will require not only a concerted effort to educate them about recycling, but also a comprehensive technical assistance program to provide the tools and knowledge to help them set up effective recycling and organics recovery systems. Key elements of a technical assistance program are outlined in Section 3.5. The City will need to work with property owners, managers, and tenants on an ongoing basis to actively engage this sector in waste reduction and recycling.

To develop and implement an effective communications plan and technical assistance program will require a commitment of resources by the City. Therefore, the plan proposes a designated commercial/multi-family recycling coordinator.

6.2.5 Green City Program – Lead by Example

Initiating a progressive Green City Program that includes comprehensive recycling and organics recovery programs at City-owned or operated facilities will demonstrate the City's commitment to maximizing waste diversion, as well as serve as models for other businesses and institutions. Establishing comprehensive recycling programs in parks and at public events, venues, and areas instills an ethos of sustainability and encourages recycling at home, work, and play. For example, coupling recycling and trash receptacles (twinning the bins) in all public buildings and places would ensure that recycling is widely available and always an option.

Green City Programs usually extend beyond recycling to include broader sustainability policies, such as environmentally preferable purchasing (EPP), which entails establishing purchasing policies that include environmental considerations (e.g., recycled-content, product longevity, etc.) in addition to price when making purchasing decisions. Leveraging the purchasing power of governments can stimulate demand for greener products and has the potential to encourage and drive market innovation.

A Green City Program would require establishing a City policy to initiate the program and developing a detailed program plan and schedule. It should complement other sustainability efforts initiated by the City. The education and technical assistance materials previously discussed could be utilized for this program as well.

6.2.6 Supporting Policies

The key program elements outlined previously in this section have included recommended policies pertaining to that specific element. Should implementation of these action plan elements fail to achieve the City's desired diversion goals, the City may wish to implement additional policies that further encourage or incentivize waste reduction and recycling. Some of the various policies utilized by other local governments were discussed in Section 3.9. Outlined below are several policies that are included in the proposed plan:

1) Disposal bans: At least 47 states ban the disposal of one or more items, including Arkansas, which bans the landfilling of lead-acid batteries and yard waste.[44] Communities reporting some of the highest recycling rates have employed disposal bans for items such as recyclable materials, yard waste, food waste, and unprocessed C&D debris. Such bans generally apply to entities that generate substantial quantities of the targeted material. Bans are usually phased in with a grace period prior to enforcement or fines. The plan proposes the City consider disposal bans on recyclable materials included in the City program, yard waste, and food waste should diversion goals not be achieved. Any such ban would need to be carefully developed and executed.

2) Every other week trash collection: Once food waste is captured with the organics stream and the quantity of trash generated by residents is significantly reduced through recycling, trash should no longer need to be collected on a weekly basis. Some progressive communities with effective organics recovery programs offer residents the option of every other week or even monthly trash collection (organic materials continue to be collected weekly). Should the City wish to implement this policy, it would also need to be carefully planned and executed. While collecting trash on a biweekly basis would lower costs and further encourage waste reduction and recycling participation, the City would need to ensure all putrescible materials are collected on a weekly basis.

As the City progresses in implementing changes to its materials management system, additional policies will undoubtedly warrant consideration. For example, product bans for items such as expanded polystyrene food service ware and retail plastic bags were considered during the planning process. Once an effective infrastructure is established for recovering and managing greater quantities of recyclable and compostable materials, consideration might then be given to policies that discourage generation of waste products that cannot be reused, recycled, or composted.

6.3 Next Steps

The primary objective of this Master Plan is to provide policy, program, and facility recommendations for the City to develop an efficient, cost-effective materials management

[44] The Northeast Recycling Council, Inc. (NERC), *Disposal Bans and Mandatory Recycling in the United States*, June 24, 2011, p.1.

system that maximizes waste reduction and recycling and puts the City on a path to attaining its goal of 80% waste diversion.

The planning process included a baseline and operational analysis of the City's existing waste management system, waste composition study, meetings and surveys to obtain community and stakeholder input, evaluation of potential waste reduction and diversion options, two pilot programs to gain City-specific experience with several of these options, and modeling of various waste diversion options. This Master Plan provides the results of these various tasks, as well as a proposed action plan based on these results to strive to maximize waste diversion.

Combined, the key elements of the proposed action plan work synergistically. A scenario model that included these key elements resulted in a 50% diversion rate by the end of the 10-year planning period. Actual results may vary depending on the commitment of resources and decisions made during implementation. If the various elements of the proposed action plan are optimized by establishing supportive policies and incentives, a diversion rate exceeding 50% should be feasible. However, achieving the City's stated goal of 80% diversion will likely require more aggressive actions, such as policies that discourage the use of products resulting in waste that cannot be recycled or composted or programs to recover hard-to-recycle materials.

Achieving even a 50% waste diversion rate requires a nearly three-fold increase in the City's current rate of 18%. Change of this magnitude will require an intentional consciousness on the part of elected officials and City staff to commit to and bring about this change. This commitment will need to be communicated to residents and businesses to engage them and bring about behavioral change.

A three-fold increase in waste diversion will also require transformation of all facets of the City's existing materials management system, including facilities, operations, programs, public and business outreach, policies, and fee structures. The proposed action plan outlined in this section is intended to help bring about these changes. Outlined on the next page are the first steps recommended to initiate implementation of the proposed action plan.

The proposed plan is intended to be dynamic. As key elements are implemented, programs should continuously be evaluated and enhanced, facilities monitored and optimized, and additional supporting policies considered.

In conclusion, this Master Plan provides a roadmap to assist the City in significantly increasing its waste diversion rate and to put the City on a path toward 80% diversion. This plan identifies the greatest opportunities to divert additional waste from being landfilled, evaluates options for targeting these materials, and then provides a proposed action plan to implement the key diversion elements considered most applicable and beneficial to the City. The success of the plan will ultimately depend on the City's commitment to its waste diversion goal and proactive implementation of key waste diversion elements of the plan.

RECOMMENDED INITIAL IMPLEMENTATION STEPS

To develop an environmentally and economically sustainable materials management system that maximizes waste diversion and minimizes waste disposal, the following steps are recommended to initiate implementation of the proposed action plan:

1. Provide conceptual approval of the proposed action plan with implementation of key elements dependent on acceptance of detailed implementation plans.
2. Approve a policy to pursue conversion to single stream recycling.
3. Conduct an RFP process to either contract for single stream processing services at a privately developed regional state-of-the-art single stream MRF or to develop a City-owned single stream mini-MRF. Identify potential sites for development of a City-owned facility.
4. Develop a detailed single stream conversion plan and schedule.
5. Obtain a Type CO permit for the City's compost facility.
6. Develop a detailed plan and schedule for initiating a voluntary organics recovery program, focusing initially on large food waste generators and schools.
7. Hire a commercial/multi-family recycling coordinator to provide the technical, educational, and oversight support necessary to implement effective recycling programs.
8. Develop a communications plan to announce the City's commitment to waste diversion and to get buy-in to new initiatives.
9. Develop a technical assistance program to inform businesses, institutions, and multi-family complexes of the City's waste diversion commitment and help them prepare for new recycling initiatives.
10. Adopt a Green City Initiative directing all City-owned or operated buildings to establish comprehensive recycling, organics recovery, and environmentally preferable purchasing programs.
11. Modify City building codes to require new commercial and multi-family developments to provide adequate space and access for recycling and organics recovery (for large commercial food waste generators).
12. Revise and reissue nonexclusive franchise agreements to (a) require reporting to City regarding types, quantities, and deposition of all materials collected within the City and (b) enable the City to designate a facility if it so chooses.

PROPOSAL

prepared for

CITY OF FAYETTEVILLE ARKANSAS

RFP 17-16
Recycling and Trash Collection Rate Study

November 9, 2017

MSW CONSULTANTS

11875 High Tech Avenue, Suite 150, Orlando, FL 32817 | 800-679-9220

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November 9, 2017

Les McGaugh
City of Fayetteville, Purchasing Division
113 W. Mountain – Room 306
Fayetteville, AR 72701

Subject: Proposal for Recycling and Trash Collection Rate Study
In Response to RFP 17-16

Dear Mr. McGaugh:

MSW Consultants, LLC, is pleased to provide this proposal to the City of Fayetteville (City) to assess the City's collection system and concurrently develop a cost-of-service and rate study for all residential and commercial customers.

MSW Consultants is a management consulting firm with offices in Missouri, specializing in the waste and recycling industry. We offer an unparalleled combination of collection system operational expertise and financial/rate modeling experience focused on publicly-provided services. We have completed similar projects recently for Louisville (KY), Centre County (PA), and Columbia (MO) and would be happy to share samples of our work products to demonstrate the methodologies used to test and validate rates.

In addition, our proprietary municipal collection model allows us to baseline the City's current collection system and then compare and contrast the resource needs (crews, trucks, routes) and costs (capital and operating) of the current system against alternative collection systems. Based on our review of the City's 2016 *Solid Waste Reduction, Diversion and Recycling Master Plan*, it appears the City may be interested in a more thorough, quantitative assessment of changes to the residential recycling program, and potentially in implementing organics collection for a subset of customers.

Full details are contained in our proposal. Please do not hesitate to contact me at (407) 380-8951 or jculbertson@mswconsultants.com if you have any questions, and thank you for your consideration.

Sincerely,

MSW CONSULTANTS, LLC

John Culbertson
Vice President

Cynthia M. Mitchell
Project Manager

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City of Fayetteville
RFP 17-16
Recycling and Trash Collection Rate Study

Table of Contents

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EXECUTIVE SUMMARY

COMPANY INTRODUCTION

MSW Consultants is a specialized consulting company whose key management staff have over 100 years combined experience providing municipal solid waste management planning, recycling program assessment, collection program productivity analysis and routing, solid waste cost-of-service and rate development, waste composition and generation studies, litter and marine debris management, procurement assistance, and implementation assistance for local governments and institutions across the nation.

Headquartered in Florida and with offices in Missouri and Pennsylvania, MSW Consultants offers an unparalleled combination of collection system operational expertise and financial/rate modeling experience focused on publicly-provided services. The City of Fayetteville is requesting a collection system analysis and rate study based on actual full costs. While simple in concept, in practice it is critical to have a deep operational understanding of waste and recycling collection systems in order to properly allocate costs to determine fair and equitable rates. MSW Consultants has completed similar projects to Fayetteville's recently, for Louisville (KY), Centre County (PA), and Columbia (MO) to name several. We know what it takes to reach technically defensible, cost-based rates (and would be happy to share samples of our work products to demonstrate our methodologies and outcomes).

KEY STAFF

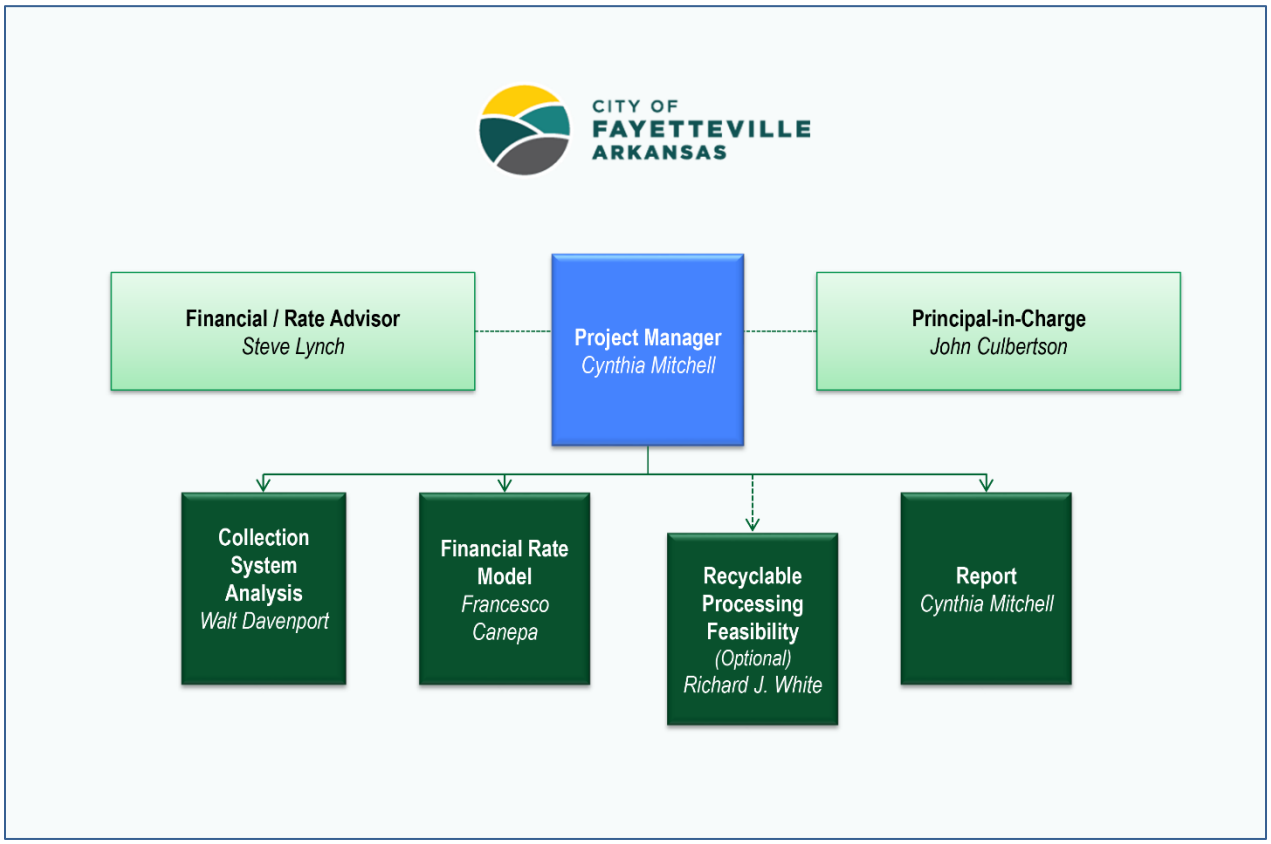
MSW Consultants has assigned an experienced project team to serve the City on this important assignment. Our **Project Manager, Cynthia Mitchell**, is based out of Columbia, Missouri and is the firm's Client Manager for the Midwest region. She spent 20 years working in the solid waste industry for public sector and non-profit organizations, most recently as the Solid Waste Utility Manager for the City of Columbia where she managed the operational and financial aspects of residential and commercial trash and recoverables collection, a Class I bioreactor landfill, a compost facility and material recovery facility (MRF). She also managed Columbia's full cost-of-service and rate study in 2015.

Cynthia will be supported by a highly qualified team of solid waste industry professional staff:

- **Walt Davenport, President**, spent 15 years managing private sector collection operations before founding MSW Consultants, where he has served for almost 20 years.
- **John Culbertson, Vice President**, is the firm's QA/QC advisor and has 24 years experience helping local governments optimize their waste management systems.
- **Richard White, Processing Systems Manager**, is an expert at planning and implementing recycling programs and determining the best and most cost-efffective processing configuration to meet peformance and budgetary targets.
- **R. Stephen Lynch, Executive Consultants**, is a former investment banker with extensive financial management and cost analysis experience for the municipal solid waste sector.

The organization chart on the following page identifies the roles to be played by these key staff, who will be supported by MSW Consultants team of analysts and administrative professionals.

Project Organization Chart



APPROACH HIGHLIGHTS

Broadly, our approach incorporates a **Collection System Evaluation** which will feed certain performance metrics and specialized allocation factors into a **Full Cost-of-Service Model** that will identify the fair and equitable rates for residential and commercial customers. While many firms develop general rate recommendations based on a macro-level revenue sufficiency analysis, our proven method segregates the cost, customer base, tonnage collected, and tonnage processed for each City collection service so that City elected officials and customers clearly understand the full cost to provide each service.

Our approach is broken into three phases:

PHASE 1 – COLLECTION SYSTEM EVALUATION

In this Phase, MSW Consultants will undertake a collection system "due diligence" process to understand the current system. We will observe and measure productivity rates and customer set-out characteristics for City collection services, and compare/contrast these metrics to other collection systems to determine performance levels. At the conclusion of this phase, we will have identified a variety of observations and recommendations for areas of improvement and/or modification to meet City objectives.

PHASE 2 – COST AND RATE ANALYSIS

MSW Consultants will utilize the performance metrics and customer set-out data to develop a bottom-up full cost of service financial model. Our financial model captures all direct operating expense, appropriate assumptions for collection vehicle upkeep and replacement, and any special Capital Improvement Program initiatives expected to impact the City's waste management system for the next 10 years. We also dynamically capture the terms of existing contracts (whether for disposal, processing, composting, collection, etc.) so that the rate model adjusts in accordance with such terms.

At the conclusion of this Phase, we will identify the extent of any revenue shortfall or surplus, current and desired operating fund balances, and compare current rates to full cost rates so that City staff and elected officials understand if any cross-subsidization is occurring within the overall collection system. We have budgeted to meet with the City at this important juncture to review findings to date.

PHASE 3 – REPORTING AND PRESENTATION

The final phase involves assembling the pertinent methodology, findings, and recommendations into a cost-of-service and rate report that provides a five-year rate path as well as the other important financial elements identified by the City in the RFP. The report will also comment on the outcome of the collection system evaluation and offer recommendations on customer outreach that may be needed to inform customers about impending changes to their rates.

OPTIONAL SERVICES

MSW Consultants has reviewed the City's 2016 Master Plan and, although not explicitly requested in this RFP, remains available to support related waste management and recycling initiatives. We have included options to more comprehensively analyze residential recycling collection and processing beyond single stream, which has been a popular yet highly contaminated method of recycling across the U.S. in the past decade. We are also experienced in organics collection and processing from both residential and commercial generators.

SCHEDULE

MSW Consultants projects a six-month time frame to complete this project, with a detailed schedule shown in the chart below.

Projected Project Schedule

Task		Month 1				Month 2				Month 3				Month 4					Month 5				Month 6				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5
Phase 1 COMPILE & REVIEW EXISTING SYS/INFO																											
1.1	Info Request and Data Review	■	■	■	■																						
1.2	Kick-off Meeting				◆																						
1.3	Facility Assessment (TS, Recycling, Composting)				■	■	■	■																			
1.4	Asset Assessment				■	■	■	■																			
1.5	Collections Operation Audit				■	■	■	■	■	■																	
1.6	Working Meeting								◆																		
Phase 2 Cost and Rate Analysis																											
2.1	Cost of Service Analysis						■	■	■	■	■	■															
2.2	CIP Review								■	■	■	■															
2.3	Test Year Revenue Sufficiency Requirements								■	■	■	■	■														
2.4	Rate Design								■	■	■	■	■	■	■	■											
2.5	Working Meeting															◆											
Phase 3 Report																											
3.1	Draft Report															■	■	■	■	◆							
3.2	Final Report																				■	■	■	■	◆		
3.3	Presentation(s)																								■	■	◆
Optional Tasks																											
	Organics Collection Pro Forma Cost Estimate																										
	Recycling Collection Comparability Analysis																										
	Recyclables Processing Planning Cost Estimate																										
	Update Ordinance (TBD)																										

Please see our full proposal for additional details about our approach and extensive experience.

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COST OF SERVICE ANALYSIS & RATE STUDY

A. GENERAL INFORMATION

MSW Consultants is a specialized consulting company whose key management staff have over 100 years combined experience providing municipal solid waste management planning, recycling program assessment, collection program productivity analysis and routing, solid waste cost-of-service and rate development, waste composition and waste audit studies, solid waste engineering, procurement assistance, and implementation assistance for governmental, institutional, and private waste generators across the nation. MSW Consultants was created in name in 2002 and legally established as a Maryland Limited Liability Company (LLC) in 2004. The firm converted to a Florida LLC in 2014, and is currently headquartered in Orlando, FL. The firm's client base has expanded to over 55 city, county, state and private organizations across the U.S., served by 14 staff and associates. MSW Consultants provides the following menu of solid waste consulting services:






SOLID WASTE MANAGEMENT PLANS

- SWMPs and Zero Waste Plans
- Overview of waste management systems and technologies
- Stakeholder committee facilitation
- Public education and outreach strategies

RECYCLING/COMPOSTING

- Recycling system planning
- Residential recycling program implementation
- Single stream recycling analysis
- Volume-based pricing (Pay-As-You-Throw) program and rate development
- Yard waste diversion and composting program assistance

COLLECTION OPTIMIZATION

- Refuse, recycling, yard waste and bulky waste productivity analysis and improvement
- Automated and single-stream collection conversion assistance
- Front-load and roll-off efficiency analysis and service rate development
- GPS, event tracking, RFID and onboard data collection system development
- Route development, route balancing, and area/path re-routing

FINANCIAL ANALYSIS

- Solid waste system full-cost-of-service studies
- Enterprise fund development
- Lifecycle cost development
- Solid waste enterprise fund service rate development
- Facility processing/tip fee analysis
- User fee and non-ad valorem assessment rate development

COLLECTION, DISPOSAL AND RECYCLING PROCUREMENT SERVICES

- Solid waste, recycling, yard waste and bulky waste collection procurement assistance
- Contract/franchise system analysis
- Disposal and facility operations procurement assistance
- Managed competition assistance
- Contract negotiation assistance

WASTE COMPOSITION AND GENERATION ANALYSIS

- Sampling plan development
- Waste composition field sampling and sorting
- Statistical analysis
- Waste generation rate studies
- Institutional and commercial waste audits and recycling program improvement
- Visible litter studies and litter/illegal dumping research

SOLID WASTE ENGINEERING

- Facility permitting and permit modifications
- Plans and specifications, construction management and contract monitoring
- Transfer station facility siting, design and optimization
- Compost facility siting, design and operations

B. KNOWLEDGE OF APPLICABLE REGULATIONS & LOCAL CONDITIONS

MSW Consultants serves the local government sector from coast to coast and understands the regulatory environment under which the industry operates. In particular, the waste industry is largely governed by state regulation and local ordinance, in addition to the federal Resource Conservation and Recovery Act (RCRA). The City of Fayetteville operates under City Code of Ordinances Chapter 50 as well as any applicable sections of the and State of Arkansas Code of Regulations.

The City has adopted diversion goals for and are making efforts to move toward and exceed these goals.

We have reviewed the City's 2016 *Solid Waste Reduction, Diversion, and Recycling Master Plan* to familiarize ourselves with the local conditions. The City recently adopted a goal path to double the current diversion rate, with an interim level of 20 to 30 percent diversion between 2017-2022 and 30 to 40 percent diversion between 2022-2027. The Master Plan also identified the following initial implementation steps which were approved by the City Council in February 2017:

- Provide conceptual approval of the proposed action plan with implementation of key elements dependent on acceptance of detailed implementation plans.
- Obtain a Type CO permit for the City's compost facility.
- Develop a detailed plan and schedule for initiating a voluntary organics recovery program, focusing initially on large food waste generators and schools.
- Release an RFP to secure a contract with a processor for the recovery and recycling of construction and demolition material.
- Develop a communications plan to announce the City's commitment to waste diversion and to get buy-in to new initiatives.
- Develop a technical assistance program to inform businesses, institutions, and multifamily complexes of the City's waste diversion commitment and help them prepare for new recycling initiatives.
- Adopt a Green City Initiative directing all city-owned or operated buildings to establish comprehensive recycling, organics recovery, and environmentally preferable purchasing programs.
- Modify City building codes to require new commercial and multi-family developments to provide adequate space and access for recycling and organics recovery (for large commercial food waste generators).

Additional initial implementation steps that were recommended but not approved included:

- Approve a policy to pursue conversion to single stream recycling.
- Conduct an RFP process to either contract for single stream processing services at a privately developed regional state-of-the-art single stream MRF or to develop a City-owned single stream mini-MRF. Identify potential sites for development of a City-owned facility.
- Develop a detailed single stream conversion plan and schedule.

- Hire a commercial/multi-family recycling coordinator to provide the technical, educational, and oversight support necessary to implement effective recycling programs.
- Revise and reissue nonexclusive franchise agreements to (a) require reporting to City regarding types, quantities, and deposition of all materials collected within the City and (b) enable the City to designate a facility if it so chooses.

Given that the City has previously set an eventual 80 percent diversion goal, it will be necessary to enhance recycling from residential households; yet Council did not approve the policy to pursue single stream recycling. MSW Consultants has developed our approach with the outcome of the 2016 Master Plan in mind. With our state-of-the-art collection system modeling capabilities, we are prepared to assist the City to revisit the single stream recycling collection recommendation contained in the Master Plan, and also to consider collection options for organics from commercial establishments.

C. UNDERSTANDING OF PROJECT & PROPOSED PROJECT APPROACH & DESIRED OUTCOMES

UNDERSTANDING

MSW Consultants believes it is critical to have a detailed understanding of each client's political, operational, and local waste market dynamics to assure a successful consulting engagement. This is provided in the City's recent Solid Waste Reduction, Diversion and Recycling Plan, issued in September 2016 and approved in February 2017. We offer the following synopsis of the City of Fayetteville solid waste management system, which we have factored into our approach:

- **Financial Management:** The City accounts for waste management services in its Recycling and Trash Collection fund. The City's most recently posted budget shows that Solid Waste operates through various subaccounts: Operations & Administration, Commercial Collections, Residential Collections, Commercial Drop Box Collections, Recycling, Transfer Station and Composting. The City's budget appears to aggregate solid waste commercial and residential collection revenues, but differentiates the cost of service. This project must separate revenues by operation to determine if collection costs are sufficient by service.
- **Solid Waste Facility Operations:** The City operates a transfer station, compost facility and recycling facility. This study must assess the facilities and any planned improvements and determine rates to adequately meet the cost of these needs.
- **Residential Collection:** Fayetteville City is the exclusive collector of residentially generated trash, recycling, green wastes, and bulky items within the political boundary. Residents set out wastes in either a 32-, 64- or 96-gallon cart, a thorough Pay-As-You-Throw system. Citizens can place extra bags next to their cart for an additional fee per bag. The Operational Assessment (Technical Memo 4) associated with the Master Plan indicated there may be room to increase route size, based on average stops observed, and that a detailed route optimization process would be needed to confirm this opportunity. MSW Consultants conducts such assessments. Though stops may average fewer than industry average, other circumstances and possible program changes should be considered. City growth and other potential programs, such as initiating organics collection or expanding recyclables diversion, will impact trash dynamics.
- **Recycling:** The citizens of Fayetteville are supplied with two 18-gallon (estimated) recycling bins for curbside collection. Rate structures provide options based on the size of the trash

cart in conjunction with the recycling bins. The City is the exclusive collector for residential curbside recycling and also offers two recycling drop-off sites and recycling roll-offs at several multi-family complexes throughout the City. Curbside collection routes involve time-consuming stops, with single-collector trucks separating materials into 8 categories while at each stop. A variety of recycling options are available for Commercial customers, depending on materials types and volumes. The MSW Consultants collection model can be used to compare full and unit costs of the current collections system(s).

- **Yard Waste**: Yard waste is also collected on the household's trash day in bags or bundles.
- **Commercial Collection:** The City also offers a variety of commercial trash and recycling service options. Similar to the residential sector, the City universally collects commercial trash in carts and dumpsters, but competes for open top and compactor service with franchised haulers. The city offers assistance in assessing recycling opportunities with each business. MSW Consultants will explore the degree of difficulty being met to recover costs for commercial collection service, particularly with commercial recycling.
- **Rates and Billing:** Solid waste fees are currently billed at a single family residential rate structure which varies based on the size of refuse container (32-, 64- or 96-gallon). Other variables include independent charges for extra service on trash cart, an overfull cart or extra bags placed beside the cart. MSW understands the City desires a full financial and rate analysis is warranted to evaluate if these rates are adequately accounting for the full costs of providing services.
- **Commercial Rate Structure:** According to the City's solid waste rate sheet, commercial recycling is priced at deep discounts. Though this encourages recycling, actual costs and resources utilized need to be allocated for coverage. At a cursory glance, the City's commercial rates for various sizes of front-loading dumpsters, roll-offs and 95-gallon cart, also appear to be on the low side. MSW Consultants' approach for this project includes a full analysis of commercial customers, service levels, and development of rational billing rates based on the full cost to provide collection and disposal of the wastes and recyclables collected.

At the current time, the City is interested in engaging an experienced consultant to review the current system for operational functionality, assess asset and facility condition and provide recommendations for modifications and improvements. The consultant shall verify the appropriateness and equitability of the current cost and rate structure and propose a rate structure sufficient to cover planned operations now and in the future.

MSW Consultants specializes in municipal waste management program optimization. We assist local governments, authorities, and utilities across the country to evaluate and improve their integrated waste management and recycling systems; rationalize service rates; improve efficiency; increase recycling and diversion; and establish and implement long term plans to successfully operate the system. We have applied a common-sense, logical approach to this process for many local governments. Our approach to assist Fayetteville in this project is outlined below.

APPROACH

Below is a brief outline of the expected tasks to be performed as part of this project. MSW Consultants has developed a successful protocol for system evaluation and cost/rate studies. The phase and task list below attempt to concisely present our approach to successfully complete the analysis. We remain available to modify and refine this approach based on input from the City.

PHASE 1 PROJECT INITIATION & COLLECTION SYSTEM EVALUATION

Task 1.1 Information Request and Review of Data: MSW Consultants will submit a written request for information to be provided by the City within 7-10 business days or as otherwise discussed. We will also review publicly available information provided on the City website. Operational data is essential to determine the most accurate cost of services from which to model rates and budgets. Data requested will include (but is not limited to) the following:

- Historical and projected operating expenses and revenues;
- Current rates and charges;
- Historical customer billing data;
- Capital asset and rolling stock lists;
- Capital Improvement Plans;
- Refuse, Recycling and Yard Waste route lists and maps; and
- Tonnage information for Trash, Recycling and Yard Waste Collection as well as tons received at the Transfer Station and Recycling Facility.

Task 1.2 Kick-off Meeting: MSW Consultants will conduct a kick-off meeting to establish project expectations and schedules and review remaining data needs. Arrangements will be discussed and finalized regarding facility tours and asset assessment.

Task 1.3 Transfer Station, Recycling Center and Composting Facility Assessment: We will tour the Fayetteville Transfer Station, Material Recovery Facility and Composting Facility and assess current operations, configuration, and appropriateness of the facility equipment for supporting the current system and future needs. Note that we are not an engineering firm and will rely on the City's existing engineering plans and cost estimates as the basis for development of a financial model and rate schedule.

Task 1.4 Asset Assessment: MSW staff will assess the condition of Transfer Station, MRF, Composting and Collections assets and fleet, conducting appropriate reviews for use in reviewing and/or preparing replacement schedules.

Task 1.5 Collection Operations Audit: MSW Consultants will review routing, house count and tonnage information for the purpose of identifying current performance metrics relating to Residential Refuse, Residential Recycling, Commercial Refuse and Commercial Recycling. This task would include interviews of key City staff for prioritization and route selection in order to gain insight on opportunities for improvement. MSW Consultants will provide on-route audits for the City's collection programs, focusing on key routes of interest or concern to City staff. Our proprietary model will be used to validate key efficiency metrics that are observed during normal route operations.

Task 1.6 Working Meeting: MSW Consultants will assemble findings of the collection system evaluation and deliver a presentation to City staff. We have budgeted for a web meeting to manage expenses, with the City arranging to review findings and provide feedback.

PHASE 2 COST AND RATE ANALYSIS

Task 2.1 Cost-of-Service Analysis: This task will develop a "bottom up" activity-based cost model. The activities to be modeled from the bottom up include all collection services differentiated by customer class, operation of the Transfer Station and disposal costs associated with the Eco Vista

Landfill. A bottom-up model compiles the specific personnel, fleet, and management/administrative resources that are required to perform each of the activities of the Recycling and Trash Collection Division. These resources in turn have unit costs associated (capital and operating costs). The unit costs are organized by activity, and summed to generate a full system cost. The result of this effort is a line-item allocation of resources to functions, which in turn provides full costs of each function.

Task 2.2 Capital Improvement Program Review: A critical aspect of every solid waste management system is the maintenance of facilities, a functional collection fleet and container inventory. MSW Consultants will review the City's capital replacement program and policies and develop a recommended capital replacement schedule for vehicles and equipment, as well as facilities (with input from applicable programs within the City's Recycling and Trash Division).

Task 2.3 Test Year Revenue Sufficiency Requirements: Under the current system, we will develop test year revenue requirements and develop rates under the current rate structure that cover full costs.

Task 2.4 Rate Design Analysis: This exercise should define rate classes for residential and commercial customers, and provide the range of rate setting options available to recoup full costs. For the residential rates, it is expected that MSW Consultants will compare flat rates and a range of variable rate combinations. For commercial collection, MSW Consultants can calculate the appropriate container rate matrix, as well as the range of special service fees that are warranted using proprietary modeling.

Some considerations might include (for example), implementing dual stream or single stream recycling collection; or charging bundled rates to commercial establishments for refuse and recycling. The objective of reviewing these topics is to provide perspective and seek guidance from the City on the future evolution of its system.

Task 2.5 Working Meeting: At this stage of the project, we will have made preliminary determinations as to the full cost of City collection services, and also calculated potential impact to rates of various alternatives. Our approach includes preparation and delivery of a presentation to City staff at this stage of the project to review key operational, cost-related, and rate-related findings, and to seek guidance on preferred rate modifications and a rate path. Input from the City at this stage will inform development of the project report.

PHASE 3 REPORTING/PRESENTATIONS

Task 3.1 Draft Report Finalizing Rates, Replacement Schedule and Recommendations: At this point, MSW will proceed to incorporate the findings into a concise summary of the Analysis and developed Rate Path and Replacement Schedule for the City's programs with a Technical Report. The report will include any recommendations for improvements to service levels, safety practices and administration of the system based on the findings and observations to this point, and provide at least two rate path alternatives along with a selection recommendation. The report will contain supporting schedules in appendices. The report will be discussed during conference call or webinar meeting with key points highlighted.

Task 3.2 Final Report: Upon receiving comments back on the Draft Report, MSW Consultants will finalize the report and rate path for delivery to the City.

Task 3.3 Presentation(s): MSW professional staff would present a summary PowerPoint presentation to the Fayetteville City Administration and Council (if desired). For budgetary purposes, it is assumed presentations could be coordinated within a single traveling event.

OPTIONAL TASKS

The following tasks are not critical to meet the City's stated objectives in the RFP, but are offered here as potential tasks that MSW Consultants believes could be beneficial to the City with regard to moving forward with the Master Plan and/or useful in consideration of rate paths for future operation.

- **Organics Collection Pro Forma Cost Estimate**: In alignment with the approved Master Plan initiative, MSW Consultants would evaluate implementing a voluntary organics diversion program and the associated collection costs and resulting impact to rates. MSW Consultants will work with the City to determine the appropriateness of any such tasks.
- **Recycling Collection Comparability Analysis of Single Stream Collection vs. Dual Stream Collection vs. Status Quo:** Understanding there is some interest in the community in single stream recycling or other methods to increase diversion, MSW Consultants could compare the combined collection and processing costs for a dual stream system and a single stream system. Although single stream recycling has become the norm in the U.S., cart-based single stream systems have generated a high level of contamination and also rendered glass valueless at best, and non-recoverable at worst. MSW Consultants would prepare a quantitative, unbiased analysis that takes into consideration the collection cost, processing cost, customer acceptance, material cleanliness and marketability and potential improved diversion.
- **Recyclables Processing Planning Cost Estimates**: The Master Plan identified development of a MRF as one potential strategy for migrating to single stream recycling. If desired, MSW Consultants' Recyclables Processing Specialist, Mr. Richard White, could prepare a high-level analysis of the projected capital and operating costs of single stream processing vs dual stream processing of the City's enhanced recycling collection program.
- **Update Ordinance**: MSW Consultants can review the City's ordinance, identify areas requiring update based on the outcome of the study, and provide suggested ordinance language for consideration by the City. Note that MSW Consultants does not employ attorneys and that our suggested revisions will require legal review by the City. We would receive one round of comments from the City.

D. EXPERIENCE & PERFORMANCE RECORDS

MSW Consultants is a management consulting company specializing in the municipal waste and recycling industry. The table below lists related project experience for local governments over the past six years.

MSW Consultants Client and Project List

Year	Client	Project
2017	City of Georgetown, KY	Municipal Solid Waste System Evaluation and Rate Study
2017	Louisville Metro Government, KY	Comprehensive Solid Waste System Analysis and Cost-of-Service Study
2016	Centre County Recycling and Refuse Authority (CCRRA), PA	Single Stream Recycling Feasibility Evaluation and Collection Rate Study
2016	Pennsylvania Department of Environmental Protection, PA	Recycling Technical Assistance Provider
2016	Liberty County, Georgia, GA	Solid Waste Cost & Rate Study
2016	City of Alamosa, CO	Solid Waste Cost-of-Service and Curbside Recycling Feasibility Study

COST OF SERVICE ANALYSIS & RATE STUDY

Year	Client	Project
2016	Town of Front Royal, VA	Collection System Optimization Study
2015	Central Connecticut Solid Waste Authority, CT	Disposal and Recyclables Processing Procurement Assistance
2015	City of Columbia, MO	Solid Waste Collection Cost of Service and Rate Recommendation
2015	City of Muskogee, OK	Solid Waste Collection System Evaluation and Cost/Rate Study
2015	Borough of State College, PA	Refuse Services Evaluation and Rate Study
2014	Cambria County Solid Waste Management Authority (CCSWMA), PA	RFP for Recyclables Processing
2014	Howard County, MD	Solid Waste Management Plan 2014-2024
2014	Lexington-Fayette Urban County Government, KY	Countywide Waste Stream Analysis
2014	City of Allentown, PA	RFP for E-Scrap Collection
2013	City of Philadelphia, PA	Recyclables Processing Composition Audit
2013	Montgomery County, MD/NMWDA, MD	Waste-by-Rail Negotiation Assistance
2013	Robesonia-Wernersville-Womelsdorf COG, PA	Recycling Education
2013	Upper Nazareth Township, PA	Recycling Program Optimization
2013	Carroll Township, PA	Yard Waste Composting and Commercial Recycling Program Assistance
2013	Borough of Dickson City, PA	Residential Collection Optimization and Recycling Study
2013	Marple Township, PA	Compost Facility Feasibility Study
2013	Winchester Municipal Utilities, KY	Solid Waste Collection Service Optimization and Rate Study
2012	Borough of West Reading, PA	Yard Waste Recycling Analysis
2012	Cities of Atlantic Beach and Neptune Beach, FL	Solid Waste Cost Analysis
2012	Howard County, MD	Composition Analysis of Residential Expanded Organics Collection
2012	City of Scranton, PA	Evaluation of Residential & Commercial Recycling Collection Programs
2012	Borough of Clarks Summit, PA	Development of Commercial Recycling Program
2012	City of North Port, FL	Transfer Station Feasibility Study
2012	Town of Simsbury, CT	Evaluation of Curbside Recycling Collection
2011	Lexington-Fayette Urban County Government, KY	Solid Waste Collection and Cost-of-Service Study
2012	Borough of State College, PA	Educational Program Development for Restaurant Recycling and Composting Program
2011	Lexington-Fayette Urban County Government, KY	Route Optimization and Onboard Systems Implementation
2011	Wayne County, PA	Municipal Waste Management Plan Update
2011	Lexington-Fayette Urban County Government, KY	Solid Waste Collection, Disposal and Recycling Benchmarking
2011	Centre County Solid Waste Authority, PA	Disposal Capacity Procurement Assistance
2011	Central Connecticut Solid Waste Authority, CT	Disposal and Recyclables Processing Procurement
2011	City of Poughkeepsie, NY	Multi-Family Collection System Audit and Collection Efficiency Study

Selected project profiles are provided below to highlight projects that were very similar to this engagement.

CITY OF GEORGETOWN, KY: MUNICIPAL SOLID WASTE SYSTEM EVALUATION AND RATE STUDY (2017)

The City of Georgetown, through its Department of Public Works (DPW), is the exclusive collector to the roughly 11,000 residential housing units, providing collection of refuse in 96-gallon "Herbie" garbage carts, as well as bulky items and brush. The City also provides commercial cart service and commercial frontload service to a small number of customers. In an ongoing effort to systematically evaluate and improve its service delivery, the City commissioned a comprehensive report on the City's existing solid waste collection operations, including logistics and routing, personnel, equipment, finances and rate structure, maintenance, safety, regulatory compliance, facilities, quality of service, solid waste ordinances and enforcement procedures.

MSW Consultants provided a comprehensive evaluation of the City's operations, policies, and rate structure. This analysis identified that the City's exclusively-provided residential collection system was efficiently performed, and that residential rates were sufficient not only to fund the residential services, but also had been subsidizing commercial cart and dumpster collection. The analysis identified fixes to the commercial cart rate structure to shore up the financial performance of that service. Finally, the analysis found that the City's dumpster customer base was too small to be economically viable and recommendations were offered to exit the business or outsource the service.

LOUISVILLE METRO GOVERNMENT, KY: COMPREHENSIVE SOLID WASTE SYSTEM ANALYSIS (2017)

MSW Consultants performed a comprehensive solid waste system analysis and 10-year solid waste plan for the Louisville Metro Government. This project included:

Collection System Analysis and Cost-of-Service Study: MSW Consultants conducted a collection system optimization analysis for the LMG-provided residential and CBD collection system, which included an activity-based full cost-of-service analysis to identify true costs of solid waste management in the General Funded system. This analysis covered the wet-dry collection program offered to the Central Business District, which is capturing organics and achieving recycling rates over 70 percent.

Comprehensive Plan: MSW Consultants managed a team of consultants to collaborate with over 60 stakeholder organizations, as well as the 80 incorporated municipalities in Jefferson County, to develop a viable 10-year solid waste plan. The plan identified the policies, programs and facilities that will be needed to reach regional waste management and diversion goals.

CENTRE COUNTY RECYCLING AND REFUSE AUTHORITY (CCRRA), PA: SOLID WASTE COLLECTION COST-OF-SERVICE AND RATE RECOMMENDATION (2016)

The Centre County Recycling & Refuse Authority (CCRRA) currently provides recycling collection and processing to over 25,000 residential households and 500 commercial establishments throughout the County, as well as a yearly Household Hazardous Waste (HHW) collection event.

The CCRRA contracted with MSW Consultants evaluate the range of recycling collection and processing options that would best integrate with the County's long-range goals and local values. MSW Consultants is familiar with the regulatory and regional market dynamics faced by Centre County and led a targeted analysis of the options available to the Authority to capitalize on new technologies and opportunities for recycling collection and processing.

MSW Consultants collaborated with Willdan Financial Services to develop an integrated solid waste financial model that combined financial projections derived from audited financial statements with a range of operational changes for analysis. With regular input and feedback from the Authority staff, a prioritized set of recommendations was submitted for consideration by the full Authority Board. MSW Consultants and Willdan delivered a full financial model for use by the Authority in future rate setting.

CITY OF ALAMOSA, CO: SOLID WASTE COST-OF-SERVICE & CURBSIDE RECYCLING FEASIBILITY STUDY (2016)

MSW Consultants worked as a subconsultant as part of a utility rate study to analyze the solid waste management department and verify/update service rates. The City of Alamosa provides residential and commercial refuse collection and offers a drop-off center for recyclables. This project analyzed the feasibility of offering curbside recycling to the City's residential customers. The curbside recycling analysis also included likely cost and operating impacts for consolidating the recyclables and long-hauling them to distant processors for sorting and marketing.

TOWN OF FRONT ROYAL, VA: SOLID WASTE COLLECTION SYSTEMS EVALUATION (2016)

The Town of Front Royal contracted with MSW Consultants to provide consulting services to help the Town evaluate and offer recommendations on the management of all solid waste collection and disposal services in the most cost-effective manner. MSW Consultants worked in partnership with the Town staff to review existing services, compare industry practices to current business models, evaluate pricing and service levels and offer recommendations on how to increase efficiency, reduce operational costs, and improve customer service.

City of Columbia, MO: Solid Waste Collection and Landfill Cost-of-Service and Rate Recommendation (2015)

The City of Columbia owns and operates a vertically integrated solid waste management system that includes a bioreactor landfill, dual stream material recovery facility and compost center, as well as both residential, commercial and roll-off collection services. By ordinance, the City is responsible for collection of wastes and recyclables from all residential properties and from commercial entities that generate food wastes. The City funds its solid waste system through a combination of tip fees at the landfill plus user fees charged to residential and commercial accounts.

The City last updated its rates in 2008. In 2014, the City retained MSW Consultants to perform a cost-of-service and rates study, and to benchmark the service levels and costs of its system against nine peer cities in the Midwest and Southeast. The project also included a series of route audits and observations to measure collection productivity and understand customer set-out behaviors. MSW Consultants is currently managing a financial subcontractor in the development of a dynamic rate model for ongoing use by the City.

Borough of State College, PA: Refuse Services Evaluation and Rate Study (2015)

College Borough, home to Penn State University, provides all residential and commercial waste collection to 4,300 customer accounts representing almost 15,000 individual units within its municipal borders. In addition to regular weekly curbside and alley waste and recycling collection, the Borough serves commercial dumpster accounts and also maintains the downtown business district with regular waste and litter basket collection. The Borough provides most services with its own fleet and staff resources, operating a $3.5 million annual budget.

The Borough last reviewed its collection system, cost-of-service, and rate structure in 1994. Since that time, numerous changes have taken place in the waste industry. Automation, single stream recycling, alternative fuel vehicles, automated vehicle location (AVL) systems, and volume-based rate structures have become commonplace. Further, a culture of sustainability, greening the community, and recycling have become more widespread. The Borough engaged MSW Consultants to conduct a comprehensive operational and financial review of the system. MSW Consultants performed extensive on-route observations to measure current productivity and identify opportunities for changing operating protocols and/or revising the Borough's rate structure to more closely align with the services provided. The project recommended operational changes, and created an updated cost-of-service model, and provided a 10-year rate path that balances equitability, ease of administration, and revenue sufficiency. The project also delivered a dynamic financial cost and rate model for ongoing use by Borough staff.

CITY OF MUSKOGEE, OK: SOLID WASTE COLLECTION SYSTEM EVALUATION AND COST/RATE STUDY (2015)

The City of Muskogee undertook a comprehensive rate study for its water, sewer and solid waste management systems. MSW Consultants, working as a subconsultant, supported the development of a financial model for the solid waste system to validate and modify current rate structures. MSW Consultants performed a collection system evaluation as part of this engagement, which included evaluations of residential collection services, commercial collection services, and fleet management practices. The collection system analysis projected the impacts of converting to automated collection and implementing curbside yard waste and recycling collection service..

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, KY: SOLID WASTE COLLECTION AND COST-OF-SERVICE STUDY (2012)

The Lexington-Fayette Urban County Government Division of Waste Management (DWM) provides comprehensive collection of residential and commercial waste and recyclables. The DWM operates as part of the Urban Services Fund, and is funded by a solid waste tax equal to 0.1430 per $100 of assessed value of residential and commercial properties.

The UCG retained MSW Consultants to perform a detailed cost-of-service and rate study of the publicly-provided collection services provided by the DWM. The collection cost and rate study was intended to: (1) Validate the current cost-of-service and project system cost forward for planning purposes, (2) Calculate a schedule of user fees if the UCG were to move away from the ad valorem revenue mechanism; (3) Evaluate a Pay-As-You-Throw (PAYT) rate structure for residential households; and (4) Comment on the costs, benefits and disadvantages of privatizing waste and recycling collection.

MSW Consultants developed a comprehensive financial model to identify system costs and defensibly project financially self-supporting user fees (both flat and PAYT). The model included residential fees as well as commercial dumpster and roll-off rates. MSW Consultants delivered both a rate model and a concise white paper outlining the cost, rate and revenue comparisons, including a discussion on privatization considerations.

References

Client/Project	Contact
City of Columbia, MO ***Solid Waste Collection and Landfill Cost-of-Service and Rate Recommendation***	***David Nichols, P.E. Public Works Director*** 701 East Broadway Columbia, MO 65205 (573) 874-7253 david.nichols@como.gov

Client/Project	Contact
Centre County Recycling & Refuse Authority, PA *Solid Waste Collection Cost-of-Service and Rate Recommendation*	***Joanne Shafer – Deputy Director/Recycling*** 253 Transfer Road Bellefonte, PA 16823 (814) 238-7005 x113 jshafer@centrecountyrecycles.org
Louisville Metro Government, KY *Comprehensive Solid Waste System*	***Pete Flood – Compliance & Enforcement Manager*** 600 Meriwether Avenue Louisville, KY 40217 (502) 574-3290 pete.flood@louisvilleky.gov
Lexington-Fayette Urban County Government, KY Solid Waste Collection and Cost-of-Service Study	***Brad Stone - Senior Admin Officer*** 200 East Main Street Lexington, KY 40507 (859) 425-2520 bstone@lexingtonky.gov

E. PROJECT PERSONNEL ASSIGNMENTS & QUALIFICATIONS

We are pleased to introduce the following MSW Consultants professional staff assigned to this project, as well as their roles and qualifications for supporting a collection system evaluation, cost-of-service and rate study.

CYNTHIA M. MITCHELL, SENIOR PROJECT MANAGER

Project Manager

Cynthia Mitchell is the firm's Client Manager for the Midwest region, operating out of Central Missouri. She joined MSW Consultants in 2016 after spending 20 years working in the solid waste industry for public sector and non-profit organizations. She most recently served as the Solid Waste Utility Manager for the City of Columbia (Missouri), where she managed the operational and financial aspects of residential and commercial trash and recoverables collection, a Class I bioreactor landfill, a compost facility and material recovery facility (MRF). Of particular relevance, Ms. Mitchell managed a full cost-of-service and rate study for the City in 2015. Her expertise encompasses all aspects of a full-service collection, disposal and recovery solid waste utility, including planning and budgeting; personnel management; procurement/contracts; capital projects; rolling fleet and routing; heavy equipment; subtitle D and bioreactor landfill; waste analysis, minimization and sustainability programs; facility operation and regulatory compliance. She is an active member of multiple public works/solid waste and recycling trade associations.

JOHN CULBERTSON, VICE PRESIDENT

Principal-in-Charge and Quality Assurance Officer

John Culbertson is a Principal of MSW Consultants with a background in solid waste management and recycling planning, financial analysis, procurement, and program optimization. Mr. Culbertson has 20 years of experience providing waste management consulting services to federal, state, county and city organizations across the nation. He specializes in helping municipalities implement integrated waste management strategies that align policy, education, revenue mechanisms, service contracts, and programs for effective diversion and environmentally sound waste management A graduate of Yale

University, Mr. Culbertson is a long-time member of the Solid Waste Association of North America (SWANA) and several state recycling associations, and is a frequent speaker at national waste management and recycling conferences.

WALT DAVENPORT, PRESIDENT

Collections Systems Analysis

As the founder of MidAtlantic Solid Waste Consultants in 1992, and with over 30 years of waste management industry experience, Walt Davenport has extensive operational background and knowledge of waste and recycling collection, processing and disposal operations. With roots in the solid waste collection and hauling industry and the past 15 years spent consulting for the benefit of municipal and state organizations to solve waste industry problems, Mr. Davenport specializes in helping municipalities transition and optimize their collection systems. He specializes in collection procurement strategy; routing and route balance; onboard data management systems; waste characterization; and analysis of local and regional waste and recycling market dynamics.

R. STEPHEN LYNCH, EXECUTIVE CONSULTANT

Financial/Rate Advisor

Mr. Lynch is a nationally recognized expert in the fields of Solid Waste Management Planning and Solid Waste Project Financing. As an SEC Registered Municipal Financial Advisor, Mr. Lynch has completed over $4 billion of municipal and private sector financings for Solid Waste projects throughout the US, including the $144 million Lisbon CT WTE plant for the Eastern Connecticut Resource Recovery Authority (ECRRA), the $45 million restructuring and refinancing of the Hudson Falls (NY) WTE facility and the expansion of the City of Albany's (NY) Landfill Gas to energy project, among others. He has developed financial pro forma models for operating landfills, transfer stations, and other solid waste facilities and leads the firm's strategic analysis practice.

FRANCESCO CANEPA, ANALYST

Rate Model Support

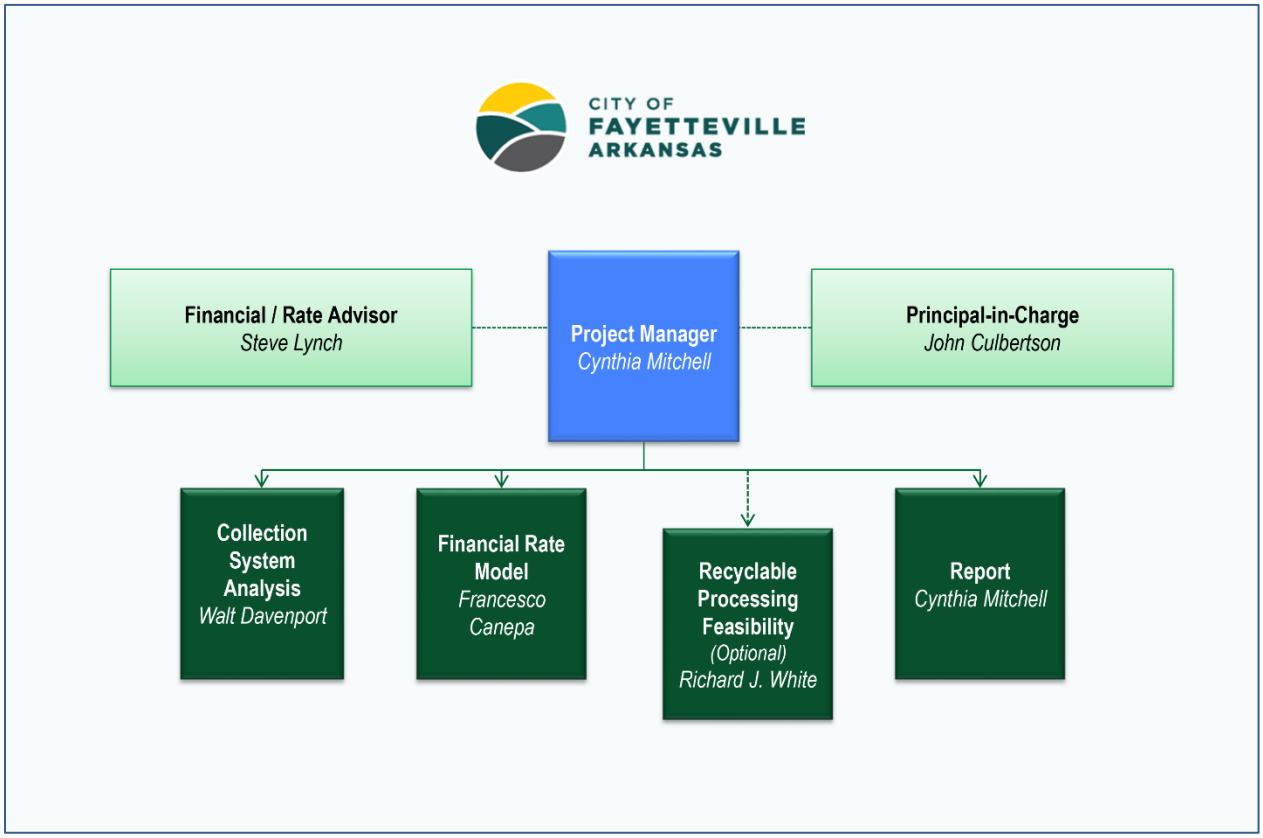
Mr. Canepa has applied his academic background in economics to become a seasoned analyst with strong spreadsheet programming and modeling skills. He previously spent nine months working as a research intern for WasteInsight™, MSW Consultants' proprietary waste market database. In addition to supporting the firm's consulting projects, Mr. Canepa continues to lead the WasteInsight™ research team where he specializes in analyzing collection and disposal markets and contracts.

RICHARD J. WHITE, SENIOR CONSULTANT

Recyclables Processing Feasibility

Mr. Dick White has 40 years of progressive leadership in MRF process design, processing efficiency optimization, and marketing for leading U.S. recycling companies. He has spent his career on the frontlines of U.S. material recovery technology advances for multiple leading recyclables processors. With a background in mechanical engineering, Mr. White's expertise has advanced from early densification technologies to state-of-the-art single stream and mixed waste processing equipment and configurations. Mr. White has managed over two dozen MRF developments and retrofits with responsibility for both operational and financial management.

A project organization chart is shown below, and resumes of the project team are included in Appendix A.



F. ABILITY TO RESPOND IN A TIMELY MATTER

MSW Consultants has developed the following project schedule with consideration to existing project work. Project phases and tasks are projected to be completed over six months following receipt of a signed contract and official Notice To Proceed. The key staff identified to perform this project have sufficient availability to meet this schedule.

Projected Project Schedule

	Task	Month 1				Month 2				Month 3				Month 4					Month 5				Month 6				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5
Phase 1 COMPILE & REVIEW EXISTING SYS/INFO																											
1.1	Info Request and Data Review																										
1.2	Kick-off Meeting				◆																						
1.3	Facility Assessment (TS, Recycling, Composting)																										
1.4	Asset Assessment																										
1.5	Collections Operation Audit																										
1.6	Working Meeting								◆																		
Phase 2 Cost and Rate Analysis																											
2.1	Cost of Service Analysis																										
2.2	CIP Review																										
2.3	Test Year Revenue Sufficiency Requirements																										
2.4	Rate Design																										
2.5	Working Meeting															◆											
Phase 3 Report																											
3.1	Draft Report																			◆							
3.2	Final Report																								◆		
3.3	Presentation(s)																										◆
Optional Tasks																											
	Organics Collection Pro Forma Cost Estimate																										
	Recycling Collection Comparability Analysis																										
	Recyclables Processing Planning Cost Estimate																										
	Update Ordinance (TBD)																										

G. COST

MSW Consultants will provide the scope of services described in this proposal for a total price of $54,846, as shown by Task in the table below.

	PHASE	Hours	Labor Expense	Other Expenses	Subtotal by Task
1	Compile & Review Existing System/Information	140	$15,240	$4,273	$19,513
2	Cost and Rate Analysis	188	$21,280	$2,249	$23,529
3	Report [1]	88	$9,720	$2,084	$11,804
	Grand Total	**416**	**$46,240**	**$8,606**	**$54,846**
Optional Tasks [2]		TBD	TBD	TBD	TBD

[1] Pricing assumes 1 travel event to cover the presentation(s) to Fayetteville management. Additional trips could be added at a cost of $2,680

[2] Pricing to be determined if city desires these add-on services

APPENDIX A

RESUMES

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CYNTHIA M. MITCHELL

Senior Project Manager

Experience Summary

- 20 years serving the City of Columbia Public Works and Utilities Departments
- Successfully managed Collection, Landfill, Composting and Material Recovery Facility Operations

Education

- B.S. Business Administration-Finance, **Northeast Missouri State University**
- MBA, **William Woods University**
- Engineering Coursework, **University of Missouri - Columbia**

Select Professional Affiliations

- Member, **American Public Works Association (APWA)**
- Member, **Missouri Recycling Association (MORA)**
- Member, **Missouri Waste Control Coalition (MWCC)** 1998-2007, 2010 - current
- Member, **Solid Waste Association of North America**, 1998-2007, 2010-current

Key Skills

- Project Management
- Financial Analysis, Budgeting/Capital Planning
- Waste Minimization & Sustainability
- Landfill & Recovery Operation

Ms. Mitchell has dedicated her career to being a resource to officials responsible for integrated solid waste management in governmental, institutional and commercial entities.

Ms. Mitchell's experience encompasses all aspects of a vertically integrated collection, disposal and recovery solid waste utility. She has the unique understanding of all facility operations, including planning and budgeting, personnel management, procurement/contracts and capital projects; landfill operations, including regulatory compliance, heavy equipment, subtitle D, and bioreactor disposal; collections, including rolling fleet and routing; and recovery, including waste analysis, minimization and sustainability programs.

Ms. Mitchell is the firm's Midwest Region Sr. Project Manager and works out of Columbia, MO and Orlando, FL.

Select Project Experience

Howard County/Northeast Maryland Waste Disposal Authority (NMWDA), Alpha Ridge Landfill Traffic Study (Ongoing): Ms. Mitchell managed a study to analyze traffic flows through a busy county transfer station, wood waste processing center and heavily utilized citizen drop-off center.

Ft. Pierce (FL), Collection Efficiency Study (2017): Ms. Mitchell conducted route observations, productivity modeling and fleet assessment, summarizing for the client the findings and potential areas for advancing the operation.

West Central Solid Waste Management District (MO), 5 Year Guidance Plan (2008): Ms. Mitchell assessed existing solid waste services within the five-county district, identified options for providing additional services most feasibly and provided recommendations for implementation and presented reports to board.

Kaysinger Recycle and Disposal (MO), Recycling Study (2007-2008): Ms. Mitchell conducted study for multi-county rural region and provided recommended recycling service plan including budgeting, scheduling and centralized service locations.

Career Highlights

City of Columbia (MO), Solid Waste Utility Manager

Ms. Mitchell served in positions of Solid Waste Utility Manager, Landfill & Recovery Superintendent, Waste Minimization Supervisor, Waste Minimization Coordinator, and Administrative Support throughout twenty years of service. She had responsibility over full-service trash and recycling collection for approximately 45,000 residential accounts, 2,000 commercial accounts, commercial food waste collection for composting, and servicing of 13 citywide recycling drop-off locations; operation of community yard waste drop-off sites and Compost Facility; operation of regional Material Recovery Facility; operation of regional Sanitary Bioreactor Landfill. Responsibilities included capital improvement planning and annual budgeting around $20 million. Ms. Mitchell initiated the city's collection truck conversion to Compressed Natural Gas, managed centralized billing for University of Missouri-Columbia service, established a unique billing structure for the downtown business district incorporating trash and recycling service charges based on customer category and size, and planned and managed numerous contracts for both capital improvement and consulting projects.

JOHN CULBERTSON
Vice President

Experience Summary

- 20 years as a planning consultant in the waste management and recycling industry
- Successfully performed and managed consulting engagements for over 40 municipalities nationally

Education/Certifications

- B.A. Economics, **Yale University**
- SWANA Certified **Municipal Solid Waste Management Systems Manager**

Select Professional Affiliations

- Technical Advisor for Waste Management Industry, **Gerson Lehman Group Council of Advisors,** 2004-present
- Member, **Solid Waste Association of North America**, 2000-present
- Member, **National Recycling Coalition**, 2004-present

Key Skills

- Strategic/Master Planning
- Financial Analysis and Rate Development
- Procurement Assistance and Contract Negotiation
- Waste Composition and Generation Analysis
- Recycling Program Development

Mr. Culbertson has dedicated his career to providing waste management and recycling consulting services to federal, state, county and city governments and organizations in Florida and across the nation. His expertise encompasses all aspects of the waste management industry, including solid waste system planning and strategic analysis; financial analysis and system funding; procurement assistance and contract negotiation; collection efficiency and routing; transfer and long-haul logistics; MRF operations and efficiency; waste stream and waste generation analysis; and a wide range of information management and statistical analysis. He is the firm's QA/QC manager and also manages its Orlando, Florida office.

Select Project Experience

Louisville Metro Government (KY), Comprehensive Solid Waste Plan (2017), Technical Advisor.

Montgomery County (MD)/NMWDA, Shady Grove Transfer Station Evacuation Plan (Ongoing), Technical Advisor.

DONG Bioenergy, Northeast Market Research (Ongoing), Client Manager.

Grand Teton National Park (WY), Zero Waste to Landfill Plan (2017): Client Manager and Technical Advisor.

City of Georgetown (KY), Collection System Operational and Rate Evaluation (2016), Client Manager and Financial Specialist.

Central Connecticut Solid Waste Authority (CT), Disposal & Recyclables Processing Procurement (2016), Client Manager.

Hennepin County (MN), Analysis of City of Minneapolis Waste Stream (2016), Study design and Client Manager.

Confidential Client (Kingdom of Saudi Arabia), Municipal Solid Waste Compost Plant Recommissioning Evaluation (2016), Project Coordinator.

City of Alamosa (CO), Solid Waste Rate Evaluation (2016), Technical Advisor for Rate Study.

Liberty County, Rate Study (GA) (2016), Project Manager.

Centre County Recycling & Refuse Authority (PA), Single Stream Recycling Analysis and Rate Study (2016), Project Manager.

Winchester Municipal Utilities, Commercial Recycling and Tip Fee Study (2016), Client Manager.

Borough of State College (PA), System Evaluation and Cost-of-Service/Rate Study (2015), Technical Advisor.

Town of Front Royal (VA), Collection System Analysis (2015), QA/QC Officer.

City of Muskogee (OK), Collection System Analysis (2015), Technical Advisor, Rate Study.

City of Boston (MA), Residential Food Waste Evaluation (2014), Project Manager.

Lexington-Fayette Urban County Government (KY), Cost-of-Service Analysis (2012): Project Manager.

WALT DAVENPORT
Owner/President

Experience Summary

- ☑ 30 years in the waste management/recycling industry
- ☑ Collection System Optimization and Waste Composition Expert

Select Professional Affiliations

- ☑ Member, **Solid Waste Association of North America**, 2006-present
- ☑ **Professional Recyclers of Pennsylvania**, 2000-present

Key Skills

- ☑ Operations Management
- ☑ Collection Efficiency and Automated Technology
- ☑ Procurement Assistance and Contract Negotiation
- ☑ Waste Characterization
- ☑ Solid Waste Fleet Management
- ☑ Facility Conceptual Design & Feasibility Studies

Education/Certifications

- ☑ SWANA Certified **Collection Systems Manager**
- ☑ California Resource Recovery Association **Zero Waste Certification**
- ☑ Meteorology coursework (2.5 years), State University of New York at Oswego
- ☑ Business Management coursework, Siena College, Albany, NY

MSW Consultants founder and President Walt Davenport has worked in the public and private sectors of the solid waste management industry as a team leader, technical expert, operations specialist, and problem solver. His early career in the private sector was characterized by his ability to increase productivity and profitability, improve customer and employee satisfaction, and negotiate and manage contracts. Since the early 1990s, Mr. Davenport has shifted his consulting focus by assisting dozens of state, county, and city clients across the nation as a subcontractor and, since 2005, as the president of the firm. With extensive experience in collection efficiency and routing, waste composition and generation studies, facility and collection system management and operations, and as a senior business manager, Mr. Davenport brings a wealth of knowledge and resources for the benefit of the firm's clients.

Selected Project Experience

City of Tavares (FL), Commercial Solid Waste and Residential Collection Procurement (2017), Principal-in-Charge.

Confidential Client (OK), Solid Waste Management Consulting Services (2017): Project Manager.

Town of West Hartford (CT), Solid Waste Management Plan (2016): Project Manager.

Ft. Pierce (FL), Collection Efficiency Study (2017) Technical Manager.

City of Georgetown (KY) Collection Analysis (2017): Technical Manager for collection optimization.

Winchester Municipal Utilities (KY), Collection Service Optimization and Rate Study (2016): Technical Manager.

Confidential Client, Expert Testimony (2016): Subject Matter Expert.

Louisville Metro Government (KY), Comprehensive Waste Management Plan (2017): Client Manager and Technical Manager for collection optimization.

Centre County Recycling and Refuse Authority (PA), Single Stream Recycling Analysis and Rate Study (2016): Technical Manager for recycling collection analysis.

Town of Front Royal (VA), Collection System Optimization (2016): Client and Project Manager.

Centre Region Council of Governments (PA), Brush Collection Study (2015): Project Manager.

State College Borough (PA), Cost-of-Services and Single Stream Recycling Collection Feasibility Study (2015): Client and Project Manager.

City of Muskogee (OK), Solid waste Cost-of-Service and Rate Study and Collection System Efficiency Study (2015): Project Manager.

City of Columbia (MO), Cost-of-Service and Rate Study (2015): Technical Manager, collection optimization.

Northeast Maryland Waste Disposal Authority - Montgomery County (MD), CSX Rail Haul Contract Negotiation Assistance (2014): Client Manager.

R. STEPHEN LYNCH
Senior Executive Consultant

Experience Summary

- ☑ Financial and Economic Analysis of Solid Waste and Recycling Systems
- ☑ Solid Waste and Recycling Municipal Planning
- ☑ Lifecycle Econometric Modeling and Valuation of Landfills
- ☑ Feasibility Studies
- ☑ Implementation of Cost Saving Solid Waste and Recycling Programs

Education

- ☑ B.A. Economics, Magna Cum Laude, **Bowdoin College**
- ☑ MBA, **Wharton School of Finance**
- ☑ General Course, **London School of Economics**

Awards

- ☑ Rhodes Scholar Nominee
- ☑ James Bowdoin Scholar

R. Stephen Lynch, who joined MSW Consultants in 2015, has served as a financial expert and trusted consultant in the waste and recycling industry for the majority of his career. He founded R. S. Lynch & Company to advise local governments on solid waste facility development, financing and planning in 1987; and Caribbean Sustainability Initiatives LTD in 2011 to offer similar services to that region. Prior to his consulting career, he served as First Vice President, National Solid Waste Financing Coordinator for E.F. Hutton and Company Inc. In this capacity, he managed all solid waste and environmental projects, nationwide including the valuation and financing of solid waste disposal facilities. Mr. Lynch has managed the planning and financing of over $3 billion of solid waste facilities and systems nationwide.

Mr. Lynch offers MSW Consultants' clients unsurpassed experience in matters of strategic planning, facility development, econometric lifecycle modeling of solid waste facilities, procurements including public/private partnerships, contract negotiations, and identifying opportunities for municipal clients to achieve efficiencies and costs savings.

Select Project Experience

Eastern Connecticut Resource Recovery Authority (ECRRA), Waste-to-Energy Options Evaluation -$128,000,000 Facility Development and Financing (1990-present), Project Administrator.

DONG Bioenergy, Northeast Market Research (2017), Project Manager.

New York Department of Environmental Conservation (NY) Economic Analysis of Waste Plastics-to-Oil Sourcing in New York State (2017), Technical Advisor.

Finch Paper, Disposal Market Analysis (2016): Project Manager.

Centre County (PA) and Penn State University Financial, Economic and Environmental Lifecycle Modeling (2010): Financial Modeling and WTE Anlaysis.

Warren and Washington County (NY) Cost Saving Programs and Valuation of Solid Waste Assets (2005-2011): Project Manager, multiple projects.

Lindroth Development Corporation (New Providence, The Bahamas), Financial and Economic Analysis of a new $150,000,000 Waste-to-Energy Facility (2011-2012): Financial advisor.

Williams Industries Inc. (Barbados, WI), Financial and Economic of Analysis of a new $78,000,000 Waste-to-Energy Facility (2012 to 2013): Financial Advisor.

Warren County (NY) LSWMP Implementation (2009-2012): Project Manager.

South Central Regional Council of Governments (CT) Waste Disposal Evaluation (2008-2009): Project Manager.

Albany (NY) Financial & Economic Analysis and Public/Private Contract Negotiation (2008-2009): Procurement Advisor.

FRANCESCO CANEPA

Analyst

Education/Certifications

- ☑ BS, Economics, **University of Central Florida,** Orlando, FL
  - Minor in Digital Media

Key Skills

- ☑ Market Research
- ☑ Process Documentation
- ☑ Data Analysis
- ☑ Microsoft Office
- ☑ Adobe Creative Suite

Memberships

- ☑ Young Professionals Group, Solid Waste Association of North America (SWANA)

Mr. Canepa is a recent addition to MSW Consultants with an academic background in economics and a passion to create a positive impact on the environment. He previously spent nine months working as a research intern for *WasteInsight*™, MSW Consultants' proprietary waste market database. In addition to supporting the firm's consulting projects, Mr. Canepa continues to lead the *WasteInsight*™ research team where he specializes in analyzing collection and disposal markets and contracts.

Recent Projects

New York City (NY), Citywide Residential and School Waste Composition (Ongoing): Mr. Canepa served as a sample manager responsible for collecting yard and food waste samples from residential truck routes around the City and transporting the samples to a central location as part of a waste characterization study of New York City's organics waste stream.

WasteInsight™ Portal (Ongoing): Mr. Canepa serves as the lead market analyst and manages the market research team tasked with populating WasteInsight™ with waste management program and contract information from over 3,700 municipalities nationwide. He has created process instruction documentation for the streamlining of research efforts and set up spreadsheet-based progress trackers to capture key research metrics. In addition, Mr. Canepa is responsible for compiling and tracking government vendor bid opportunities for MSW Consultants.

Enevo (FL), Restaurant Waste Audit (2017): Mr. Canepa measured the quantity of disposed wastes and estimated the composition of the materials from a large restaurant serving the tourist area of Orlando. He analyzed the data and estimated the quantity and composition for use by the waste broker managing the account.

Mattress Recycling Council (CA), Disposal Study (2017): Mr. Canepa conducted a study to record and quantify mattress disposal patterns at a mattress recycling plant in southern California. He subsequently organized and analyzed the data for delivery in a letter report to the client.

DONG Energy (MA), Central Massachusetts Collection Market Research (2017): Mr. Canepa conducted a localized collection market study in Massachusetts to identify the different collection and disposal arrangements found on the local government level.

Indian River Shores (FL), Solid Waste Franchise Technical Assistance (2017): Mr. Canepa provided waste route audit support and collected neighborhood data to identify the varying service levels provided to a high-end oceanside town with expectations of premium collection services. He then created a customized pricing sheet and organized waste management program information to create a comprehensive overview of services for an RFP for a new franchise collector.

DONG Energy, Northeast Disposal Market Research (2016): Mr. Canepa conducted a disposal facility study for the northeast market identifying current disposal facilities, agreements, and pricing in order to identify opportunities for a U.S. market entry for the client.

RICHARD JAMES WHITE

Senior Associate – Processing Design

Experience Summary

- ☑ 40 years of progressive leadership in MRF process design, processing efficiency optimization, and marketing for leading U.S. recycling companies

Education

- ☑ Michigan State University, Advanced Management Program, **Masters of Business Administration**
- ☑ University of Detroit, **Bachelor of Mechanical Engineering**

Career Highlights

- ☑ 39 years in materials processing industry culminating as **Vice President of Technology** for **FCR, Inc.,** the nation's largest merchant MRF owner

Dick White has spent his career on the frontlines of U.S. material recovery technology advances for multiple leading recyclables processors. With a background in mechanical engineering, Mr. White's expertise has advanced from early densification technologies to state-of-the-art single stream and mixed waste processing equipment and configurations. Mr. White has managed over two dozen MRF developments and retrofits with responsibility for both operational and financial management.

Relevant Project Experience

Denali National Park (AK), Recycling Processing Plan (2016): Mr. White led a focused planning effort with the National Park Service and its concessions vendor to design and identify costs for building a Recycling Center on park property to receive, consolidate and process recyclable materials.

Centre County (PA) Recycling and Refuse Authority, Single Stream Recycling Feasibility Evaluation and Rate Study (2016): Mr. White evaluated the feasibility of converting the Authority's curb-sort MRF to accommodate single stream recyclables. He developed the equipment configuration, capital and operating costs for retrofitting the existing MRF.

Confidential Client, Due Diligence Evaluation of Single Stream MRF (2015): Mr. White performed due diligence for a private investor to audit the operating and financial performance of a merchant single stream recycling facility serving regions in New York and Connecticut.

New York City Transit Authority (NY), System Waste Audit (2013): Mr. White evaluated the operations of the Authority's contracted state-of-the-art material recovery facility (MRF). The evaluation included review of the equipment, process configuration, recovery rates relative to industry standards and recommendations for improvements in the incoming material stream.

Consulting Project Summary

Mr. White has served as a consultant to public and private facility owners since 2012. His consulting engagements include:

- ☑ ReCommunity (FCR) - $2.7 mil project in Ithaca, NY MRF site and equipment renovation and update
- ☑ ReCommunity (FCR) - $4.5 mil conversion of the Detroit MRF from Dual to Single Stream
- ☑ Casella Recycling Rutland, VT - $3.5 mil conversion of the Rutland MRF from Dual to Single Stream
- ☑ Glassvac assist in creating business plan and start-up plan for new glass processing business
- ☑ ReCommunity – Develop RFP, Equipment Design and Vendor selection on SS MRF projects in Brookhaven, NY, Broward County, FL
- ☑ CP Manufacturing – Consulted with them on Business Planning and Organizational design
- ☑ Casella Recycling - Develop RFP, Equipment Design and Vendor selection on SS MRF projects in Manchester, NH, Lewiston, ME, Boston, MA

APPENDIX B

REQUIRED RESPONSES

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CITY OF FAYETTEVILLE ARKANSAS

City of Fayetteville, Arkansas
Purchasing Division – Room 306
113 W. Mountain
Fayetteville, AR 72701
Phone: 479.575.8220
TDD (Telecommunication Device for the Deaf): 479.521.1316

RFP (REQUEST FOR PROPOSAL)

REQUEST FOR PROPOSAL: RFP 17-16, Recycling and Trash Collection Rate Study
DEADLINE: Thursday, November 09, 2017 before 2:00:00 PM, local time
RFP DELIVERY LOCATION: Room 306 – 113 W. Mountain, Fayetteville, AR 72701
PURCHASING AGENT: Les McGaugh, lmcgaugh@fayetteville-ar.gov
DATE OF ISSUE AND ADVERTISEMENT: Monday, October 16 & October 23, 2017

REQUEST FOR PROPOSAL
RFP 17-16, Recycling and Trash Collection Rate Study

No late proposals shall be accepted. RFP's shall be submitted in sealed envelopes labeled with the project number and name as well as the name and address of the firm.

All proposals shall be submitted in accordance with the attached City of Fayetteville specifications and bid documents attached hereto. Each Proposer is required to fill in every blank and shall supply all information requested; failure to do so may be used as basis of rejection. Any bid, proposal, or statements of qualification will be rejected that violates or conflicts with state, local, or federal laws, ordinances, or policies.

The undersigned hereby offers to furnish & deliver the articles or services as specified, at the prices & terms stated herein, and in strict accordance with the specifications and general conditions of submitting, all of which are made a part of this offer. This offer is not subject to withdrawal unless upon mutual written agreement by the Proposer/Bidder and City Purchasing Agent.

Name of Firm: MSW Consultants, LLC

Contact Person: John Culbertson Title: Vice-President

E-Mail: jculbertson@mswconsultants.com Phone: (800) 679-9220

Business Address: 11875 High Tech Avenue, Suite 150

City: Orlando State: FL Zip: 32817

Signature: John Culbertson Date: 11/03/2017

Proposers shall include this form completed in its entirety with RFP response. This form shall not count towards page limitations set forth in the RFP.

1. DISCLOSURE INFORMATION

Proposer shall disclose any possible conflict of interest with the City of Fayetteville, including, but not limited to, any relationship with any City of Fayetteville employee. Proposer response must disclose if a known relationship exists between any principal or employee of your firm and any City of Fayetteville employee or elected City of Fayetteville official.

If, to your knowledge, no relationship exists, this should also be stated in your response. Failure to disclose such a relationship may result in cancellation of a purchase and/or contract as a result of your response. This form must be completed and returned in order for your bid/proposal to be eligible for consideration.

PLEASE CHECK ONE OF THE FOLLOWING TWO OPTIONS, AS IT APPROPRIATELY APPLIES TO YOUR FIRM:

✓ 1) NO KNOWN RELATIONSHIP EXISTS

_____2) RELATIONSHIP EXISTS (Please explain):_____

I certify that; as an officer of this organization, or per the attached letter of authorization, am duly authorized to certify the information provided herein are accurate and true; and my organization shall comply with all State and Federal Equal Opportunity and Non-Discrimination requirements and conditions of employment.

2. PRIMARY CONTACT INFORMATION

At the discretion of the City, one or more firms may be asked for more detailed information before final ranking of the firms, which may also include oral interviews. NOTE: Each Proposer shall submit to the City a primary contact name, e-mail address, and phone number (preferably a cell phone number) where the City selection committee can call for clarification or interview via telephone.

Corporate Name of Firm: MidAtlantic Solid Waste Management Consultants, LLC (MSW Consultants)

Primary Contact: John Culbertson Title of Primary Contact: Vice-President

Phone#1 (cell preferred): (407) 580-4017 Phone#2: (407) 380-8951

E-Mail Address: jculbertson@mswconsultants.com

3. ACKNOWLEDGEMENT OF ADDENDA

Acknowledge receipt of addenda for this invitation to bid, request for proposal, or request for qualification by signing and dating below. All addendums are hereby made a part of the bid or RFP documents to the same extent as though it were originally included therein. Proposers/Bidders should indicate their receipt of same in the appropriate blank listed herein. Failure to do so may subject vendor to disqualification.

ADDENDUM NO.	SIGNATURE AND PRINTED NAME	DATE ACKNOWLEDGED

4. PRICING:
Pricing shall be attached as a separate form. Reference RFP for details on what all pricing shall include.

5. DEBARMENT CERTIFICATION:
As an interested party on this project, you are required to provide debarment/suspension certification indicating in compliance with the below Federal Executive Order. Certification can be done by completing and signing this form.

Federal Executive Order (E.O.) 12549 "Debarment and Suspension" requires that all contractors receiving individual awards, using federal funds, and all sub-recipients certify that the organization and its principals are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency from doing business with the Federal Government.

Signature certifies that neither you nor your principal is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

Questions regarding this form should be directed to the City of Fayetteville Purchasing Division.

NAME OF COMPANY: MSW Consultants, LLC

PHYSICAL ADDRESS: 11875 High Tech Avenue, Suite 150, Orlando, FL 32817

MAILING ADDRESS: 11875 High Tech Avenue, Suite 150, Orlando, FL 32817

PRINTED NAME: John Culbertson

PHONE: (800) 679-9220 FAX: (800) 679-9220

E-MAIL: jculbertson@mswconsultants.com

SIGNATURE: John Culbertson

TITLE: Vice-President DATE: 11/03/2017

DUNS#: 174225958 TAX ID: 20-1872233

City of Fayetteville
RFP 17-16, Recycling and Trash Collection Rate Study
SECTION B: Vendor References

The following information is required from all firms so all statements of qualification may be reviewed and properly evaluated:

COMPANY NAME: MSW Consultants, LLC

NUMBER OF YEARS IN BUSINESS: 13 HOW LONG IN PRESENT LOCATION: 5

TOTAL NUMBER OF CURRENT EMPLOYEES: 10 FULL TIME 7 PART TIME

NUMBER OF EMPLOYEES PLANNED FOR THIS CONTRACT: 4 FULL TIME 1 PART TIME

PLEASE LIST FOUR (4) REFERENCES THAT YOU HAVE PREVIOUSLY PERFORMED CONTRACT SERVICES FOR WITHIN THE PAST FIVE (5) YEARS (All fields must be completed):

1. City of Columbia, MO
COMPANY NAME

Columbia, MO 65205
CITY, STATE, ZIP

David Nichols, P. E. Public Works Director
CONTACT PERSON

(573) 874-7253
TELEPHONE

(573) 874-7132
FAX NUMBER

david.nichols@como.gov
E-MAIL ADDRESS

2. Centre County Recycling & Refuse Authority
COMPANY NAME

Bellefonte, PA 16823
CITY, STATE, ZIP

Joanne Shafer - Deputy Director/Recycling
CONTACT PERSON

(814) 238-7005 x.113
TELEPHONE

FAX NUMBER

jshafer@centrecountyrecycles.org
E-MAIL ADDRESS

3. Louisville Metro Government
COMPANY NAME

Louisville, KY 40217
CITY, STATE, ZIP

Pete Flood - Compliance & Enforcement Manager
CONTACT PERSON

(502) 574-3290
TELEPHONE

FAX NUMBER

pete.flood@louisvilleky.gov
E-MAIL ADDRESS

4. Lexington-Fayette Urban County Government
COMPANY NAME

Lexington, KY 40507
CITY, STATE, ZIP

Brad Stone - Admin Officer Sr.
CONTACT PERSON

(859) 425-2520
TELEPHONE

FAX NUMBER

bstone@lexingtonky.gov
E-MAIL ADDRESS

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/29/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Connie Phillips Insurance, Inc.
605 West Patrick Street
Frederick MD 21701

CONTACT NAME: Wendy Mendez
PHONE (A/C, No, Ext): (301)662-5717
FAX (A/C, No): (301)662-0556
E-MAIL ADDRESS: wmendez@insurance-financial.net

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Crum & Forster	
INSURER B : Hartford Ins Co of the Midwest	00914
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Mid Atlantic Solid Waste Consultants LLC
11875 High Tech Ave., Suite 150
Orlando FL 32817

COVERAGES CERTIFICATE NUMBER: CL16112911521 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X $5,000 deductible X Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:			EPK-115031	12/4/2016	12/4/2017	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Professional Liability	$ 4,000,000 $ 50,000 $ 5,000 $ 4,000,000 $ 4,000,000 $ 4,000,000 $ 4,000,000
A	AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			EPK-115031	12/4/2016	12/4/2017	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 0			EFX-106514	12/4/2016	12/4/2017	EACH OCCURRENCE AGGREGATE	$ 1,000,000 $ 1,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		30WECEG7363	12/31/2016	12/31/2017	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
A	Professional Liability			EPK-115031	12/4/2016	12/4/2017	Each Wrongful Act	4,000,000
A	Pollution Liability			EPK-115031	12/4/2016	12/4/2017	Each Pollution	4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Insureds Copy

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Connie Phillips/CEP Connie Phillips

Gisele Papadakis

From: McGaugh, Les <lmcgaugh@fayetteville-ar.gov>
Sent: Wednesday, November 01, 2017 10:03 AM
To: Gisele Papadakis
Subject: RE: Questions regarding RFP 17-16 Recycling and Trash Collection Rate Study

Gisele,
Thank you for your questions and your interest in the project.
Your answers are as follows:
In Section 2. Scope of Work and Project Conditions (page 15), the RFP states "The study shall include an assessment of our existing operations, to include at a minimum, an analysis of the City of Fayetteville's Recycling and Trash Collection user characteristics, a review of the City's current collection equipment, review of the City's current collection routes and timing, make recommendations for refinements and modifications to the collections system and provide feasibility level cost estimates for implementation of said recommendations."

Also,
Please use the reference sheet to put a minimum of three, four spaces are available if you choose to utilize them all.
Thank you,

Les McGaugh
Purchasing Agent
Purchasing Division
113 W. Mountain
City of Fayetteville, Arkansas 72701
lmcgaugh@fayetteville-ar.gov
T 479.575.8220 | **F** 479.575.8257
Website | Facebook | Twitter | Instagram | YouTube

From: Gisele Papadakis [mailto:GPapadakis@mswconsultants.com]
Sent: Wednesday, November 01, 2017 8:58 AM
To: McGaugh, Les <lmcgaugh@fayetteville-ar.gov>
Subject: Questions regarding RFP 17-16 Recycling and Trash Collection Rate Study

Dear Mr. McGaugh,
Please see below some questions regarding the RFP 17-16:

Could the city verify whether they are asking for a rate study strictly from a cost of service perspective, or also including an operations analysis for its various services and facilities?

Please clarify how many references you are requesting; in the Vendor References Form (pg. 14 of the RFP) it lists four and in the Proposal Content (pg.19 of the RFP) it lists three references.

Thanks in advanced.
Best regards,

Gisele Papadakis, Director of Marketing
MSW CONSULTANTS

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11875 High Tech Avenue | Suite 150 | Orlando, FL 32817
(800) 679-9220 x 24 toll free phone/fax
(407) 392-0378 direct
~~~~~~~~~~~~~~~~~~~~~~~~~~~~
gpapadakis@mswconsultants.com
www.mswconsultants.com

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FAYETTEVILLE

MSW CONSULTANTS

mswconsultants.com