Proposal for
Mixed Waste Processing Facility
Feasibility Study

March 7, 2017

Prepared for:  Mr. Tom McGlasson Jr., Executive Director
Monroe County Solid Waste Management District
3400 S. Walnut Street
Bloomington, IN 47401

Submitted by:  Kessler Consulting, Inc.
innovative waste solutions
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813-971-8333
We Walk the Walk!
Green Practices of the Kessler Consulting Team

We work in a green office.

- KCI is proud to be a carbon neutral company.
- We received the Earth Charter U.S. 2008 Sustainable Business award.
- We have been an EPA WasteWise member since 1999 and were named the 2002 National Small Business Champion.
- We have been recognized by the Florida Department of Environmental Protection for our outstanding recycling efforts.
- We utilize on-site recycling and food waste composting, double-sided printing, equipment reuse, low-flow water products, xeriscaping, nontoxic cleaning supplies, energy-efficient lighting and equipment, and thermostat control programs to reduce waste and conserve energy and water.
- We purchase all of our paper products with post-consumer recycled content and utilize reusable/refillable items such as pens, pencils, and ink and toner cartridges.
- We utilize hybrid sedans for all automobile travel.
- KCI’s employees volunteer significant professional time to sustainable endeavors, including the Solid Waste Association of North America (SWANA), SWANA Florida Sunshine Chapter, U.S. Composting Council (USCC), U.S. Green Building Council (USGBC), Florida Green Building Coalition (FGBC), Recycle Florida Today (RFT), American Society for Testing and Materials (ASTM) International, and other solid waste and recycling organizations.

We live in green homes.

- We actively recycle.
- Many of our employees compost food and yard waste, xeriscape, grass-cycle, and practice home water conservation as a general practice.
- Many of our employees use Energy Star® rated appliances, compact fluorescent light bulbs and low flow toilets and faucets.
- Some of our employees utilize solar panels to generate a portion of their electrical needs.

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

[Logos of various sustainability certifications and partnerships]

Printed on recycled-content paper
March 7, 2017

Mr. Tom McGlasson Jr., Executive Director
Monroe County Solid Waste Management District
3400 S. Walnut Street
Bloomington, IN 47401

Re: RFP for Mixed Waste Processing Facility Feasibility Study

Dear Mr. McGlasson:

Kessler Consulting, Inc. (KCI) is pleased to submit this proposal to conduct a Mixed Waste Processing Facility (MWPF) Feasibility Study for the Monroe County Solid Waste Management District (District). We developed our proposed scope of work using a facts-based and results-oriented approach to the work. Unlike many consultants, KCI has no conflict of interest (perceived or potential). We do not work for trade associations or private waste service companies with a policy position for or against any type of materials processing. We have no interest in future design or engineering services, no business relations with potential bidders, and no vested interest in the outcome of the project.

Our sole focus is to provide the District with a comprehensive and insightful assessment of the feasibility of materials and mixed waste processing specifically in the local context of Monroe County. To develop our proposal, we conducted preliminary research contacting a number of individuals and groups knowledgeable about regional, Monroe County, Bloomington, and Indiana University solid waste management. Also, one of our staff formerly worked at the Indiana Department of Environmental Management reviewing permit applications and writing permits.

KCI, founded in 1988, is a niche firm that specializes in innovative and practical solutions for our clients that optimize the business and operational efficiencies of their solid waste management operations. Throughout the firm’s 29-year history, KCI has worked with more than 200 public and private sector clients. We believe that KCI offers the District an unparalleled blend of attributes including the following:

- **Technology Evaluations and Feasibility Assessments:** Throughout our 29 years, we have seen an incredible evolution in solid waste management. With each new innovation and emerging technology, KCI has provided its clients with impartial, facts-based analysis and assessments that ensure sustainable, reliable state-of-the-art recovery and diversion programs.

- **Materials Recovery and Mixed Waste Processing:** In the past few years, KCI has advised numerous clients on materials recovery and mixed waste processing. In the past year alone we have worked on five materials recovery facility (MRF) feasibility and/or development projects. We have led site visits and assessments at the new generation of mixed waste processing facilities operating in California. We have in depth knowledge of the Montgomery, Alabama facility - its technology, business model, potential for success, and reasons for its closure. **We know what it takes to develop successful MRFs and MWPFs.** With no vested interest in the study’s outcome, KCI will provide the District with an objective analysis.
✓ **University Towns:** KCI has had the good fortune to work with a number of communities that host large educational institutions. In fact, we recently began work with City of Bloomington to help with its transition to automated collection. These communities face unique opportunities and challenges. Universities are, in effect, cities unto themselves with many different waste streams, unique seasonal fluctuations, and their own materials management policies and programs, which will require special consideration in this project.

✓ **Waste Composition Studies:** Composition studies provide the practical basis for effectively evaluating mixed waste processing technologies and assessing the feasibility for the District. In the past five years, KCI has conducted more than 50 sorting studies with over 250 sort days and over 2,500 samples. Several recent studies were conducted in university towns.

✓ **State-of-the-Art Facility Operations Experience:** The KCI team is in-tune with the most advanced equipment and processing capabilities available, and has conducted numerous operational management analyses of materials and organics processing facilities. Our work has resulted in significant efficiencies and operational savings for our clients.

✓ **National and International Recycling Markets Expertise:** Our team understands the operational and marketing practices necessary to successfully prepare and market materials for the domestic and international recycled materials markets. Our clients receive top dollar for the recyclable materials processed at their facilities.

✓ **Actionable Results:** KCI does not conduct studies that just sit on a shelf. We are known for developing practical, cost-effective solutions that our clients can implement to maximize material recovery and waste diversion. As a firm, our objective is to help shift the focus of solid waste management from waste disposal to resource management. **We deliver results!**

In all the work we do, KCI’s top commitment is to client service. KCI stands out as a certified Small Business Enterprise firm that remains dedicated to the idea of personalized service. *The people who market the work are the people who do the work.* Our deep commitment to client service has helped our company remain flexible and responsive to changes in client needs — regardless of market changes.

Most importantly, we understand that there is no single right answer for everyone and that all solid waste is local. KCI has helped numerous clients employ a full spectrum of programs and technologies to manage a wide array of material streams including recyclables, organics, mixed waste, construction and demolition debris, and medical waste.

We look forward to the opportunity to work with the District to complete this MWPF Feasibility Study. As KCI President, I am responsible for this submittal. Please feel free to contact me if you have questions regarding any aspect of our proposal or require additional information.

Sincerely,

Mitch Kessler  
President  
Kessler Consulting, Inc.
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Section 1
Attestations

1.1 Non-Collusion Affidavit

NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he or she has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He / She further says that no person or persons, firms or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

OATH AND AFFIRMATION

I affirm under the penalties of perjury that the foregoing facts and information are true and correct to the best of my knowledge and belief.

Dated at Tampa, FL, this 15th day of February, 2017

Kessler Consulting, Inc.
(Name of Organization)

By,

President
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF Florida SS:
COUNTY OF Hillsborough

Mitch Kessler, being duly sworn, deposes and says that he is President of the above Kessler Consulting, Inc.
(Name of Organization)

and that the statements contained in the foregoing bid, certification and affidavit are true and correct.

Subscribed and sworn before me this 15th day of February, 2017

[Notary Public]

My Commission Expires July 4, 2020

County of Residence: Pinellas

Request for Proposal MWPollen Study

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Issued January 13, 2017
1.2 Equal Employment Opportunity/ADA Statement

EQUAL EMPLOYMENT OPPORTUNITY/ADA STATEMENT

During the performance of the contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation of belief, age or disability. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to race, color, religion, sex, national origin, political affiliation or belief, age or disability. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for the training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provision of the nondiscrimination clause.

2. The Contractor agrees that all services, facilities, activities and programs provided as part of this contract will meet the requirements of the American’s with Disabilities Act and the rules and regulations promulgated thereunder.

3. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age or disability.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided, advising the labor union workers’ representative of the Contractor’s commitments under the Equal Employment Opportunity Section of this contract, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

5. In the event of the Contractor’s noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further contracts.

AUTHORIZED SIGNATURE

Mitch Kessler
President
PRINTED NAME TITLE
Kessler Consulting, Inc. March 3, 2017
COMPANY NAME DATE

Request for Proposal
MWPF Feasibility Study Page 9 of 9
Issued January 13, 2017
1.3 Certified Check

Check # 6651602242
Dated: 03/06/2017
$8,400.00
1.4 Certificate of Authority

State of Indiana
Office of the Secretary of State
Certificate of Authority
of
KESSLER CONSULTING, INC.

I, CONNIE LAWSON, Secretary of State, hereby certify that an Application for Certificate of Authority of the above Foreign For-Profit Corporation has been presented to me at my office, accompanied by the fees prescribed by law and that the documentation presented conforms to law as prescribed by the provisions of the Indiana Business Corporation Law.

NOW, THEREFORE, with this document I certify that said transaction will become effective
Wednesday, March 01, 2017.

In Witness Whereof, I have caused to be affixed my signature and the seal of the State of Indiana, at the City of Indianapolis, February 08, 2017

CONNIE LAWSON
SECRETARY OF STATE

201703011179833 / 7510336

To ensure the certificate’s validity, go to https://bsd.sos.in.gov/publicbusinesssearch
Section 2
Statement of Understanding and Proposal Summary

Existing Solid Waste Management System Overview

The Monroe County Solid Waste District (District) provides recycling and solid waste management services that include a network of recycling and waste collection centers, electronics recycling, bulky waste collection, hazardous waste collection, and environmental education programs.

It operates a network of five (5) recycling centers. The central facility (South Walnut) is also a hazardous waste collection center. A re-use center is located adjacent to this facility. Monroe County (County) residents without collection service are able to dispose trash at four rural recycling and waste centers in special orange bags which can be purchased at retail locations throughout the County. The four rural centers also accept bulky waste on a rotating basis. Waste electronics that have a screen are accepted at the central facility, while other electronics are accepted at all five locations. In 2016, the District handled approximately 2,760 tons of recyclables, 2,150 tons of trash, and 730 tons of bulky waste.

The District’s 2016 budget totaled approximately $2.8 million revenue and $2.6 million expenditures. The major sources of revenue were approximately $1.7 million from property and excise tax, $280,000 from host fees, and $263,000 from orange bag sales.

Separate from the District, the City of Bloomington (City) provides recycling and trash collection services to approximately 15,000 residential units. The City collects approximately 2,800 tons of recyclables and 5,500 tons of trash annually. Commercial and multi-family waste is handled by private collectors.

Indiana University - Bloomington (IU), is a major presence in Monroe County with a campus population of approximately 45,000 students, faculty, and staff. The campus recycles approximately 1,800 tons and disposes approximately 5,000 tons of waste annually. The campus has an active Sustainability Office which coordinates numerous programs and services.

Taken together, these three public entities handle approximately 7,360 tons of recyclables and 13,380 tons of trash and bulky waste. Recyclables collected in Monroe County are primarily processed and marketed by Republic or Ray’s Recycling, both of which have facilities in metropolitan Indianapolis.

Two unique factors have bearing on the proposed MWPF Feasibility Study. First, the private sector currently controls most of the waste in the County. Private haulers collect commercial waste in Bloomington and all residential and commercial waste in the unincorporated County other than the orange bags. Republic Services controls the primary transfer station in Monroe County (formerly Hoosier Disposal), which receives waste from the District, Bloomington, and IU as well as much of the privately collected waste. A rough estimate of total municipal solid
waste (MSW) generation in the County is approximately 112,000 tons per year\(^1\) compared to the 20,740 tons handled by the District, Bloomington, and IU. The major role of the private sector is an important factor that must be taken into account during the MWPF Feasibility Study.

Second, Republic is obligated to pay a host fee to the District. The agreement stipulates that if the District or other entity engages in handling MSW, it too must pay a host fee, and if it does not then Republic is no longer obligated to pay the fee.

In summary, the status of solid waste management in the County is a perfect example of the axiom that “all waste management is local.” KCI understands that the proposal MWPF Feasibility Study must take into account the District’s unique conditions if the study is to provide meaningful and actionable results.

The following paragraphs provide an introduction to KCI’s understanding and approach to the key components of the MWPF Feasibility Study.

**Feasibility Studies**

Solid waste management is business. Any good business plan is based on solid research, analysis, and projections that look at the raw materials and technologies to be utilized; the customers and competitors that comprise the marketplace; and the capital cost, revenues, and expenses that determine its financial viability.

KCI is known for using facts-based analysis and innovative solutions to maximize material recovery and waste diversion. As a firm, our objective is to help shift the focus of solid waste management from waste disposal to materials management.

Every client faces unique opportunities and challenges. So we never take a cookie-cutter approach that yields the same conclusions. Our staff includes strategic planners, MBAs, financial analysts, engineers, and research analysts able to consider all facets of mixed waste processing feasibility for the District. For each client, we adapt our “toolbox” of process flow modeling, technology performance metrics, facility-sizing calculations, cost estimating, and financial life cycle performance assessments. The results will be customized and on-point for the District.

**Waste Composition Studies**

It is impossible to complete a well-grounded feasibility study without fully understanding the quantity and composition of municipal waste and recyclables. In the past five years alone, KCI has conducted more than 53 waste composition studies (WCSs) and recyclables composition studies (RCSs). Many of these studies formed the basis for planning and implementation of new materials management programs and facilities.

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\(^1\) Based on a population of approximately 140,000 and an estimated average waste generation factor of 1,600 pounds per capital per year.
KCI is constantly refining its WCS/RCS methodology to keep pace with new developments in materials processing technologies and equipment. KCI staff is currently working with a group of stakeholders to update and improve the standard methodology for conducting WCS and RCS studies.

When WCSs are being done as part of a feasibility study like this project, they must not only quantify the amount of materials, they must also consider the quality of those materials and what is potentially recoverable.

**Mixed Waste Processing**

KCI understands the “business” of solid waste management. We stay current with industry best practices, new trends and technologies, and other operational changes that will ensure that the feasibility study for the District can help you maximize the efficiency and cost-effectiveness of your solid waste operations.

KCI has been in materials management since the 1980s when municipal recycling and composting were first emerging. Over the years, we have advised our clients on the evolution of materials management, including the spread of curbside recycling, the conversion to single-stream recycling, advances in Materials Recovery Facility (MRF) technologies, and the new generation of mixed waste processing. In the early 1990s, KCI helped develop one of the first mixed waste processing facilities in the U.S. for a county in central Florida. In the past two years alone, we have been involved in the procurement and/or development of five materials processing facilities.

**University Towns**

Communities with large educational institutions present unique opportunities and challenges with regard to materials management. Transient student populations and academic schedules can burden the materials management system at particular times each year (e.g., student move-in and move-out) when large amounts of packaging and bulky waste can be generated. While the District is not directly responsible for managing IU’s materials at this time, the feasibility study needs to take into account the special circumstances associated with IU’s and Bloomington’s materials management systems.

KCI is well-versed through our prior work experience, including WCSs and RCSs, strategic plans, recycling and organics collection systems, outreach and education, and program management. We will bring this sensitivity and prior knowledge to bear for the District’s feasibility study.
Section 3
Qualifications and Experience

KCI is a national leader in solid waste management planning. Since 1988, we have provided practical and innovative consulting services to more than 200 public and private sector clients. We are on the leading edge of sustainability and environmental stewardship.

Our focus is solely on solid waste management issues. In addition to our core services of strategic planning, waste reduction and recycling program development, system optimization, and contracting, we also have expertise in green government and business certifications, and other sustainability work. KCI’s project team has unparalleled expertise in evaluating, developing, and operating materials processing facilities.

Our professional reputation is based on an impressive history of project experience and accomplishments, including work in the following areas:

- Waste Composition and Generation Studies
- Recyclables and Mixed Waste Processing
- Materials Markets
- Operational and Financial Analysis
- Waste Reduction and Recycling
- Technology and Equipment Evaluation
- Procurement and Contracting Assistance
- Strategic Planning and Program Optimization
- Zero Waste and Master Plans
- OrgaDivs Recycling
- Sustainability and Green Programs
- Collection Route Efficiency and Optimization

We have organized our project experience for the District based on the key components of this project, which include:

- Recyclables and Waste Processing Facility Feasibility Studies and Development
- Recyclables and Waste Composition Studies
- University Towns

As reflected in this section, our depth of experience coupled with our critical objectivity will provide the District with the unbiased, accurate, and comprehensive analysis and guidance needed to determine the fiscal sustainability and requirements for constructing and operating a successful MWPF.
3.1 Processing Facility Feasibility Studies and Development

Good decisions require good information and incisive analysis. We constantly track trends, new technologies, and best practices, and bring this knowledge to bear for our clients. KCI remains ahead of the curve in recognizing and monitoring the emerging trends in materials processing and sharing that information with our clients as well as our industry at large.

- In 2002, at a time when only a handful of communities had adopted it, KCI developed and presented a series of workshops on single stream recycling in collaboration with industry trade conferences.
- KCI was responsible for developing the Solid Waste Association of North America (SWANA) Recycling Training Course which covered materials processing among other subjects.
- KCI is now finalizing the new SWANA Zero Waste Training Course which includes materials on the current state of the art of materials processing.

The key is interpreting and applying our knowledge and experience to our clients’ specific situation. KCI helps our clients establish innovative materials management systems that are uniquely fitted to their needs, goals, and objectives.

Pinellas County, FL
Contact: Deb Bush, Solid Waste Operations Manager, (727) 464-7803

Technology Research

KCI recently completed an in-depth study of material and energy recovery technologies for Pinellas County, as part of its comprehensive, long-term strategic planning process. KCI’s study included materials processing, mixed waste processing, composting, anaerobic digestion, and other mechanical, biological/chemical, and thermal technologies. The information gathered on each technology included feedstock; out-put products and their potential markets; commercial-scale projects and their relevant information; companies utilizing each technology; and estimated costs and revenues association with each technology.

Materials Recovery Facility Evaluation and Feasibility Study

KCI assisted with this Florida Department of Environmental Protection-funded innovative grant project to evaluate existing processing capacity in the Tampa Bay area and the need for additional capacity. Site visits were conducted to eight fully integrated state-of-the-art facilities in California that utilize some combination of dual stream, single stream, and/or mixed waste processing, as well as organics and construction and demolition (C&D) debris recovery operations. A MRF technology review was developed based on research of state-of-the-art MRFs, interviews with industry experts, and site visits. The needs assessment for the Tampa
Bay area was incorporated into a preliminary MRF feasibility study. The project results ultimately led to the development of several new MRFs in the Tampa Bay area.

**Waste Characterization Study**

KCI conducted a waste characterization study of the municipal solid waste delivered to the county’s Bridgeway Acres facility. The study: 1) characterized the Class I waste and overall materials received by the county at Bridgeway Acres; 2) characterized the Class III and non-processable waste that is landfilled; 3) determined the amount of organics in the waste stream, in particular the commercial waste stream; and 4) compared the waste streams of municipalities. The Class I study targeted six generator sectors. The non-processable waste targeted three generator sectors. Project activities included reviewing existing and relevant information; developing sorting event parameters, protocols, and schedule; sorting representative samples of the Class I waste; conducting a visual audit of the Class III waste; analyzing the resulting data; and preparing a final report detailing the study and providing recommendations.

**Lethbridge, Alberta, Canada**

*Contact:* David Schaaf, Waste and Recycling Manager, (403) 320-3088

**Materials Recovery Facility Assessment and Development**

KCI was tasked with conducting a MRF feasibility study and providing recommendations regarding MRF design, development, ownership, and operations that would assist the city in deciding whether or not to implement curbside recycling. Project activities included: 1) identifying and estimating potential quantities of recyclable materials, 2) assessing end-use markets for recyclable materials, 3) analyzing current recycling infrastructure in Lethbridge, 4) developing a preliminary conceptual design, 5) Assessing public and private ownership and operations options, and 6) developing capital and annual cost estimates and preliminary timelines for development.

Based on the analysis of KCI’s studies and planning sessions with city staff, KCI presented its recommendations to city council. Subsequently, the council approved curbside recycling and the development of its own MRF facility, successfully concluding a seven year effort by the environmental committee to obtain approval of the program. KCI is now assisting the city with MRF development, procurement, design, and commissioning.
Clearwater, FL
Contact: Brian Jay Ravins, Finance Director, (727) 562-4538

Materials Recovery Facility Assessment

The City of Clearwater contracted KCI to conduct an independent financial assessment of the 10 ton per hour single stream MRF that the city plans to develop in 2017. The goal of KCI’s assessment was to help the city determine whether the MRF was a business model that represented a sound investment of the city’s solid waste fund reserves.

KCI reviewed all the relevant MRF procurement documents including the Request for Proposals (RFP), MRF design and development plan, and the financial proposal city staff had prepared. KCI then analyzed a pro forma assessment prepared by city staff that estimated the budgetary impact of MRF development and operation.

With this background understanding, KCI conducted a detailed financial assessment of the MRF’s capital costs, operating and maintenance costs, and revenue from commodity sales. In order to more fully assess the MRF business model, KCI identified the specific cost variables that had the greatest impact on the financial results. Based on our knowledge of the local market, we identified three different MRF operating scenarios based on combinations of city and third-party inbound tonnage. KCI also developed low and high commodity market scenarios based on historical price trends. In this way, the financial assessment was able to consider the MRF’s financial performance in a range of potential market conditions.

Denver, CO
Contact: Charlotte Pitt, Denver Recycles Manager, (303) 446-3413

Solid Waste Master Plan

As part of the project team, KCI is assisting with development of a Solid Waste Master Plan for the City of Denver. The plan, designed to illustrate the city’s programs through the year 2030, evaluates the current solid waste system and makes both short and long recommendations. Denver’s program is a diverse solid waste system that includes municipally provided collection and drop sites, public and private partnerships for disposal and recycling processing, and household hazardous waste programs.

Kessler Consulting’s role has been to evaluate current collection and drop off operations and develop short and long term recommendations for efficient and high service levels, while meeting the city’s desire to further expand recycling efforts through organics and C&D recovery. KCI is also assisting with C&D recycling policy development, hauler licensing and permit recommendations, and evaluating collection bans and new ordinance development.
**Evaluation of Materials Processing Options**

As part of a team, KCI evaluated the City of Denver’s recycling infrastructure, including collection, processing, and marketing systems and services at the privately-owned and operated MRF. Project activities included an evaluation of processing and marketing types, preparation of a single stream processing RFP, and assistance with the contract negotiations and procurement.

**Recyclables Processing Service Procurement**

Given the extent of KCI’s prior Denver experience and knowledge, Denver Solid Waste Management (DSWM) once again sought the team’s assistance in the procurement of a reliable and cost-effective recyclables processor.

The team is currently conducting research and acquiring data needed to develop a focused procurement strategy. This work includes a trash and recyclable materials composition study, spanning two seasons. The team is compiling information regarding successful procurement and contractual approaches used by other similar cities.

Thereafter, the team will evaluate the viability of a future city-owned MRF and its potential impact to the procurement process. The team will then identify current and future infrastructure and operational options, capacities, and DSWM partnership needs. A thorough market analysis will aid in assessing current and foreseeable market trends and pricing for recycled commodities. Based on this research and analysis, the team will collaborate with the city to develop a comprehensive procurement strategy, laying out the priorities and approach for the procurement effort. Our team will then assist Denver in the RFP development, evaluation, and negotiations.

**Emerald Coast Utilities Authority, Pensacola, FL**

*Contact: Randy Rudd, Deputy Exec. Director of Shared Services, (850) 969-3393*

**Recyclables and Mixed Waste Processing Options Analysis**

KCI has been working closely with Emerald Coast Utilities Authority (ECUA) as it defines and evaluates a flexible solution to address both its interim and long term material processing needs and enhance waste diversion.

KCI assisted ECUA in identifying potential alternatives for the acceptance, processing, and marketing of recyclable material collected from residential customers. In this analysis, KCI reviewed the feasibility of implementing mixed waste recovery options for ECUA material. To identify recyclables processing options, KCI gathered information from local and state entities, recycling industry leaders, processing vendors, and KCI’s knowledgebase in a five-state area including Alabama, Florida, Georgia, Louisiana, and Mississippi. Results from this research
assisted ECUA in making an informed decision on how to most economically process their collected recyclable material.

**Mixed Waste Processing Procurement**

KCI helped develop a Request for Qualifications (RFQ) for Mixed Waste Processing and Recycling Services. The RFQ was a collaborative effort of both the county and ECUA. The intent was to develop processing capacity for recyclables as well as mixed waste to assist in meeting the state’s 75 percent recycling goal. KCI participated in reviewing proposals submitted by seven vendors and in interviews/presentations with the four top-ranked companies. KCI then participated in negotiations with the two top-ranked companies. Final negotiations are underway with the top-ranked firm.

**MRF Development**

KCI assisted the Emerald Coast Utilities Authority (ECUA) with the development and procurement of Florida’s newest, Authority-owned, state-of-the-art MRF for processing single stream recyclables. KCI initiated the project by reviewing and shortlisting potential vendors based upon ECUA’s short and long term goals. KCI then assessed various recycling and processing scenarios including different types of processing options, ownership and operational responsibility options, regionalization opportunities, and flow control issues.

Once the framework of the facility was determined, KCI assisted ECUA through two procurements for the processing equipment vendor and MRF operator, which involved developing procurement documents, developing proposal comparisons, participating in team meetings, shortlisting vendors, and negotiating the contracts and terms. For the equipment procurement, KCI also reviewed MRF design including building specifications and processing system design, drafted the performance statement, and monitored construction progress. For the operator procurement, KCI negotiated the operating fees and revenue sharing terms and drafted the contract. The MRF began operation in October 2016, a little over a year from the initial request for proposals. Currently, KCI is assisting ECUA with developing inter-local agreements with neighboring jurisdictions for processing their single stream recyclables at the MRF.

**MRF Performance Testing**

As part of ongoing materials processing assistance, KCI coordinated with the equipment provider and acted as ECUA’s representative during the performance testing of ECUA’s 25 ton per hour single stream MRF. The test was to ensure that the system achieves the stated performance standards (e.g., throughput, purity, and recovery). Initially, KCI negotiated the terms of the vendor’s performance statement prior to MRF development. Once the system was installed and operating, KCI reviewed and critiqued the vendor’s performance test work plan. KCI staff was present on-site for the duration of the acceptance testing to focus on oversight, monitoring, and assurance that procedures were implemented in accordance with the work plan. KCI reviewed raw data and calculations from the vendor to ensure accuracy. KCI confirmed that the system achieved all the required performance standards as well as provided that determination to ECUA.
Charleston County, SC
Contact: Joe Dawson, County Attorney, (843) 958-4010

Solid Waste Management Master Planning

KCI’s initial work was to develop the “Green for Green” Solid Waste Master Plan for Charleston County. This work entailed development of an integrated waste management computer model and a comprehensive operational and financial assessment and analysis of all aspects of the county’s solid waste system – collection, materials processing, composting, waste-to-energy, landfill, and the user fee that finances all county waste infrastructure and programs. The analysis then modeled various interim and long-term recovery and disposal alternatives.

Throughout the process, KCI facilitated and managed a council appointed resident and business-led green team to garner community involvement and buy-in. KCI’s efforts culminated in a Master Plan that established the county’s goal to become the premier waste management program in the Southeast and provided specific direction to accomplish it. Based on the goals of the Master Plan, KCI subsequently worked with the county to implement programs, operational improvements and infrastructure that have tripled the county’s recovery rate while cutting $18 million from the county’s solid waste budget.

Emerging Technologies Evaluation

Throughout the term of KCI’s work with Charleston County, KCI has provided strategic and technical guidance as the county monitors developments in emerging waste treatment technologies. Work activities completed by KCI include:

- Developed a Request for Information (RFI) to identify potentially viable technologies and vendors.
- Coordinated field visits for the county to state-of-the-art waste processing facilities.
- Tracked status of and provided ongoing advice to county on developments in emerging technologies.
- Provided strategic and technical guidance to county on county-initiated RFQ.

Existing MRF Improvements

KCI’s evaluation of the county’s existing MRF identified numerous opportunities to reduce costs and improve productivity. KCI provided technical assistance to the county for the implementation of numerous improvements and modifications at the MRF.
KCI assisted with the procurement of privatized MRF operations and negotiated a processing contract which provided savings/additional revenue to the county of over $1 million per year. Utilizing the results of recyclables composition studies, KCI worked with the county to develop the technical specifications and procurement of MRF renovations and conversion of the processing system to handle single stream recyclables.

New MRF Development

The county is currently in the process of developing a new MRF. KCI provided technical assistance and organization in the development of a new and state-of-the-art MRF slated to begin construction in 2017. KCI drafted general conditions and technical specifications for an innovative processing system RFP, and integrated design-build RFP, and a subsequent operator RFP. With each document, KCI proposed language, a timeline and a review process. To date, KCI has provided assistance and recommendations on site evaluations, financial analysis, and preliminary site designs for consideration by the county. KCI also spearheaded the processing system procurement, analyzing proposed systems and leading two rounds of vendor meetings to equalize proposals for county selection.

Collection

KCI evaluated the county’s collection operations and developed a series of short and long term recommendations for operational improvements regarding curbside collection, drop site, and household hazardous waste operations, including staffing, safety and compliance, productivity and cost reductions, operation planning, and continuity of operations/privatization. KCI subsequently provided technical assistance in the implementation of all recommendations, including the following major accomplishments.

Single stream recycling collection pilot: KCI designed a six-month residential single stream recycling pilot program that included the first of its kind objective and quantifiable “Head to Head” pilot comparing two types of automated collection vehicles. The pilot design included the development of standard operating procedures and a standard timeline to be used for a repeated, phased deployment plan.

Phased rollout of countywide single stream recycling collection: Based on the success of an automated residential single stream recycling pilot program, KCI designed and provided technical assistance during the implementation of a county-wide single stream recycling collection to approximately 113,000 households. Assistance included route planning, equipment allocation, collection system design, and data collection processes. The programs included the use of radio frequency identification (RFID) tags for asset tracking, route visualization, and real-time data collection to accurately measure participation and set-out rates in order to enhance programs and drive continual improvement. Single stream service has also
been extended to all County School District properties and more than 2,500 multifamily and commercial properties.

**Waste Transfer and Disposal**

Based on results of the Master Plan the County Council directed staff to implement transfer and out-of-county disposal for a portion of MSW collected in the county while maintaining a portion of in-county disposal at the county’s own landfill. Work activities completed include the following:

- Evaluated financial costs and savings associated with transfer and disposal options and provided recommendations for appropriate allocation of waste amongst transfer and disposal facilities.
- Assisted the county in contract negotiation and implementation of waste transfer network.
- Assisted county with monitoring the performance of transfer and disposal contracts.

**Hillsborough County, FL**

*Contact: Mike Merrill, County Administrator, (813) 276-2843*

**Solid Waste Collection and Materials Processing Assistance**

Over the past decade, KCI assisted Hillsborough County with several collection contract negotiations. The county again enlisted our services, this time to conduct a competitive bid for these services. KCI initially researched a number of collection program options to determine how best to meet the county’s priorities: 1) to provide the highest and most modern level of service to its residents for the most competitive price and 2) to be able to meet a contracted tonnage commitment for garbage disposal. The findings helped confirm the latest collection technologies and industry trends throughout the state, and how they can be used to help the county meet its priorities.

KCI assisted with a bid process to replace previous franchise agreements. The bid included four different service options. The board directed the implementation of a residential, automated collection system using roll carts for twice per week garbage collection and once per week recycling collection. In addition, KCI developed a recyclable materials processing services bid for the county’s residential program recyclables. Previously the county did not receive revenue for recyclable materials.

KCI managed the transition planning and implementation of the new franchise collectors, processing contractor, and cart vendors, which included 120 new compressed natural gas (CNG) collection vehicles being put into service, mapping of approximately 500 new collection routes, the building of a recyclables transfer station and single stream MRF, and the assembly and distribution of over half a million roll carts, the largest rollout in the nation, with a single start date for automated service.
Solid Waste Technical Assistance

KCI continued to assist the county with additional project management and technical assistance, by providing ongoing system-wide program management as a result of the new 10-year collection and processing contracts. We provided continued project oversight and assistance of the solid waste contractors, services, and program changes, assisting in the compilation of a system-wide, integrated data management system, conducting recycling and waste composition studies, assisting in the development and implementation of section strategy, and providing ongoing technical assistance. The county transitioned from three to five districts, and from manual to automated residential collection. Simultaneously, the franchise collectors procured 120 new collection vehicles, obtained service yards, established offices, mapped collection routes, trained staff, and developed collection, transition, and contingency plans. The economic impact of this project was estimated to be approximately $85 million.

KCI provided education and outreach expertise as part of technical assistance for the county to reduce contamination in their single stream material. KCI assisted the development of the slogan, graphics and precise material definitions. In addition, an advertorial, press release and social media posts were drafted for use in county marketing.

KCI provides on-going analysis and review of the county's service verification technology and data. Utilizing the longitude and latitude data provided by the franchise hauler’s service verifications KCI developed a Roll Cart Audit Process for the county to periodically audit the location of over 560,000 assets.

Transfer Station Operational Assessment

KCI assisted Hillsborough County with a pre and post construction operational analysis by conducting an operational assessment of its transfer station operations network. Through both physical audits, and a review of pertinent data such as weight tickets, employee timecards, and fleet equipment lists and associated costs, KCI assessed the county’s transfer station system including its long-haul transfer truck operation in order to identify improvement opportunities for the long-term financial viability of the operation. As part of the assessment, we conducted a week-long evaluation of all inbound and outbound transfer station vehicle traffic for each station as well as an evaluation of the loading, transfer trip, and unloading process at the Resource Recovery Facility. The assessment yielded recommendations to optimize hauling hours, enhance fleet support, improve scale house operations, and enhance management through technology.

Sumter County, FL
Contact: William “Jackey” Jackson, Asst. Public Works Director, (352) 569-6700

Facility Planning and Development

KCI had lead responsibility for the development, conceptual design, and project management of the 100 tons per day mixed waste processing facility and 200 tons per day mixed waste/biosolids compost, compost and recyclable market development, and compliance with state and federal government compost and recycling regulations.
KCI previously provided lead technical support for contract negotiations regarding the operations of the Sumter County Volume Reduction and Composting Facility. Tasks included contract review, technical recommendations, and negotiations with the vendor.

**Solid Waste Program Assessments**

KCI provided ongoing solid waste, recycling, and composting program analysis and funding development. These program analyses have resulted in Sumter County expanding its integrated program to become an internationally recognized and national award-winning facility. Program upgrades and accomplishments from these assessments have included the following:

- Addition of a second in-vessel digester tube to process MSW and sludge from this rural county’s rapidly expanding population.
- Funding for the county through five Department of Environmental Protection (DEP) Innovative Grants, one Environmental Protection Agency (EPA) Region IV grant, and a $3.5 million legislative appropriation.
- Development of solid waste, recycling, and composting administrative and management documents, including but not limited to regulatory reporting schedules, project timelines, vendor market sheets, scale house flyers and tracking spreadsheets.
- Preparation of a 10-county landfill cost and facility survey and analysis.
- Site visits and evaluation of three community drop-off centers to recommend logistical, operational and staffing requirements for the county’s new center.

**Tallahassee, FL**

*Contact: Rick Fernandez, Assistant City Manager, (850) 891-8580*

**Mixed Waste Processing Assessment**

KCI conducted a critical review of the city’s existing recyclables processing, collection, and waste transfer and disposal agreements and identified potential options for future services that would provide additional savings to the city and increase waste diversion.

KCI researched the current state of mixed waste processing technologies in the U.S. and prepared an assessment of how mixed waste processing might be integrated into the city’s waste management system.

KCI then assisted in negotiating an extension to the city’s collection contract that lowered the rate by $3.23 per household per month. KCI went on to assist in conducting a competitive procurement for processing services for single stream recyclables.
Indian River County, FL

Contact: Himanshu Mehta, Managing Director, (772) 770-5112

Alternative Processing Technology Procurement

KCI assisted the county with an RFI/RFP process to explore the feasibility of developing a processing facility at the county’s facility to maximize diversion of waste from the landfill. KCI initially explored potential private sector interest in partnering with the county to develop processing capacity in order to recover recyclables, organics, and possibly energy with the objective of assisting the county in achieving the Florida state goal of 75 percent recycling. KCI worked closely with county staff to conduct the RFI/RFP process that met the county’s needs and objectives.

Recyclables Processing Service Procurement

KCI provided technical assistance to Indian River County during a competitive procurement for recyclables processing services. We reviewed and developed technical and financial summaries of the four proposals received by the county. We also conducted a sensitivity analysis to evaluate the impacts of fluctuations in the commodity market index on revenue potential as proposed by vendors. KCI also provided technical information related to processing trends in Florida and the United States, and preliminary guidance on opportunities to increase recycling tonnages. With KCI’s assistance, the county negotiated and executed a contract that resulted in revenue to the county of more than $50 per ton during the first year.

Boulder County, CO

Contact: Darla Arians, Zero Waste Program Manager, (720) 564-2223

Recycling Center Operational and Financial Analysis

KCI, in association with LBA Associates, Inc., conducted an operational and financial evaluation of the Boulder County Recycling Center (BCRC) in order to benchmark current operations and economics, and to evaluate proposed facility improvements. We analyzed operational and financial records for the BCRC; calculated key performance metrics for the BCRC; and compared them with regional MRFs and general industry standards.

An onsite audit of the BCRC was conducted during which KCI staff observed each stage of MRF operations with particular focus on identifying where improvements could be made in facility layout and process flow, equipment configurations, materials management, sorting procedures, worker ergonomics, equipment operations, overall system design and capacity, etc. KCI provided practical recommendations for improving current operations, as well as planned future equipment and building modifications to accommodate additional tonnage.
Confidential Client, Chile

**MRF Procurement Assistance**

KCI assisted a private South American company with developing Chile’s first single stream MRF. KCI provided technical assistance in developing bid documents, reviewing vendor proposals, conducting vendor interviews, and facilitating contract negotiations with vendors of single stream processing systems. KCI skillfully adapted its experience and knowledge of the solid waste and recycling industry in the U.S. to the unique regulatory and business climate of the South American solid waste industry. Under KCI’s guidance, the company selected a preferred vendor and completed contract negotiation. The company is proceeding with site design, permitting, and construction of this ground-breaking initiative.

Lee County, FL

*Contact: Keith Howard, Solid Waste Director, (239) 533-8000*

**MRF Operator Procurement**

The County requested KCI's assistance with the solicitation of a MRF operator that included the development of a procurement strategy, technical specifications for procurement documents that would be developed by the county, identification of potential vendors nationwide, and addenda language. In the process of developing a strategy for the procurement, the County has determined that it desires additional assistance from KCI for a comprehensive MRF evaluation and for the development of a MRF operator contract. In addition, the county seeks KCI to assist with negotiations of the county's solid waste and recycling collection franchise agreements, and should the negotiations fail to result in amended franchise agreements with terms and conditions that are acceptable to the county and its current franchises, assistance with conducting a competitive procurement for solid waste and recycling services.
3.2 Recyclables and Waste Characterization Studies

KCI is uniquely qualified to assist the District in conducting a waste characterization study. Our extensive industry knowledge and experience will ensure the study results are statistically valid and provide useful baseline data to bring about programmatic changes. In addition, KCI conducts all aspects of our waste characterization studies (no outsourcing!) to ensure that the results are reliable.

KCI recently served on a National Waste and Recycling Association (NWRA) committee that developed a white paper on an appropriate methodology for conducting recyclables characterization studies. We are currently working with a group of stakeholders to update and improve the American Society for Testing and Materials (ASTM) Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste (ASTM D5231-92; reapproved 2008) for conducting WCS and RCS studies.

Understanding the composition of a waste stream enables the development of effective programs for managing and reducing waste. We have conducted studies for local governments, universities, public sector buildings, hospitals, theme parks, public festivals, airports, and various private businesses. In the last 5 years alone, we have completed more than 50 sorting events (including several universities and university towns) with over 250 sort days, and over 2,500 samples!

The following list indicates the depth of KCI’s WCS and RCS experience, and is followed by descriptions of a handful of these studies.

- Alachua County, FL (1998)
- Appalachian State University, NC (2013)
- Baker County, FL (1993)
- Bradford County, FL (1990)
- Burger King, Inc. (1997)
- Calhoun County, FL (1990)
- Carrboro, NC (2016)
- Chatham County, NC (2014)
- Confidential Client, Toronto, ON (2012)
- Confidential Client, Miami, FL (2012)
- Confidential Client, Davie, FL (2013)
- Confidential Client, Tampa, FL (2014)
- Deerfield Beach, FL (2014)
- Denver, CO (2008, 2016-17)
- DeSoto County, FL (1994)
- Dunedin, FL (2017)
- Durham, NC (2015)
- Duval Public Schools, FL (2001)
- Emerald Coast Utilities Authority, FL (2011, 2015)
- Escambia County, FL (2016)
- Fayetteville, AR (2015)
- Florida National Guard, FL (2001)
- Fort Lauderdale, FL (2010, 2014)
- Gilchrist County, FL (1994)
- Gulf County, FL (1996)
- Hallandale Beach, FL (2016)
- Hardee County, FL (1993)
- Highlands County, FL (1998)
- Hillsboro Beach, FL (2014)
- Hillsborough County (2014, 2015)
- Holmes County, FL (1991)
- Horry County, SC (2015)
- Key West, FL (2011)
Monroe County Solid Waste Management District
RFP for Mixed Waste Processing Facility Feasibility Study

- Largo, FL (2014)
- Lauderdale-by-the-Sea, FL (2014)
- Leon County, FL (1998)
- Levy County, FL (1990, 2000)
- Manatee County, FL (2003, 2012)
- Miami-Dade County, FL (2010)
- North Carolina State University (2015)
- Oakland Park, FL (2014)
- Okaloosa County, FL (2014)
- Orange County, NC (2016-17)
- Palm Beach County, FL (1998)
- Pasco County, FL (2011, 2014)
- Polk County, FL (2011)
- Putnam County, FL (2000)
- Sarasota, FL (2011)
- Southwest Ranches, FL (2014)
- Sumter County, FL (1991, 1998)
- Stuart, FL (2014)
- Tampa, FL (1997, 2008)
- Tallahassee, FL (2002, 2011)
- Union County, FL (1999)
- University of Arkansas, AR (2015)
- Wake County, NC (2008, 2008)
- West Park, FL (2014)

Charleston County, SC
Contact:  Joe Dawson, County Attorney, (843) 958-4010

Recyclables and Waste Composition Studies

In support of its work with the county, KCI has conducted multiple characterization studies for the county which have 1) provided the baseline for initial strategic planning efforts and 2) established ongoing benchmarks of program progress and opportunities for recovery enhancement. Studies completed by KCI to date include:

- 2009/2010 two-season residential and commercial waste composition study
- 2012 residential recycled materials composition study
- 2013 commercial waste composition study
- 2013 residential single stream recycled materials composition study
- 2015 waste characterization study at county landfill
- 2015 recycled materials composition study at MRF
Recyclables Composition Study

KCI conducted a 6-day recyclables composition study at the Progressive Waste Solution’s (PWS) transfer station to sample and sort incoming loads of residential recyclables. The study included the sampling and sorting of 45 loads of recyclables. During the sorting event, KCI was responsible for developing the sampling schedule, coordinating with haulers, developing sorting and sampling protocols, worker training, sample selection and sorting, data analysis, and report preparation. KCI then oversaw a backend, post-processing, mass-balance composition study conducted at the PWS MRF. During this study KCI was responsible for overseeing the processing of all materials, sample selection and sorting, weighing of baled materials, overall material flow and the reconciliation of all data weights following the sort. KCI also assisted the county in ongoing negotiations with PWS throughout the sorting events.

Waste Composition Study

KCI conducted a 5-day sampling and sorting event at the RRF to determine the composition of the waste stream disposed at the county’s various disposal facilities. To increase the efficiency of the study, KCI worked with the three franchised haulers to direct haul loads from across the county to the RRF for inclusion in the study. Representative samples from 40 loads of waste were collected and sorted into 36 defined material categories. Results revealed that nearly 40 percent of residential and commercial waste currently disposed consisted of recyclable fiber and containers and other accepted recyclable materials. In addition, organic materials, which had the potential to be composted, made up an additional 30 percent of the countywide waste streams.

Fayetteville, AR

City and University Waste Composition Studies

KCI assisted the City of Fayetteville in developing a Master Plan aimed at achieving 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 percent waste diversion. In order to achieve this goal, KCI initiated the project with a city-wide waste composition study to determine the types and quantities of waste currently being disposed by the residential and commercial sectors.

In addition, KCI conducted a separate waste composition study of the materials disposed on the University of Arkansas campus due to the amount of waste generated by the university, which lies within the city limits. For the university, KCI looked at waste from four distinct areas of the campus: Housing, Student Union, Athletics, and Facilities.

The results provided by these two studies, were incorporated in KCI’s recommendations for increasing waste diversion and in developing future partnerships between the city and the university. KCI delivered a comprehensive, forward-thinking Solid Waste Master Plan.
Emerald Coast Utilities Authority, Pensacola, FL
Contact: Randy Rudd, Deputy Exec. Director of Shared Services, (850) 969-3393

Recyclables Composition Study
KCI conducted a one-season recyclables composition study for ECUA. This study sampled single stream recyclables collected in Escambia and Santa Rosa Counties in order to determine the composition of recyclables that ECUA will be receiving and processing at its proposed MRF. The study provided a breakdown, by percentage, of the individual types of materials and contaminants found in the recyclables stream. The study revealed that over 60 percent of single stream recyclables consisted of paper and fiber materials, and recyclable containers comprised approximately 20 percent. The remaining 20 percent were contaminants and other non-recyclable materials. ECUA used the results of the study for finalizing the development of its proposed materials recovery facility and for calculating the average market value of the recyclables it will be processing. KCI was responsible for all aspects of project planning and execution.

Waste and Recyclables Composition Study
KCI conducted a one-season waste and recyclables composition study for ECUA. This study included four generator sectors: 1) single-family residential waste, 2) multi-family residential waste, 3) single-stream recyclables, and 4) MRF processing residue. The study revealed that 33 percent of residential waste consisted of materials that could have been recycled through the existing recycling program. It further revealed that more than half of the MRF residue consisted of recyclable materials. ECUA used the results of the study for future program planning, including evaluating the feasibility of mixed waste processing. KCI was responsible for all aspects of project planning and execution.

Denver, CO
Contact: Charlotte Pitt, Denver Recycles Manager, (303) 446-3413

Recyclables and Waste Characterization Study
KCI is currently conducting a two-season recyclables and waste materials composition study (WCS) to develop a focused procurement strategy aiming to identify a reliable and cost-effective recyclables processor. This WCS includes two, one-week sorting events targeting 40 residential waste routes and 30 residential single stream routes from a cross-section of the city. The goal of the WCS is to identify not only the composition of the current recycling stream, but also the types and quantities of recyclables still being disposed by its residents. The results of the study will be utilized in the development of the city’s procurement documents for recyclables processing as well as to evaluate the viability of a future city-owned MRF. If a city-owned MRF is feasible, our team will then identify current and future infrastructure and operational options, capacities, and partnership needs.
Orange County, NC  
**Contact:** Blair Pollock, Solid Waste Planner, (919) 968-2800 x 206

**Waste Composition Study**

KCI is conducting a two-season waste composition study (WCS) of waste generated within Orange County. The study consists of two, five-day sorting events, one in the fall and the other in the spring. In advance of the study, KCI prepared a sampling and sorting protocol that includes materials categories, site safety plan, and a sampling and sorting schedule. The WCS provides useful information regarding the types and percentages of various materials, including recyclable materials, currently being disposed to compare with previous study data and to assist in planning and developing future solid waste and resource management programs.

Chatham County, NC  
**Contact:** Sandy Skolochenko, Waste Reduction Coordinator (919) 542-0130

**Waste Composition Study**

KCI assisted Chatham County with conducting a waste characterization study of materials collected at the county’s 12 collection centers. This included three generator sectors: municipal solid waste collected in compactors, bulky waste collected in roll-off containers, and bulky waste collected in pre-crushers at two of the centers. Project activities included pre-planning, sorting representative samples of the municipal solid waste, conducting a visual audit of the bulky waste, analyzing the resulting data, and preparing a final report comparing the results with baseline data.

Durham, NC  
**Contact:** Donald M. Long, Solid Waste Director, (919) 560-4186

**Recyclables and Waste Characterization Study**

The City of Durham contracted KCI to conduct a study to characterize the MSW delivered to the city’s transfer station to determine the composition of MSW disposed in the city’s single-family residential, multi-family residential, commercial, and C&D debris/bulky waste streams. KCI also conducted a concurrent recyclables composition study to determine the composition of recyclable materials collected in the city’s curbside recycling program. As part of this study, KCI was also requested to provide a conceptual approach to divert 65 percent of the material delivered to the transfer station from disposal by 2025. To identify potential waste diversion opportunities, KCI applied the characterization study results to the various sources, types, and quantities of materials received at the transfer station. Results revealed 21 percent of the materials received were diverted from disposal, an additional 16 percent consisted of fiber and containers included in the city’s existing program, and 15 percent consisted of materials that could have been composted.
3.3 University Towns

KCI has been fortunate to work with quite a few university towns and universities. We have developed an understanding of and sensitivity to the unique opportunities and challenges presented. Large academic institutions are like a city within a city and yet a significant stakeholder in the solid waste management system.

Bloomington, IN
Contact: Adam Wason, Director, Public Works, (812) 349-3516

Automated Collection Planning and Implementation

KCI is currently assisting the City of Bloomington with its conversion from manual collection to a modernized automated collection system. KCI is providing guidance to city staff and a citizen’s advisory committee for preparing the transition plan. As the city moves forward with implementation, KCI will provide industry expertise and support to transition team members in the areas of transition scheduling, operations, education and outreach, advisory committee support, and equipment vendor interaction. The goal is to identify potential pitfalls, assist with clearly communicated program changes, and ultimately ensure a smooth transition.

Fayetteville, AR
Contact: Jeff Coles, Solid Waste Director, (479) 575-8227

Master Plan

KCI assisted the City of Fayetteville in developing a Master Plan aimed at achieving 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 percent waste diversion.

Initial project work included a waste composition study; evaluation of the city’s collection, processing, and transfer operations; and benchmarking of the existing program. Based on findings of this initial work, KCI then identified waste diversion opportunities and strategies to take advantage of these opportunities. These strategies included new and expanded programs, innovative policies, productive partnerships, and, for some material streams, development of new facilities.

A key part of the project was obtaining stakeholder input. This was achieved through public meetings, as well as meetings with elected officials, multi-family property managers, the local Chamber of Commerce, private sector vendors potentially interested in partnering with the city, and two regional solid waste planning groups. KCI
also obtained input by conducting two surveys, one for residents and the other for businesses.

KCI then developed a baseline model with a 10-year planning period. Following review and discussions with city staff, we also modeled five different waste diversion scenarios. Based on the modeling results and selection of the scenario that best met the city’s objectives, a proposed action plan was developed. The action plan identified policy, program, and facility recommendations and a phased approach for implementation.

During the course of the project, two strategies were identified that were considered important enough to pilot rather than wait until completion of the Master Plan – food waste collection and processing and single stream recycling. Findings, results, and recommendations of all work conducted during the project were compiled into a final Solid Waste Reduction, Diversion, and Recycling Master Plan.

**Boulder, CO**
*Contact: Kara Mertz, Environmental Action Manager, (303)441-3153*

**Zero Waste Program Evaluation**

KCI, as part of a project team, conducted a zero waste program evaluation. The project entailed developing and analyzing existing and potential future initiatives, developing measurement criteria to evaluate these initiatives, and applying these criteria to the initiatives. Additionally, KCI developed system scenarios for long-term planning, including bundled scenarios, and presented estimated and aggregated projected diversion potential and costs for each scenario. KCI also evaluated the economic sustainability of these bundles, while considering key program/policy changes as well as identifying “trigger points.” All findings were presented to illustrate the benefits, costs, and policy needs for each of the scenarios. Finally, KCI and our team provided a recommended metric to be used to help gauge progress toward the city’s diversion and sustainability goals.

**Tallahassee, FL**
*Contact: Rick Fernandez, Assistant City Manager, (850) 891-8580*

**Collection, Processing, Transfer and Disposal Options Assessment**

KCI conducted a critical review of the city’s existing collection, recyclables processing, and waste transfer and disposal agreements and identified potential options for future services that would provide additional savings to the city and increase waste diversion. In addition, we researched the current state of mixed waste processing technologies in the U.S. and prepared an assessment of how mixed waste processing might be integrated into the city’s waste management system. KCI then assisted in negotiating an extension to the city’s collection contract that lowered the rate by $3.23 per household per month.
Technical Assistance

KCI provided operational and financial assessments of the Solid Waste Services Department (SWS) collection services, which included activities such as route system analysis, staffing and equipment assessment, and assessment of program efficiency and cost-effectiveness. KCI performed a cost of service analysis for SWS waste collection services which included residential recycling, waste, and bulk trash collection provided by SWS and Waste Pro, as well as commercial waste collection services provided by SWS. KCI provided ongoing assistance to SWS for issues pertaining to its collection, processing and marketing, and disposal contracts. Assistance addressed activities such as coordination and contract planning; contractual reporting requirements; payments and revenue sharing; and contract management.

Appalachian State University, Boone, NC
Contact: Jennifer Maxwell, Resource Conservation Specialist, (828) 262-2667

Comprehensive Solid and Hazardous Waste Audit

KCI assisted the university in conducting an audit of the solid and hazardous wastes generated on campus. This comprehensive waste audit was identified as a primary initiative intended to provide a benchmark from which additional programs and policies would be developed to help achieve a Zero Waste campus.

The objective of the solid waste audit was to determine the composition of the solid waste stream generated in the academic, auxiliary, and residential areas of the campus. It consisted of sampling and sorting solid waste from more than 45 distinct areas of the campus to determine the types and quantities of recoverable materials being disposed. The results were initially utilized to expand the university’s composting programs to include post-consumer organics, which were found to comprise as much as 57 percent of the waste stream in some areas of the campus.

The objective of the hazardous waste audit was to evaluate the handling, storage, and disposal practices for hazardous waste materials. It was conducted to establish a benchmark of the university’s compliance with state and federal regulations.

North Carolina State University, Raleigh, NC
Contact: Analis Fulghum, Recycling Program Manager, (919) 515-9881

Waste Characterization Study

KCI conducted a WCS for North Carolina State University to provide baseline data of the waste disposed on campus to be used in developing new waste management programs, enhancing current programs, and gauging effectiveness of programs currently in place. The two week WCS included sampling and sorting waste from 33 buildings (generation points) on campus that was collected over a 24-hour period. KCI analyzed all data gathered during the WCS and provided the university with valuable information on recyclable materials present in the waste.
stream and opportunities to recover those materials. The final report provided insight into materials that are included in the university’s current programs, but still prevalent in the waste stream, as well as additional materials that could be recovered to aid the university as it strives to achieve higher goals. The results also helped the university understand the specific compositions of various buildings, which will assist in providing building-specific programs and corresponding outreach materials.

University of Colorado-Boulder, CO  
Contact: Lisa Potter, Asst. Director of Facilities Operations, (303) 492-1428

**Solid Waste and Recycling Analysis**

As part of the Campus Master Plan to reach a Zero Waste goal (90 percent) by the year 2020, the University of Colorado Boulder requested KCI conduct a review and analysis of the university’s solid waste, recycling, and composting operations and recommend program changes to assist the university in reaching its goal. KCI was specifically asked to assess three areas of the university’s collection/operations and processing programs: 1) Collection process, 2) capital equipment needs and 3) Intermediate Processing Facility (IPF) needs. Recommendations in the final report included streamlining collection using technology and partnering with a local processor for efficient and economical processing of recyclables. As a result of KCI’s recommendations, the university switched its recycling receptacles in the dorms and cafeterias to single stream bins.

Alachua County, FL  
Contact: Sally Palmi, Solid Waste & Recycling Coordinator, (352) 374-5213

**Commercial/Institutional Electronics Recovery Program**

KCI assisted the county in a full scale review of their electronics (E-scrap) recycling program and developed a marketing program targeted at increasing commercial and institutional collection. The project included planning and attending waste generator and end-user meetings, executing and analyzing data provided by a countywide business survey, the development of an E-scrap Best Management Practices guide, development of a Donation Center/Thrift Store Marketing Kit and an E-manager Marketing Kit. Additionally, a two-day E-scrap collection event was developed and executed to spread the word about the county’s E-scrap program and the availability to local businesses.
3.4 References

KCI considers all of our clients as references, so we encourage the District and the Evaluation Committee to contact any of our clients listed below or in the projects described in Section 3.

**Charleston County, South Carolina**
Joe Dawson, County Attorney
4045 Bridge View Dr., N. Charleston, SC 29405
jdawson3@bellsouth.net
(843) 958-4010

**County and City of Denver, Colorado**
Charlotte Pitt, Manager
Solid Waste Management / Denver Recycles
2000 W. 3rd Avenue, 3rd Floor, Denver, CO 80223
charlotte.pit@denvergov.org
(303) 446-3413

**Emerald Coast Utilities Authority, Pensacola, Florida**
Randy Rudd, Deputy Executive Director of Shared Services
9255 Sturdevant Street, Pensacola, FL 32514
randall.rudd@ecua.fl.gov
(850) 969-3393

**City of Lethbridge, Canada**
David Schaaf, Waste and Recycling Manager
910 4th Avenue South, Lethbridge, Alberta, T1J 0P6
dave.schaaf@lethbridge.ca
(403) 320-3088
3.5 Report Samples

KCI’s policy is that we do not share reports prepared for our clients without their authorization. Our reports contain research, information, and analysis that is confidential and proprietary. The following two confidential sample reports are provided in a separate envelope and in separate files on the USB drive.

1. City of Lethbridge, Alberta: Materials Recovery Facility Feasibility Study

2. Pinellas County, Florida: Review of Material and Energy Recovery Technologies
Section 4
Organization Chart, Resumes, and Staff Availability

To consistently deliver KCI’s brand of client service, we always operate as a team.

Our staff has logged significant time working together as a team and each has specific skills and expertise to contribute. KCI has a senior staff team with unsurpassed experience and expertise as evidenced by a combined 125+ years of directly relevant experience.

KCI team members have degrees in environmental law, environmental sciences, resource management and administration, business administration, environmental engineering, marketing, biological sciences, and interdisciplinary ecology.

More importantly, they have hands-on experience and understanding to objectively assess recycling and waste management services, conduct waste composition studies, and understand the ins and outs of evaluating, building and running MRFs.

Along with on-point experience, our staff is relentlessly passionate about what they do, thereby having the dynamic ability to provide the District with an objective analysis and actionable reporting.

Selected Staff Profiles

Mitch Kessler, President and Project Director, has more than 33 years of solid waste consulting experience with a history of delivering dependable results for our clients. He is a resolute problem-solver with a practical perspective focusing on action and measurable outcomes. Mitch’s environmental law degree and extensive industry background provides unparalleled knowledge of industry trends and a keen ability for strategic thinking. He is a nationally recognized expert in the procurement and operations of solid waste collection systems, and materials recovery programs and facilities. Mitch also has a knack for surveying the local infrastructure, developing partnerships, and negotiating competitive contracts that are win-win for all parties.

Peter Engel, Senior Consultant and Project Manager, will serve as the primary contact for the District. Peter has 30 years of experience covering a broad range of technical and analytical disciplines, working with public and private sector clients in recycling, composting, and integrated solid waste management (ISWM). Peter has the expertise and on-point project experience in MRF feasibility, design/build and MRF equipment solicitation and contract assistance that will provide the District with the thorough and objective analysis needed for this project.

“The insight and experience that you brought to this process was invaluable. Equally important was your professionalism. You successfully developed the synergy necessary to complete this project on time and with an outcome that exceeded our expectations.”

Ed Hunzeker
County Administrator
Manatee County, FL
Robin Mitchell, Director of Technical Services and Senior Consultant, has 30 years of experience in the solid waste industry. Robin has a rich background in regulatory and policy development and specializes in procurements and contracts. In fact, Robin developed the first market index revenue calculator for KCI and has maintained it over the past 17 years. As Director of Technical Services, Robin will be responsible for the technical review of this project.

Ashley Evans PE, Senior Consultant, is a professional engineer and solid waste consultant specializing in solid waste, storm water, energy, and remediation markets. With 15 years of industry experience, Ashley is a versatile leader and highly effective communicator with strong analytical and consulting skills.

Shane Barrett, Consultant, has planned and supervised the field work for 70 waste characterization and recyclables composition studies. These studies include sorting events ranging from one-day to three-weeks, single-season to multiple-seasons, and from single to ten generator sectors. In total, Shane has overseen the sorting of more than 3,000 samples.

Ryan Graunke, Research Analyst, joined KCI 2 ½ years ago after working for the Indiana Department of Environmental Management, where he reviewed permit applications and wrote regulatory permits. At KCI he has led multiple waste and recycling composition studies and worked on a number of MRF development projects. Ryan looks forward to returning to work on an Indiana project!

KCI’s key personnel assigned to the various project tasks will be complemented by consultants and research analysts with extensive experience researching solid waste issues and a “can-do” attitude when it comes to problem solving. Our staff has logged significant time functioning together as a team and each has specific skills and experience to contribute. Utilizing the strengths of each team member will allow KCI to bring about the most efficient results for the District.

Key personnel resumes are provided within this section with education and direct work experience on projects similar to that which the District is requesting.
Organizational Chart

Client

Monroe County Solid Waste Management District

KCI Project Management Team

<table>
<thead>
<tr>
<th>Project Director</th>
<th>Project Manager</th>
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</thead>
<tbody>
<tr>
<td>Mitch Kessler</td>
<td>Peter Engel</td>
</tr>
<tr>
<td>President, Principal-in-Charge</td>
<td>Senior Consultant &amp; Primary Contact</td>
</tr>
</tbody>
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KCI Project Team

<table>
<thead>
<tr>
<th>Assessment of District &amp; Regional Waste Management System</th>
<th>Mixed Waste Processing Technology Review, Facility Profiles &amp; Assessment</th>
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</thead>
<tbody>
<tr>
<td>Mitch Kessler</td>
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<tr>
<td>Peter Engel</td>
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<tr>
<td>Ryan Graunke</td>
<td>Ashley Evans</td>
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<td>Ryan Graunke</td>
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<thead>
<tr>
<th>Waste &amp; Recyclables Characterization Study</th>
<th>Project Coordination, Final Report &amp; Presentation</th>
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<tbody>
<tr>
<td>Robin Mitchell</td>
<td>Mitch Kessler</td>
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<tr>
<td>Shane Barrett</td>
<td>Peter Engel</td>
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<tr>
<td>Ryan Graunke</td>
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Mitch Kessler
President

Mitch Kessler will serve as Project Director for Kessler Consulting, Inc. (KCI). He will have final responsibility for the direction and coordination of all tasks assigned to KCI, and will have ultimate responsibility for all services provided by our firm.

Mitch has 33 years of solid waste experience and has managed or directed more than 300 projects for over 200 KCI clients. His legal training is especially useful in understanding and interpreting local, state, and federal laws and regulations. His broad background in solid waste management and business makes him a Project Director who is an industry leader with the history and experience to deliver results for our clients.

Mitch is a nationally recognized expert in the procurement and operations of solid waste collection systems and materials recovery programs and mixed waste processing facilities. He is knowledgeable in collection and market development issues as they relate to the economic viability of solid waste and recycling programs.

A few of the recent projects that Mitch directed are summarized below.

- **Solid Waste Management Alternatives and Green for Green Plan, Charleston County, SC**
  Mitch designed and managed an independent audit of the county’s waste stream and solid waste management operations. The audit included an in-depth analysis of program costs and systems including collection, waste-to-energy and landfill disposal, compost, and MRF operations. He directed research into emerging alternative technologies. A Nine Point Green Strategy was developed for an efficient and cost-effective integrated solid waste management program. Mitch directed implementation of the plan, which included implementing transfer and disposal changes, improving the capacity and efficiency of existing operations (compost, landfill, MRF), building alliances with local municipalities, and continuing the county’s conversion to an automated single stream recycling program.

- **MRF Assistance, Charleston County, SC**
  Mitch provides ongoing support to the county-owned MRF, which started with the identification and implementation of recommendations to improve productivity and

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**Formal Education**
- University of New Hampshire, NH
  JD, Environmental Law, 1984
- Purdue University, IN
  MA, American Studies, 1981
  BS, Management, 1979
- State University of New York, NY
  AAS, Horticulture, 1976

**Supplemental Education**
- SWANA Certified Recycling Manager
- SWANA Certified Composting Systems Manager
- SWANA Certified Instructor for Recycling, Collection & Composting

**Affiliations & Leadership Roles**
- Recycle Florida Today, Inc., Chair (2 years), and BOD (8 years)
- Florida Organics Recyclers Association, founding Chair
- United States Composting Council
reduce costs. Mitch helped implement movements and modifications to the MRF equipment. Mitch also helped the county privatize the MRF operations and negotiated the contract between the two parties resulting in cost savings and material revenues. Mitch helped retrofit the facility to accept single stream materials and subsequently assisted the county in the siting and building of a new state-of-the-art facility.

- **Collections Services Assistance, Hillsborough County, FL**
  Mitch was integrally involved in working with the highest level of county administrative staff to craft a solid waste system strategy to modernize the existing system, provide high quality service, manage the county’s resources, and be fiscally responsible. As a result of the strategy developed, Mitch directed the internal development of two procurements including solid waste and recyclables collection and processing services, and helped to present the bids to the Board of County Commissioners for approval. Upon service level selection and award of franchises to three service providers, Mitch also directed the development of a procurement for more than 520,000 roll carts that were used to convert the county from manual to automated collection. The new franchises resulted in a 34 percent reduction in rates paid by residents for collection service, and more than $2.8 million per year in estimated recycling revenue to the county based on five year average commodities prices.

- **Recycling Center Analysis, Boulder County, CO**
  Mitch directed an operational and financial evaluation of the Boulder County Recycling Center to benchmark current operations and economics and evaluate proposed facility improvements. Mitch provided practical recommendations for improving current operations as well as planned future equipment and building modifications to accommodate additional tonnage.

- **Waste and Recyclables Processing and Compost Operations and Marketing, Emerald Coast Utilities Authority (ECUA), Pensacola, FL**
  Mitch has directed numerous ECUA projects for nearly a decade. Most recently Mitch has guided ECUA through the procurement and negotiation steps of developing a state-of-the-art MRF for single stream recyclables. With KCI’s assistance, ECUA was able to go from initial request for proposals to an operating MRF in less than a year! On a separate project, KCI has provided technical and operational support for ECUA as it is developing a full-scale biosolids compost operation. Mitch used his numerous contacts in the industry to help ECUA create a compost end-user market in the Pensacola area.

Mitch has received the following industry awards:

- Professional Achievement Award – Private Sector, 2012, SWANA
- Distinguished Service Award, 2008, SWANA
- George Kirkpatrick Lifetime Commitment Award, 2006, RFT
- Outstanding Contribution Award, 2002, SWANA FL
- Exceptional Leadership Award, 1997, Florida Organics Recyclers Association

Prior Employment History:

- Organics Recycling Incorporated, C.O.O. and Director of Business Development
- Resource Integration System, Vice President and Director of Consulting Services
- Malcolm Pirnie, Inc., Waste Reduction and Recycling Specialist
Peter Engel
Project Manager

Peter Engel will serve as Project Manager. He has worked since 1987 with public and private sector clients in recycling, composting, and integrated solid waste management (ISWM). From conceptual design to implementation and program optimization, Peter blends system-thinking and strong technical knowledge to help clients achieve their materials management improvement goals.

Peter’s core work experience includes:

- Solid waste management plans
- Regulatory analysis and development
- Collection system planning and analysis
- Financial analysis and rate studies
- Operational performance improvement
- Recycling facility development and operations
- Public-private partnerships and procurement
- Composting facility development and operations

Peter has played an integral role in implementing innovative solutions and best practices in recycling, composting, and ISWM for a wide range of local and regional governments and industries. He is also an experienced trainer having worked with both management and operational personnel in domestic and international contexts.

Peter has worked on projects through North America and his international experience includes projects in Chile, Egypt, Tajikistan, the Maldives, Bulgaria, Senegal, Liberia, and El Salvador. The following are a few of the projects in which Peter has played an integral role.

- **Solid Waste Management Planning and Implementation, Charleston County, SC**
  Peter helped lead a comprehensive analysis of the county’s waste streams and existing collection, recycling, and disposal programs, based on which the county decided not to renew its waste-to-energy contract and instead to focus on achieving a 40 percent recycling goal. Peter continues to work closely with the county to design and implement programs and facilities for maximizing materials and organics recycling. He has focused on improving existing MRF operations, development of a new regional MRF, developing information management systems, and managing transfer and disposal contracts.

- **Materials Recovery Facility Development, Charleston County, SC**
  Peter has worked closely with the county on two phases of MRF development. Initially, the county needed to retrofit its old dual stream MRF to handle single stream. Peter worked with the county to develop the conceptual design, technical specifications and procurement of processing equipment to handle single stream recyclables. Peter then assisted the county with the development of a new 30 ton per hour single stream MRF. To
date, he has developed procurement documents, reviewed vendors’ technical and financial proposals, and assisted the county during vendor interviews and the selection of preferred vendors.

**Materials Recovery Facility Development, Emerald Coast Utilities Authority, Pensacola, FL**

Peter worked closely with ECUA throughout the development of its new MRF (start in August 2016). Initially, he assessed various recycling and processing scenarios including different types of processing options and regionalization opportunities. Once ECUA decided to develop its own 25 ton per hour MRF, his work focused on two partnerships with the private sector – one to provide the processing system and the other to operate the MRF. This involved developing procurement documents, analyzing and comparing proposals, participating in team meetings, shortlisting vendors, and negotiating the contract. For the equipment procurement, Peter reviewed MRF design including building specifications and processing system design and drafted the performance statement. For the operator procurement, he also helped negotiate the operating fees and revenue sharing terms, drafted the contract, and reviewed the operating plan.

**Materials Recovery Facility Development, Private Client, Chile**

Peter is currently assisting a private Chilean company with developing the country’s first single stream MRF. His international experience and knowledge of the solid waste and recycling industry in the U.S. is providing the right combination for the specific needs of this project. Work has focused on the procurement of the processing system for this 30 ton per hour MRF. He provided technical assistance in developing bid documents and conducted a comprehensive technical review of vendor proposals. With Peter’s assistance, the client has selected a vendor and is now in the process of final design and permitting.

**Materials Recovery Facility Analysis, Boulder County, CO**

Peter coordinated this detailed operational and financial evaluation of the Boulder County Recycling Center (BCRC). A two-day on-site audit took a comprehensive look at facility layout, process flow, equipment configuration, sorting procedures, labor requirements, and commodity production. Supplemented with analysis of historical records, KCI determined key performance metrics for the MRF compared to industry standards and developed practical recommendations for improving current operations.

**Materials Recovery Facility Feasibility Study, Lethbridge, Alberta, Canada**

Peter managed this feasibility study that city staff used to develop recommendations to implement curbside recycling service in this community (pop. 95,000) that has historically relied on drop-off recycling. This involved projecting city and regional recycling tonnages, on-site evaluation of existing recycling infrastructure, assessment of public-private partnership opportunities, preliminary MRF process design, and 15-year financial analysis.

**Prior Employment History:**

- **Reclay StewardEdge**, Senior Consultant
- **TERRA**, Principal Consultant
- **E&A Environmental Consultants**, Consultant
Robin Mitchell
Director of Technical Services

Robin Mitchell has 30 years of solid waste industry experience. She specializes in strategic planning, service procurements and contracts, rate analyses, recycling/waste reduction program development and implementation, and characterization studies.

Robin also has a rich background in regulatory and policy development, which enables her to quickly understand and interpret regulatory requirements. A few of the recent projects Robin has managed are summarized below.

**Waste Reduction, Diversion, and Recycling Master Plan, Fayetteville, AR**
Robin managed the development of a comprehensive Master Plan for the city, based on the city’s goal of diverting 80 percent of its waste from disposal. Initial project work included a waste composition study; evaluation of the city’s collection, processing, and transfer operations; and benchmarking of the existing program. Project work resulted in the implementation of food waste composting and single stream recycling pilot programs. Public input was achieved through surveys of residents and businesses, public meetings, as well as briefings and presentations to council members. Based on the modeling results and selection of the scenario that best met the city’s objectives, a proposed action plan was developed. The action plan identified policy, program, and facility recommendations and a phased approach for implementation. Robin and her team then produced the city’s final Solid Waste Reduction, Diversion, and Recycling Master Plan.

**Comprehensive Waste Composition Study, Fayetteville, AR**
Robin managed the planning and execution of an eight-day composition study for the City of Fayetteville and the University of Arkansas. Field work for the city entailed five days of sampling and sorting residential and commercial waste delivered to the city’s transfer station, as well as visual audits of bulky waste loads. Field work for the university study entailed three days of sampling and sorting waste from four generator sectors (facilities, housing, student union, and athletics) at a privately owned landfill. Results of the studies are being used to develop a master plan that will assist the city in striving to achieve its goal of 80 percent waste diversion.
MRF Technology Review and Feasibility Study, Pinellas County, FL
Robin oversaw an evaluation of existing recyclables processing capacity in the Tampa Bay area and analyzed the need for additional capacity. Project activities included a review of state-of-the-art MRF technologies based on literature review, interviews with industry experts, and site visits in Florida and California. The project identified an unfulfilled capacity need in the area.

Waste Characterization Study, North Carolina State University, Raleigh, NC
Robin managed this project to determine the composition of solid waste disposed in academic buildings, residential halls, dining facilities, libraries, mixed use buildings, and research and medical buildings of the NC State campus. The WCS consisted of sampling and sorting solid waste from 33 distinct buildings to determine the types and quantities of recoverable materials being disposed. Results are being used to identify additional waste diversion opportunities to assist the NC State achieve its 65 percent recycling goal.

Solid and Hazardous Waste Audit, Appalachian State University, Boone, NC
Robin managed this project, which consisted of both a solid waste and hazardous waste audit for the university. The solid waste audit entailed sampling and sorting waste from more than 45 distinct areas of the campus. The objective was to determine the types and quantities of waste, especially recoverable materials, disposed by the academic, auxiliary, and residential areas of the campus. The Hazardous Waste Audit was conducted to establish a benchmark of the university’s compliance with state and federal regulations.

Material and Energy Recovery Technologies, Pinellas County, FL
As part of Pinellas County’s comprehensive, long-term strategic planning process, KCI is conducting a comprehensive study of the status and relative costs of material and energy recovery technologies. The study includes mechanical, biological/chemical, and thermal technologies, along with other related topics regarding CNG and co-processing with biosolids. The information gathered on each technology includes feedstocks, output products and their potential markets, profiles of commercial-scale projects, companies utilizing each technology, and estimated costs and revenues associated with each technology.

Robin has received the following industry awards:

- **2012 Recycler of the Year**, RFT
- Federal Environmental Executive’s “Closing the Circle Award,” 1996, for work to enhance government affirmative procurement
- **U.S. EPA Bronze Medal**, 1995, a team award for implementing the “Recycling Means Business” program
- **U.S. EPA Region 4 Bronze Medal**, 1990, a team award for revising and redeveloping the Regional model RCRA permit

Prior Employment History:

- **U.S. EPA, Region 4**, Waste Reduction Specialist
- **Florida Defenders of the Environment**, Executive Director
**Ashley Evans, PE, LEED AP**

**Senior Consultant**

**Ashley Evans** is a professional engineer and solid waste consultant specializing in solid waste, storm water, energy, and remediation markets. With 15 years of industry experience, Ashley is a versatile leader and highly effective communicator with strong analytical and consulting skills. Prior to joining KCI, Ashley spent 11 years with the engineering consultant firms of Arcadis and HDR Engineering in the role of Project and Client Manager, working on a variety of solid waste related projects.

Ashley is passionate about the environment and improving the world through engineering. Her principal focus has been on reducing the negative impacts of solid waste. The solid waste industry continues to grow in technological advancements and is an energy resource being tapped into more and more each day. As a result, the health and well-being of today’s world citizens and the quality of life for generations to come is improved.

Ashley’s Leadership in Energy and Environmental Design (LEED) accreditation blended with her MBA and environmental engineering degree brings forward-thinking and practical expertise to every project she works on. Her involvement and leadership roles in organizations such as SWANA, USCC, and APWA speak to her passion and commitment to sustainability and environmental responsibility.

Ashley has extensive experience in consulting, design, permitting, construction documents, and bidding assistance in the following areas:

- Facilities and Transfer Stations
- Rate Studies
- Contract Negotiations
- Community/Master Planning
- Stormwater Systems
- Waste-to-Energy
- Commercial Developments
- Landfill Cells
- Landfill Closures
- Landfill Gas Systems
- Compliance Monitoring, Reporting, and Remediation

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**Formal Education**
- University of North Carolina
  - MBA, Master of Business Administration, 2015
- University of Florida
  - BS, Environmental Engineering, 2005

**Professional Registrations**
- Registered Professional Engineer
  - Florida
  - Georgia
  - Maryland
- LEED® Accredited Professional

**Affiliations & Leadership Roles**
- Solid Waste Association of North America – Young Professionals Committee Chair
- American Public Works Association
- International Solid Waste Association
- United States Green Building Council
- American Water Works Association
- Engineers without Borders – Past President
- World Water Alliance – Secretary and Founding Officer
A few of the recent projects Ashley has managed or assisted with are summarized below.

- **Strategic Planning and Financial Services, Fairfax County, VA**
  Ashely served as Project Manager and was responsible for determining 20-year projections of population and commercial growth rates, developing various waste generation scenarios, and investigating active solid waste management facilities for use in the county’s Solid Waste Management Plan.

- **Yard Waste Assessment, Memphis, TN**
  Ashley was responsible for the assessment of the city’s yard waste collection program and recommending solutions to remedy abuse of the program, reduce cost of the program, improve customer experience and education, and improve processes for waste collection staff.

- **Strategic Planning and Financial Services, Memphis, TN**
  Ashley served as the Project Engineer responsible for the development of a pay-as-you-throw (PAYT) study to evaluate the city’s curbside collection system to determine waste streams generated, areas for improvement, associated costs and cost savings of the existing and proposed system, fee structure, as well as the phasing and costs for implementation.

- **Solid Waste Rate Study and Collection Feasibility Study, Macclenny, FL**
  As Project Manager, Ashley was responsible for the preparation of a waste collection rate study which evaluated current costs of solid waste programs, disposal fees, cost of future improvements and maintenance, potential population growth, and process improvements to determine collection rates for residential and commercial customers over a 10 year period. Ashley met with city officials to determine an appropriate fee schedule for the city and prepared city council meeting materials for officials and public attendees. Ashely was responsible for the preparation of a study evaluating the current collection processes and multiple scenarios to improve the collection equipment, staffing, expenses, and routes. The study assessed all annual operating costs for the solid waste division, equipment maintenance and replacement scheduling, and billings. Study projected cost over a 10 year period to determine which scenario met the city’s needs.

Ashley has received the following industry awards:

- Northeast Florida Young Engineer of the Year, 2013
- Pathfinder Award for Community Service, 2013
- EWB-Jax Young Engineer of the Year, 2010

Prior Employment History:

- **Arcadis**, Project/Client Manager
- **HDR Engineering, Inc.**, Project Manager/Client Development
Shane Barrett will be the Audit Supervisor for the Waste and Recyclables Characterization Study. Prior to joining KCI, Shane worked in the Waste Reduction Section of the Florida Department of Environmental Protection, where he was responsible for compiling county data for the state’s Solid Waste Management Annual Report and also assisted in developing the Florida Green Lodging Certification Program.

Shane has been with KCI for 13 years during which he has planned and supervised the field work for 70 waste characterization and recyclables composition studies. These studies include sorting events ranging from one-day to three-weeks, single-season to multiple-seasons, and from single to ten generator sectors. In total, Shane has overseen the sorting of more than 3,000 samples.

In all audits, Shane develops the audits to meet the needs of the client. Activities include coordinating with waste haulers, developing sampling schedules and site safety plans, training sorters, overseeing sampling and sorting, data analysis, report development, and compiling recommendations based on the results.

In addition to conducting waste composition studies, Shane has special expertise in and advanced knowledge of a variety of software programs and research tools. Shane also assists senior consulting staff with various project-related work including pilot program development, data analysis, processing contract management, educational material development, and various research projects. Shane’s exceptional support skills have made him a vital member of the projects on which he has assisted, a few of which are summarized below.

**Campus-Wide Waste Composition Audit, North Carolina State University, Raleigh, NC**
Shane designed and was sort supervisor for a waste composition study for North Carolina State University. The study was designed to determine the amount of recyclable materials still being disposed of by students and staff in 33 different buildings across campus. The goal was to sample and sort waste generated over a 24-hour period from each building. Shane designed the study to include multiple samples from each building to determine average waste generation and recyclables recovery.

**Campus-wide Waste Composition Audit, Appalachian State University, Boone, NC**
Shane planned and conducted a campus-wide waste composition audit for the university to determine the types and quantities of waste discarded at 45 distinct areas of the campus. Shane coordinated the sampling and delivery of more than 90 samples of waste to the sort

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**Formal Education**
Florida State University, FL
BS, Biological Sciences, 2001

**Supplemental Education**
Florida DEP Contracts/Grants Manager Certified, 2002
Florida DEP Certified – Florida Green Lodging Assessor, 2005

**Affiliations & Leadership Roles**
Recycle Florida Today, Inc., Board of Directors
SWANA – Florida Chapter
National Recycling Coalition
site, trained sorting staff, and oversaw the entire audit. The results of the audit are being used by university staff as they strive for a zero-waste campus.

- **City and University of Arkansas Waste Composition Study, Fayetteville, AR**
  Shane initiated our work on the city’s Master Plan project with a city-wide waste composition study to determine the types and quantities of waste currently being disposed by the residential and commercial sectors. Shane also audited incoming loads of bulk and C&D debris using a visual audit methodology. In addition, KCI also conducted a separate waste composition study of the wastes disposed on the University of Arkansas campus due to the amount of material generated by the university, which lies within the city limits. For the university, KCI looked at waste from four distinct areas of the campus: Housing, Student Union, Athletics, and Facilities. The results provided by these two studies, will be incorporated in KCI’s recommendations for increasing waste diversion and in developing future partnerships between the city and the university.

- **Comprehensive Waste Composition Study, Hillsborough County, FL**
  As sort supervisor, Shane conducted a 5-day sampling and sorting event at the RRF to determine the composition of the waste stream disposed at the county’s various disposal facilities. To increase the efficiency of the study, Shane worked with the three franchised haulers to direct haul loads from across the county to the RRF for inclusion in the study. Representative samples from 40 loads of waste were collected and sorted into 36 defined material categories.

- **Comprehensive Waste Composition Study, Chatham County, NC**
  Shane served as sort supervisor for this study that targeted garbage and bulky waste collected in the county’s 12 collection centers. For this study, KCI targeted garbage compactors and bulky roll-offs from each collection center, as well as pre-crushers from two locations. The results of this study were compared to a similar study conducted previously to determine changes in the waste stream and to evaluate the potential waste diversion that might be achieved through program improvements.

- **Commercial Waste Composition Study, Charleston County, SC**
  As WCS supervisor, Shane was responsible for developing the sorting event plan, protocols, and sampling schedule to understand the impacts of the county’s new commercial waste reduction programs. He was responsible for coordinating with haulers, acquiring all equipment, and overseeing all onsite activities, including daily setup, worker training, sample selection, and sorting. Shane also completed the data analysis and report preparation.

- **Recyclables Composition Study, Charleston County, SC**
  Following the conversion from dual stream to a carted, single stream recycling program, Shane conducted a recyclables composition study to determine the composition of the county’s new recycling stream. Shane developed all sorting methodologies and oversaw all field work. The results were utilized to aid in the procurement of MRF equipment.

**Prior Employment History:**
- Florida Department of Environmental Protection, Waste Reduction Section
Ryan Graunke joined KCI in 2015, following two and a half years’ experience writing environmental regulatory permits for the Indiana Department of Environmental Management. Ryan’s experience with solid waste goes back to when he was an undergraduate at the University of Florida, where he was an intern with the Office of Sustainability. He assisted in the development of a recycling program for on-campus tailgating activities. He also launched a campaign to teach students about what materials are recyclable on campus.

Ryan’s passion for waste reduction became focused on the anaerobic digestion of food waste. For his undergraduate thesis, he conducted a food waste audit of an on-campus dining hall and, using a research digester, measured the biogas potential of the dining hall’s food waste. This work carried over to his graduate research for which he conducted several waste audits at local schools, restaurants, and a small farm, and used various laboratory techniques to analyze the collected food waste for its biogas and fertilizer potential.

Ryan is a scientifically-minded individual and an accomplished researcher with skills in designing experiments, data analysis, and technical writing. His undergraduate thesis won the Student Research on Campus Sustainability Award from the Association for the Advancement of Sustainability in Higher Education in 2008. Ryan’s Master’s thesis on the effect of mechanical pretreatment on the anaerobic digestion of food waste won the Award of Excellence for Graduate Research by the University of Florida – Institute of Food and Agricultural Sciences for the “Best Thesis” in 2011. He has authored two scientific articles that have been published in peer-reviewed journals, including one titled “Food Waste Auditing at Three Florida Schools.”

Following graduate school, Ryan has coupled his scientific skills with experience in the regulatory field working as an air permit writer with the Indiana Department of Environmental Management. As an air permit writer, Ryan became adept at interpreting and applying environmental air regulations, a skill that easily translates to the solid waste world. A few of the recent projects at KCI in which Ryan has assisted are provided below.

**MRF Feasibility and Materials Marketability Assessment, Lethbridge, Canada**

Ryan worked with the City of Lethbridge in Alberta, Canada to assist in a feasibility study for the development of a new materials recovery facility. Ryan developed a model to estimate the amount and type of materials potentially recovered and the potential revenue and marketability of those recovered materials. Ryan also wrote a recommendation regarding different ownership and operating scenarios for a new MRF.
MRF Development, Emerald Coast Utilities Authority (ECUA), Pensacola, FL
Ryan provided technical assistance during the procurement of an equipment vendor and operator for a proposed single stream MRF. Ryan was responsible for developing procurement documents with technical specifications and proposal requirements, evaluating proposals submitted by bidders, drafting and revising contract language, and maintaining communication between project managers, the client, and bidders.

MRF Performance Acceptance Test, ECUA, Pensacola, FL
Ryan assisted in overseeing the acceptance test to assess the performance of the equipment at ECUA’s new MRF. KCI’s role was to be ECUA’s representatives at the test to ensure all proper protocols were followed and to record all pertinent data to calculate performance metrics. Ryan’s primary responsibility was monitoring the sorting of recyclables and residue in order to measure purity/contamination rates and recovery rates of recycled commodities.

Recyclables Composition Study, ECUA, Pensacola, FL
Ryan was the field supervisor for a recyclables composition study of curbside-collected single stream recyclables. He was responsible for all aspects of planning, executing, and analyzing the study. Specific tasks included developing sampling schedule, sort protocol, material categories, and site safety plan, planning for field work logistics, ensuring proper sampling and sorting procedures, managing the temporary laborers, analyzing data, and preparing the final report. For the study, Ryan oversaw the sampling and sorting of 39 samples of single stream recyclables. The results of the study were used to measure the composition of recyclables that ECUA will be receiving at a proposed materials recovery facility it is developing and to evaluate the average market value of the recyclables.

Biosolids/Yard Waste Composting Pilot, Hillsborough County, FL
Ryan worked with county staff to oversee a pilot project testing the feasibility of composting the county’s biosolids. This involved mixing ground yard waste with biosolids from the county’s wastewater treatment plant and comparing different composting techniques to assess the potential of full-scale implementation of biosolids/yard waste composting. Ryan assisted in monitoring activities to ensure that the composting procedures comply with FDEP and the general best management practices of the composting industry. Ryan was responsible for compiling and managing all data collected during the project, drafting weekly reports to FDEP, and overseeing on-site activities.

Recyclables Composition Study, Sarasota County, FL
Ryan was the field supervisor for a comprehensive recyclables composition study of curbside-collected dual stream recyclables. He was responsible for all aspects of planning, executing, and analyzing the study. Specific tasks included developing sort protocol, material categories, and site safety plan, planning for field work logistics, overseeing proper sampling and sorting procedures, managing the temporary laborers, analyzing data, and preparing the final report. The results of the study were used to reevaluate the average market value of the recyclables collected in unincorporated Sarasota County.

Prior Employment History:
- Indiana Department of Environmental Management, Air Quality Permit Writer
- University of Florida, Soil and Water Science Department, Graduate Research Assistant
4.1 Personnel Utilization

KCI anticipates company-wide personnel to have more than sufficient available capacity for the project time period. In addition, the chart below reflects the percentage of available time for personnel. The time needed from each team member will vary during the course of the project, but these percentages are based on average availability during the anticipated timeline for the project. Should the District encounter unforeseen circumstances that would necessitate the expansion of the scope, or additional consulting services, KCI has the depth of staff and resources available to assist the District as needed.

Your project team is available to start as soon as a notice to proceed is issued!
Section 5
Proposed Scope of Work

5.1 Project Approach

KCI’s methods and approach are described in detail in the Scope of Work/Deliverables (below) which includes the enumeration of specific tasks, work activities, and deliverables.

KCI will approach the MWPF Feasibility Study from a resource management perspective, meaning a primary focus will be on cost-effective and environmentally-sound recovery of material resources. The intent will be to put materials to their best and highest use, with cost being a key consideration. KCI will specifically evaluate the strategic, technical, and financial implications of recyclables and mixed waste processing and how the District’s business model would potentially be modified. As depicted in the graphic below, a key consideration is integrating and balancing all elements of the system, regardless of whether it is controlled by the District, Bloomington, UI, private companies, or neighboring counties. Each element has a cost and changes in one element will impact the other elements, both operationally and financially.

The RFP identifies 15 work activities. For our proposed scope of work (Section 5.3), KCI has organized the activities so that each task builds on prior tasks and informs subsequent tasks, and thus facilitates work flow. The full range of possible recyclables and mixed waste processing solutions and potential sources of material is so diverse that we believe it will be helpful to first narrow the focus to what is applicable and appropriate for the District.

KCI proposes that work begins with an assessment of the District and regional solid waste management system and a review of state-of-the-art mixed processing technologies (Items #2 and #3 in the RFP scope of work). This will help focus the WCS which in turn will provide the necessary foundation for a practical and District-focused feasibility assessment of recyclables and mixed waste processing.

We then propose conducting a strategy session with the District in order to identify and focus the project priorities within the context of the regional, competitive landscape for processing and disposal, the results of the WCS, and the range of tonnage that may be attracted.

KCI will then conduct the heart of the feasibility assessment. KCI maintains a database of materials processing facilities in the United States. We also have a proprietary spreadsheet model for assessing integrated collection, processing, and disposal systems which we can
customize with District-specific data. Our work will look at different processing scenarios (i.e., segregated recyclables, single stream recyclables, and recovery of recyclables and/or compostables from mixed waste) and evaluate their operational and financial implications, including staffing requirements, waste diversion rates and planning-level facility information (e.g., building size, equipment requirements, capital expense, operating expense, and operating revenue). KCI will complete the project by preparing a Mixed Waste Processing Feasibility Report for the District that includes actionable findings and conclusions that can help drive the District’s policy, program, and infrastructure decisions.

5.2 Project Management

KCI employs state-of-the-art technology to ensure efficient communication and research capabilities. We utilize a number of communication and coordination tools, including videoconferencing, regularly scheduled internal team meetings, regularly scheduled client teleconferences, SharePoint file sharing, and file transfer sites to cost-effectively manage client communications.

KCI has an extensive in-house Resource Center containing current and relevant solid waste information, as well as a database of solid waste program information for various jurisdictions that is updated on a continual basis. Our working relationship with our clients and many industry experts allows us to easily network and gain quick access to information.

Our quality control and assurance program is straightforward and effective. All deliverables are reviewed by a minimum of three people. The original author of each deliverable is responsible for conducting a thorough review. The task manager then reviews the deliverable for technical accuracy and to ensure it meets the project requirements and expectations of the client. Depending upon the nature and complexity of the deliverable, an additional senior staff member may also be requested to conduct a technical review. Finally, the project manager examines the deliverable for a holistic technical approach and continuity with the project scope of work. Upon the project manager’s approval, administrative staff conducts a final review for grammatical, typographical, or formatting errors. We strive for excellence!

5.3 Scope of Work

Task 1 - Assessment of District and Regional Waste Management System

Purpose: In this initial task, we will inventory and assess the District and regional waste management system infrastructure, services, contractual arrangements, and pricing. This work will lay the foundation for all subsequent task work.

Work Activities:

1. Prepare for and conduct a kick-off teleconference with District staff to initiate the project and clearly define the project objectives, work activities, deliverables and schedule.

2. Request and review information regarding the District including:
o Tonnage reports for all materials handled by the District for the past three years and the current year to date.

o Contracts for recycled materials processing and solid waste transfer and disposal.

o Site plans for District recycling centers and other property controlled by the District.

o County population and employment data and future projections.

o Detailed financial records for the past three years and the current year to date, including budgets, actual revenues and expenditures, capital accounts, reserve accounts, and bond/debt financing.

o Program education and outreach materials.

o Estimates of waste tonnage collected by private companies in Monroe County.

3. Research and review information regarding recycling and solid waste management in Bloomington, IU, and neighboring counties\(^2\) including:

o Quantities of recyclable materials and solid waste handled for the past three years and the current year to date.

o Descriptions of programs, contracts, and infrastructure for recycled materials collection, processing, and marketing and solid waste transfer and disposal. Particular focus will be placed on determining the role of the private sector in the waste management system, i.e., the flow of commercial waste.

o Pricing for recycling and disposal services (e.g., facility operating cost, processing cost, recycled materials revenue, and transfer and disposal cost), to the extent they are available.

o Population and employment data and future projections for a 15-year period.

4. Develop process flow diagrams “mapping” the flow, tonnage, and responsible entities for recyclables and waste in Monroe and neighboring counties.

5. Based on KCI’s database of recyclables and mixed waste processing facilities throughout the U.S., compile a matrix of processing technologies, including the following:

o General description of the technology and major equipment components.

o Typical feedstocks (e.g., segregated recyclables, single stream recyclables, and mixed municipal solid waste).

o Marketable products, by-products, potential markets, and values for marketable products.

\(^2\) Morgan, Brown Lawrence, Greene, and Owen counties. Each is a single county solid waste management district.
6. Rate their potential applicability to the District in terms of design capacity, feedstock availability, and how the technology complements or is compatible with the District and regional solid waste infrastructure.

**Deliverables:**

- Technical memorandum containing a summary of the current solid waste management system, population and waste projections, processing technologies, and their potential applicability for the District.

**Task 2 - Recyclables and Waste Composition Study**

**Purpose:** KCI will conduct a recyclables and waste composition study (R&WCS) to determine the types and quantities of processable waste, including recyclables, being disposed by distinct generators within the District. The results of the R&WCS will be used in subsequent task work. This task assumes that the R&WCS will target the following generator sectors: Bloomington residential and commercial waste, privately collected County residential waste, orange bag waste, and UI waste.

**Work Activities:**

1. Prepare for and conduct a kick-off teleconference with District staff to initiate the project and clearly define the task objectives, work activities, deliverables and schedule.

2. Review data and information, compiled in Task 1, to prepare a Sampling and Sorting Protocol that will include the following:
   - Sampling Schedule detailing target number of samples per generator sector and haulers each of the five days of fieldwork.
   - Protocol for pulling representative samples from selected loads of waste and sorting the samples.
   - Material Categories List of defined material categories into which the waste will be sorted. KCI will ensure that these categories are consistent with the District’s objectives and include appropriate recyclable material categories.
   - Site Safety Plan detailing the procedures and practices to ensure safety throughout the sorting event.

3. Work with University staff to determine the types of waste to be included in study (e.g., samples from housing, academic, dining, and mixed-use buildings) and coordinate the collection and delivery of samples to the sort location.

4. Discuss university participation in the R&WCS as both a learning experience and/or volunteer opportunity for both students and staff.

5. Conduct a site visit at Republic’s Transfer Station to observe waste management procedures, identify appropriate sampling and sorting area, determine how selected
trucks will be identified, and coordinate the assistance of Republic’s loader and operator to assist with pulling samples.

6. Review the Sampling and Sorting Protocol with District staff and revise as needed.

7. Conduct the sorting event over five days comprised of 40 to 45 samples of approximately 200 to 300 pounds each. Specific work hours will depend on the transfer station’s operating hours and typical waste collection patterns. Activities will include the following:
   - Mobilize for the fieldwork, including obtaining all supplies, ensuring all equipment is in good working order, and arranging for contracted laborers to assist in sorting.
   - Provide a KCI Field Supervisor, KCI Sorting Supervisor, and up to six, contracted day laborers.
   - Conduct a training session prior to starting work each day, to review safety and sorting procedures with workers.

8. Conduct a statistical analysis to calculate the percentage by weight of each material category for each generator sector, as well as the 90 percent confidence intervals. Analysis will be conducted in accordance with ASTM’s Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste (D5231-92; Reapproved 2008).

9. Prepare a draft technical memorandum providing the methodology and study results, as well as appendices containing individual sample data for each generator sector. The memorandum will also identify the types and quantities of potentially recyclable materials that are currently disposed by District residents and businesses.

Assumptions: For the purpose of preparing its proposed scope and budget, KCI made the following assumption regarding the composition study:
   - The District will secure the cooperation of Republic to conduct the study in an outdoor area adjacent to the transfer station.
   - The District will secure the cooperation of Bloomington and UI to participate in the study.
   - The transfer station site visit will be conducted at the same time as Task 3.
   - Any costs associated with materials handling equipment (e.g., small loader to pull samples) and disposal of sample materials are not included.

Deliverables:
- Sampling and sorting protocol detailing material categories, sampling schedule, and site safety plan.
- Technical memorandum presenting the results of the characterization study to be submitted four months after the project is started.
**Task 3 - Feasibility Study Strategy Session**

**Purpose:** This task identifies the potential geographic area and sources of waste and recyclables that may be handled by the proposed facility. It also assesses the need for the proposed facility based on the regional market place. This work helps focus the remainder of the project so that it can yield conclusive and actionable results.

**Work Activities:**

1. Identify opportunities and constraints in the District and regional solid waste management systems, such as the role of the independent private services providers (e.g., control of commercial waste streams), length and terms of public sector contracts and agreements, capacity and life expectancy of alternative processing and disposal facilities, and proximity and cost of those alternative facilities.

2. Prepare for and lead a one-day on-site strategy session with District staff. The work session will include the following activities:
   - Review Task 1 results with a focus on sources and types of waste and recyclable materials, their distance from the District, who controls the materials, and costs and revenues associated with managing those materials.
   - Review results of the R&WCS, specifically in terms of the potential opportunity to increase materials recovery and diversion from disposal.
   - Identify the relative costs and benefits associated with including regional waste and/or recyclables in the proposed facility given existing infrastructure and services.
   - Assess the opportunities and constraints for “attracting” those materials to a processing facility in Monroe County, rank the likelihood of those materials coming to the proposed facility, and estimate the maximum tonnage that the proposed facility may receive.
   - Identify alternative solutions for increasing waste diversion and assess their advantages and disadvantages.

3. The outcome of the work session will be a refined focus for the remainder of the project, in particular the basis for determining the range of scenarios for the technical and financial analysis.

**Deliverables:**

- Strategy session.
- Technical memorandum summarizing the results of the strategy session.

**Task 4 - Scenario Development and Conceptual Design Parameters**

**Purpose:** This task identifies up to four scenarios to be analyzed in Task 5. The scenarios will cover the minimum and maximum range of potential tonnages and material types identified in the strategy session.
Work Activities:

1. Develop a list and summary description of potential scenarios which cover a range of facility input options (e.g., segregated recyclables, single stream recyclables, and mixed waste) and the minimum and maximum range of potential tonnages.

2. Prepare for and participate in a teleconference with the District to discuss potential scenarios, and then select four scenarios for subsequent analysis. The scenarios will include an alternative solution that does not require a District processing facility, but still enables the District to increase recycling and reduce waste going to disposal.

3. Contact up to three processing system vendors and obtain general information regarding design parameters, system performance assumptions (e.g., material recovery rates), processing system layouts, and equipment inventories, staffing requirements, and estimated capital costs.

Deliverables:

- Technical memorandum describing up to four material processing scenarios.

Task 5 - Scenario Assessment

Purpose: The purpose of this task is to assess the feasibility of the four processing scenarios, including an alternative solution, within the context of the local waste management market place. This task will consider financial, non-financial, and strategic factors that impact the feasibility and sustainability of each scenario.

Work Activities:

1. Develop planning-level (rough order of magnitude) cost estimates for each scenario, including capital cost for buildings, processing system, and rolling stock; annual operating costs (i.e., labor, electricity, equipment maintenance, supplies, fuel, etc.); and annual revenue from sale of products.

2. Develop 15-year cost projections and estimate the net present value and potential return on investment compared to the District’s current waste management practice.

3. Develop an inventory and assessment of strategic factors relevant to the District’s decision-making process, such as potential impact on existing programs, infrastructure, stakeholders, and District revenue sources. The assessment will also include flow control strategies compliant with case law, contractual options to secure tonnage commitment, public-private partnerships for ownership and operations, project financing options, and greenhouse gas emissions.

Deliverables:

- Technical memorandum describing the results of the scenario assessment.
Task 6 - Project Coordination, Final Report and Presentation

**Purpose:** Throughout this project, KCI will maintain frequent communication with District staff regarding project status and technical aspects of work. This task will prepare the project report and presentation for subsequent use by the District.

**Work Activities:**

1. Participate in twice monthly project status calls with District.

2. Prepare a draft report summarizing the results of the feasibility study. The draft report will be submitted no later than six months after project initiation, and will be based on the deliverables provided throughout the project, including:
   - Assessment of the current District and regional solid waste management systems including waste and recyclables tonnage, flow and control of materials, and costs.
   - Technology review and facility profiles.
   - Results of the strategy session.
   - Waste characterization study results.
   - Description of potential mixed waste processing scenarios and an alternate solution.
   - Results of the scenario evaluation.

3. Prepare a final report based on the District’s review and comment. The final report will be submitted within eight months of project initiation (contingent on receiving District comments no more than 30 days after the draft report submittal).

**Deliverables:**

- Draft report.
- Final report.
Section 6
Proposed Project Schedule and Cost

Project Schedule

KCI developed the following proposed schedule to complete the proposed scope of work and comply with the District’s major milestone requirements, namely an interim report of the characterization study in four months, a draft report within six months, and a final report within eight months of the effective date of the contract. The proposed schedule shows the expected time needed to complete each task and the expected delivery time for project deliverables (noted as ◊). The schedule is contingent upon timely communication, coordination, and response to KCI information requests by the District.

<table>
<thead>
<tr>
<th>Task</th>
<th>Month</th>
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<tbody>
<tr>
<td>1 District &amp; Regional Assessment</td>
<td>1</td>
</tr>
<tr>
<td>2 Waste Composition Study</td>
<td>2</td>
</tr>
<tr>
<td>3 Strategy Session</td>
<td>3</td>
</tr>
<tr>
<td>4 Scenario Development</td>
<td>4</td>
</tr>
<tr>
<td>5 Scenario Assessment</td>
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<tr>
<td>6 Report</td>
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<tr>
<td>Project Coordination</td>
<td>7</td>
</tr>
<tr>
<td>Project Coordination</td>
<td>8</td>
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</table>

Project Cost

KCI will perform the proposed scope of work for a total fee of $84,000. This includes estimated professional fee of $71,900 (including all overhead, direct and indirect costs) plus direct expenses of $12,100 (characterization study supplies and temporary labor, travel, postage, telecommunications, etc.). KCI will only bill for actual hours and expenses incurred. The table below provides our staff assigned to this project, their proposed hours, and hourly rate.

<table>
<thead>
<tr>
<th>PERSON</th>
<th>POSITION</th>
<th>PROPOSED HOURS</th>
<th>RATE</th>
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<tr>
<td>Mitch Kessler</td>
<td>Project Director</td>
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<td>Peter Engel/Robin Mitchell</td>
<td>Project Manager/</td>
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<td></td>
<td>Senior Consultant</td>
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<td>Ashley Evans</td>
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<td>Shane Barrett</td>
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<td>Ryan Graunke</td>
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<tr>
<td>Nikki McNew/Annie Mathew</td>
<td>Administrative Support</td>
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</table>
Sub-Consultants

KCI will not utilize contracted sub-consultants for this project. While conducting research for this proposal, KCI talked with a number of people in Bloomington, UI, and local community organizations knowledgeable about solid waste and recycling. In addition to District staff providing “boots on the ground” knowledge and context for the project work, KCI can draw on this network of contacts we have already made in Monroe County.
Section 7
Prior Work on Similar Projects

Since inception, KCI has remained focused solely on solid waste management. Our work reflects the depth of our experience and our continued commitment to our clients and the communities they serve. As requested in the RFP, on the following page we are providing a listing of all consulting work completed within the past five years on similar projects.

In past five years, KCI has completed solid waste planning, feasibility, program development, and financial analysis for well over 100 clients! Please note that we have limited this list to those projects that are specifically related to the core elements of this project. Given that we have provided descriptions of these projects in the Qualifications and Experience section, we have referenced the page numbers where the description(s) and contact information is located.
<table>
<thead>
<tr>
<th>Client</th>
<th>Page(s)</th>
<th>Feasibility Study</th>
<th>RCS/WCS</th>
<th>Facility Development / Operations</th>
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Section 8  Proposed Contract

CONTRACT FOR
SOLID WASTE CONSULTING SERVICES

THIS CONTRACT, made this __ day of __________ 2017, is by and between the Monroe County Solid Waste Management District (District) whose address is ____________, and Kessler Consulting, Inc. (“KCI”), a Florida corporation whose address is 14620 N. Nebraska Avenue, Building D, Tampa, FL 33613.

I. SCOPE

For and in consideration of timely payment by the District of the compensation set forth below, KCI shall provide the Scope of Services (“Services”) specified in Exhibit A, which is attached hereto and incorporated herein by reference, subject to the other terms and conditions set forth in this contract. The Services to be provided may be changed by the mutual agreement of the parties hereto. The District shall promptly provide KCI with any and all documents and information needed by KCI to provide the Services. It is expressly agreed that KCI is an independent contractor of the District.

The District reserves the right to request additional services from KCI. When approved by the District as an amendment of the contract and authorized in writing prior to work, KCI shall provide such additional requirements as may become necessary.

Changes, modifications, or amendments in scope, price, or fees to the contract shall not be allowed without a prior formal contract amendment approved by the Mayor and the District Council in advance of the change in scope, cost, or fees.

II. TERM OF AGREEMENT

The initial contract period shall commence on the date this contract is executed by the District and KCI, whichever date is later, and shall terminate two (2) years after the commencement date, unless extended by mutual agreement of the parties hereto.

III. COMPENSATION

The compensation to be paid by the District to KCI for providing the Services shall be as stated in Exhibit B, which is attached hereto and incorporated herein by reference. The District shall pay KCI for completion of Services on a time and materials basis; for an amount not to exceed that specified in Exhibit B without prior approval by the Mayor and District Council. Labor shall be invoiced based on the hourly rates specified in Exhibit B and expenses shall be invoiced at cost, without mark-up. Labor rates may be adjusted if the contract is extended beyond the initial two (2) years upon approval of a formal contract amendment by the Mayor and the District Council.

If requested to provide additional services pursuant to Section I, compensation for these additional services shall be as negotiated between the District and KCI, as approved by the Mayor and District Council.

IV. METHOD OF BILLING AND PAYMENT

KCI may submit monthly invoices to the District requesting payment for services accomplished during each calendar month. Monthly invoices will include breakdown of employees and hours worked, description of activities performed, and reimbursable costs and expenses incurred. All invoices shall be due and payable to the District to KCI within thirty (30) days of invoice receipt. Failure to pay compensation to KCI, as and when required, shall entitle KCI to immediately cease all services, and to terminate this contract as set
forth below. Any failure by the District to pay any sums due and owing KCI shall be a material breach of this contract.

V. RIGHT TO AUDIT

The District reserves the right to audit KCI’s records as such records relate to purchases between the District and KCI.

VI. JURISDICTION AND VENUE

Legal jurisdiction to resolve any disputes shall be Florida, with Florida law applying to the case. Venue for any legal dispute shall be Hillsborough County, Florida.

VII. INDEMNIFICATION

KCI agrees to indemnify the District 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 contract, and such obligation shall survive acceptance of the services and payment thereof by the District.

The District shall indemnify and hold harmless KCI and its agents, representatives and employees, from and against any and all suits, actions, legal proceedings, claims, demands, damages, liabilities, costs and expenses, including attorney’s fees, arising out of or in connection with or claimed to arise out of or in connection with any negligent act, error, omission or wrongful act of the District and/or anyone acting on its behalf in connection with or incident to this contract. This paragraph shall survive the termination, cancellation and/or expiration of this contract.

VIII. TERMINATION

A. The District reserves the right to cancel this contract without cause by giving sixty (60) days prior notice to KCI in writing of the intention to cancel or with cause if at any time KCI fails to fulfill or aide by any of the terms or conditions specified.

B. Failure of KCI 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 discretion of the District.

C. In addition to all other legal remedies available to the District, the District 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 District.

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

E. If this contract is terminated for any reason, the District shall compensate KCI for all services completed through the date of termination, together with all reimbursable costs and expenses. Such payment to KCI shall be considered a payment on account, and shall not constitute payment in full of all sums owed to KCI pursuant to this contract or otherwise.
IX. INSURANCE

KCI shall procure and maintain throughout the term of this contract the following insurance limits and coverage and shall, upon executing this contract, provide the District with certificates of insurance evidencing same, showing other party as Additional Insured on all coverage except workers' compensation and professional liability. Such insurance shall include appropriate clauses and/or endorsements pursuant to which the insurance companies shall waive its right of subrogation against the District.

A. Workers’ Compensation Insurance and Employer’s Liability Insurance, in accordance with Chapter 440, Florida statutes, and/or any other applicable law requiring workers’ compensation, of not less than the following:

- Workers’ Compensation: $1,000,000.00 limit per accident
- Employer’s Liability: $1,000,000.00 limit per disease aggregate
- $1,000,000.00 limit per disease each employee

B. Commercial General Liability Insurance, on terms no more restrictive than the latest edition of the Commercial General Liability policy (CG 00 01) of the Insurance Services Office, in the amount of not less than $1,000,000.00 per occurrence to protect against claims for damages for bodily injury, including wrongful death, as well as claims of property damages, which may arise from any operations under this contract, whether such operation be by KCI or by the District or anyone directly employed by or contracting with KCI or the District.

C. Comprehensive Automobile Liability Insurance in the amount of not less than $100,000.00 combined single limit for bodily injury and property damage liability to protect both parties from claims for damages for bodily injury, including the ownership, use, or maintenance of owned and non-owned automobiles, including rented automobiles whether such operations be by KCI or the District or by anyone directly or indirectly employed by KCI or the District.

D. Professional Liability Insurance in the amount of not less than $1,000,000 per occurrence.

Any subconsultants shall provide certificates of insurance evidencing coverage and terms in accordance with the insurance requirements outlined above.

X. ASSIGNMENT, SUBCONTRACTING, ACQUISITIONS AND/OR MERGERS

A. KCI and any subconsultants identified in KCI’s proposal to the District shall perform services pursuant to this contract. No other assignment or subcontracting shall be allowed without prior written consent of the District.

B. In the event of a corporate acquisition and/or merger, KCI shall provide written notice to the District within thirty (30) calendar days of KCI’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 District, 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.

XI. DISPUTE RESOLUTION

If a dispute arises out of or relates to this contract, or the breach thereof, the parties will attempt to settle the matter through amicable discussion. If no agreement can be reached the parties agree to use mediation before resorting to a judicial forum. The cost of a third party mediator will be shared equally by the parties. Notwithstanding the foregoing, this paragraph shall not in any way preclude notice of breach or default, or
termination of this contract, as provided in this contract. This paragraph shall survive the termination, cancellation and/or expiration of this contract.

XII. ATTORNEY’S FEES
In the event of any demand, action or proceeding between the parties arising out of or relating to this contract, the prevailing party shall be entitled to recover any and all costs, including attorney’s fees and court costs, incurred in any investigations, actions, trials, appeals, mediations, arbitrations, bankruptcy proceedings, collection proceedings, collection efforts, and supplementary proceedings.

XIII. UNCONTROLLABLE CIRCUMSTANCES
KCI will not be liable in any way to the District for any delay or non-performance resulting from or arising out of any act(s) of God, severe weather, strike, civil disorder, earthquake, any law, order, proclamation, regulation, ordinance, demand or requirement of any governmental agency, or any other condition or occurrence whatsoever beyond KCI’s sole control.

XIV. SEVERENCE
In the event a portion of this contract is found by a court of competent jurisdiction to be invalid or unenforceable, the provisions not having been found by a court of competent jurisdiction to be invalid or unenforceable shall continue to be effective.

XV. ENTIRETY OF AGREEMENT
This contract embodies the entire agreement and understanding between the District and KCI, and there are no other agreements and understandings, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby. No alteration, change or modification of the terms of the contract, or any attachments, shall be valid unless made in writing signed by both parties hereto.
IN WITNESS WHEREOF, the District and the KCI execute this contract as follows:

MONROE COUNTY SOLID WASTE
MANAGEMENT DISTRICT

________________________________________
Name & Title

________________________________________
Date

KESSLER CONSULTING, INC.

________________________________________
MITCH KESSLER, President

________________________________________
Date