



# Lexington-Fayette Urban County Government

## Request for Proposals

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The Lexington-Fayette Urban County Government hereby requests proposals for **RFP #24-2017 Organics Recycling Feasibility Study** to be provided in accordance with terms, conditions and specifications established herein.

Sealed proposals will be received in the Division of Central Purchasing, Room 338, Government Center, 200 East Main Street, Lexington, KY, 40507, until **2:00 PM**, prevailing local time, on **August 21, 2017**.

Proposals received after the date and time set for opening proposals will not be considered for award of a contract and will be returned unopened to the Proposer. It is the sole responsibility of the Proposer to assure that his/her proposal is received by the Division of Central Purchasing before the date and time set for opening proposals.

Proposals must be sealed in an envelope and the envelope prominently marked:

**RFP #24-2017 Organics Recycling Feasibility Study**. If mailed, the envelope must be addressed to:

Todd Slatin – Purchasing Director  
Lexington-Fayette Urban County Government  
Room 338, Government Center  
200 East Main Street  
Lexington, KY 40507

Additional copies of this Request For Proposals are available from the Division of Central Purchasing, Room 338 Government Center, 200 East Main Street, Lexington, KY 40507, (859)-258-3320, at no charge.

Proposals, once submitted, may not be withdrawn for a period of sixty (60) calendar days.

**The Proposer must submit one (1) master (hardcopy), (1) electronic version in PDF format on a flashdrive or CD and seven (7) duplicates (hardcopies) of their proposal for evaluation purposes.**

The Lexington-Fayette Urban County Government reserves the right to reject any or all proposals, and to waive technicalities and informalities when such waiver is determined by the Lexington-Fayette Urban County Government to be in its best interest.

Signature of this proposal by the Proposer constitutes acceptance by the Proposer of terms, conditions and requirements set forth herein.

Minor exceptions may not eliminate the proposal. Any exceptions to the specifications established herein shall be listed in detail on a separate sheet and attached hereto. The Lexington-Fayette Urban County Government shall determine whether any exception is minor.

The Lexington-Fayette Urban County Government encourages the participation of minority- and women-owned businesses in Lexington-Fayette Urban County Government contracts. This proposal is subject to Affirmative Action requirements attached hereto.

***Please do not contact any LFUCG staff member or any other person involved in the selection process other than the designated contact person(s) regarding the project contemplated under this RFP while this RFP is open and a selection has not been finalized. Any attempt to do so may result in disqualification of the firm's submittal for consideration.***

### **Laws and Regulations**

All applicable state laws, municipal ordinances and regulations of all authorities having jurisdiction over the project shall apply to the contract, and shall be deemed to be incorporated herein by reference.

### **Equal Employment Opportunity**

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its subcontracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

## **Kentucky Equal Employment Opportunity Act**

The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any "county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

"During the performance of this 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, age, or national origin;
- (2) The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, or national origin;
- (3) The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provision of the nondiscrimination clauses required by this section; and
- (4) The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses."

The Act further provides:

"KRS 45.610. Hiring minorities -- Information required

- (1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetables.
- (2) Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.

KRS 45.620. Action against contractor -- Hiring of minority contractor or subcontractor

(1) If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.

(2) If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.

(3) The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job."

It is recommended that all of the provisions above quoted be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his workforce in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

## **LFUCG Non-Appropriation Clause**

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

## **Contention Process**

Vendors who respond to this invitation have the right to file a notice of contention associated with the RFP process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the RFP process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the RFP process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with RFP processes. If, based on this review, a RFP process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a RFP recommendation must be filed within 3 business days of the RFP recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

## **SELECTION CRITERIA:**

1. Specialized experience and technical competence of the person or firm (including a joint venture or association) with the type of service required (20 points)
2. Capacity of the person or firm to perform the work, including any specialized services, within the time limitation (15 points)
3. Past record and performance on contracts with LFUCG or other governmental agencies and private industry with respect to such factors as control of cost, quality or work, and ability to meet schedules (15 points)
4. Familiarity with the details of the project (15 points)
5. Extent of innovative ideas presented throughout analysis. Additional considerations will be given to unique and innovative approaches to organics management while keeping in mind the end results is the beneficial reuse of composted material (15 points)
6. Degree of local employment to be provided by the person or firm in the performance of the contract by the person or firm (5 points)
7. Estimated cost of services (15 points)

Proposals shall contain the appropriate information necessary to evaluate based on these criteria. A committee composed of government employees as well as representatives of relevant user groups will evaluate the proposals.

Questions shall be submitted via IonWave at: <https://lexingtonky.ionwave.net>

## Affirmative Action Plan

All vendors must submit as a part of the proposal package the following items to the Urban County Government:

1. Affirmative Action Plan for his/her firm;
2. Current Work Force Analysis Form;

Failure to submit these items as required may result in disqualification of the submitter from award of the contract. All submissions should be directed to:

Director, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street, 3rd Floor  
Lexington, Kentucky 40507

All questions regarding this proposal must be directed to the Division of Central Purchasing, (859)-258-3320.

## AFFIDAVIT

Comes the Affiant, \_\_\_\_\_, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is \_\_\_\_\_ and he/she is the individual submitting the proposal or is the authorized representative of \_\_\_\_\_, the entity submitting the proposal (hereinafter referred to as "Proposer").
  
2. Proposer will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
  
3. Proposer will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
  
4. Proposer has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
  
5. Proposer has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Proposer will not violate any provision of the campaign finance laws of the Commonwealth.
  
6. Proposer has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."

**Continued on next page**



7. Proposer acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

\_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing instrument was subscribed, sworn to and acknowledged before me  
by \_\_\_\_\_ on this the \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_.

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC, STATE AT LARGE

# EQUAL OPPORTUNITY AGREEMENT

## The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states:

*The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.*

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

*The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.*

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The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

## Bidders

*I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.*

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Name of Business*

\_\_\_\_\_

**WORKFORCE ANALYSIS FORM**

Name of Organization: \_\_\_\_\_

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators																	
Professionals																	
Superintendents																	
Supervisors																	
Foremen																	
Technicians																	
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft																	
Service/Maintenance																	
<b>Total:</b>																	

Prepared by: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

*(Name and Title)*

*Revised 2015-Dec-15*

**DIRECTOR, DIVISION OF CENTRAL PURCHASING  
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 EAST MAIN STREET  
LEXINGTON, KENTUCKY 40507**

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL  
EMPLOYMENT OPPORTUNITIES AND DBE CONTRACT PARTICIPATION**

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs. The Lexington Fayette Urban County Government also has set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-owned Small Businesses. The goal for the utilization of Disadvantaged Business Enterprises as well Veteran –owned Small Businesses as subcontractors is a recommended goal. Contractor(s) who fail to meet such goal will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprises Subcontractors contact:

Sherita Miller, MPA, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street, 3rd Floor, Room 338  
Lexington, Kentucky 40507  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

Firm Submitting Proposal: \_\_\_\_\_

Complete Address: \_\_\_\_\_  
Street City Zip

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email address: \_\_\_\_\_

**Lexington-Fayette Urban County Government**  
**MWDBE PARTICIPATION GOALS**

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) The LFUCG has also established a 3% of total procurement costs as a Goal for participation of Veteran-Owned Small Businesses (VOSB).
- 4) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
  - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

### C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned and operated by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned and operated by one or more Non-Minority Females.
- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned and operated by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned and operated by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

### D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled “MWDBE Participation Form”. The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

### E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form.” The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed;

estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.

- 2) Bidders not reaching the Goal must submit the “MWDBE Participation Form”, the “Quote Summary Form” and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter “None” on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
  - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
  - b. Included documentation of advertising in the above publications with the bidders good faith efforts package
  - c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
  - d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
  - e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
  - f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
  - g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder’s good faith efforts documentation.
  - h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less that seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
  - i. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.



j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

**Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.**



## MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA  
Minority Business Enterprise Liaison  
Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street  
Lexington, KY 40507  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)  
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented resolution 167-91—Disadvantaged Business Enterprise (DBE) 10% Goal Plan in July of 1991. The resolution states in part (a full copy is available in Central Purchasing):

*“A Resolution supporting adoption of the administrative plan for a ten percent (10%) Minimum goal for disadvantaged business enterprise participation in Lexington-Fayette Urban County Government construction and professional services contracts; Providing that as part of their bids on LFUCG construction contracts, general Contractors shall make a good faith effort to award at least ten percent (10%) of All subcontracts to disadvantaged business enterprises; providing that divisions of LFUCG shall make a good faith effort to award at least ten percent of their Professional services and other contracts to disadvantaged business enterprises...”*

A Disadvantaged Business Enterprise is defined as a business that has been certified as being at least 51% owned, operated and managed by a U.S. Citizen of the following groups:

- African-American
- Hispanic-American
- Asian/Pacific Islander
- Native American/Native Alaskan
- Non-Minority Female
- Economically and Socially Disadvantaged

In addition, to that end the city council also adopted and implemented resolution 167-91—Veteran-owned Businesses, 3% Goal Plan in July of 2015. The resolution states in part (a full copy is available in Central Purchasing):

*“A resolution adopting a three percent (3%) minimum goal for certified veteran-owned small businesses and service disabled veteran-owned businesses for certain of those Lexington-Fayette Urban County contracts related to*

*construction for professional services, and authorizing the Division of Purchasing to adopt and implement guidelines and/or policies consistent with the provisions and intent of this resolution by no later than July 1, 2015.”*

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in (<https://lexingtonky.ionwave.net>)

<b>Business</b>	<b>Contact</b>	<b>Email Address</b>	<b>Phone</b>
<b>LFUCG</b>	Sherita Miller	<a href="mailto:smiller@lexingtonky.gov">smiller@lexingtonky.gov</a>	859-258-3323
<b>Commerce Lexington – Minority Business Development</b>	Tyrone Tyra	<a href="mailto:ttyra@commercelexington.com">ttyra@commercelexington.com</a>	859-226-1625
<b>Tri-State Minority Supplier Diversity Council</b>	Susan Marston	<a href="mailto:smarston@tsmsdc.com">smarston@tsmsdc.com</a>	502-365-9762
<b>Small Business Development Council</b>	Shirie Hawkins UK SBDC	<a href="mailto:smack@uky.edu">smack@uky.edu</a>	859-257-7666
<b>Community Ventures Corporation</b>	Phyllis Alcorn	<a href="mailto:palcorn@cvky.org">palcorn@cvky.org</a>	859-231-0054
<b>KY Transportation Cabinet (KYTC)</b>	Melvin Byne	<a href="mailto:Melvin.bynes2@ky.gov">Melvin.bynes2@ky.gov</a>	502-564-3601
<b>KYTC Pre-Qualification</b>	Shella Eagle	<a href="mailto:Shella.Eagle@ky.gov">Shella.Eagle@ky.gov</a>	502-782-4815
<b>Ohio River Valley Women’s Business Council (WBENC)</b>	Sheila Mixon	<a href="mailto:smixon@orwbc.org">smixon@orwbc.org</a>	513-487-6537
<b>Kentucky MWBE Certification Program</b>	Yvette Smith, Kentucky Finance Cabinet	<a href="mailto:Yvette.Smith@ky.gov">Yvette.Smith@ky.gov</a>	502-564-8099
<b>National Women Business Owner’s Council (NWBOC)</b>	Janet Harris-Lange	<a href="mailto:janet@nwbo.org">janet@nwbo.org</a>	800-675-5066
<b>Small Business Administration</b>	Robert Coffey	<a href="mailto:robertcoffey@sba.gov">robertcoffey@sba.gov</a>	502-582-5971
<b>LaVoz de Kentucky</b>	Andres Cruz	<a href="mailto:lavozydeky@yahoo.com">lavozydeky@yahoo.com</a>	859-621-2106
<b>The Key News Journal</b>	Patrice Muhammad	<a href="mailto:paatricem@keynewsjournal.com">paatricem@keynewsjournal.com</a>	859-373-9428



**LFUCG MWDBE PARTICIPATION FORM**

**Bid/RFP/Quote Reference #** \_\_\_\_\_

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



**LFUCG MWDBE SUBSTITUTION FORM**

**Bid/RFP/Quote Reference # \_\_\_\_\_**

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



**MWDBE QUOTE SUMMARY FORM**

Bid/RFP/Quote Reference # \_\_\_\_\_

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



### LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

**Bid/RFP/Quote #** \_\_\_\_\_

**Total Contract Amount Awarded to Prime Contractor for this Project** \_\_\_\_\_

<b>Project Name/ Contract #</b>	<b>Work Period/ From:</b>	<b>To:</b>
<b>Company Name:</b>	<b>Address:</b>	
<b>Federal Tax ID:</b>	<b>Contact Person:</b>	

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**

## LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # \_\_\_\_\_

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

\_\_\_\_\_ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

\_\_\_\_\_ Included documentation of advertising in the above publications with the bidders good faith efforts package

\_\_\_\_\_ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

\_\_\_\_\_ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

\_\_\_\_\_ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

\_\_\_\_\_ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

\_\_\_\_\_ Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

\_\_\_\_\_ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

\_\_\_\_\_ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

\_\_\_\_\_ Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

\_\_\_\_\_ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the



contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

\_\_\_\_\_ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

\_\_\_\_\_ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

\_\_\_\_\_ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

\_\_\_\_\_ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

\_\_\_\_\_ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

\_\_\_\_\_ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE **and Veteran participation.**

**NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.**

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

## **GENERAL PROVISIONS**

1. Each Respondent shall comply with all Federal, State & Local regulations concerning this type of service or good.

The Respondent agrees to comply with all statutes, rules, and regulations governing safe and healthful working conditions, including the Occupational Health and Safety Act of 1970, *29 U.S.C. 650 et. seq.*, as amended, and KRS Chapter 338. The Respondent also agrees to notify the LFUCG in writing immediately upon detection of any unsafe and/or unhealthful working conditions at the job site. The Respondent agrees to indemnify, defend and hold the LFUCG harmless from all penalties, fines or other expenses arising out of the alleged violation of said laws.

2. Failure to submit ALL forms and information required in this RFP may be grounds for disqualification.
3. Addenda: All addenda, if any, shall be considered in making the proposal, and such addenda shall be made a part of this RFP. Before submitting a proposal, it is incumbent upon each proposer to be informed as to whether any addenda have been issued, and the failure to cover in the bid any such addenda may result in disqualification of that proposal.
4. Proposal Reservations: LFUCG reserves the right to reject any or all proposals, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.
5. Liability: LFUCG is not responsible for any cost incurred by a Respondent in the preparation of proposals.
6. Changes/Alterations: Respondent may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the proposal, and received by LFUCG prior to the scheduled closing time for receipt of proposals, will be accepted. The proposal, when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of proposal".
7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from a Respondent.
8. Bribery Clause: By his/her signature on the bid, Respondent certifies that no employee of his/hers, any affiliate or Subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.

9. Additional Information: While not necessary, the Respondent may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the Respondent's response. Additional documentation shall not serve as a substitute for other documentation which is required by this RFP to be submitted with the proposal,
10. Ambiguity, Conflict or other Errors in RFP: If a Respondent discovers any ambiguity, conflict, discrepancy, omission or other error in the RFP, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.
11. Agreement to Bid Terms: In submitting this proposal, the Respondent agrees that it has carefully examined the specifications and all provisions relating to the work to be done attached hereto and made part of this proposal. By acceptance of a Contract under this RFP, proposer states that it understands the meaning, intent and requirements of the RFP and agrees to the same. The successful Respondent shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to Respondent shall be authorized for services or expenses reasonably covered under these provisions that the proposer omits from its Proposal.
12. Cancellation: If the services to be performed hereunder by the Respondent are not performed in an acceptable manner to the LFUCG, the LFUCG may cancel this contract for cause by providing written notice to the proposer, giving at least thirty (30) days notice of the proposed cancellation and the reasons for same. During that time period, the proposer may seek to bring the performance of services hereunder to a level that is acceptable to the LFUCG, and the LFUCG may rescind the cancellation if such action is in its best interest.

#### A. Termination for Cause

- (1) LFUCG may terminate a contract because of the contractor's failure to perform its contractual duties
- (2) If a contractor is determined to be in default, LFUCG shall notify the contractor of the determination in writing, and may include a specified date by which the contractor shall cure the identified deficiencies. LFUCG may proceed with termination if the contractor fails to cure the deficiencies within the specified time.
- (3) A default in performance by a contractor for which a contract may be terminated shall include, but shall not necessarily be limited to:
  - (a) Failure to perform the contract according to its terms,

- conditions and specifications;
- (b) Failure to make delivery within the time specified or according to a delivery schedule fixed by the contract;
  - (c) Late payment or nonpayment of bills for labor, materials, supplies, or equipment furnished in connection with a contract for construction services as evidenced by mechanics' liens filed pursuant to the provisions of KRS Chapter 376, or letters of indebtedness received from creditors by the purchasing agency;
  - (d) Failure to diligently advance the work under a contract for construction services;
  - (e) The filing of a bankruptcy petition by or against the contractor; or
  - (f) Actions that endanger the health, safety or welfare of the LFUCG or its citizens.

#### B. At Will Termination

Notwithstanding the above provisions, the LFUCG may terminate this contract at will in accordance with the law upon providing thirty (30) days written notice of that intent, Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.

- 13. Assignment of Contract: The contractor shall not assign or subcontract any portion of the Contract without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.
- 14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this Contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.
- 15. Authority to do Business: The Respondent must be a duly organized and authorized to do business under the laws of Kentucky. Respondent must be in good standing and have full legal capacity to provide the services specified under this Contract. The Respondent must have all necessary right and lawful authority to enter into this Contract for the full term hereof and that proper corporate or other action has been duly taken authorizing the Respondent to enter into this

Contract. The Respondent will provide LFUCG with a copy of a corporate resolution authorizing this action and a letter from an attorney confirming that the proposer is authorized to do business in the State of Kentucky if requested. All proposals must be signed by a duly authorized officer, agent or employee of the Respondent.

16. **Governing Law:** This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this Contract, the Parties agree that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division. All parties expressly consent to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to this Contract or any rights or obligations arising thereunder. Service of process may be accomplished by following the procedures prescribed by law.
17. **Ability to Meet Obligations:** Respondent affirmatively states that there are no actions, suits or proceedings of any kind pending against Respondent or, to the knowledge of the Respondent, threatened against the Respondent before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of Respondent to perform its obligations under this Contract, or which question the legality, validity or enforceability hereof or thereof.
18. Contractor understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Contractor is an independent contractor at all times during the performance of the services specified.
19. If any term or provision of this Contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.

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Signature

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Date

## **RISK MANAGEMENT PROVISIONS INSURANCE AND INDEMNIFICATION**

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### **INDEMNIFICATION AND HOLD HARMLESS PROVISION**

- (1) It is understood and agreed by the parties that Consultant hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Consultant or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "Consultant") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.
- (2) Consultant shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by Consultant's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the Consultant; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.
- (3) Notwithstanding, the foregoing, with respect to any professional services performed by Consultant hereunder (and to the fullest extent permitted by law), Consultant shall indemnify, save, hold harmless and defend LFUCG from and against any and all liability, damages and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees, for any damage due to death or injury to any person or injury to any property (including the loss of use resulting therefrom) to the extent arising out of, pertaining to or relating to the negligence, recklessness or willful misconduct of Consultant in the performance of this agreement.
- (4) In the event LFUCG is alleged to be liable based upon the above, Consultant shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.
- (5) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.
- (6) LFUCG is a political subdivision of the Commonwealth of Kentucky. Consultant acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the Consultant in any manner.

**FINANCIAL RESPONSIBILITY**

Consultant understands and agrees that it shall demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions prior to final acceptance of its proposal and the commencement of any work or the provision of services.

**INSURANCE REQUIREMENTS**

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

**Required Insurance Coverage**

Consultant shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work or services hereunder by Consultant. The cost of such insurance shall be included in any bid:

<b><u>Coverage</u></b>	<b><u>Limits</u></b>
General Liability (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million aggregate or \$2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	combined single, \$1 million per occurrence
Professional Liability	\$1 million per occurrence, \$2 million aggregate
Worker's Compensation	Statutory
Employer's Liability	\$500,000 to \$1million

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky. LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

- c. The General Liability Policy shall include Products and Completed Operations coverage and Premises and Operations Liability coverage, unless it is deemed not to apply by LFUCG.
- d. The General Liability Policy shall have a Professional Liability endorsement (including Errors and Omissions) for any services performed pursuant to the contract, and/or a separate Professional Liability Policy shall be provided in the amount specified above unless deemed not to apply by LFUCG.
- f. The Professional Liability policy shall be maintained for a minimum of three years beyond the completion date of the project, to the extent commercially available. If not commercially available, Consultant shall notify LFUCG and obtain similar insurance that is commercially available and acceptable to LFUCG.
- g. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- h. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

#### Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

#### Deductibles and Self-Insured Programs

**IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE.** Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of Consultant's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If Consultant satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, Consultant agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.



- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

#### Safety and Loss Control

Consultant shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

#### Verification of Coverage

Consultant agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

#### Right to Review, Audit and Inspect

Consultant understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

#### Safety and Loss Control

Consultant shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

#### **DEFAULT**

Consultant understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging Consultant for any such insurance premiums purchased, or suspending or terminating the work.

Request for Proposals:  
Organics Recycling Feasibility Study

The Lexington-Fayette Urban County Government (LFUCG) and its Division of Waste Management seek proposals from qualified contractors to perform a comprehensive feasibility study for the potential to establish an organic waste recycling program.

The consultant must have expertise in solid waste management program analysis, particularly in the areas of program design, systems planning and economic efficiency.

**I. Statement of Purpose:**

The overall goal of conducting a feasibility study is to determine the options available to LFUCG in pursuing an effective organics recycling program. LFUCG would like the opportunity to evaluate all available solutions to divert organic food waste from the waste stream.

**II. Background and Overview:**

- A. Lexington consists of 314,488 residents (per 2015 U.S. Census data), and 76.82% of residential homes are serviced through city collection (per the 2016 Fayette County Solid Waste Management Area Annual Report). LFUCG's Division of Waste Management provides collection services to 96,000 residents and 3,000 businesses as part of its weekly collection program. Collection services include refuse, recycling and yard waste container services.
- B. For the curbside collection program, LFUCG provides residents with a 95-gallon yard waste container. Debris that will not fit in the container can be consolidated into small-sized bundles. Residents may also place their material in biodegradable paper yard waste bags that are provided to residents free of charge by the LFUCG. And once per year, during the late fall, the LFUCG will provide vacuum leaf collection service to each household in the urban services area.
- C. Yard waste is processed by a contracted vendor. The processing site is located on city-owned property. The vendor processes yard waste material from city-serviced residences, and additional material received from citizen and business drop-offs.
- D. LFUCG currently collects the following organic yard waste materials from residences:
  - 1. Tree and brush prunings
  - 2. Leaves
  - 3. Grass clippings

4. Garden and plant scrap (no dirt, rocks or plastic planter pots accepted)
5. Stumps and branches

### **III. Lexington Waste Stream Analysis (see Attachment A)**

- A. One of the key factors in analyzing overall program success and areas of future focus for diversion efforts is through periodic waste stream analyses.
- B. LFUCG Division of Waste Management has conducted studies to analyze the overall waste stream in 2009 and 2014 (included as Attachment A).
- C. The 2014 study indicates the potential with organic materials in overall landfill waste diversion efforts. LFUCG would like the contractor to consider the findings and recommendations outlined within the study as they relate to food and other organics diversion.
- D. Food waste was found to be the most prevalent material within single-family, multi-family and commercial waste streams. Therefore, food waste – along with yard wastes and possibly compostable papers – offers the most potential to reduce landfill waste volumes and increase diversion efforts. The study concludes that this is achievable, but only if viable alternatives can be identified.
- E. Particularly, the 2014 study determined:
  1. 22.6% of the aggregate solid waste stream being sent to Kentucky landfills by LFUCG is comprised of organic material. 12.3% of those organic materials are comprised of food waste material.
  2. 29.8% of the overall solid waste stream is comprised of paper, which includes many easily-composted paper products. Plain corrugated paper and food were the two most prevalent single material categories (together making up 24.8% of the overall solid waste stream).
  3. Within the single-family waste analysis, 31% of the surveyed waste was organic material, with 18.8% being food waste.
- F. Further detailed results can be observed within Attachment A.

### **IV. Pilot Study and Additional Programs**

LFUCG has performed related past projects with the goal of wider food and other organics material collection.

- A. A food waste compost pilot program was developed in 2010. This program was designed to integrate kitchen food waste, collected from 366 residences and four business locations, into yard waste that is normally collected and processed through LFUCG operations. The

collection of food scrap was performed by the existing yard waste route in the area, and collected material was processed with yard waste materials at the LFUCG composting facility. The lack of control measures, lack of quantifiable or usable data, increased unprocessable contamination and lack of a continued education program caused the overall project to be inconclusive in providing the best next steps. Collection continued for a number of years from partner businesses, but the pilot program was ended in the spring of 2017 because of the factors mentioned above.

- B. LFUCG has also partnered with other entities to periodically offer home composting instructional workshops. LFUCG has most recently partnered with the Fayette County Cooperative Extension Service to hold informational sessions that encourage home composting efforts within the community.
- C. LFUCG contracts with Seedleaf, a local non-profit specializing in composting methods and education. Seedleaf works, on behalf of LFUCG, with local restaurants that have readily-available post-consumer food scraps for disposal. Seedleaf provides as-needed food waste pick-ups, transports it to area gardens where they oversee the processing of material for re-use in community gardens. The joint project between LFUCG and Seedleaf is ongoing and serves to divert a large portion of tonnage annually from the landfill waste stream, to be re-used as soil amendment.

Based on past and present projects and conclusions drawn from numerous waste stream studies, LFUCG has determined that a variety of new programs could be developed that would utilize more of the existing program infrastructure in place, would consider a wider base of organics materials to be collected and could be, overall, more cost-efficient and beneficial to LFUCG.

## **V. Project Scope:**

- A. LFUCG would like to determine viable options available to establish an organic waste recycling program.
- B. The contractor should consider the following as part of the study:
  - 1. Residential collection of organic food waste material
  - 2. Commercial collection of organic food waste material
  - 3. Dual residential and commercial collection programs
  - 4. Any other organic program options that may present viable opportunities
- C. Many communities have implemented some level of food waste diversion through source reduction, and some have focused on collection and composting of food waste in order to significantly increase landfill diversion.

D. For programs specifically targeting both residential and commercial food waste generators and food service providers, consideration should be given to the following:

1. Types of organic waste (produced and to be managed)
2. Convenience
3. Participation and diversion levels
4. Costs of services
5. Containers and container maintenance
6. Collection frequency

E. Overall, LFUCG requests that the selected contractor consider and study a number of factors related to:

1. Types of organics collection programs already in place, and other existing infrastructure available to potential future programs
2. Types of organic waste (produced and to be managed) and available processing and system capacity
3. Participation and diversion levels
4. Participants and potential program partners; public/private partnerships
5. Markets for compost and education components to be incorporated/community engagement
6. Economic impacts (cost of services, cost-savings, maintenance costs)
7. Composting system types, methods and capacities, and other technical requirements
8. Environmental impacts (negative and positive; disposal costs avoided)
9. Implementation viability (such as convenience factor)

F. LFUCG will provide the contractor with current program data to aid in the study.

G. LFUCG requests a report detailing recommendations and all viable program options. Implementation of the results from the study will increase the rate of diversion of LFUCG's overall waste stream through the selected organics recycling program.

## **VI. All submissions must include the following information:**

A. Organization Information

1. An organizational chart and list of personnel that would be providing service to LFUCG
2. Resumes detailing the qualifications for each of the individuals listed in the organizational chart
3. References on comparable projects

**B. Performance Record**

1. Past record and performance on contracts with the LFUCG or other governmental agencies and private industry with respect to such factors as quality of work and ability to meet schedules
2. Degree of local employment to be provided by the person or firm in the performance of the contract

**C. Detailed Project Approach**

**VII. Scoring:**

A. Please provide a detailed project approach.

B. Proposal will be evaluated based on the following criteria:

1. Specialized experience and technical competence of the person or firm (including a joint venture or association) with the type of service required (20 points)
2. Capacity of the person or firm to perform the work, including any specialized services, within the time limitation (15 points)
3. Past record and performance on contracts with LFUCG or other governmental agencies and private industry with respect to such factors as control of cost, quality or work, and ability to meet schedules (15 points)
4. Familiarity with the details of the project (15 points)
5. Extent of innovative ideas presented throughout analysis. Additional considerations will be given to unique and innovative approaches to organics management while keeping in mind the end results is the beneficial reuse of composted material (15 points)
6. Degree of local employment to be provided by the person or firm in the performance of the contract by the person or firm (5 points)
7. Estimated cost of services (15 points)

**Schedule:**

A. Consultant shall complete all work within 120 calendar days from the Notice to Proceed.



# LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT

## COUNTY-WIDE WASTE STREAM ANALYSIS

**FINAL REPORT**

NOVEMBER 10, 2014



## **MSW CONSULTANTS**

*MidAtlantic Solid Waste Consultants*

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## APPENDIX A – MATERIAL CATEGORIES & DEFINITIONS

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# 1. INTRODUCTION

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## 1.1 OVERVIEW

The Lexington-Fayette Urban County Government (LFUCG) last conducted a waste characterization study in 2009 as part of its Recycling Center Master Plan. Since that time, waste generation patterns have changed due to factors such as light-weighting, the continuing shift from print to digital, expansion of e-commerce, increased attention to diversion and sustainability by the business sector, and ongoing evolution of the economy.

LFUCG retained MSW Consultants, LLC to perform an updated County-wide waste characterization study (2014 Study). The objectives of this study were to:

- ◆ Quantify the waste generated by major generating sectors including single family residential, multi-family residential, commercial, industrial, and construction and demolition (C&D);
- ◆ Representatively characterize wastes from each generator sector and for the UCG service area as a whole; and
- ◆ Compare the results of this update with the 2009 Study to measure recycling progress and to identify future initiatives to increase diversion within each generator sector.

Findings from this study will be used to select new programs or to modify existing programs, and ultimately to help guide development of a strategic zero waste plan.

## 1.2 COMPARISON OF 2009 AND 2014 STUDIES

The 2014 Study generally used the same methodology as was used in the 2009 Study. Notable similarities and differences are listed below. It is possible that differences in the design and execution of the two studies may obscure changes in the disposed waste stream. Results that may be impacted by study design changes are described in the results section.

### 1.2.1 SIMILARITIES

- ◆ **Generator Sectors:** Both studies used the same generator sectors.
- ◆ **Material Definitions:** The studies used substantially identical material definitions. (However, several plastics categories were slightly modified.)
- ◆ **Material Streams:** Both studies measured the composition of both disposed municipal solid waste (MSW) and also construction and demolition (C&D) debris.
- ◆ **Manual Sorting and Visual Surveying:** The studies used identical methodologies for sampling incoming loads of waste, and for sorting or visually surveying samples of MSW and C&D, respectively.
- ◆ **Host Facility for MSW Sampling:** Both studies captured samples of MSW exclusively at the Bluegrass Transfer Station.

### 1.2.2 DIFFERENCES

- ◆ **Seasonality:** The 2009 Study captured samples in two seasons, winter (January) and spring (April). The 2014 Study captured samples only in the summer season (September).
- ◆ **Number of Samples:** The 2009 Study captured 100 manually sorted MSW samples and 200 visually surveyed C&D samples. Due to budget limitations and schedule demands, the 2014 Study captured half as many – 50 manually sorted MSW samples and 100 visually surveyed loads of C&D.
- ◆ **Host Facility for C&D Surveying:** On 2009, the Haley Pike Landfill was open and roughly half of the visual surveying of C&D loads took place at this facility, with the remainder of surveys were taken at the Bluegrass Transfer Station. The Haley Pike Landfill no longer accepts waste and all visual surveying of C&D loads occurred at the Bluegrass Transfer Station.

# 1. INTRODUCTION

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## 1.3 REPORT ORGANIZATION

The remainder of this report presents the methodology and results of the 2014 Study. The report is divided into the following sections:

- ◆ **Methodology:** This section quantifies waste disposal quantities captured in the study, presents the sampling plan for MSW and C&D waste, and summarizes the field data collection methods and analytical methods applied in the study.
- ◆ **Results:** Detailed results about the composition of LFUCG's disposed waste are presented in this section. Results are presented in both tabular and graphical format to highlight findings of interest. This section also identifies the most prevalent materials remaining in the waste stream, and comments on the fraction of wastes that could be recycled, composted, reused or otherwise diverted from disposal.
- ◆ **Conclusions and Recommendations:** This section presents the conclusions and recommendations for further study.

## 2. METHODOLOGY

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### 2.1 STUDY DESIGN

This project defined two discreet waste streams to be characterized: (1) municipal solid wastes (MSW) – including single family residential, multi-family residential, commercial, industrial, and self-haul wastes – disposed at the Bluegrass Transfer Station, and (2) C&D debris, also disposed at the Bluegrass Transfer Station. This study did not attempt to characterize any MSW or C&D waste that may be exported for disposal in surrounding counties.

Prior to conducting any field data collection, a Study Design and Sampling Plan was developed to assure that the incoming truckloads of waste that were ultimately sampled and characterized were representative of the entire incoming waste stream. This section summarizes the pertinent details of the Study Design and Sampling Plan that was developed prior to field data collection.

#### 2.1.1 WASTE GENERATION SECTORS

For the purposes of this study, a total of six generator sectors were defined. Allocation of incoming loads into these sectors was based on scalehouse records at the Bluegrass Transfer Station. It should be noted that the scalehouse’s assignment of loads to a sector served as the basis for determining the generator sector.

- ◆ **Single-Family Residential Wastes:** Includes residentially generated garbage and trash from single-family households that is collected by LFUCG or private haulers, primarily in compactor vehicles. The majority of the single family residential waste is collected by the UCG.
- ◆ **Multi-Family Residential Wastes:** Includes wastes generated garbage and trash that is collected by private or public haulers, primarily in compactor vehicles, from multi-family apartments and condominiums.
- ◆ **Commercial Wastes:** Includes municipal solid wastes generated by commercial and institutional facilities and delivered by both LFUCG and private haulers primarily in compactor trucks or in compacting roll-off boxes. This stream may include some non-compacted wastes delivered in open top roll-off boxes and in other vehicles. Note that commercial wastes exclude any “special” wastes that may be generated in these sectors.
- ◆ **Industrial Wastes:** Includes wastes generated in the industrial and agricultural sectors and delivered by private haulers. This stream may include compacted and non-compacted wastes delivered in various truck types.
- ◆ **Self-haul Waste:** Encompasses wastes that are delivered to the landfill or transfer station by the actual residential generator. Self-haul waste includes small to mid-size deliveries of waste in cars, pick-up trucks and vans, including those with trailers. Self-haul wastes are recorded separately by the gate house.
- ◆ **C&D Debris:** This includes all wastes that are generated as a result of construction, demolition and renovation activities, regardless of who is delivering the wastes. C&D wastes may be delivered by private (or public) haulers in roll-off boxes, and also may be delivered by self-haulers or contractors on construction/demolition/renovation projects (e.g., roofing contractor delivering shingles). C&D wastes also include any load that is classified as C&D by the disposal facility scalehouse, even if the load was not generated as a result of C&D activities.

#### 2.1.2 MATERIAL CATEGORIES

Prior to the study, LFUCG developed a preferred list of material categories for use in sorting the municipal solid waste stream. In total, there were 79 categories used in the manual sorts. The visual survey of C&D loads applied an abbreviated set of material categories to reflect the differences in C&D

## 2. METHODOLOGY

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waste compared to MSW. A total of 42 material categories were used for the C&D visual surveys. The material categories correspond closely with the 2009 Study and allow for close comparisons. A complete list of the material categories and definitions is included as Appendix A.

### 2.1.3 SEASONALITY

The 2014 Study field data collection was performed over only one season. All sampling, sorting and visual surveying took place September 8 through 12, 2014, and could be considered representative of the summer season.

The 2009 Study obtained data over two seasonal field data collection events in January (winter) and April (spring). Budget and schedule limitations required the 2014 update to be performed in September.

### 2.1.4 WASTE STREAM QUANTIFICATION

The tables below define and quantify the waste streams analyzed for this project. Although other wastes may be generated in Fayette County and exported elsewhere for final disposal, this study did not attempt to integrate exported wastes into the overall characterization. It is assumed that the composition of these exported wastes would be comparable to the wastes disposed at the two host facilities.

Table 2-1 presents the annual material volumes delivered to the LFUCG Blue Grass transfer station for the previous 12 months, for each defined generator sector. Facility operations personnel assigned each load into the generator sectors defined for this study. The assignment of loads to generator sectors appeared to be consistent with the 2009 Study.

**Table 2-1 – Annual Waste Deliveries: August 1, 2013 to July 31, 2014**

<b>Incoming Material Type</b>	<b>Loads</b>	<b>Percent of Loads</b>	<b>Tons</b>	<b>Percent of Tons</b>
Residential	14,556	28.6%	91,183	33.0%
Commercial and Multi-Family Residential	11,982	23.5%	102,623	37.1%
Industrial	12,671	24.9%	50,609	18.3%
Self-Haul	4,994	9.8%	3,516	1.3%
Construction and Demolition (C&D)	6,774	13.3%	28,679	10.4%
<b>Total</b>	<b>50,977</b>	<b>100%</b>	<b>276,611</b>	<b>100%</b>

As shown, over 276,000 tons of MSW and C&D was delivered to the transfer station, spread among the single-family, commercial/multi-family, industrial, self-haul, and C&D generator sectors.

### 2.1.5 SAMPLING TARGETS

Based on the waste deliveries above, known variance in the composition of wastes from each generator sector, and on the targeted level of statistical validity, Table 2-2 summarizes the targeted number of samples from each of the generating sectors, as well as the number of samples actually obtained. As presented, sampling targets were substantially achieved for all generator sectors, with a slight shortfall of industrial generator samples and a slight excess of commercial samples. C&D sampling targets were exceeded. MSW Consultants believes the samples obtained reasonably reflect the sampling plan targets.

Table 2-2 Targeted and Actual Sample Summary

Sample Type	Generator Sector	Targeted Samples	Samples Obtained	Variance
Manual	Residential	14	14	0
	Multi-family	5	5	0
	Commercial	20	22	+2
	Industrial/Self Haul	11	9	-2
	<b>Sub Total Manual</b>	<b>50</b>	<b>50</b>	<b>0</b>
Visual	C&D Debris	100	111	+11
	<b>Sub Total Visual</b>	<b>100</b>	<b>111</b>	<b>+11</b>
<b>Grand Total</b>		<b>150</b>	<b>161</b>	<b>+11</b>

The sampling methodology targeted grab samples at or above 200 pounds. As part of the analysis, average sample weights were evaluated to determine if minimum sample weights were achieved. Table 2-3 shows the average sample weight by generating sector. As presented, the average sample weight exceeded the minimum sample weight for all generator sectors for which manual sorts were performed.

Table 2-3 Average Sample Weight by Generation Sector

Generating Sector	Average Sample Weight (Pounds)
Residential	213
Multi-family	209
Commercial	208
Industrial	212
Self-haul	219

Table 2-4 shows the distribution of C&D loads and total weight of C&D loads surveyed by C&D generator sector at the Bluegrass Transfer Station.

Table 2-4 Distribution of C&D by Generator Sectors

Metric	Residential	Non-Residential	Total
Number of Loads	39	72	111
Weight of Loads (pounds)	214,600	736,280	950,880

As a final exercise, MSW Consultants interviewed drivers of incoming loads to determine the origin of the debris contained in the load. **Table 2-5** presents the breakdown of the waste generating activity for the visually surveyed loads that were classified as C&D.

## 2. METHODOLOGY

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Table 2-5 Activity by Generator Sector

<b>Generator Sector</b>	<b>Construction</b>	<b>Renovation</b>	<b>Demolition</b>	<b>Manufacturing</b>	<b>Retail</b>	<b>Warehouse</b>	<b>Clean-out</b>	<b>Total</b>
Residential	7	17	1	0	0	0	14	39
Non-Residential	15	16	1	11	7	14	8	72
<b>Total</b>	<b>22</b>	<b>33</b>	<b>2</b>	<b>11</b>	<b>7</b>	<b>14</b>	<b>22</b>	<b>111</b>

MSW Consultants believes that the distribution of C&D loads selected for visual surveying is representative of the mix of C&D debris (and other debris coded as C&D debris) being delivered to the transfer station and recorded as C&D. It is noted that some of the loads were not actually generated from construction or demolition related activities.

### 2.2 FIELD DATA COLLECTION

Field sampling and sorting methods used in this analysis generally conformed to industry standards, refined based on the extensive experience of MSW Consultants in performing numerous similar studies. The following sections summarize field sampling and sorting procedures.

#### 2.2.1 LOAD SELECTION

MSW Consultants used a systematic selection procedure to identify the vehicles to be selected for manual grab sampling (MSW) or visual surveying (C&D) at each host facility. Systematic sampling is intended to remove any sampling bias that may arise from an individual selecting specific incoming vehicles. To remove such bias, the Field Supervisor divided the total number of incoming residential, commercial, and C&D loads at the transfer station by the number of samples needed that day. The resulting number is the sampling frequency and determines whether every third vehicle, every sixth vehicle, or every 20th vehicle is selected for sampling. This strategy is known as the “Nth Truck” approach.

Systematically selected loads were directed to a designated tipping area for subsequent grab sampling or visual surveying. The Field Supervisor interviewed the drivers of selected loads to confirm information such as origin of the load, waste generating sector, hauler, vehicle type and number, and other data. This information was noted on a vehicle selection form, along with a unique identifying number associated with that vehicle on that day.

#### 2.2.2 PHYSICAL SORTING OF MSW SAMPLES

Once the sample had been acquired and placed on a plastic tarp, the material was manually sorted into the prescribed component categories. Plastic 18-gallon bins with sealed bottoms were used to contain the separated components. Figure 2-1 shows the work area being set up.



**Figure 2-1 Work Area at Bluegrass Transfer Station**



Sorters were trained to specialize in certain material groups, with someone handling the paper categories, another person handling plastics, another glass and metals, and so on. In this way, sorters became highly knowledgeable in a short period of time as to the definitions of individual material categories.

The Crew Chief monitored the bins as each sample was being sorted, requiring a re-sort of materials that were improperly classified. Open bins allowed the Crew Chief to see the material at all times. The Crew

Chief also verified the sorting accuracy of each component during the weigh-out. The materials were sorted to particle size of 2-inches or less by hand, until no more than a small amount of homogeneous material remained. This layer of mixed 2-inch-minus material was allocated to the appropriate categories based on the best judgment of the Crew Chief—most often a combination of Other Paper, Other Organics, or Food Waste.

The overall goal was to sort each sample directly into component categories in order to reduce the amount of indistinguishable fines or miscellaneous categories. Note that the sorting methodology included the use of a customized, sturdy framed sort table that has a removable screen sized at ½ inch. Small particles passing through the screen were swept into a separate container and allocated to the appropriate category.

### 2.2.3 VISUAL SURVEYING OF C&D LOADS

Visual surveying of a load of C&D waste involved detailed volumetric measurements of the truck and load dimensions, followed by the systematic observation of the major material components in the tipped load. The basic steps to visual surveying were:

- ◆ Measure the dimensions of the incoming load prior to tipping and (if possible) estimate the percent full of the vehicle.
- ◆ Tip the load. If it is a large load, and if possible, have a loader spread out the material so that it is possible to discern dense materials such as block, brick, and dirt that tend to sink to the bottom of the pile.
- ◆ Make a first pass around the load marking the major material categories that are present in the load—cardboard, drywall, dimensional lumber, etc. Estimate the percentage of the load made up of these major materials. If possible, estimate of the volume in cubic yards associated with this material.
- ◆ Make a second pass around the load, noting the secondary material categories contained in the load. Estimate the percentage of the load made up of these materials. If possible, estimate of the volume associated with this material.
- ◆ Validate that the estimated percentages sum to 100 percent, and that the estimated volume of major material categories is realistic given the overall truck dimensions and volume.

## 2. METHODOLOGY

Figure 2-2 C&D Load Awaiting Visual Surveying



Figure 2-2 shows a C&D load awaiting surveying.

### 2.2.4 DATA RECORDING

The weigh-out and data recording process is arguably the most critical process of the sort. The Crew Chief was singularly responsible for overseeing all weighing and data recording of each manually sorted sample. Once each sample had been sorted, and fines swept from the table, the weigh-out was performed. Each bin containing sorted materials from the just-completed samples were carried

over to a digital scale. Sorting laborers assisted with carrying and weighing the bins of sorted material, the Crew Chief recorded all data.

The Crew Chief used a waste composition data sheet to record the composition weights. Each data sheet containing the sorted weights of each sample was matched up against the Field Supervisor's sample sheet to assure accurate tracking of the samples each day.

C&D load visual survey sheets were filled out by the Field Supervisor, who could easily match them up against the master sample sheet. The Field Supervisor also acquired weigh tickets for each of the visually surveyed samples.

## 2.3 STATISTICAL METHODS

The following statistical measures were calculated to determine the overall composition of each commercial waste stream.

- ◆ **Sample Mean:** The sample mean, or average, composition is considered the “most likely” fraction for each material category in the waste stream. The sample mean is determined by (i) summing the weight of each material in each sample; (ii) summing the total weight of all samples, and (iii) dividing the first value by the second value to determine the percent-by-weight composition. Note that the sample mean, while a good estimate, is unlikely to be identical to the population mean value. The meaningfulness of the sample mean is enhanced by the following statistical measures.
- ◆ **Confidence Intervals:** When a sample of data is obtained, it is analyzed in an attempt to determine certain values that describe the entire population of data under analysis. For example, in a poll of likely voters, the intent of the poll is to determine the percentage of all voters who support a given candidate, not simply the percentage of voters in the poll who support that candidate. The percentage of voters who support a given candidate in the poll can easily vary from sample to sample; but the percentage of all voters who support that candidate is a fixed value. In our sample of incoming loads of waste, we are not primarily interested in the percentage composition of the sampled loads, but rather in trying to determine what the composition of the sampled loads tells us about the composition of all waste generated. A confidence interval is a statistical concept that attempts to indicate the likely range within which the true value lies. The confidence intervals reflect

the upper and lower range within which the population mean can be expected to fall. Confidence intervals require the following "inputs:"

- ◆ The "level of confidence", or how sure one wants to be that the interval being constructed will actually encompass the population mean;
- ◆ The sample mean, around which the confidence interval will be constructed;
- ◆ The sample standard deviation, which is used as a measure of the variability of the population from which the sample was obtained; and
- ◆ The number of sampling units that comprised the sample (a.k.a. sample size).

Confidence intervals have been calculated at a 90 percent level of confidence, meaning that we can be 90 percent sure that the population mean falls within the upper and lower confidence intervals shown. (The converse is also true: that there is a 10 percent chance that the population mean falls outside of the sample mean.) In general, as the number of samples increases, the width of the confidence intervals decreases, although the more variable the underlying waste stream composition, the less noticeable the improvement for adding incremental samples. This principal also drives the need for a significantly larger sample of C&D loads for visual surveying compared to MSW samples for manual sorting.

It should be noted that the manually sorted data analysis was performed after converting each sample from its absolute weight to percent by weight of each material type. Conversely, the visual C&D survey data underwent a more elaborate analysis. First, volumetric estimates of each surveyed load were converted to weight based on density factors. The density factors have been accumulated by MSW Consultants from industry resources and supplemented with real-world densities obtained in other waste characterization studies. The calculated load weights were then compared against the actual reported weights as presented on the weigh tickets obtained for each load.

Density factors may be adjusted for certain materials if the variance between the calculated and actual weight of visually surveyed C&D loads varies by more than five to 10 percent. In Lexington-Fayette County, the variance was six percent. MSW Consultants believes that the calculated weights derived from the visual volumetric estimates are highly representative of the actual weights.

## 2. METHODOLOGY

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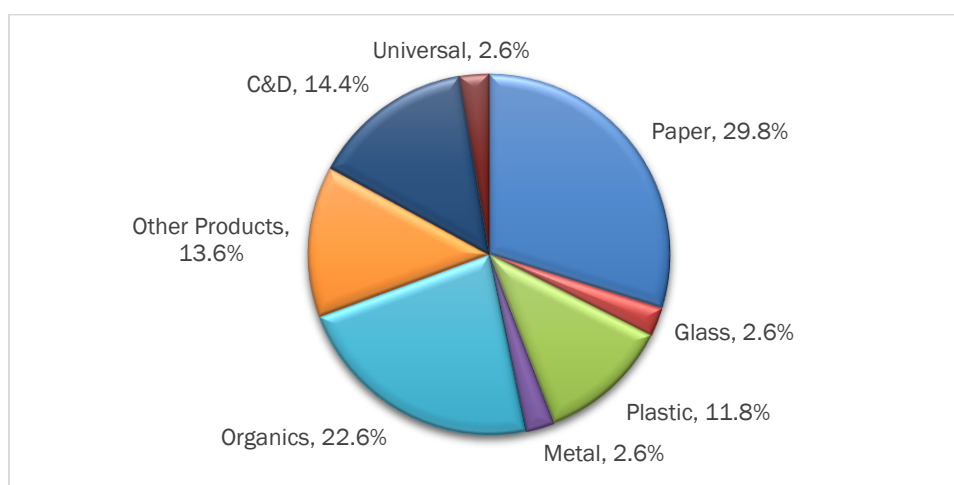
### 3. RESULTS

#### 3.1 AGGREGATED MUNICIPAL SOLID WASTE COMPOSITION (EXCLUDING C&D)

The aggregated municipal solid waste (MSW) stream is the sum of single-family residential, multi-family residential, commercial, industrial and self-haul waste disposed at the Bluegrass Transfer Station. The aggregated MSW waste stream excludes C&D waste (see Section 3.6 for C&D waste composition data and results).

Figure 3-1 shows the breakdown of the aggregated waste stream by material group (paper, plastic, glass, metal, etc.) in percent by weight.

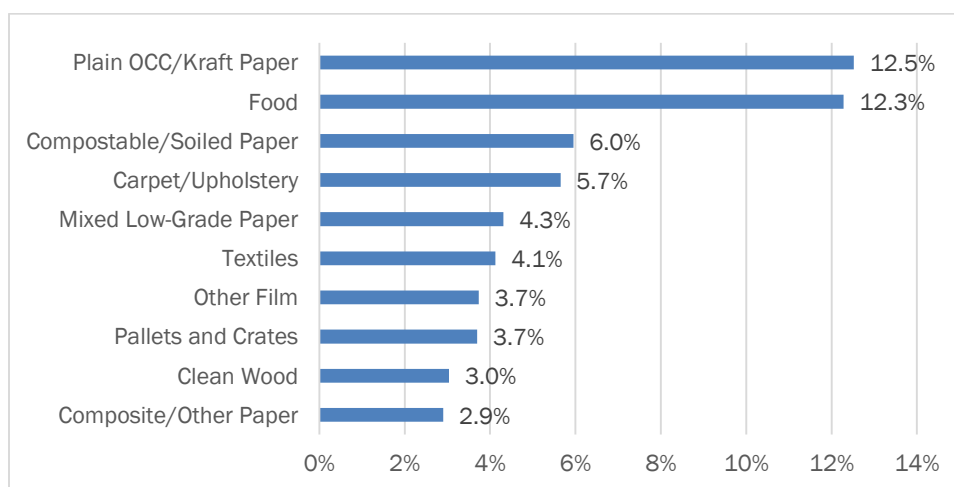
**Figure 3-1 Composition of the Aggregated MSW Stream**



As presented in the chart above, Paper makes up almost 30 percent of the waste stream, followed by Organics at 23 percent.

Figure 3-2 presents the top ten most commonly found materials in the aggregated waste stream.

**Figure 3-2 Top 10 Most Common Materials in the Aggregated MSW Stream**



It is noteworthy that Plain OCC (including Kraft Paper) was the most prevalent single material category, although followed closely by Food. The prevalence of Plain OCC is driven by the large amount of OCC



### 3. RESULTS

that was found in the Industrial generator sector. Excluding the impact of the Industrial generator sector, Food is the most prevalent material. However, a number of other divertible items also made the top 10.

As a final step, MSW Consultants evaluated the fraction of the disposed waste stream that could be recycled, composted, or otherwise diverted.<sup>1</sup> Specifically, each material was assigned as being either recyclable, compostable, accepted at the Transfer Station or Convenience Center for diversion, reusable, or non-recoverable. Table 3-1 summarizes how each material was classified for purposes of assigning diversion potential. Each diversion strategy is defined below this table.

**Table 3-1 Diversion Strategies for Lexington County, by Material Category**

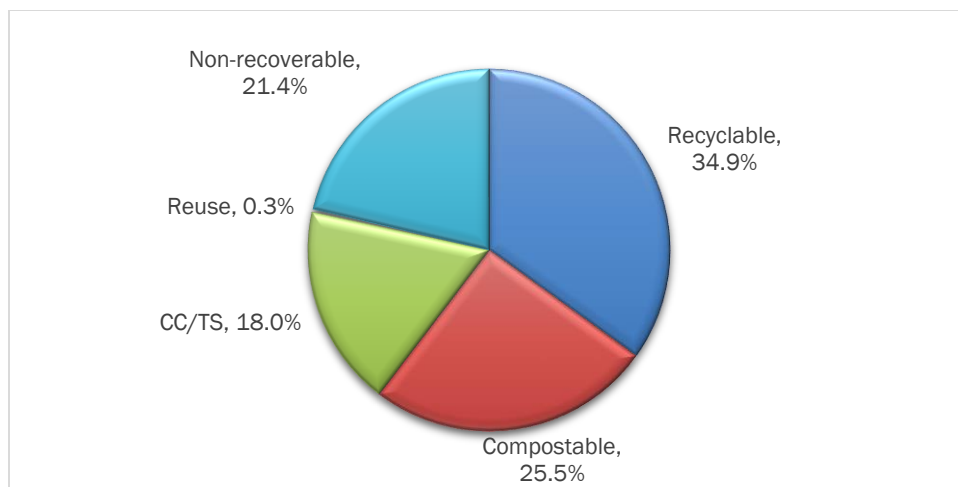
<b>Recyclable</b>	<b>Convenience Center/ Transfer Station</b>	<b>Non-Recoverable</b>
Newspaper Plain OCC/Kraft Paper High-Grade Paper Mixed Low-Grade Paper Phone Books Paperback Books PET Bottles #1 PET Thermoforms #2 HDPE Natural/Colored Bottles Other Plastic Bottles No. 2 Through 7 Tubs, Cups, and Lids Clean Shopping/Dry Cleaner Bags Other Clean Polyethylene Film Clear Glass Bottles & Jars Green Glass Bottles & Jars Brown Glass Bottles & Jars Aluminum Cans Aluminum Foil/Containers Other Aluminum Other Nonferrous Tin/Steel Cans Empty Paint and Aerosol Cans Empty Propane and Other Tanks Other Ferrous Textiles	<b>Compostable</b> Waxed OCC/Kraft Paper Polycoated Paper Compostable/Soiled Paper Grass Leaves Prunings Other Yard Waste Food Animal By-products Stumps and Logs	<b>Reuse Store</b> Paperback Books Apparel Furniture Appliances Paint

<sup>1</sup> It is important to note that the condition of any recyclable or reusable item in the disposed waste stream may be so poor as to prevent diversion or recovery of that item. The recoverability options shown are intended to reflect how an item in good enough condition could be diverted instead of disposed.

- ◆ **Recyclable:** Includes recyclable materials that are targeted in existing recycling programs in the Lexington area.
- ◆ **Compostable:** Includes organic materials that can be composted, whether or not a commercial composting operation exists in Lexington County.
- ◆ **Accepted at Convenience Center or Transfer Station (CC/TS):** County solid waste facilities accept a range of special materials for diversion at the Bluegrass Transfer Station or local convenience centers.
- ◆ **Reuse Store:** Some materials can be taken to a thrift shop or reuse store if they are in good condition.
- ◆ **Non-Recoverable:** Some items are disposed and have no realistic, near-term opportunity for diversion. It should also be noted that many of actual items found during the sort were too damaged or contaminated to realistically be diverted.

The pie chart in Figure 3-3 illustrates the recoverability potential of the aggregate disposed MSW stream.

**Figure 3-3 Diversion Potential of Aggregated Waste MSW Stream**



As presented in Figure 3-3, a significant fraction of the disposed waste stream can potentially be recycled, composted, or otherwise reused. As mentioned above, however, it is important to note that many factors will in practice reduce the actual diversion potential, including the condition or level of contamination of the disposed item, the existence of a local market for recovered materials, the existence of an appropriate collection and transportation network to aggregate materials, and the availability of a sufficient quantity of the material to warrant diversion or recycling.

Table 3-2 on the following page provides the detailed statistical analysis of the aggregate disposed MSW composition, including average percent composition and 90 percent confidence interval. These results exclude C&D debris.

### 3. RESULTS

Table 3-2 Detailed Aggregate Waste Composition

Material	Conf		Material	Conf	
	Percent	Int (+/-)		Percent	Int (+/-)
<b>Paper</b>	<b>29.8%</b>	<b>4.9%</b>	<b>Metal</b>	<b>2.6%</b>	<b>0.5%</b>
Newspaper	2.2%	1.3%	Aluminum Cans	0.6%	0.1%
Plain OCC/Kraft Paper	12.5%	4.4%	Aluminum Foil/Containers	0.2%	0.1%
Waxed OCC/Kraft Paper	0.3%	0.3%	Other Aluminum	0.0%	0.0%
High-Grade Paper	0.4%	0.2%	Other Nonferrous	0.0%	0.0%
Mixed Low-Grade Paper	4.3%	0.9%	Tin/Steel Cans	0.6%	0.2%
Phone Books	0.1%	0.1%	Empty Paint and Aerosol Cans	0.1%	0.1%
Paperback Books	1.0%	1.1%	Empty Propane and Other Tanks	0.0%	0.1%
Polycoated Paper	0.1%	0.1%	Other Ferrous	0.2%	0.2%
Compostable/Soiled Paper	6.0%	0.9%	Composite/Other Metals	0.9%	0.4%
Composite/Other Paper	2.9%	2.0%			
			<b>Organic</b>	<b>22.6%</b>	<b>4.2%</b>
<b>Plastic</b>	<b>11.8%</b>	<b>1.5%</b>	Grass	1.2%	1.0%
PET Bottles	1.0%	0.2%	Leaves	0.1%	0.2%
#1 PET Thermoforms	0.1%	0.0%	Prunings	1.1%	0.8%
#2 HDPE Natural/Colored Bottles	0.4%	0.1%	Other Yard Waste	1.9%	2.0%
Other Plastic Bottles	0.1%	0.1%	Food	12.3%	2.8%
#2 - #7 Tubs, Cups, and Lids	0.4%	0.2%	Disposable Diapers	2.4%	0.8%
Nonfood Expanded Polystyrene	0.1%	0.0%	Animal By-products	2.4%	1.4%
Other Food Service Plastics	1.2%	0.3%	Composite/Other Organic	1.2%	0.4%
Other Rigid Packaging	0.4%	0.1%			
Clean Shopping/Dry Cleaner Bags	0.9%	0.2%	<b>Other Products</b>	<b>13.6%</b>	<b>3.6%</b>
Other Clean Polyethylene Film	1.6%	0.9%	Tires	0.4%	0.7%
Other Film	3.7%	0.6%	Rubber	1.5%	1.0%
Plastic Products	0.5%	0.2%	Textiles	4.1%	1.6%
Composite/Other Plastic	1.1%	0.3%	Carpet/Upholstery	5.7%	2.8%
			Apparel	0.3%	0.2%
<b>Glass</b>	<b>2.6%</b>	<b>0.8%</b>	Furniture	Not found	
Clear Glass Bottles & Jars	1.1%	0.3%	Mattresses	0.2%	0.3%
Green Glass Bottles & Jars	0.5%	0.2%	Appliances	0.3%	0.2%
Brown Glass Bottles & Jars	0.6%	0.3%	Composite/Other Products	1.1%	0.7%
Plate Glass	0.0%	0.0%			
Composite/Other Glass	0.4%	0.6%	<b>Construction &amp; Demolition</b>	<b>14.4%</b>	<b>4.5%</b>
			Clean Wood	3.0%	1.4%
<b>Universal Waste</b>	<b>2.6%</b>	<b>1.3%</b>	Pallets and Crates	3.7%	1.9%
Paint	0.0%	0.0%	Stumps and Logs	Not found	
Batteries	0.0%	0.0%	Composite/Other Wood	2.1%	1.5%
Cleaners	Not found		Clean Gypsum	0.0%	0.1%
Oil Fuels	Not found		Painted Gypsum	0.8%	1.0%
Electronics	0.2%	0.2%	Fiberglass Insulation	0.2%	0.2%
Television	0.2%	0.3%	Rock/Concrete/Bricks	1.5%	1.6%
Computers	Not found		Asphaltic Roofing	Not found	
Other Electronics	0.3%	0.4%	Ceramics	1.1%	1.0%
Pesticides/Herbicides	Not found		Sand/Soil/Dirt/Grit/Fines	1.1%	0.4%
Medical Waste	0.1%	0.1%	Composite/Other Construction Debris	0.9%	0.9%
Treated Wood	1.8%	1.2%			
Light Bulbs	0.0%	0.0%			
Other Hazardous Waste	Not found		<b>Total</b>	<b>100%</b>	<b>100</b>
			<b>Total Samples</b>		<b>100</b>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.



### 3.2 SINGLE-FAMILY WASTE

The remaining sections provide parallel results for each of the major generator sectors analyzed in the study.

**Figure 3-4** below presents the breakdown of single-family residential waste. Organics are the most prevalent material group by a significant margin.

**Figure 3-4 Composition of Single-Family Residential Waste**

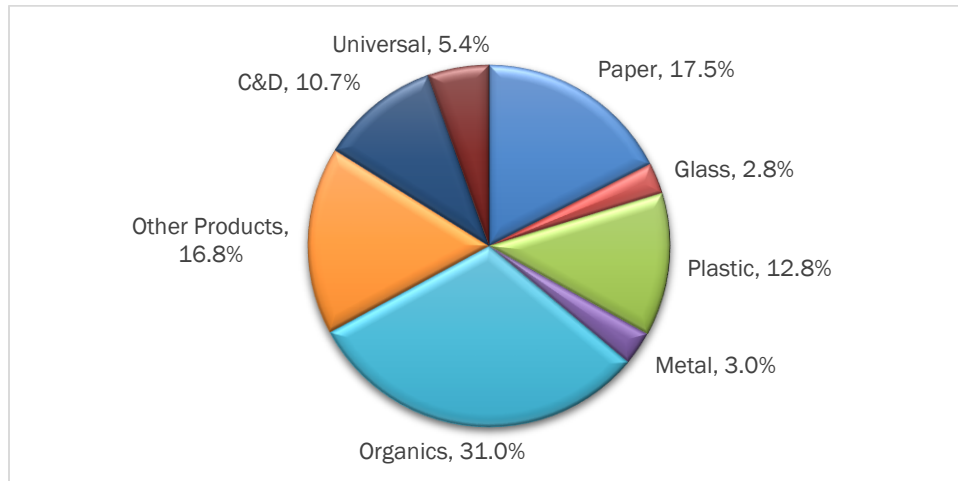
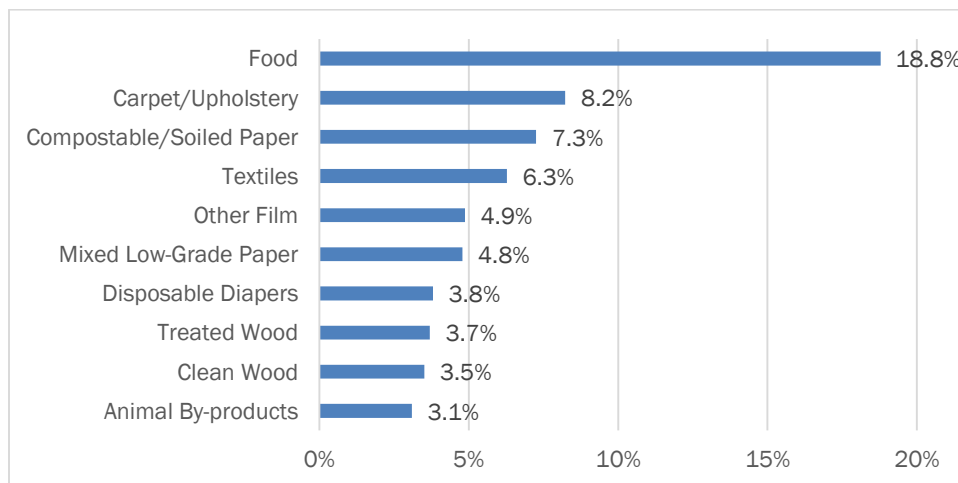


Figure 3-5 presents the top ten materials disposed in the single-family waste stream. The top ten most commonly found materials in the study made up over 64 percent of all the materials disposed in the single-family waste stream. Food comprises almost 19 percent of single family residential waste. It is noteworthy that not a single targeted recyclable made the top 10.

**Figure 3-5 Top 10 Most Common Materials in Single-Family Residential Waste Stream**



### 3. RESULTS

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Figure 3-6 illustrates the potential recoverability of waste from the single-family residential waste stream.

**Figure 3-6 Single –Family Diversion Potential**

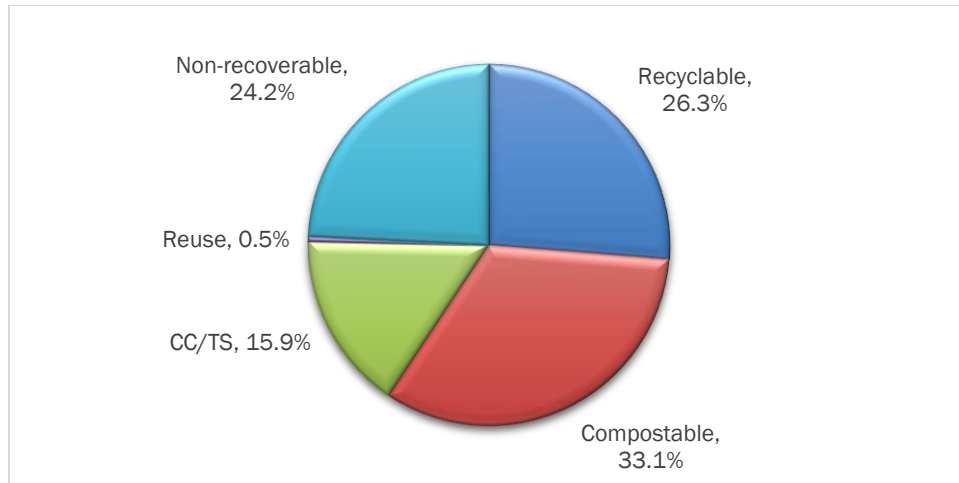


Table 3-3 provides a detailed tabular summary of single-family residential waste composition.

Table 3-3 Detailed Single Family Residential Waste Composition

Material	Percent	Conf		Material	Percent	Conf	
		Int (+/-)	Int (+/-)			Int (+/-)	Int (+/-)
<b>Paper</b>	<b>17.5%</b>	<b>2.6%</b>		<b>Metal</b>	<b>3.0%</b>	<b>0.6%</b>	
Newspaper	1.8%	0.7%		Aluminum Cans	0.5%	0.2%	
Plain OCC/Kraft Paper	2.3%	1.4%		Aluminum Foil/Containers	0.3%	0.1%	
Waxed OCC/Kraft Paper	0.1%	0.1%		Other Aluminum	Not found		
High-Grade Paper	0.1%	0.1%		Other Nonferrous	Not found		
Mixed Low-Grade Paper	4.8%	0.9%		Tin/Steel Cans	0.9%	0.3%	
Phone Books	0.3%	0.3%		Empty Paint and Aerosol Cans	0.2%	0.1%	
Paperback Books	0.1%	0.1%		Empty Propane and Other Tanks	0.2%	0.3%	
Polycoated Paper	0.1%	0.0%		Other Ferrous	0.4%	0.3%	
Compostable/Soiled Paper	7.3%	1.5%		Composite/Other Metals	0.6%	0.5%	
Composite/Other Paper	0.7%	0.2%					
				<b>Organic</b>	<b>31.0%</b>	<b>5.5%</b>	
<b>Plastic</b>	<b>12.8%</b>	<b>1.6%</b>		Grass	2.3%	2.2%	
PET Bottles	1.0%	0.2%		Leaves	0.3%	0.5%	
#1 PET Thermoforms	0.1%	0.1%		Prunings	1.0%	1.2%	
#2 HDPE Natural/Colored Bottles	0.6%	0.3%		Other Yard Waste	0.3%	0.5%	
Other Plastic Bottles	0.3%	0.2%		Food	18.8%	3.3%	
#2 - #7 Tubs, Cups, and Lids	0.4%	0.2%		Disposable Diapers	3.8%	1.3%	
Nonfood Expanded Polystyrene	0.1%	0.1%		Animal By-products	3.1%	1.2%	
Other Food Service Plastics	1.4%	0.2%		Composite/Other Organic	1.5%	0.6%	
Other Rigid Packaging	0.4%	0.1%					
Clean Shopping/Dry Cleaner Bags	1.0%	0.3%		<b>Other Products</b>	<b>16.8%</b>	<b>4.9%</b>	
Other Clean Polyethylene Film	0.6%	0.9%		Tires	Not found		
Other Film	4.9%	0.7%		Rubber	0.6%	0.5%	
Plastic Products	0.6%	0.4%		Textiles	6.3%	4.0%	
Composite/Other Plastic	1.4%	0.6%		Carpet/Upholstery	8.2%	4.4%	
				Apparel	0.5%	0.4%	
<b>Glass</b>	<b>2.8%</b>	<b>0.7%</b>		Furniture	Not found		
Clear Glass Bottles & Jars	1.7%	0.4%		Mattresses	0.7%	1.1%	
Green Glass Bottles & Jars	0.3%	0.3%		Appliances	0.3%	0.3%	
Brown Glass Bottles & Jars	0.6%	0.4%		Composite/Other Products	0.2%	0.2%	
Plate Glass	Not found						
Composite/Other Glass	0.2%	0.2%		<b>Construction &amp; Demolition</b>	<b>10.7%</b>	<b>4.4%</b>	
				Clean Wood	3.5%	2.4%	
<b>Universal Waste</b>	<b>5.4%</b>	<b>3.7%</b>		Pallets and Crates	Not found		
Paint	0.0%	0.0%		Stumps and Logs	Not found		
Batteries	0.1%	0.1%		Composite/Other Wood	2.4%	2.3%	
Cleaners	Not found			Clean Gypsum	0.1%	0.1%	
Oil Fuels	Not found			Painted Gypsum	0.1%	0.2%	
Electronics	0.3%	0.4%		Fiberglass Insulation	Not found		
Television	0.1%	0.1%		Rock/Concrete/Bricks	0.1%	0.2%	
Computers	Not found			Asphaltic Roofing	Not found		
Other Electronics	1.0%	1.3%		Ceramics	1.6%	2.7%	
Pesticides/Herbicides	Not found			Sand/Soil/Dirt/Grit/Fines	1.6%	0.9%	
Medical Waste	0.2%	0.2%		Composite/Other Construction Debris	1.3%	1.0%	
Treated Wood	3.7%	3.6%					
Light Bulbs	0.0%	0.0%					
Other Hazardous Waste	Not found						
				<b>Total</b>	<b>100%</b>	<b>14</b>	
				<b>Total Samples</b>			

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

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### 3.3 MULTI-FAMILY WASTE

Only five samples of multi-family waste were obtained in the 2014 Study. This is not a sufficient sample size to draw statistically meaningful conclusions, and consequently only the detailed results table is provided for multi-family wastes.

Table 3-4 is a detailed tabular summary of multi-family residential waste composition.

Table 3-4 Detailed Multi-Family Waste Composition

Material	Conf		Material	Conf	
	Percent	Int (+/-)		Percent	Int (+/-)
<b>Paper</b>	<b>35.8%</b>	<b>13.0%</b>	<b>Metal</b>	<b>3.2%</b>	<b>1.1%</b>
Newspaper	8.8%	11.0%	Aluminum Cans	1.0%	0.3%
Plain OCC/Kraft Paper	10.0%	5.0%	Aluminum Foil/Containers	0.5%	0.3%
Waxed OCC/Kraft Paper	0.2%	0.4%	Other Aluminum	Not found	
High-Grade Paper	0.4%	0.5%	Other Nonferrous	Not found	
Mixed Low-Grade Paper	8.8%	4.6%	Tin/Steel Cans	1.1%	0.5%
Phone Books	0.1%	0.2%	Empty Paint and Aerosol Cans	0.1%	0.1%
Paperback Books	0.2%	0.3%	Empty Propane and Other Tanks	Not found	
Polycoated Paper	0.0%	0.0%	Other Ferrous	0.0%	0.0%
Compostable/Soiled Paper	5.8%	0.4%	Composite/Other Metals	0.5%	0.4%
Composite/Other Paper	1.4%	0.5%			
			<b>Organic</b>	<b>23.9%</b>	<b>6.6%</b>
<b>Plastic</b>	<b>12.1%</b>	<b>3.1%</b>	Grass	Not found	
PET Bottles	1.6%	0.7%	Leaves	Not found	
#1 PET Thermoforms	0.0%	0.0%	Prunings	0.2%	0.3%
#2 HDPE Natural/Colored Bottles	0.5%	0.5%	Other Yard Waste	Not found	
Other Plastic Bottles	0.2%	0.1%	Food	17.3%	5.0%
#2 - #7 Tubs, Cups, and Lids	0.7%	0.4%	Disposable Diapers	2.7%	2.2%
Nonfood Expanded Polystyrene	0.1%	0.1%	Animal By-products	2.5%	1.8%
Other Food Service Plastics	1.2%	0.2%	Composite/Other Organic	1.2%	1.1%
Other Rigid Packaging	0.8%	0.4%			
Clean Shopping/Dry Cleaner Bags	1.8%	0.5%	<b>Other Products</b>	<b>7.6%</b>	<b>3.7%</b>
Other Clean Polyethylene Film	0.0%	0.0%	Tires	Not found	
Other Film	3.2%	0.6%	Rubber	0.2%	0.1%
Plastic Products	0.8%	0.6%	Textiles	3.0%	2.4%
Composite/Other Plastic	1.3%	0.5%	Carpet/Upholstery	1.9%	2.0%
			Apparel	0.8%	1.2%
<b>Glass</b>	<b>3.0%</b>	<b>1.5%</b>	Furniture	Not found	
Clear Glass Bottles & Jars	1.5%	1.0%	Mattresses	Not found	
Green Glass Bottles & Jars	0.7%	0.4%	Appliances	0.6%	1.1%
Brown Glass Bottles & Jars	0.7%	0.4%	Composite/Other Products	1.0%	0.7%
Plate Glass	0.1%	0.1%			
Composite/Other Glass	0.0%	0.0%	<b>Construction &amp; Demolition</b>	<b>14.0%</b>	<b>18.1%</b>
			Clean Wood	0.1%	0.1%
<b>Universal Waste</b>	<b>0.5%</b>	<b>0.6%</b>	Pallets and Crates	Not found	
Paint	Not found		Stumps and Logs	Not found	
Batteries	0.0%	0.0%	Composite/Other Wood	4.1%	6.7%
Cleaners	Not found		Clean Gypsum	Not found	
Oil Fuels	Not found		Painted Gypsum	Not found	
Electronics	0.0%	0.0%	Fiberglass Insulation	1.2%	1.9%
Television	Not found		Rock/Concrete/Bricks	2.9%	4.7%
Computers	Not found		Asphaltic Roofing	Not found	
Other Electronics	0.0%	0.1%	Ceramics	3.5%	5.8%
Pesticides/Herbicides	Not found		Sand/Soil/Dirt/Grit/Fines	2.2%	1.5%
Medical Waste	Not found		Composite/Other Construction Debris	0.1%	0.2%
Treated Wood	0.4%	0.6%			
Light Bulbs	Not found				
Other Hazardous Waste	Not found				
			<b>Total</b>	<b>100%</b>	
			<b>Total Samples</b>		<b>5</b>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

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#### 3.4 COMMERCIAL WASTE

Figure 3-7 presents the breakdown of commercial waste. As shown, Paper and Organics both comprise almost one quarter of the commercial waste stream.

**Figure 3-7 Composition of the Commercial Waste Stream**

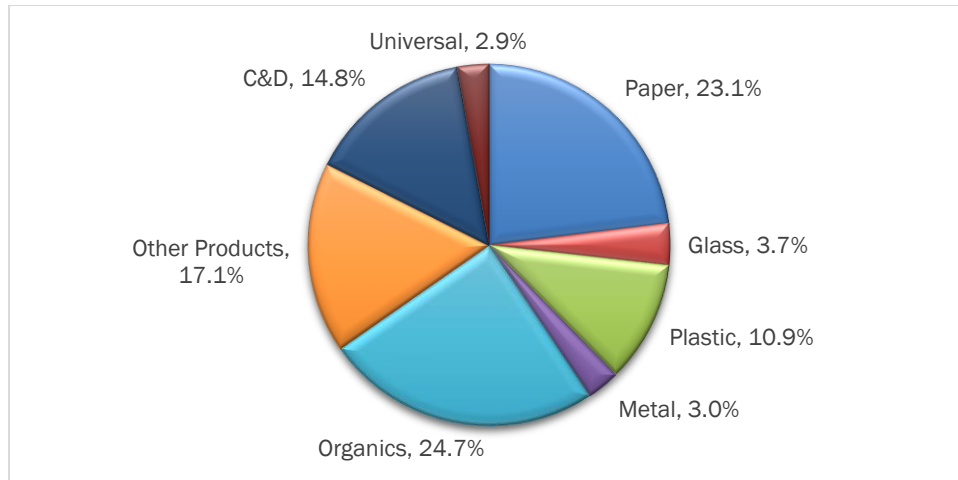


Figure 3-8 presents the top ten most commonly found materials in the commercial waste stream. These materials sum to over 58 percent of all materials found in commercial waste

**Figure 3-8 Top 10 Most Common Materials in the Commercial Waste Stream**

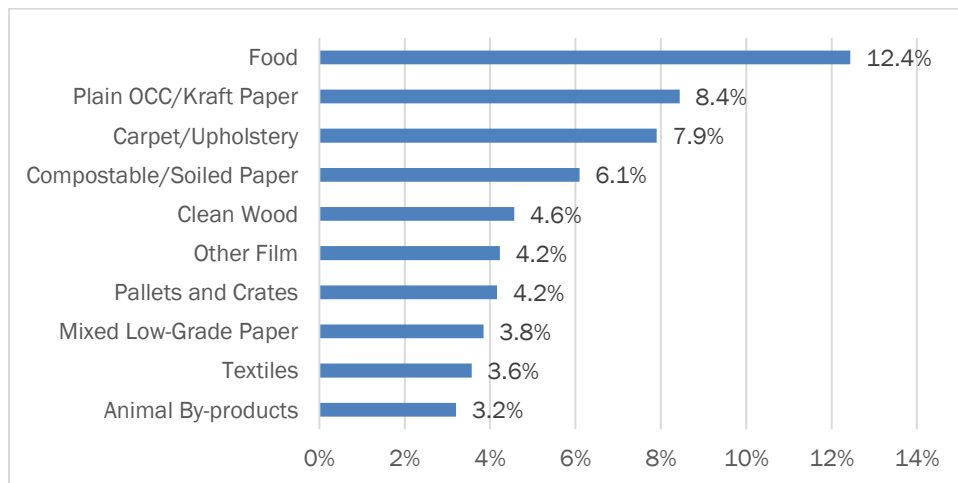


Figure 3-9 shows the potential recovery of materials in the commercial waste stream.

Figure 3-9 Diversion Potential of Commercial Waste Stream

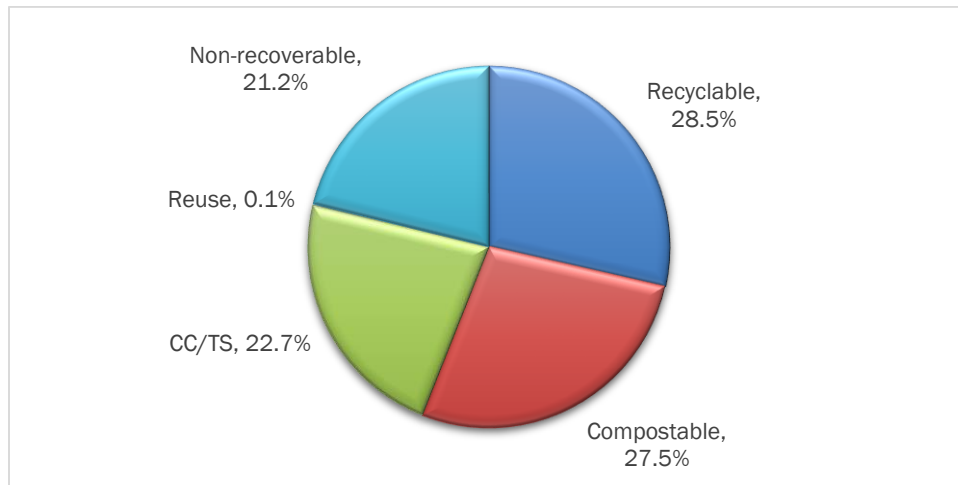


Table 3-5 shows the detailed tabular summary of commercial waste composition.

### 3. RESULTS

Table 3-5 Detailed Commercial Waste Composition

Material	Conf		Material	Conf	
	Percent	Int (+/-)		Percent	Int (+/-)
<b>Paper</b>	<b>23.1%</b>	<b>3.6%</b>	<b>Metal</b>	<b>3.0%</b>	<b>1.0%</b>
Newspaper	1.8%	1.3%	Aluminum Cans	0.6%	0.2%
Plain OCC/Kraft Paper	8.4%	2.3%	Aluminum Foil/Containers	0.1%	0.1%
Waxed OCC/Kraft Paper	0.7%	0.8%	Other Aluminum	Not found	
High-Grade Paper	0.6%	0.5%	Other Nonferrous	0.0%	0.0%
Mixed Low-Grade Paper	3.8%	1.2%	Tin/Steel Cans	0.5%	0.3%
Phone Books	0.1%	0.1%	Empty Paint and Aerosol Cans	0.2%	0.1%
Paperback Books	0.4%	0.5%	Empty Propane and Other Tanks	Not found	
Polycoated Paper	0.2%	0.2%	Other Ferrous	0.3%	0.4%
Compostable/Soiled Paper	6.1%	1.3%	Composite/Other Metals	1.3%	0.8%
Composite/Other Paper	1.0%	0.4%			
			<b>Organic</b>	<b>24.7%</b>	<b>6.7%</b>
<b>Plastic</b>	<b>10.9%</b>	<b>1.8%</b>	Grass	1.4%	1.7%
PET Bottles	1.2%	0.3%	Leaves	0.2%	0.3%
#1 PET Thermoforms	0.0%	0.0%	Prunings	2.1%	1.6%
#2 HDPE Natural/Colored Bottles	0.5%	0.2%	Other Yard Waste	1.1%	1.8%
Other Plastic Bottles	0.1%	0.1%	Food	12.4%	5.0%
#2 - #7 Tubs, Cups, and Lids	0.3%	0.1%	Disposable Diapers	2.7%	1.4%
Nonfood Expanded Polystyrene	0.1%	0.1%	Animal By-products	3.2%	3.0%
Other Food Service Plastics	1.5%	0.4%	Composite/Other Organic	1.6%	0.7%
Other Rigid Packaging	0.3%	0.1%			
Clean Shopping/Dry Cleaner Bags	0.9%	0.4%	<b>Other Products</b>	<b>17.1%</b>	<b>6.9%</b>
Other Clean Polyethylene Film	0.1%	0.1%	Tires	1.0%	1.5%
Other Film	4.2%	0.9%	Rubber	2.7%	2.3%
Plastic Products	0.7%	0.5%	Textiles	3.6%	1.6%
Composite/Other Plastic	0.9%	0.5%	Carpet/Upholstery	7.9%	5.6%
			Apparel	0.1%	0.1%
<b>Glass</b>	<b>3.7%</b>	<b>1.5%</b>	Furniture	Not found	
Clear Glass Bottles & Jars	1.3%	0.5%	Mattresses	Not found	
Green Glass Bottles & Jars	0.7%	0.5%	Appliances	0.4%	0.4%
Brown Glass Bottles & Jars	0.8%	0.6%	Composite/Other Products	1.3%	1.2%
Plate Glass	0.0%	0.0%			
Composite/Other Glass	0.9%	1.4%	<b>Construction &amp; Demolition</b>	<b>14.8%</b>	<b>6.0%</b>
			Clean Wood	4.6%	2.7%
<b>Universal Waste</b>	<b>2.9%</b>	<b>1.6%</b>	Pallets and Crates	4.2%	3.4%
Paint	Not found		Stumps and Logs	Not found	
Batteries	0.0%	0.0%	Composite/Other Wood	1.5%	2.4%
Cleaners	Not found		Clean Gypsum	0.1%	0.1%
Oil Fuels	Not found		Painted Gypsum	1.3%	2.1%
Electronics	0.2%	0.2%	Fiberglass Insulation	0.1%	0.2%
Television	0.5%	0.8%	Rock/Concrete/Bricks	0.0%	0.0%
Computers	Not found		Asphaltic Roofing	Not found	
Other Electronics	0.0%	0.0%	Ceramics	0.7%	1.1%
Pesticides/Herbicides	Not found		Sand/Soil/Dirt/Grit/Fines	1.0%	0.5%
Medical Waste	0.1%	0.1%	Composite/Other Construction Debris	1.3%	1.9%
Treated Wood	2.0%	1.4%			
Light Bulbs	0.0%	0.0%			
Other Hazardous Waste	Not found				
			<b>Total</b>	<b>100%</b>	<b>22</b>
			<b>Total Samples</b>		<b>22</b>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.



### 3.5 INDUSTRIAL WASTE

Only nine samples of industrial waste were obtained in the 2014 Study. Industrial wastes are highly variable from load to load and from sample to sample. Consequently, this is not a sufficient sample size to draw statistically meaningful conclusions, and only the detailed results table is provided for industrial wastes.

Table 3-6 is a detailed tabular summary of industrial waste composition. As shown, the samples obtained for this study contained an unusually high fraction of corrugated cardboard, and many of the material categories were not observed in these nine samples. It is not clear that this is an accurate representation of the industrial waste stream, and readers are cautioned in relying on these data for planning and projection purposes.

It is also worth noting that the high incidence of cardboard in the industrial sector contributes to a high overall incidence of cardboard in the aggregate waste stream. MSW Consultants believes that the incidence of cardboard may be overstated as a result of the contribution in the industrial stream.

### 3. RESULTS

Table 3-6 Industrial Waste Composition

Material	Conf		Material	Conf	
	Percent	Int (+/-)		Percent	Int (+/-)
<b>Paper</b>	<b>54.0%</b>	<b>18.8%</b>	<b>Metal</b>	<b>1.0%</b>	<b>1.0%</b>
Newspaper	Not found		Aluminum Cans	0.2%	0.1%
Plain OCC/Kraft Paper	33.6%	19.6%	Aluminum Foil/Containers	0.0%	0.0%
Waxed OCC/Kraft Paper	Not found		Other Aluminum	0.0%	0.0%
High-Grade Paper	0.5%	0.5%	Other Nonferrous	0.0%	0.0%
Mixed Low-Grade Paper	2.4%	2.6%	Tin/Steel Cans	0.0%	0.0%
Phone Books	Not found		Empty Paint and Aerosol Cans	Not found	
Paperback Books	3.5%	5.8%	Empty Propane and Other Tanks	Not found	
Polycoated Paper	Not found		Other Ferrous	0.0%	0.1%
Compostable/Soiled Paper	4.2%	3.1%	Composite/Other Metals	0.7%	1.0%
Composite/Other Paper	9.8%	10.7%			
			<b>Organic</b>	<b>8.1%</b>	<b>10.1%</b>
<b>Plastic</b>	<b>12.1%</b>	<b>6.4%</b>	Grass	Not found	
PET Bottles	0.4%	0.3%	Leaves	Not found	
#1 PET Thermoforms	0.2%	0.2%	Prunings	Not found	
#2 HDPE Natural/Colored Bottles	0.0%	0.1%	Other Yard Waste	6.3%	10.3%
Other Plastic Bottles	0.0%	0.0%	Food	1.8%	1.8%
#2 - #7 Tubs, Cups, and Lids	0.6%	0.9%	Disposable Diapers	0.0%	0.0%
Nonfood Expanded Polystyrene	0.0%	0.0%	Animal By-products	Not found	
Other Food Service Plastics	0.6%	0.7%	Composite/Other Organic	0.0%	0.0%
Other Rigid Packaging	0.5%	0.7%			
Clean Shopping/Dry Cleaner Bags	0.4%	0.3%	<b>Other Products</b>	<b>6.2%</b>	<b>6.2%</b>
Other Clean Polyethylene Film	6.4%	4.2%	Tires	Not found	
Other Film	1.7%	1.5%	Rubber	0.8%	0.9%
Plastic Products	0.0%	0.0%	Textiles	3.2%	5.2%
Composite/Other Plastic	1.3%	1.0%	Carpet/Upholstery	0.2%	0.3%
			Apparel	0.0%	0.0%
<b>Glass</b>	<b>0.3%</b>	<b>0.2%</b>	Furniture	Not found	
Clear Glass Bottles & Jars	0.2%	0.1%	Mattresses	Not found	
Green Glass Bottles & Jars	0.1%	0.1%	Appliances	Not found	
Brown Glass Bottles & Jars	Not found		Composite/Other Products	1.9%	2.6%
Plate Glass	Not found				
Composite/Other Glass	Not found		<b>Construction &amp; Demolition</b>	<b>18.5%</b>	<b>17.6%</b>
			Clean Wood	1.1%	1.3%
<b>Universal Waste</b>	<b>Not found</b>		Pallets and Crates	9.0%	5.9%
Paint	Not found		Stumps and Logs	Not found	
Batteries	Not found		Composite/Other Wood	1.7%	2.8%
Cleaners	Not found		Clean Gypsum	Not found	
Oil Fuels	Not found		Painted Gypsum	1.2%	2.0%
Electronics	Not found		Fiberglass Insulation	Not found	
Television	Not found		Rock/Concrete/Bricks	5.3%	8.8%
Computers	Not found		Asphaltic Roofing	Not found	
Other Electronics	Not found		Ceramics	Not found	
Pesticides/Herbicides	Not found		Sand/Soil/Dirt/Grit/Fines	0.1%	0.1%
Medical Waste	Not found		Composite/Other Construction Debris	Not found	
Treated Wood	Not found				
Light Bulbs	Not found				
Other Hazardous Waste	Not found				
				<b>Total</b>	<b>100%</b>
				<b>Total Samples</b>	<b>9</b>

Confidence intervals calculated at the 90% confidence level. Percentages for material types may not total 100% due to rounding.

### 3.6 CONSTRUCTION AND DEMOLITION DEBRIS

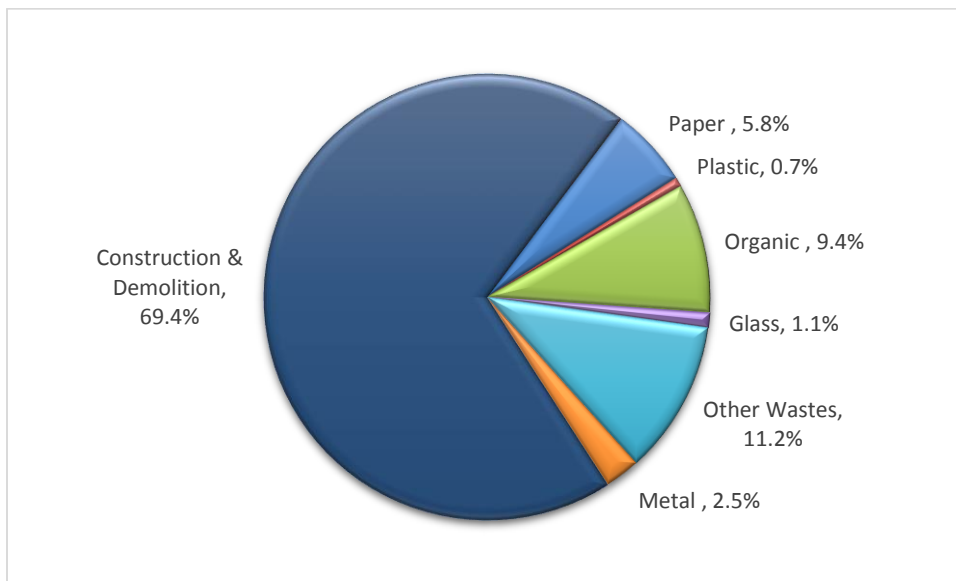
Consistent with the 2009 Study, loads of C&D waste were visually surveyed into 42 separate material categories. These material categories aggregate into material groups (paper, plastic, glass, etc.). These material categories differ from categories used for the MSW stream; C&D categories were selected based on MSW Consultants’ experience of expected components in C&D waste.

Visual surveys were performed on complete incoming loads of C&D wastes at the Bluegrass Transfer Station. Visually obtained volumetric estimates of waste were made of each load immediately after the load was tipped by the collection vehicle. These data were recorded at the time of making the visual observations. After the field work was completed, volume measurements were converted to weight-based estimates using industry-accepted density factors, and the weight values were then normalized based on actual load weights taken from scale tickets.

It should be noted that the definition of C&D waste was based on the classifications of incoming loads at the scalehouse. If a load was coded as C&D, it was considered C&D for the purposes of this study even if the load contained non-C&D debris.

Figure 3-10 shows the breakdown of the C&D waste stream by material group. Not surprisingly, almost 70 percent of the wastes were construction and demolition-related materials.

**Figure 3-10 Composition of the C&D Waste Stream**



### 3. RESULTS

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Figure 3-11 shows the most prevalent materials in C&D loads. These 10 materials make up almost 75 percent of the C&D waste stream.

**Figure 3-11 Top 10 Most Prevalent C&D Materials**

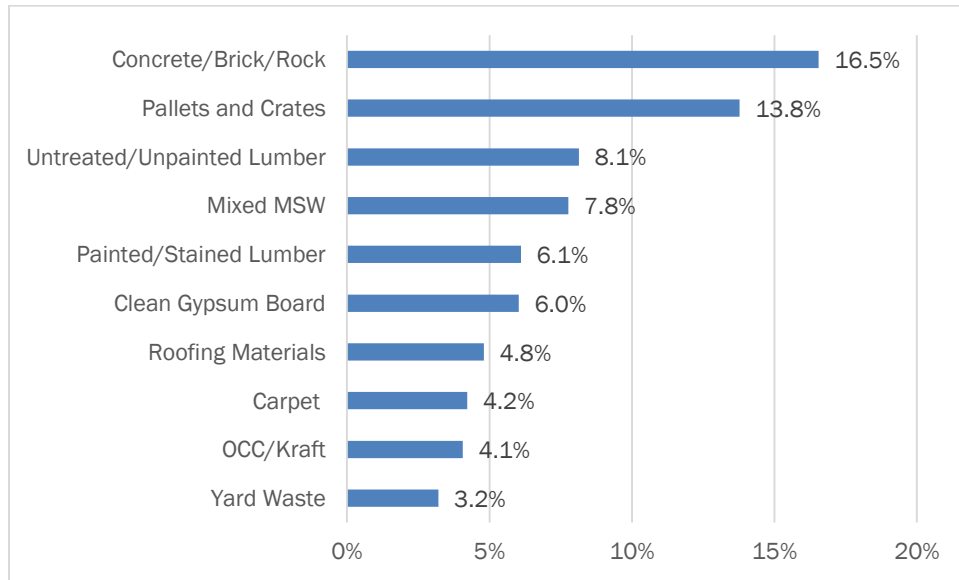


Table 3-7 provides the detailed composition of C&D wastes.

**Table 3-7 C&D Waste Composition**

Material	Percent	Conf		Material	Percent	Conf	
		Int (+/-)				Int (+/-)	
<b>Paper</b>	<b>5.8%</b>	<b>2.0%</b>		<b>Construction &amp; Demolition</b>	<b>69.4%</b>	<b>4.9%</b>	
OCC/Kraft	5.1%	1.8%		Concrete/Brick/Rock	16.4%	4.8%	
R/C and Other Paper	0.7%	0.3%		Asphalt Paving	Not found		
				Roofing Materials	4.8%	2.9%	
<b>Plastic</b>	<b>1.1%</b>	<b>0.3%</b>		Ceiling Tiles	0.1%	0.1%	
HDPE Buckets	0.0%	0.0%		Pallets and Crates	15.0%	4.1%	
Clean Recoverable Film	0.1%	0.1%		Untreated/Unpainted Lumber	7.8%	2.2%	
R/C and Other Plastic	1.0%	0.3%		Treated Lumber	0.5%	0.4%	
				Painted/Stained Lumber	5.9%	1.7%	
<b>Glass</b>	<b>0.7%</b>	<b>0.9%</b>		Plywood	1.4%	0.6%	
				OSB	1.6%	0.8%	
<b>Metal</b>	<b>2.5%</b>	<b>0.9%</b>		MDF and Particle Board	0.9%	1.0%	
Appliances	0.0%	0.0%		Wood Furniture	1.9%	0.9%	
Other Ferrous Metals	2.2%	0.9%		Other Wood	0.7%	0.9%	
HVAC Ducting	0.1%	0.1%		Clean Gypsum Board	6.0%	2.6%	
				Painted Gypsum Board	2.1%	1.2%	
<b>Other Wastes</b>	<b>11.2%</b>	<b>3.2%</b>		Dirt, Sand, and Gravel	2.6%	1.7%	
Electronics	0.6%	0.4%		Insulation	0.5%	0.3%	
Items with CRTs	0.2%	0.2%		R/C and Other C&D	1.2%	0.9%	
Bulky Items	2.2%	1.2%					
Tires	0.3%	0.4%		<b>Organic</b>	<b>9.4%</b>	<b>3.0%</b>	
Lead acid batteries	Not found			Yard Waste	3.1%	1.8%	
Vehicle and Equipment Fluids	Not found			Carpet	4.1%	1.9%	
Paint and Paint Related Waste	0.1%	0.1%		Carpet Padding	0.1%	0.1%	
Other Hazardous	0.0%	0.0%		R/C and Other Organics	2.0%	1.7%	
Fines/Mixed Residue	0.4%	0.3%					
Mixed MSW	7.4%	2.8%					
				<b>Total</b>		<b>100.0%</b>	
				<b>Samples</b>		<b>111</b>	

### 3.7 COMPARISON OF 2014 AND 2009 STUDY RESULTS

The following table is provided to allow for comparisons between the two study results. It is the opinion of MSW Consultants that the most informative comparisons can be made for single family residential and commercial wastes, as both studies captured enough samples to achieve relatively stable statistical results. Comparisons of the industrial waste stream – and by extension, the aggregate waste stream – are less informative because of the underlying uncertainty about industrial waste composition in the 2014 Study. Ideally, the industrial waste stream should undergo more extensive sampling in order to improve the accuracy of these results.

### 3. RESULTS

Table 3-8 Comparison of MSW Composition, 2014 and 2009

Material	Aggregate		Residential		Commercial		Industrial	
	2014	2009	2014	2009	2014	2009	2014	2009
<b>Paper</b>	<b>29.8%</b>	<b>24.0%</b>	<b>17.5%</b>	<b>21.9%</b>	<b>23.1%</b>	<b>30.9%</b>	<b>54.0%</b>	<b>19.0%</b>
Newspaper	2.2%	1.8%	1.8%	2.8%	1.8%	1.3%	Not found	1.6%
Plain OCC/Kraft Paper	12.5%	9.1%	2.3%	3.4%	8.4%	12.2%	33.6%	13.6%
Waxed OCC/Kraft Paper	0.3%	0.2%	0.1%	0.2%	0.7%	0.4%	Not found	0.0%
High-Grade Paper	0.4%	2.7%	0.1%	1.4%	0.6%	5.6%	0.5%	0.7%
Mixed Low-Grade Paper	4.3%	3.0%	4.8%	5.0%	3.8%	2.8%	2.4%	0.5%
Phone Books	0.1%	0.3%	0.3%	0.1%	0.1%	0.7%	Not found	0.0%
Paperback Books	1.0%	0.1%	0.1%	0.2%	0.4%	0.0%	3.5%	0.0%
Polycoated Paper	0.1%	0.4%	0.1%	0.4%	0.2%	0.8%	Not found	0.0%
Compostable/Soiled Paper	6.0%	5.0%	7.3%	7.0%	6.1%	5.5%	4.2%	1.4%
Composite/Other Paper	2.9%	1.3%	0.7%	1.4%	1.0%	1.6%	9.8%	1.1%
<b>Plastic</b>	<b>11.8%</b>	<b>11.3%</b>	<b>12.8%</b>	<b>12.2%</b>	<b>10.9%</b>	<b>11.8%</b>	<b>12.1%</b>	<b>9.5%</b>
PET Bottles	1.0%	0.9%	1.0%	1.2%	1.2%	1.0%	0.4%	0.2%
#1 PET Thermoforms	0.1%	N/A	0.1%	N/A	0.0%	N/A	0.2%	N/A
#2 HDPE Bottles	0.4%	N/A	0.6%	N/A	0.5%	N/A	0.0%	N/A
#2 HDPE Natural Bottles	N/A	0.2%	N/A	0.4%	N/A	0.2%	N/A	0.0%
#2 HDPE Colored Bottles	N/A	0.3%	N/A	0.4%	N/A	0.3%	N/A	0.0%
Other Plastic Bottles	0.1%	0.2%	0.3%	0.3%	0.1%	0.2%	0.0%	0.0%
#2 - #7 Tubs, Cups, and Lids	0.4%	N/A	0.4%	N/A	0.3%	N/A	0.6%	N/A
#2, 4, and 5 Tubs, Cups, and Lids	N/A	0.3%	N/A	0.4%	N/A	0.3%	N/A	0.1%
#1, 3, 6, and 7 Tubs, Cups, and Lids	N/A	0.4%	N/A	0.4%	N/A	0.4%	N/A	0.4%
Nonfood Expanded Polystyrene	0.1%	0.8%	0.1%	0.3%	0.1%	0.2%	0.0%	2.5%
Other Food Service Plastics	1.2%	1.2%	1.4%	1.9%	1.5%	1.2%	0.6%	0.2%
Other Rigid Packaging	0.4%	0.7%	0.4%	0.4%	0.3%	0.6%	0.5%	1.6%
Clean Shopping/Dry Cleaner Bags	0.9%	0.2%	1.0%	0.3%	0.9%	0.3%	0.4%	0.0%
Other Clean Polyethylene Film	1.6%	0.2%	0.6%	0.1%	0.1%	0.5%	6.4%	0.1%
Other Film	3.7%	3.4%	4.9%	4.1%	4.2%	3.8%	1.7%	1.6%
Plastic Products	0.5%	1.4%	0.6%	0.9%	0.7%	1.6%	0.0%	1.6%
Composite/Other Plastic	1.1%	1.2%	1.4%	1.0%	0.9%	1.4%	1.3%	1.1%
<b>Glass</b>	<b>2.6%</b>	<b>2.4%</b>	<b>2.8%</b>	<b>2.8%</b>	<b>3.7%</b>	<b>2.5%</b>	<b>0.3%</b>	<b>0.0%</b>
Clear Glass Bottles & Jars	1.1%	0.8%	1.7%	1.6%	1.3%	0.7%	0.2%	0.0%
Green Glass Bottles & Jars	0.5%	0.3%	0.3%	0.5%	0.7%	0.3%	0.1%	0.0%
Brown Glass Bottles & Jars	0.6%	0.8%	0.6%	0.5%	0.8%	1.2%	Not found	0.0%
Plate Glass	0.0%	0.2%	Not found	0.0%	0.0%	0.0%	Not found	0.0%
Composite/Other Glass	0.4%	0.3%	0.2%	0.2%	0.9%	0.4%	Not found	0.0%
<b>Universal Waste</b>	<b>2.6%</b>	<b>0.8%</b>	<b>5.4%</b>	<b>0.6%</b>	<b>2.9%</b>	<b>1.5%</b>	<b>Not found</b>	<b>0.0%</b>
Paint	0.0%	0.0%	0.0%	0.1%	Not found	0.1%	Not found	0.0%
Batteries	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	Not found	0.0%
Cleaners	0.0%	0.0%	Not found	0.0%	Not found	0.0%	Not found	0.0%
Oil Fuels	0.0%	0.0%	Not found	0.1%	Not found	0.0%	Not found	0.0%
Electronics	0.2%	0.4%	0.3%	0.0%	0.2%	1.0%	Not found	0.0%
Television	0.2%	0.0%	0.1%	0.0%	0.5%	0.0%	Not found	0.0%
Computers	0.0%	0.0%	Not found	0.0%	Not found	0.0%	Not found	0.0%
Other Electronics	0.3%	0.0%	1.0%	0.1%	0.0%	0.0%	Not found	0.0%
Pesticides/Herbicides	0.0%	0.0%	Not found	0.0%	Not found	0.0%	Not found	0.0%
Medical Waste	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	Not found	0.0%
Treated Wood	1.8%	0.0%	3.7%	0.0%	2.0%	0.0%	Not found	0.0%
Light Bulbs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Not found	0.0%
Other Hazardous Waste	0.0%	0.1%	Not found	0.1%	Not found	0.2%	Not found	0.0%

Table 3-8 (continued)

Material	Aggregate		Residential		Commercial		Industrial	
	2014	2009	2014	2009	2014	2009	2014	2009
<b>Metal</b>	<b>2.6%</b>	<b>4.6%</b>	<b>3.0%</b>	<b>4.6%</b>	<b>3.0%</b>	<b>5.1%</b>	<b>1.0%</b>	<b>1.7%</b>
Aluminum Cans	0.6%	0.5%	0.5%	0.8%	0.6%	0.5%	0.2%	0.1%
Aluminum Foil/Containers	0.2%	0.2%	0.3%	0.2%	0.1%	0.2%	0.0%	0.0%
Other Aluminum	0.0%	0.1%	Not found	0.1%	Not found	0.2%	0.0%	0.2%
Other Nonferrous	0.0%	0.1%	Not found	0.1%	0.0%	0.1%	0.0%	0.2%
Tin/Steel Cans	0.6%	0.5%	0.9%	0.9%	0.5%	0.5%	0.0%	0.0%
Empty Paint and Aerosol Cans	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%	Not found	0.0%
Empty Propane and Other Tanks	0.0%	0.0%	0.2%	0.0%	Not found	0.0%	Not found	0.0%
Other Ferrous	0.2%	1.3%	0.4%	1.2%	0.3%	0.8%	0.0%	1.2%
Composite/Other Metals	0.9%	1.9%	0.6%	1.1%	1.3%	2.8%	0.7%	0.0%
<b>Organic</b>	<b>22.6%</b>	<b>23.3%</b>	<b>31.0%</b>	<b>33.5%</b>	<b>24.7%</b>	<b>22.5%</b>	<b>8.1%</b>	<b>12.8%</b>
Grass	1.2%	0.7%	2.3%	1.1%	1.4%	0.3%	Not found	0.6%
Leaves	0.1%	3.6%	0.3%	9.7%	0.2%	1.6%	Not found	1.0%
Prunings	1.1%	0.5%	1.0%	0.9%	2.1%	0.4%	Not found	0.2%
Other Yard Waste	1.9%	0.5%	0.3%	0.3%	1.1%	0.6%	6.3%	0.8%
Food	12.3%	12.1%	18.8%	16.1%	12.4%	13.7%	1.8%	3.8%
Liquid Food Waste	N/A	1.0%	N/A	0.6%	N/A	0.8%	N/A	2.1%
Disposable Diapers	2.4%	1.8%	3.8%	2.3%	2.7%	1.2%	0.0%	0.2%
Animal By-products	2.4%	2.5%	3.1%	1.5%	3.2%	2.9%	Not found	4.2%
Composite/Other Organic	1.2%	0.6%	1.5%	0.8%	1.6%	0.9%	0.0%	0.0%
<b>Other Products</b>	<b>13.6%</b>	<b>12.5%</b>	<b>16.8%</b>	<b>16.8%</b>	<b>17.1%</b>	<b>12.0%</b>	<b>6.2%</b>	<b>7.1%</b>
Tires	0.4%	0.0%	Not found	0.0%	1.0%	0.0%	Not found	0.0%
Rubber	1.5%	0.2%	0.6%	0.3%	2.7%	0.1%	0.8%	0.2%
Textiles	4.1%	1.9%	6.3%	1.7%	3.6%	1.9%	3.2%	1.9%
Carpet/Upholstery	5.7%	3.0%	8.2%	5.9%	7.9%	3.5%	0.2%	0.1%
Apparel	0.3%	1.7%	0.5%	3.3%	0.1%	0.9%	0.0%	0.1%
Furniture	0.0%	3.0%	Not found	4.2%	Not found	0.3%	Not found	4.3%
Mattresses	0.2%	1.5%	0.7%	0.6%	Not found	3.1%	Not found	0.5%
Appliances	0.3%	0.4%	0.3%	0.5%	0.4%	0.8%	Not found	0.0%
Composite/Other Products	1.1%	0.7%	0.2%	0.4%	1.3%	1.4%	1.9%	0.0%
<b>Construction &amp; Demolition</b>	<b>14.4%</b>	<b>21.0%</b>	<b>10.7%</b>	<b>7.6%</b>	<b>14.8%</b>	<b>13.7%</b>	<b>18.5%</b>	<b>49.8%</b>
Clean Wood	3.0%	2.1%	3.5%	1.0%	4.6%	1.3%	1.1%	4.7%
Pallets and Crates	3.7%	11.0%	Not found	0.0%	4.2%	6.8%	9.0%	34.9%
Stumps and Logs	0.0%	0.7%	Not found	0.5%	Not found	1.0%	Not found	0.1%
Composite/Other Wood	2.1%	1.7%	2.4%	1.5%	1.5%	1.4%	1.7%	2.6%
Clean Gypsum	0.0%	0.5%	0.1%	0.2%	0.1%	0.0%	Not found	1.8%
Painted Gypsum	0.8%	0.9%	0.1%	0.0%	1.3%	0.1%	1.2%	0.0%
Fiberglass Insulation	0.2%	0.0%	Not found	0.0%	0.1%	0.0%	Not found	0.0%
Rock/Concrete/Bricks	1.5%	0.8%	0.1%	0.3%	0.0%	1.0%	5.3%	0.4%
Asphaltic Roofing	0.0%	0.1%	Not found	0.3%	Not found	0.2%	Not found	0.0%
Ceramics	1.1%	0.1%	1.6%	0.2%	0.7%	0.1%	Not found	0.0%
Sand/Soil/Dirt/Grit/Fines	1.1%	2.6%	1.6%	2.4%	1.0%	1.4%	0.1%	5.3%
Composite/Other Construction Debris	0.9%	0.6%	1.3%	1.2%	1.3%	0.6%	Not found	0.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Total Samples</b>	<b>50</b>	<b>102</b>	<b>14</b>	<b>28</b>	<b>22</b>	<b>38</b>	<b>9</b>	<b>38</b>

### 3.7.1 CHANGES IN RESIDENTIAL WASTE

Both the 2009 and 2014 Studies obtained enough residential samples to draw meaningful comparisons. The following observations are made about changes in the Residential waste stream:

- ◆ The incidence of recyclable fiber has decreased meaningfully. This is likely due to a combination of factors, including lower generation of fiber as well as increased use of recycling program.

### 3. RESULTS

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- ◆ There does not appear to have been any changes in the fraction of recyclable containers being disposed. However, these containers are still a small amount of total disposal.
- ◆ Likely due to the different seasonal data collection periods for the two studies, the quantity of leaves, and of total yard waste – was significantly lower in the 2014 Study.
- ◆ The incidence of Treated/Painted Wood was noticeably higher in 2014, which had an impact on total Universal Wastes. However, this result was driven by one sample that contained almost 32 percent treated/painted wood. Had this sample been omitted from the analysis, the actual amount of treated wood would have been less than half the amount shown.
- ◆ Food waste slightly increased since 2009; this may be driven by a reduction in other historically prevalent materials such as paper and
- ◆ Other Products stayed relatively consistent as a group, but there was shift from Apparel to other Textiles and a slight increase in Carpet/Upholstery in the 2014 Study.

#### 3.7.2 CHANGES IN COMMERCIAL WASTE

Both the 2009 and 2014 Studies obtained enough commercial samples to draw meaningful comparisons. The following observations are made about changes in the Commercial waste stream:

- ◆ There was a significant reduction in the incidence of both cardboard and high grade paper. While there has been reduced generation of these materials, it seems likely that recycling has increased in the commercial sector.
- ◆ Organic wastes were relatively consistent between the studies.
- ◆ There were significantly fewer metals in the disposed commercial waste stream.
- ◆ Treated/Painted Wood was higher in 2014, again due in part to a single samples which contained over 18 percent of this material. Had this sample been omitted from the analysis, the actual amount of treated wood would have been roughly half the amount shown.
- ◆ Textiles and Carpet/Upholstery both reflected an increase in the 2014 Study.

#### 3.7.3 CHANGES IN C&D WASTE

In 2009, almost three quarters of the C&D visual surveying took place at the Haley Pike Landfill; conversely, all of the C&D surveying occurred at the Bluegrass Transfer Station in 2014. The MSW Consultants visual surveyor noticed a significantly different mix of incoming C&D loads at the transfer station. Specifically, there were very few loads of roofing material and relatively few open top boxes in the 2014 Study at the transfer station. In 2009, many of the loads surveyed were larger open top boxes consistent with a large construction site.

Because of the vastly different mix of C&D loads captured in 2014, this report does not attempt to compare the C&D composition as such comparison provides little insight into the impact of program changes or even changes in C&D waste generation as a whole.



## 4. CONCLUSIONS

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### 4.1 CONCLUSIONS

The 2014 Study successfully updated UCG's understanding of the constituents remaining in the disposed waste stream received at the Bluegrass Transfer Station. As the UCG embarks on a zero waste strategic planning process, the results of this study will inform planners and stakeholders about various options and priorities for future diversion increases. The following conclusions can be drawn based on the results of this study.

- ◆ **Targeted Recyclables:** Despite a reduction in the percentage of recyclables in disposed waste since the 2008 Study, there are still recyclable fiber, bottles and containers that are being disposed. Continued public education will be needed to maximize the use of current recycling programs.
- ◆ **Organics:** Food is still the most prevalent material in the single family residential, multi-family residential and commercial waste streams. Along with yard wastes (and possibly compostable papers), organics therefore offers the most potential to reduce waste disposal if viable alternatives can be found.
- ◆ **Yard Wastes:** The 2014 Study field data collection schedule did not allow for testing how much yard wastes are being disposed rather than diverted via existing yard waste collection systems. Very little yard waste was found; however, no sampling was performed during the spring and fall months when yard waste generation tends to be higher.
- ◆ **Industrial Waste:** The industrial waste stream was found to have a surprising amount of corrugated cardboard in this study. Although this finding is qualified due to a relatively low sample count, there are obviously opportunities to divert cardboard from the industrial waste stream (as this waste stream was defined for this study).
- ◆ **C&D Debris:** In addition to the segregated loads of C&D recorded by the scalehouse, a significant fraction of C&D waste was found in the residential, commercial and industrial waste streams mixed in with other wastes. C&D diversion programs should consider how to shift these wastes from the MSW to the C&D waste stream where they could be processed and recovered at a higher rate.
- ◆ **Hazardous Wastes:** Hazardous waste and electronic waste programs appear to be effective, based on the very small amount of universal, household hazardous, and electronic wastes found in the study.
- ◆ **Maximum Diversion Potential:** It is important to note that, even if 100 percent of recoverable and reusable constituents in the waste stream were successfully diverted, the UCG could achieve no more than a 75 to 80 percent diversion rate because there simply are not viable options to divert the remaining 20 to 25 percent.

Ultimately, the UCG manages a large waste shed spanning multiple generator types, and it will require a range of waste reduction programs to successfully target the entire disposed waste stream. There is no "one size fits all" strategy. The UCG should expect zero waste planning and implementation to take many years and multiple iterations, and should focus on making steady progress over time.

### 4.2 RECOMMENDATIONS

The following recommendations are offered to the extent the UCG wishes to better understand the composition and origin of disposed wastes so that diversion policies and programs can most effectively target various classes of generators.

- ◆ **Perform Regular Waste Stream Analyses:** The waste stream has been changing rapidly for the past decade, and if current trends continue, disposed wastes will be substantially different in five years. The UCG should continue performing waste stream composition analysis on a five year

## 4. CONCLUSIONS

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schedule, especially as it initiates a zero waste plan. Such analyses are critical to measure progress and guide zero waste objectives.

- ◆ **Align Project Resources to Achieve Desired Objectives:** the 2008 Study allowed for capture of 100 manually sorted samples, which enabled separate analyses of the six different generator sectors to a reasonable degree of statistical validity. The 2014 Study allowed capture of 50 manually sorted samples; however, it retained the same generator sectors. As described in the Section 3, there was not a sufficient number of samples obtained from three multi-family, industrial or self-haul sectors to accurately characterize the wastes from these sectors. Should the UCG wish to separately analyze all six sectors in the future, it is recommended that a two-season sort be budgeted rather than a single season. Conversely, if only a single season can be accommodated within budget, the UCG should revisit the method and importance of each of the current generator sectors.
- ◆ **Align Seasonal Data Collection in Subsequent Studies:** The 2014 Study was limited to one week of field data collection, in late summer. The 2008 Study captured two seasons of field data collection, in the winter and spring. The UCG should standardize the number of seasons and the timing of each seasonal field data collection event in future studies. Doing so will reduce the number of variables that have changed since the preceding study, and better illuminate actual changes to the composition of the waste stream over time.
- ◆ **Additional Analysis of Industrial Sector:** The industrial sector was not sufficiently analyzed in this study, although the relatively small number of samples obtained identified a significant amount of recyclable cardboard. The UCG should consider a follow-up study of the industrial sector that includes gate surveying and visual surveying of industrial loads over several days. Such data collection is significantly less expensive than manual sorting, and would better assess the types of generators and types of wastes contributing to this sector. The cost of a focused industrial waste study is estimated to be less than \$10,000 if performed by a consultant.
- ◆ **Additional Analysis of Self Haul Loads:** The self-haul sector was not sufficiently analyzed in this study. According to scalehouse records, this sector makes a very small contribution to overall waste disposal (less than 1.5 percent), so it is appropriate that this sector received relatively little focus. However, like the industrial sector, a brief analysis that applies gate surveying and visual surveying of self haul loads would cost-effectively expand the UCG's understanding of diversion opportunities from self haulers.

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**APPENDIX A**  
**MATERIAL CATEGORIES & DEFINITIONS**

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## Municipal Solid Waste Material Categories

### PAPER

1. **NEWSPAPER:** Printed ground-wood newsprint. Advertising “slicks” (glossy paper), if found mixed with newspaper; otherwise, ad slicks are included with mixed low-grade paper.
2. **PLAIN OCC/KRAFT PAPER:** Unwaxed/uncoated corrugated container boxes, clean pizza boxes, and Kraft paper. Includes large clean Kraft carryout bags and white shopping bags from department stores, hardware stores, etc. with or with paper handles, paper fast-food packaging bags, paper lunch-size bags, etc.
3. **WAXED OCC/KRAFT PAPER:** Waxed/coated corrugated container boxes and Kraft paper, and brown paper bags.
4. **HIGH-GRADE PAPER:** White and lightly colored bond, rag, or stationery-grade paper. This includes white or lightly colored sulfite/sulfate bond, copy papers, notebook paper, envelopes, continuous feed sulfite/sulfate computer printouts, and forms of all types, excluding carbonless paper.
5. **MIXED LOW-GRADE PAPER:** Mixed paper acceptable in LFUCG’s residential curbside program. This includes junk mail, magazines, catalogs, colored papers, bleached Kraft, boxboard, mailing tubes, carbonless copy paper, and ground-wood computer printouts.
6. **PHONE BOOKS:** Phone books.
7. **PAPERBACK BOOKS:** Paperback books.
8. **GABLE TOP/ASEPTIC CONTAINERS:** Bleached and unbleached paperboard coated with HDPE film. This includes polycoated milk, juice (including those with plastic spouts), and ice cream cartons, paper cups, takeout containers, and frozen/refrigerator packaging and aseptic drink boxes.. Excludes juice concentrate cans.
9. **COMPOSTABLE/SOILED PAPER:** Paper towels, paper plates, waxed paper, tissues, and other papers that were soiled with food during use (e.g. pizza boxes).
10. **COMPOSITE/OTHER PAPER:** Predominantly paper with other materials attached (e.g., orange juice cans and spiral notebooks), and other difficult to recycle paper products such as ice cream cartons, paper cups, takeout containers, and frozen/refrigerator packaging, hardcover books, and photographs,
11. **#1 PET BOTTLES:** #1 PET or PETE narrow necked bottles such as soda, water, and other bottles with the label #1 PET or PETE.
12. **#1 PET THERMOFORMS:** #1 PET or PETE thermoforms i.e. clamshells and trays.
13. **#2 HDPE BOTTLES:** #2 HDEP (High-density polyethylene) natural or colored narrow neck bottles. These are translucent milk or juice bottles and colored liquid detergent bottles and some hair care bottles.

## Municipal Solid Waste Material Categories

14. OTHER PLASTIC BOTTLES: Plastic bottles not classified in the above-defined #1 PET or #2 HDPE categories; includes No. 3 through No. 7, unknown bottles, and other bottles with narrow necks.
15. NO. 2, THROUGH 7 TUBS: No. 2, 3, 5, 6, and 7 wide-mouth tubs, without a neck. Items such as cottage cheese, margarine, cleaning, auto, and other products and packaging.
16. NONFOOD EXPANDED POLYSTYRENE: Nonfood packaging and finished products made of expanded polystyrene. Includes Styrofoam products such as packaging peanuts and blocks.
17. FOOD SERVICE PLASTICS/EXPANDED POLYSTYRENE: Includes plastic food-service related packaging and finished products not classified elsewhere that are made of polystyrene (expanded or clear) and other plastic resins. Includes items such as plastic utensils, straws, stirrers, cups and lids, styrofoam plates, bowls, clamshells, cups, and condiment packaging.
18. OTHER RIGID PACKAGING: No. 2 through No. 7 and unmarked rigid plastic packaging and containers. Includes clamshells, salad trays, microwave trays, cookie tray inserts, plastic toothpaste tubes blister packs, and spools. Excluding expanded polystyrene and food service plastics.
19. CLEAN SHOPPING/DRY CLEANER BAGS: Clean retail grocery and other shopping bags intended for one time use. This category includes bags intended to contain produce, bread, merchandise, dry-cleaned clothing, and newspapers, but it does not include bags that are contaminated with food, liquid, or grit during use.
20. OTHER CLEAN POLYETHYLENE FILM: Clean polyethylene film, plastic sheeting, and bags, other than those identified above, which were not contaminated with food, liquid, or grit during use.
21. OTHER CONTAMINATED FILM: Film packaging other than clean checkout bags, and not defined above, or: was contaminated with food, liquid, or grit during use; is woven together (e.g., grain bags); contains multiple layers of film or other materials that have been fused together (e.g., potato chip bags). This category also includes photographic negatives, shower curtains, and used garbage bags. This category also includes supermarket and shopping bags that were contaminated with food, liquid, or grit during use.
22. PLASTIC PRODUCTS: Other finished plastic products made entirely of plastic such as toys, toothbrushes, vinyl hose, and lawn furniture.
23. COMPOSITE/OTHER PLASTIC: Items that are predominantly plastic with other materials attached such as disposable razors, pens, lighters, toys, and binders.
24. CLEAR GLASS BOTTLES & JARS: Clear glass bottles and jars including: soda, liquor, wine, juice, beer, mineral water, sports drinks and food containers.

## Municipal Solid Waste Material Categories

25. GREEN/BLUE GLASS BOTTLES & JARS: Green and blue glass bottles and jars including: soda, liquor, wine, juice, beer, mineral water, sports drinks and food containers.
26. BROWN/RED GLASS BOTTLES & JARS: Brown and red glass bottles and jars including: soda, liquor, wine, juice, beer, mineral water, sports drinks and food containers.
27. PLATE GLASS: Clear or tinted window, door, shelf, tabletop, flat auto, bus shelter, and other flat glass, including tempered.
28. COMPOSITE/OTHER GLASS: Mirrors, glassware, crystal, Pyrex and Corning Ware, and laminated or curved glass such as windshields.
29. ALUMINUM CANS: Aluminum beverage cans (UBC) and bi-metal cans made mostly of aluminum.
30. ALUMINUM FOIL/CONTAINERS: Aluminum food containers, trays, pie tins, and foil.
31. OTHER ALUMINUM: Aluminum products and scraps such as window frames and cookware.
32. OTHER NONFERROUS: Metals not derived from iron, to which a magnet will not adhere, and which are not significantly contaminated with other metals or materials.
33. TIN/STEEL CANS: Tinned steel food, pet food, and other containers, including bi-metal cans mostly of steel.
34. EMPTY PAINT AND AEROSOL CANS: Empty, metal paint and aerosol cans, including metal lids.
35. EMPTY PROPANE AND OTHER TANKS: Metal tanks used for storage and distribution of propane and other compressed fuels.
36. OTHER FERROUS: Ferrous and alloyed ferrous scrap metals, to which a magnet adheres, and which are not significantly contaminated with other metals or materials.
37. COMPOSITE/OTHER METALS: Items that are predominantly metal such as motors, insulated wire, large appliances, and other products or parts containing a mixture of metals, or metals and other materials.
38. GRASS: Grass clippings only, not including sod or weeded plants.
39. LEAVES: Leaves from trees usually in the fall.
40. PRUNINGS: Brush and cut prunings, 4 feet or less in length, from bushes, shrubs, and trees.
41. OTHER YARD WASTE: Weeded plants, sod and other organic yard waste not already included.

## Municipal Solid Waste Material Categories

42. **FOOD:** Food wastes and scraps, including meat, bone, dairy, grains, rinds, tea bags, coffee grounds with filters, etc. Excludes the weight of food containers, except when container weight is not appreciable compared to the food inside.
43. **DISPOSABLE DIAPERS:** Diapers made from a combination of fibers, synthetic and/or natural, and made for the purpose of single use. This includes disposable baby diapers and adult protective undergarments.
44. **ANIMAL BY-PRODUCTS:** Animal carcasses not resulting from food storage or preparation, animal wastes, and kitty litter.
45. **COMPOSITE/OTHER ORGANIC:** Combustible materials including wax, bar soap, cigarette butts, feminine hygiene products, vacuum cleaner bag contents, leather, briquettes, and fireplace, burn barrel, and fire-pit ash, and other organic materials not classified elsewhere.
46. **TIRES:** Vehicle tires of all types. Inner tubes are put into the rubber category.
47. **RUBBER:** Finished products and scrap materials made of natural and synthetic rubber, such as bath mats, inner tubes, rubber hoses, gloves, and foam rubber.
48. **TEXTILES:** Rag stock fabric materials and clothing including natural and synthetic textiles such as cotton, wool, silk, woven nylon, rayon, and polyester.
49. **CARPET/UPHOLSTERY:** General category of flooring applications and non-rag stock textiles consisting of various natural or synthetic fibers bonded to some type of backing material. Also includes non-rag stock grade textiles such as heavy linens and draperies.
50. **APPAREL:** Shoes, tennis shoes, purses, and other composite accessories.
51. **FURNITURE:** Mixed-material furniture such as upholstered chairs. Furniture that is made purely of one material, such as plastic or metal, would be categorized according to that material (e.g., plastic products or other ferrous metal).
52. **MATTRESSES/BOX SPRINGS:** Mattresses and box springs.
53. **SMALL CONSUMER APPLIANCES:** Nonhazardous, not predominantly metal electric appliances such as toasters, microwave ovens, power tools, curling irons, and light fixtures.
54. **COMPOSITE/OTHER PRODUCTS:** Other multi-material assembled or composite household and other products.
55. **CLEAN WOOD:** Including milled lumber commonly used in construction for framing and related uses, including 2 x 4's and 2 x 6's, and sheets of plywood, strandboard, and particleboard.



## Municipal Solid Waste Material Categories

56. **PALLETS AND CRATES:** Clean wood pallets (whole and broken), crates, pieces of crates, and other packaging lumber and panel board. Small compostable wooden produce crates are put in the food category.
57. **STUMPS AND LOGS:** Stumps or logs 4 feet or greater in length.
58. **COMPOSITE/OTHER WOOD:** Predominantly wood and lumber products that are mixed with other materials in such a way that they cannot easily be separated. This includes wood with metal, gypsum, concrete, or other contaminants. Painted or chemically treated wood goes in the hazardous waste “treated wood” category.
59. **CLEAN GYPSUM:** Calcium sulfate dehydrate sandwiched between heavy layers of Kraft-type paper. Also known as drywall. This category includes drywall that has not been painted or treated in other ways.
60. **PAINTED GYPSUM:** Used or demolition gypsum wallboard that has been painted or treated.
61. **FIBERGLASS INSULATION:** Fiberglass building and mechanical insulation, mat or rigid.
62. **ROCK/CONCRETE/BRICKS:** Any rock, gravel, portland cement mixtures (set or unset), and fired-clay bricks.
63. **ASPHALTIC ROOFING:** Asphalt shingles and tarpaper of built-up roofing.
64. **CERAMICS:** Finished ceramic or porcelain products such as toilets, sinks, cups, and dishware.
65. **SAND/SOIL/DIRT/GRIT/FINES:** Contains mixed fines smaller than 2" in diameter, including floor sweepings from construction sites and other inorganic waste.
66. **COMPOSITE/OTHER CONSTRUCTION DEBRIS:** Construction debris (other than predominantly wood) that cannot be classified elsewhere.
67. **PAINT:** Wet water/oil base paints and stains in cans or buckets. This excludes paint or stains that have been thoroughly dried in an open can or bucket.
68. **BATTERIES:** Dry or wet cell household and car batteries.
69. **CLEANERS:** Caustic or volatile petroleum cleaners such as drain cleaners, paint thinners, paint strippers, lacquer thinners, part cleaners, and industrial janitorial detergents.
70. **OIL FUELS:** Liquid petroleum products used for fuel for heating, cooking, or motorized vehicles. These include items such as kerosene, diesel, naphtha, gasoline, etc. This excludes pressurized bottled gas such as propane.

## **Municipal Solid Waste Material Categories**

71. **SMALL CONSUMER ELECTRONICS:** Items such as cell phones, PDAs, MP3 players, DVD players, VCRs, etc. This does not include televisions, computers, and cathode ray tubes (CRT).
72. **TELEVISION:** All televisions including flat screen TVs.
73. **COMPUTERS:** Computers and computer monitors such as cathode ray tubes and flat screens.
74. **COMPUTER PERIPHERAL ELECTRONICS:** Other electronics such as printers, external computer equipment i.e. cables, hard drives, keyboards, mouse, and discarded circuit boards from repairing electronic equipment.
75. **PESTICIDES/HERBICIDES:** All insecticides, fungicides, and herbicides.
76. **MEDICAL WASTE:** Treated or untreated medical waste. Includes bandages, gauze, diabetic strips, syringes, needles, and medical tubing.
77. **TREATED WOOD:** Wood that has been treated with paint, stain, or pressure treated.
78. **LIGHT BULBS:** All light bulbs and light tubes.
79. **OTHER HAZARDOUS WASTE:** Solvent-based adhesives/glues, water-based adhesives/glues, oil filters, asbestos, explosives, other chemicals, certain cosmetics, and other potentially harmful wastes. This category also includes plastic, paper, and glass containers that were used for the sale or distribution of products categorized as hazardous materials and that contained any noticeable amount of the hazardous product.