

NEBRASKA

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Technical Proposal

# 4-SEASON WASTE CHARACTERIZATION STUDY



July 16, 2024

Submitted by





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July 16, 2024



Connie Heinrichs / Kelly Rowlands, Procurement Contract Officer(s)  
State Purchasing Bureau  
Address: 1526 K Street, Suite 130  
Lincoln, NE 68508

**Subject: Proposal to Conduct a Four-Season Municipal Waste Characterization Study  
– RFP 6897 Z1**

Dear Ms. Heinrichs/Ms. Rowlands:

MSW Consultants is pleased to provide this proposal to the Nebraska Department of Environment and Energy (NDEE) to develop a comprehensive sampling plan and subsequently perform an update to Nebraska's statewide waste composition study last performed in 2009.

**MSW Consultants is a national leader with unsurpassed experience in all phases of large-scale, multi-facility, multi-season, multi-generator waste characterization studies.** Successful performance of a statewide waste composition study requires excellent logistical planning and coordination; clear and consistent communication with host facilities; specialized experience with statistical data aggregation; a focus on health and safety; and proven operational efficiency to maximize the capture of a representative number of samples within the available budget. MSW Consultants, working as both prime contractor and key subcontractor, has successfully completed statewide waste characterization studies for agencies in **California, Connecticut, Delaware, Iowa, Maryland, Massachusetts, Minnesota, Missouri, Pennsylvania, Rhode Island, Vermont, and Wisconsin** as well as for five of the nation's ten most populous cities. As shown in our attached proposal, we stand ready to help NDEE update its statewide study protocol to reflect current industry best practices, and to subsequently compare and contrast both the methods and findings of the 2025 update with the 2009 study.

To that end, we have submitted a baseline proposal that mirrors the level of effort of the 2009 study. However, because this desired level of effort exceeded NDEE's published budget, we have also provided two alternative approaches that can be performed within budget. We hope that offering these alternatives will enable NDEE to guide to the level of effort to best balance its technical objectives and financial constraints.

Regardless of the approach ultimately selected by NDEE, MSW Consultants has the unique expertise and availability to deliver the findings of this important project in a comprehensive professional report, within NDEE's stated timeline. We achieve high efficiency through deployment of experienced, professional field operations teams who use our proprietary, customized mobile data collection system with built-in QA/QC capabilities. Our staffing approach and data management technology also increase the accuracy of our field data collection efforts and allow field data to be uploaded to the cloud for added protection against loss of data. We are the only consultant offering our clients online access to their waste characterization results, pictures,

Ms. Connie Heinrichs / Ms. Kelly Rowlands

July 16, 2024

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and recommendations through our the *WasteInsight*<sup>™</sup> online portal, in addition to a customary project report.

We encourage you to review our full approach enclosed herein, and to talk with other state agencies for whom we have completed statewide studies. We are highly flexible in refining our allocation of resources based on NDEE feedback to optimize research priorities. Please do not hesitate to contact me at (407) 380-8951 or [jculbertson@mswconsultants.com](mailto:jculbertson@mswconsultants.com) if you have any questions. Thank you for your consideration.

Sincerely,

**MSW CONSULTANTS**

A handwritten signature in blue ink, appearing to read "John Culbertson".

John Culbertson  
Principal

# Technical Proposal



## RFP 6897 Z1 4-Season Municipal Waste Characterization Study

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*Cost Proposal..... Under Separate Cover*

# CORPORATE OVERVIEW

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## 1. CORPORATE OVERVIEW

### a. Identification & Information

MidAtlantic Solid Waste Consultants, LLC (dba MSW Consultants) is a limited liability company headquartered in Florida. MSW Consultants provides a range of specialized management consulting services, including solid waste management planning, recycling program assessments, collection system assessments, productivity analysis/route analysis, cost-of-service and rates development, waste composition, generation, and diversion studies, procurement services, and program development and implementation services for public and private sector clients across the nation. MSW Consultants was created in 2002 and legally established as a Maryland Limited Liability Company (LLC) in 2004 before moving to Florida in 2014. The firm's client base includes over 125 city, county, state, federal and private organizations across the U.S. We have 21 highly qualified staff and an extended network of technical specialists. MSW Consultants provides the following services:

#### Program Collection System Optimization

- Refuse, recycling, yard waste and bulky waste productivity analysis and improvement
- Automated and single-stream collection conversion
- Front-load and roll-off efficiency analysis & rates
- GPS, event tracking, RFID, onboard data collection
- Route development/balancing, and area/path re-routing
- Regional materials management assessment & program development to increase capture rates

#### Plans: Waste/Recycling/Strategic/Sustainability

- SWMPs
- Zero Waste and Waste Diversion Plans
- Action Plans
- Strategic Plans
- Education/Outreach Plans
- Materials Management Implementation Plans

#### Waste Characterization & Quality Measurement

- Disposed Waste Audits
- Recyclables Composition/Contamination/Valuation
- Curbside recycling cart/bin monitoring
- Visual contamination assessments
- Bale composition testing
- Specialized Audits: Organics, fines, plastic resins, etc. Feedstock testing

#### Fleet Management

- Fleet replacement planning
- Solid waste vehicle inspections
- Fleet maintenance & fleet procurement
- Per-trip and post-trip program assessment

#### Financial Analysis

- Solid waste system full-cost-of-service studies
- Enterprise fund development
- Lifecycle costs
- Grant funding strategy, application & risk
- Facility processing/tip fee analysis
- User fee and non-ad valorem assessments rate

#### Collection, Disposal & Recycling Procurement Service

- Curbside/drop-off waste, recycling, yard waste service
- Special collections: tires, scrap, HHW, C&D
- Contract/franchise system analysis
- Disposal and facility operations procurement assistance
- Managed competition/contract leverage
- Contract negotiation assistance

#### Waste and Recycling Audits

- LEED Certification
- Recycling program improvement
- Capture rate/recycling potential analysis
- Organics diversion programs
- Material and workflow audits
- Recycling, compost and building operations assessments

#### Recycling/Composting

- Recycling system planning
- Residential recycling program implementation
- Single stream recycling analysis
- Volume-based pricing (Pay-As-You-Throw)
- Organic waste diversion/compost systems implementation

Florida – Pennsylvania | (800) 679-9220 | [www.mswconsultants.com](http://www.mswconsultants.com)

# CORPORATE OVERVIEW

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## **b. Financial Statements**

Appendix C contains MSW Consultants' most recent financial statements for 2022. This information is marked proprietary and confidential and should not be released to competitors or the public.

Banking Reference:

Joaquin Puello, Vice President, Commercial Relationship Manager  
PNC Bank, 420 S. Orange Ave., Ste. 300, Orlando, FL 32801

## **c. Change of Ownership**

Like any successful business, MSW Consultants is approached from time to time by interested investors and acquirers. Management vets such inquiries and has investigated potential changes in ownership in the past; and will continue to do so should such inquiries advance within the next 12 months. MSW Consultants commits to notifying the State should a change in ownership occur.

## **d. Office Location**

11875 High Tech Avenue, Suite 150, Orlando, FL 32817

## **e. Relationships with the State**

MSW Consultants has no prior dealings with the State of Nebraska.

## **f. Bidder's Employee Relations to State**

No MSW Consultants employees have ever been employed by the State of Nebraska.

## **g. Contract Performance**

MSW Consultants did not have a contract terminated for default, convenience, non-performance, non-allocation of funds, or any other reason during the past five (5) years.

## **h. Summary of Corporate Experience**

MSW Consultants is a leading national provider of large-scale, multi-season, multi-stream waste characterization services for state agencies, counties, cities, and large institutional and commercial waste generators. MSW Consultants has participated in the majority of the statewide waste characterization studies performed in the U.S. over the past ten years and has assisted major U.S. cities and counties to characterize their waste and recycling streams in the pursuit of increased diversion and an assessment of current recycling program effectiveness. We are increasingly assisting recycling processors, facility developers, and specialty equipment manufacturers to design sampling and sorting methodologies needed to answer increasingly complex questions about materials streams in the pursuit of zero waste. The Table 1 below presents MSW Consultants' extensive experience in designing and implementing statewide waste characterization studies.



Table 1 – MSW Consultants Statewide Waste Characterization Experience

State	Year	MSW	C&D	Recyclables	Other Materials	State	Year	MSW	C&D	Recyclables	Other Materials
New Hampshire	Ongoing	✓	✓			Delaware*	2016	✓			
Maine	Ongoing	✓	✓			Maryland	2016	✓			
Vermont	2024	✓	✓		✓	Rhode Island*	2015	✓			
California*	2023			✓	✓	Connecticut*	2015	✓		✓	
Massachusetts	2022		✓			California*	2014	✓			
Massachusetts	2022	✓				Vermont*	2013	✓			
Pennsylvania	2021	✓		✓		Minnesota*	2013	✓			
California*	2021	✓				Massachusetts	2013	✓			
Minnesota	2020		✓			Iowa	2011	✓			
Massachusetts	2019	✓				Massachusetts*	2010	✓			
Vermont*	2018	✓	✓			Connecticut*	2010	✓			
Missouri	2017	✓	✓		✓	Wisconsin	2010	✓	✓		
Massachusetts	2016	✓				Delaware*	2007	✓	✓		

\*MSW performed significant portions of these projects as a subcontractor.

MSW Consultants provides an unparalleled value in the performance of waste characterization studies. Our experience offers clients a host of benefits, including:

**An understanding of the reasons why local governments opts to perform waste stream analyses.** The State’s proposed study will quantify the characteristics of the disposed wastes throughout the state. In so doing, the results of the study will inform all facets of waste diversion planning, including how to influence and improve diversion behaviors, as well as how to take advantage of emerging energy recovery and mechanical processing technologies for back-end recovery.

**A Commitment to Health & Safety.** MSW Consultants maintains a customized, written Safety and Health Plan specifically to govern our operational practices and PPE requirements for the performance of waste characterization studies and waste audits. Our health and safety program for waste characterization studies at landfills, waste-to-energy plants, transfer stations and MRFs has been independently certified through ISNetwork.



**A detailed understanding of the markets and specifications for recycled fibers, containers, and other materials** that can be recovered from the waste stream. This leads to a keen understanding of the basis for material category definitions that achieve the desired specifications.

**Accurate and efficient sorting procedures with professional sorting support.** MSW Consultants has developed the industry’s most transparent and verifiable system for achieving highly accurate results. We typically deploy professional sorters in conjunction with our professional management staff, supplementing with locally recruited staff where necessary. Our protocol trains sorters to place materials into clearly labeled bins, which are monitored by our crew chiefs for accuracy throughout the study.

**Real-Time App-Based Data Management:** MSW Consultants has developed the industry’s leading apps for waste characterization data entry and management. Armed with rugged tablet

# CORPORATE OVERVIEW

computers, our field operation staff have the benefit of a suite of data entry tools that provide real-time QA/QC for both manually sorted and visually surveyed samples.

MORE ACCURATE THAN PAPER FORMS

**Camera button to take photos**

**Unique Sample ID number**

**Customized sample header Data Fields**

**Color coded material groups matched with bin labels**

**Itemized record of every weigh-out**

**Pre-Weight shown as reference**

**Sorted Weight tallied in real time\***

**Separate weigh-out for tared and net measurements**

**Container tare weights show for reference**

**Visible photo thumbnails**

\*(turns red if Sorted Weight does not equal Pre-Weight)

**Specialized data management.** MSW Consultants has developed its *WasteInsight*<sup>TM</sup> online resource to provide user-friendly, organized access to material stream characterization data, including sample weights and photographs. It also allows clients to generate and download composition results filtered by location, date, material stream, and other attributes. The exhibit below portrays the workflow when using *WasteInsight*<sup>TM</sup> to track material quality and value on an ongoing basis.



**Material Characterization Experience**

MSW Consultants is a national leader in state-level waste characterization studies, with the following table summarizing municipal solid waste (MSW), construction & demolition (C&D) debris, mixed recyclables, and other waste composition studies on which we have participated for large wastesheds. The Table 2 below itemizes recent waste characterization projects of all types and sizes. As shown, we offer extensive experience in assisting states, cities, and counties to perform cost-effective, accurate, statistically representative analyses of their material streams.

**Table 2 – Recent MSW Consultants Waste Characterization Project Experience**

Client/Year/Project	Client/Year/Project
<b>New Hampshire Department of Environmental Service (Ongoing)</b> Waste Characterization Study	<b>Maine Department of Environmental Protection (Ongoing)</b> Statewide Waste Audit
<b>Vermont Department of Environmental Conservation (2012 , 2024)</b> Statewide Waste Characterization Study Update	<b>CalRecycle (2024)</b> Material Recovery Facility Recyclable Material Study
<b>Hamilton County, OH (2024)</b> Residential Waste Characterization Study	<b>Atlantic County Utilities Authority (ACUA), NJ (2024)</b> Waste Characterization Study
<b>Sims Recycling/New York City Department of Sanitation, NY (2023)</b> Residential Waste Characterization Study	<b>Baltimore County, MD (2023)</b> Winter Waste Audit
<b>City of Minneapolis, MN (2022)</b> Residential Capture Rate Study	<b>Prince George’s County, MD (2022)</b> Waste Characterization and Capture Rate Study
<b>Ontario County, NY (2022)</b> Waste Composition Study	<b>Cleveland Heights &amp; Broadview Heights, OH (2022)</b> Residential Capture Rate Study
<b>Pennsylvania Department of Environmental Protection (2021)</b> Statewide Waste Characterization Study and MRF Composition Audits	<b>Big Bend National Park, TX (2021)</b> Waste Characterization Study
<b>Orange County, FL (Ongoing)</b> Recycling Quality Improv. Program (Cart Monitoring, Material Audits)	<b>Delaware Solid Waste Authority/DSM Environmental Services (2021)</b> Single Stream Recycling Composition Audits
<b>City of Philadelphia, PA (2021)</b> Recycling Container Monitoring Pilot Program	<b>City of Reading, PA (2020)</b> Residential Waste/Recycling Composition Analysis and Procurement Support
<b>Sevier Solid Waste, Inc., TN (2020)</b> MSW Feedstock and Compost Composition Study	<b>Ada County, ID (2020)</b> Landfill Waste Stream Analysis
<b>Chittenden Solid Waste District, VT (2020)</b> Residential Waste Composition Study	<b>Solid Waste Authority of Central Ohio (SWACO), (2019)</b> Seasonal Waste Characterization Study
<b>Boulder County, CO (2019)</b> Waste Characterization Study (MSW and C&D)	<b>Summit County, UT (2019)</b> County Waste and Recycling Composition Study

**Reference Projects**

We offer the following reference projects that describe our work in more detail and provide contact information.

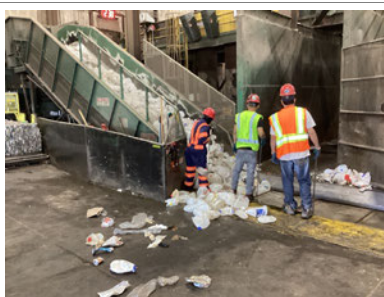
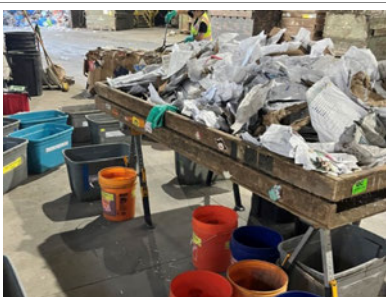
## CORPORATE OVERVIEW

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### CalRecycle, CA – Statewide MRF Residue Study in Support of SB 383 (2023)

MSW Consultants served as a subcontractor on the California Department of Resources Recycling and Recovery (CalRecycle) project to conduct material characterization studies at material recovery facilities (MRFs) across the state of California. The study was commissioned by CalRecycle as required by Senate Bill (SB) 343 to evaluate how traditional recyclables are collected and processed. In season one of the studies, MSW Consultants conducted 10 site visits at MRFs selected by CalRecycle to develop site specific plans for how to collect and sort samples from each processed material outflow and end-of-line residual ejection point.

MSW Consultants then deployed a traveling crew across northern and southern California to conduct a two-day manual sort at each facility. MSW Consultants worked closely with CalRecycle and each facility's staff to collect, photo document and sort samples from the various outflows at each facility. Twenty samples per facility were sorted into 91 material categories to meet the 200-count sample target for season one.



Reference:

**Roberta Jetter**, Senior Environmental Scientist  
(916) 341-6332 | [Roberta.Jetter@calrecycle.ca.gov](mailto:Roberta.Jetter@calrecycle.ca.gov)

Subcontractor  
Timeline: Aug-Nov 2023

#### Key Staff Roles:

John Culbertson – Technical Advisor and Project Manager  
Natalee Mannion – Assistant Project Manager and Field Operations Lead  
Joe Vetrano – Field Operations Lead  
Charles Wilson – Professional Sorter  
Shelly Wilson – Professional Sorter  
David Mann – Data Management

### Vermont Department of Environmental Conservation – Statewide Waste Characterization Study Update (2012, 2018, 2024)

The Vermont Department of Environmental Conservation (DEC) has performed statewide waste composition studies in 2012, 2018 and most recently in 2023. MSW Consultants served as a subcontractor in 2012 and 2018, and primed the 2023 update. Since the 2018 study, Vermont's Universal Recycling law fully banned food scraps from disposal in the trash and the Single-Use Products law banned the use and sale of expanded polystyrene food and beverage containers and regulated the use of plastic carry-out bags, straws, and stirrers. The 2023 Waste Characterization Study incorporated extensive field data collection with results applied to 2022 statewide tonnage data. The study characterized the composition (types and amount) of materials that are generated by Vermonters and destined for disposal in landfills or waste to energy facilities, and generated estimates of hard-to-track diversion of recycling and food scraps from the waste stream and was intended to be comparable to the 2018 Study to maintain comparability in the State's waste composition time series. The 2023 Study included two seasons of MSW hand sorts and C&D visual characterization, residential food scrap and direct-to-broker recycling research and integrated new research objectives including characterization of MRF residue and food scrap transportation management research.

Report link: <https://tinyurl.com/VT-WasteComp23>



**Reference:**

**Josh Kelly**, Solid Waste Program Manager, Vermont  
Agency of Natural Resources  
(802) 522-5897 | [josh.kelly@vermont.gov](mailto:josh.kelly@vermont.gov)

Prime Contractor  
Budget: \$253,900  
Timeline: March 2023 – March 2024

**Key Staff Roles:**

John Culbertson – Principal-in-Charge / Technical Advisor  
Cynthia Mormile – Project Manager and Visual Surveyor  
Joe Vetrano – Field Operations Lead  
Natalee Mannion – Field Operations Lead  
Shelly Wilson – Crew Chief  
Charles Wilson – Professional Sorter  
David Mann – Data Management  
Nick O'Callaghan – Data Analyst

## New York City Department of Sanitation – Residential Waste & Recycling Characterization Study (2023)

MSW Consultants has collaborated with the New York Department of Sanitation on multiple large-scale residential waste characterization studies since 2012. In 2012, 2017, and again in 2022-23, MSW Consultants performed comprehensive residential waste and recycling characterization study from the five boroughs of New York City in a project that was jointly funded by the New York Department of Sanitation and Sims Municipal Recycling of New York. These projects updated the City's prior comprehensive study, conducted in 2004-05, and were designed for use in updating the City's contract with Sims for processing of residentially generated Paper and Metals, Glass, and Plastic (MGP) from the City's dual-stream recycling program.

The most recent update entailed sampling over 3,000 Refuse, Paper, and MGP routes over two seasons to characterize the waste stream. This project required all plastics to be sorted by use and by resin, making it one of the most comprehensive characterization studies ever performed with a total of over 800 categories.

Results of these efforts are available on the DSNY website. Link: <https://tinyurl.com/NY-Studies>



# CORPORATE OVERVIEW

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Reference:

**Carmelo Freda**, Program Manager, Policy & Planning  
Bureau of Recycling & Sustainability  
(212) 437-4674 | CFreda@dpsny.nyc.gov

Prime Contractor  
Budget: \$5.5 million  
Timeline: Apr 2022 – Dec 2023

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**Key Staff Roles:**

John Culbertson – Principal-in-Charge / Technical Advisor  
Walt Davenport – Project Manager  
Natalee Mannion – Field Operations Supervisor  
Carl Muth – Crew Chief  
Nick O’Callaghan – Crew Chief & Data Analyst  
Charles Wilson – Crew Chief  
Shelly Wilson – Crew Chief  
Veronica Lenhart – Professional Sorter  
David Mann – Data Management

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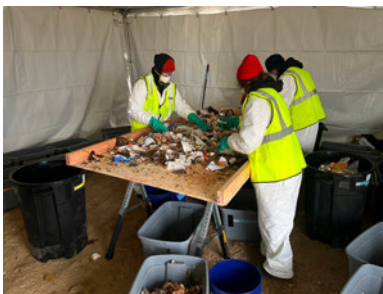
## City of Greeley, CO – Waste Characterization Study (2023)

Located an hour North of Denver, the City of Greeley is one of the fastest growing communities in Colorado. Currently, the City has no set policy or goals related to waste diversion activities and features an open-market solid waste collection system.

Facing rapid growth in the coming years, the City applied for and received a Front Range Waste Diversion grant to evaluate policy options related to waste diversion within the City. To this end, MSW Consultants was retained to develop and execute a comprehensive waste characterization study to baseline the City’s residential waste stream and quantify opportunities for future enhancements to recycling and diversion programs.

MSW Consultants and the City coordinated with local haulers and landfill operations staff to collect and sort samples of residential refuse collected throughout the City. These samples were sorted into 51 material categories. Field operations for this study were divided into two one-week seasons, one taking place in the winter, and the second taking place in the summer. The study was completed on time and on budget and has assisted in the development of data-driven solid waste policies, goals, and objectives for the City moving forward.

Report link: <https://tinyurl.com/GreeleyWC>



Reference:

**Will Jones**, Public Works Deputy Director  
(970) 350-9751 | will.jones@greeleygov.com

Prime Contractor  
Budget: \$67,900  
Timeline: Feb 2023 – Sept 2023

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**Key Staff Roles:**

John Culbertson – Principal-in-Charge / Technical Advisor  
Carl Muth – Field Supervisor & Crew Chief  
Veronica Lenhart – Professional Sorter  
David Mann – Data Management  
Nick O’Callaghan – Data Analyst

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### **Pennsylvania Department of Environmental Protection (PA DEP) – Statewide Waste & Recyclables Characterization Study (2022)**

The Pennsylvania Department of Environmental Protection (PA DEP) first performed a statewide waste stream characterization in 2002. MSW was retained to perform a comprehensive update to this four-season waste and recyclables characterization study across the Commonwealth of Pennsylvania.

The study was designed to sample from six geographic regions in the state and included representative classification of urban, suburban, rural, and commercial solid waste generators. The waste streams sampled included refuse and recyclables, as well as visual volume to weight conversion samplings of construction and demolition debris (C&D) loads.

Refuse sampling took place at 13 different disposal facilities, including landfills, transfer stations, and waste to energy facilities, with MSW Consultants deploying its staff and resources for six weeks during each quarterly cycle. A comprehensive audit encompassing inbound materials sorted commodities, and the residue was performed at nine material recovery facilities (MRFs), also distributed geographically across the state. Curb sort, dual-stream, and single-stream MRFs were captured in the project.

The project featured the participation of some 50 solid waste and recycling professionals from around the commonwealth through a partnership with Pennsylvania’s recycling advocacy organization, the Professional Recyclers of Pennsylvania (PROP). In addition to obtaining first-hand experience with waste characterization studies, PROP participants also received continuing education credits.

A total of 1,300 refuse samples were obtained and sorted into 55 categories during the overall study. Nearly 400 recyclable samples were also acquired and sampled into 59 separate categories.

Report Link: <http://tinyurl.com/PADEP2022>



#### **Reference:**

**Lawrence E. Holley**, Manager, Division of Waste  
Minimization and Planning  
(717) 787-8684 | [lholley@pa.gov](mailto:lholley@pa.gov)

Prime Contractor  
Budget: \$890,000  
Timeline: Aug 2019 – Mar 2023

#### **Key Staff Roles:**

John Culbertson – Principal-in-Charge / Technical Advisor  
Walt Davenport – Project Manager  
Natalee Mannion – Assistant Project Manager  
Joe Vetrano – Field Operations Manager  
Carl Muth – Field Supervisor & Crew Chief  
Charles Wilson – Professional Sorter  
Shelly Wilson – Professional Sorter  
Veronica Lenhart – Professional Sorter  
David Mann – Data Management  
Nick O’Callaghan – Data Analyst

# CORPORATE OVERVIEW

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## City of Lincoln, NE – Waste Characterization Study (2019)

The City of Lincoln enacted a ban on old, corrugated cardboard (OCC) at the Bluff Road Landfill, effective April 1, 2018. In order to test the effectiveness of the ban, the City sponsored waste composition studies both before and after the ban went into effect. MSW Consultants was retained to conduct the pre-ban and post-cardboard ban composition studies.

The study included sampling 99 loads from three truck types (rear load, front load, and roll-off compactors); additionally, samples were noted as being from either residential households or industrial/commercial/institutional sources.

Overall, corrugated cardboard in the disposed waste stream reduced from nearly 10 percent in the baseline study to 2.4 percent of the stream following the ban.

Report not publicly posted but may be available upon request.



Prime Contractor  
Budget:\$58,400  
Timeline: Oct 2017 – Jul 2018

### Key Staff Roles:

John Culbertson – Principal-in-Charge / Technical Advisor  
Cynthia Mormile – Field Supervisor  
Joe Vetrano – Crew Chief  
David Mann – Data Management

## i. Proposed Personnel / Management Approach

MSW Consultants offers a team of waste and recycling industry managers, economists, financial analysts, operations specialists, procurement specialists, and senior planning professionals with background in both the public and private sector. We are pleased to introduce the following team, who will lead and perform this project. Figure 1 shows the organizational chart for this project. Resumes are included in Appendix B.



Figure 1 – Project Organization Chart



**John Culbertson, Principal**

**Role: Principal-in-Charge & Technical Advisor**

John Culbertson is a Principal of MSW Consultants with a background in solid waste management and recycling planning, financial analysis, procurement, and program optimization. Mr. Culbertson has 25 years of experience providing waste management consulting services to federal, state, county, and city organizations across the nation. He specializes in helping municipalities implement integrated waste management strategies that align policy, education, revenue mechanisms, service contracts, and programs for effective diversion and environmentally sound waste management. A graduate of Yale University, Mr. Culbertson is a long-time member of the Solid Waste Association of North America (SWANA) and several state recycling associations and is a frequent speaker at national waste management and recycling conferences.

**Joe Vetrano, Senior Consultant, LEED AP**

**Role: Project Manager/Waste Characterization Specialist**

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Joe Vetrano is an environmental professional with a diverse skill set that encompasses project management, strategic planning, recycling, zero waste systems design, environmental permitting, and contingency planning. He has conducted sustainability assessments, environmental compliance audits, property condition surveys, waste stream analyses, and environmental due diligence. Mr. Vetrano has served on the MSW Consultants waste characterization field operations management team since joining the firm in 2012, and has performed large-scale studies for New York City, Philadelphia (PA), Lexington-Fayette County (KY), Phoenix (AZ), and statewide studies for Rhode Island, California, Pennsylvania, Vermont, and Massachusetts, as well as waste audits for schools, transit authorities, hotels, and a variety of retail and office properties.

### **Cynthia Mormile, Senior Project Manager**

#### **Role: Assistant Project Manager/Visual Survey Specialist**

Cynthia Mormile joined MSW Consultants in 2016 after spending over 20 years working in the solid waste industry for public sector and non-profit organizations. She most recently served as the Solid Waste Utility Manager for the City of Columbia (Missouri), where she managed the operational and financial aspects of residential and commercial trash and recoverables collection, a Class I bioreactor landfill, a compost facility and material recovery facility (MRF). Her expertise encompasses all aspects of a full-service collection, disposal and recovery solid waste utility, including planning and budgeting; personnel management; procurement/contracts; capital projects; rolling fleet and routing; heavy equipment; subtitle D and bioreactor landfill; waste analysis, material marketing, minimization and sustainability programs; facility operation and regulatory compliance. She has served on multiple industry association boards, presented at numerous state and national conferences and is currently an active member of SWANA and MORA, having served on the board and committees for these as well as APWA during her career. She has managed and served in various professional field capacities for numerous operations analysis/cost of service/rate studies, two Missouri statewide waste characterization studies, the 2019 Minnesota statewide C&D study, and various municipal, countywide and facility-specific studies.

### **Natalee Mannion, Project Manager**

#### **Role: Field Operations Supervisor/Waste Characterization Specialist**

Natalee Mannion has been in the industry for fourteen years, specializing in recycling and diversion program development and implementation; solid waste and zero waste planning; waste characterization analyses; and stormwater management. Having previously worked on the West Coast for both municipal government and private consulting firms, Natalee now works out of the Philadelphia area on behalf of MSW Consultants. She has worked with MSW Consultants for over six years as an accomplished analyst, working on a large variety of projects related to planning, operational, and financial analysis while specializing in leading the firm's waste characterization studies across the U.S.

### **Carl Muth, Project Manager I**

#### **Role: Field Operations Manager/Waste Characterization Specialist**

Carl Muth brings an academic background in Social Sciences, Communications, and Marketing. Carl specializes in field data collection and analysis for the company's material characterization and capture rate studies and has managed dozens of composition audit events and has experience developing study designs and training materials for use with the *WasteInsight*<sup>™</sup> GAP System, MSW's proprietary data management platform. Additionally, Carl conducts benchmarking efforts to support a wide variety of

MSW projects and acts as field supervisor for MSW’s recycling cart monitoring program for clients throughout the US.

**David Mann, Director of IT**

**Role: Data Manager**

David Mann is the architect of *WasteInsight™*, MSW Consultants’ proprietary waste market database, and the Grading and Purity (GAP) System for cloud-based management of material characterization data. He is an expert researcher and manager of data driven solid waste management analysis. As head of the company’s Research Division, David manages the *WasteInsight™* portal with collection and disposal data from the Northeastern states and Florida. A multi-talented information technologist for over 20 years, David is also building cloud-based analytical tools for other MSW Consultants lines of business.

**Nick O’Callaghan, Analyst**

**Role: Data Analyst**

Nick O’Callaghan provides a wide range of analytics in support of the firm’s operational analyses, market research, and system optimization work. Since joining the firm in 2020, he has developed a map-based inventory of the waste market for a northeast state to derive transportation and disposal prices to certain material streams and is currently evaluating collection market opportunities for a large U.S. city. Nick will provide financial and data analytics for the project.

**MSW Consultants Field Operations Personnel for Waste Characterization Projects**

In addition to the key management staff above, MSW Consultants waste characterization professional staff are shown in the Table 3 below. These staff are on call to fill the following professional roles during field data collection, depending on availability. MSW Consultants offers clients the most experienced, deepest team in the industry.

**Table 3 – MSW Consultants Waste Characterization Professional Staff**

Team Member	Years of Consulting Experience	Prior Waste Characterization Experience	Notes
Veronica Lenhart Fields Operations	5	<ul style="list-style-type: none"> <li>◆ Sorter for a large-scale multi-season municipal waste project study in New York</li> </ul>	<ul style="list-style-type: none"> <li>◆ Served on the mobile sorting team for multiple projects</li> <li>◆ Operate on-site sort stations and train crew on sort operations</li> </ul>
Zack Griffin Analyst	11	<ul style="list-style-type: none"> <li>◆ Operations specialist for four season statewide waste characterization study in Pennsylvania</li> <li>◆ Lead Crew Chief and sort trainer</li> </ul>	<ul style="list-style-type: none"> <li>◆ California, Pennsylvania, and Canadian waste sort experience</li> <li>◆ Sampling manager for New York City residential waste composition study in 2017</li> </ul>

## CORPORATE OVERVIEW

Team Member	Years of Consulting Experience	Prior Waste Characterization Experience	Notes
Shelly Wilson Crew Chief	2	<ul style="list-style-type: none"> <li>◆ Crew chief experience for waste characterization studies in Maryland, Delaware, and Ohio</li> <li>◆ 1+ year of professional sorting experience</li> </ul>	<ul style="list-style-type: none"> <li>◆ Served on the mobile sorting team for a Pennsylvania statewide study spanning 12 landfills and 9 MRFs</li> <li>◆ Performed multiple sorts as crew lead in various states</li> </ul>
Charles Wilson Field Technician	2	<ul style="list-style-type: none"> <li>◆ Assistant crew chief experience</li> <li>◆ 1+ year of professional sorting experience</li> </ul>	<ul style="list-style-type: none"> <li>◆ Served on the mobile sorting team for a Pennsylvania statewide study spanning 12 landfills and 9 MRFs</li> <li>◆ Performed multiple sorts as crew lead in various states</li> </ul>
Steve Deasy Sr. Project Manager	25	<ul style="list-style-type: none"> <li>◆ Supported CalRecycle statewide sort in 2018</li> <li>◆ Waste characterization lead for firms' National Park Service projects</li> <li>◆ PA Statewide Waste Composition Volunteer</li> </ul>	<ul style="list-style-type: none"> <li>◆ Career recycling professional with diverse experience</li> <li>◆ Recycling technical assistance provider for over 200 Pennsylvania municipalities</li> </ul>

### j. Subcontractors

MSW Consultants does not intend to subcontract any services for this project.

### k. Addendum Acknowledgement

MSW Consultants acknowledges the Addendum #1 posted on June 20, 2024 and Addendum #2 posted on June 22, 2024.

### l. Terms & Conditions Alternatives

#### II – F – Prices

Prices quoted shall include all labor, supplies, travel expenses, and any other expenses required to perform the scope of services ~~be net, including transportation and delivery charges fully prepaid by the bidder, F.O.B. destination named in the Request for Proposal. No additional charges will be allowed for packing, packages, or partial delivery costs.~~ When an arithmetic error has been made in the extended total, the unit price will govern

#### III – F – Ownership of Information and Data / Deliverables

The State shall have the unlimited right to publish, duplicate, use, and disclose all information and data developed or obtained by the Contractor on behalf of the State pursuant to this contract, except for data provided and declared proprietary/confidential by participating solid waste facilities (*note: During the field data collection, some customer-related data may be obtained by the Contractor and it is important to explicitly grant confidentiality to the owners of this data*).

### III – G – Insurance Requirements

~~Commercial Crime: Crime/Employee Dishonesty Including 3rd Party Fidelity. \$1,000~~

*Alternatively, we will obtain this coverage specifically for this project if the state wishes to pay the premium.*

### III – L – Disaster Recovery/Back Up Plan

~~The Contractor shall have a disaster recovery and back-up plan, of which a copy should be provided upon request to the State, which includes, but is not limited to equipment, personnel, facilities, and transportation, in order to continue delivery of goods and services as specified under the specifications in the contract in the event of a disaster.~~

# TECHNICAL APPROACH

## 2. TECHNICAL APPROACH

### a. Understanding of the Project Requirements

MSW Consultants has reviewed the RFP, the QAPP, and Nebraska’s 2009 Waste Characterization Study. These documents contain a detailed methodology for conducting an update to Nebraska’s inaugural statewide waste characterization study in 2009. Based on the Nebraska Department of Environment and Energy (NDEE) specification to use substantially the same methodology and scope as in 2009, the project parameters are clearly identified.

### b. Proposed Development Approach

We have reviewed the 2009 Study in detail. This study clearly identifies the level of effort devoted to the field data collection, specifying site visits of all host facilities, gate surveys at the largest landfill, and seasonal sampling totals. Table 4 summarizes the salient field data collection specifications from the 2009 study. As shown, the 2009 Study captured 624 samples, distributed over eight host disposal facilities and four seasons. Site visits were conducted at all host facilities in advance of the field work, and three days of gate surveying were performed at the Pheasant Point Landfill.

Table 4 – Seasonal Sampling Targets from 2009 Study

Landfills	Site Visit Days	Gate Survey Days	Samples Per Season				Total Samples
			1	2	3	4	
Pheasant Point Landfill	1	3	57	53	38	60	208
Bluff Road Landfill	1	0	36	33	47	50	166
Norfolk Area Transfer Station	1	0	24	10	16	9	59
Lexington Landfill	1	0	17	14	9	16	56
Hastings Landfill	1	0	8	16	15	15	54
Sidney Landfill	1	0	10	10	10	8	38
Chadron Transfer Station	1	0	4	10	11	9	34
Valentine Landfill	1	0	2	2	1	4	9
<b>Totals</b>	<b>8</b>	<b>3</b>	<b>158</b>	<b>148</b>	<b>147</b>	<b>171</b>	<b>624</b>

These sampling targets ostensibly provided excellent representativeness of the waste stream based on two subdivisions:

- **By Generator Sector:** Residential, Commercial and Mixed
- **By Demographic Origin:** Large Urban, Small Urban, Large Rural, Small Rural

On the surface, the 2009 Study appears to provide a comprehensive snapshot of the state’s disposed waste composition. However, a closer read of the report uncovers elements of the methodology that did not follow best practices for waste characterization – then or now.

MSW Consultants is a national, specialized provider of waste characterization for state wastesheds. We offer the following observations and recommendations about best practices for updating Nebraska’s waste characterization study.

- **There is No Basis for Sampling and Statistical Analysis Specified in the 2009 Study:** Since the 1990s, the generally accepted protocol for waste characterization has been compiled in ASTM standard D 5231-92, *Standard Test Method for Determination of the Composition of Unprocessed Municipal*

*Solid Waste*. Nowhere is this standard cited in the 2009 Study report and it is clear that this standard was not followed in several respects (to be addressed below). MSW Consultants has applied this standard – and improved on certain guidelines based on over two decades of real-world experience – in close to 100 waste characterization studies. We are recommending that many of the principles of this ASTM standard be applied to the 2025 waste characterization update.

- **NDEE Should Clarify Study Goals to Confirm Appropriate Sample Allocation:** It is clear from the table above that samples were allocated in proportion to some indicator – possibly inbound tonnage. However, the 2009 Study is unclear about the basis for weighting and aggregating samples from individual facilities into generator subtypes or demographic regions, not to mention to a statewide aggregate. MSW Consultants has collaborated with many state agencies to review their disposal reports for the purpose of developing a sound basis to allocate samples to meet NDEE’s objectives for the research. For example, if NDEE wishes to duplicate the prior study sample allocation, this will provide excellent representation of wastes from the large and small urban facilities, but will limit the accuracy of any results for the rural facilities. A better balancing of the samples across urban and rural areas will improve the granularity of waste composition across the state without sacrificing statewide accuracy. MSW Consultants looks forward to reviewing the sample allocation options with NDEE.
- **Individual Sample Acquisition Must Be Randomized:** Perhaps the most glaring divergence from waste characterization best practices in the 2009 Study was its methodology to rely on human judgment to select samples. To quote from the 2009 Methodology: “The samples were selected by the same person who conducted the visual inspection. Using information and observations garnered from the visual inspection, locations within the load were selected and the sample materials were collected from these locations.”<sup>1</sup> Following this description in the report, there is a photograph of a single individual manually removing materials from a tipped load. Conventional waste characterization methods completely eliminate human judgment from sample selection, and leverage mechanical equipment to grab truly representative materials from a pile that could weigh upwards of 10 tons.
- **Re-allocate Mixed Waste Samples:** While there are certainly many loads that arrive at disposal facilities containing a mix of both residential and commercial waste, there are many more that are segregated. In our experience, sampling and analyzing loads of mixed waste is a poor use of resources. In 2009, over 100 samples were obtained from loads of mixed waste. Presumably some of these mixed waste loads were transfer trailers, which also deliver highly degraded materials from the additional mixing and compacting at the originating transfer station. Best practices at present include going upstream to originating transfer stations and obtaining directly hauled residential and commercial loads there, instead of taking mixed waste loads at the landfill.
- **Separately Characterize C&D and Bulky Waste Loads from MSW:** Finally, the 2009 Study references visual inspection to identify bulky items, with no clear explanation for how these loads or items were measured. Since the early 2000s, extensive study has been performed on visually based, volumetric measurement methods for C&D and bulky loads. MSW Consultants has incorporated material densities and real-time calculations into its field data collection apps to greatly improve C&D and bulky waste composition measurement.

As a result of these technical deficiencies, it is difficult to determine the basis of detailed findings of the 2009 Study. Although the state-level results are probably reasonable (based simply on the extensive amount of sampling), it is not clear how accurately the results reflect the composition of

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<sup>1</sup> 2009 Study, page 2-6.

## TECHNICAL APPROACH

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individual generator sectors and demographic origins. At a minimum, greater transparency in sample allocation and analytical methods in the final report for the 2025 update will be a huge improvement on the prior study.

Based on our experience developing complex sampling plans for statewide and large city, county and regional waste sheds, MSW Consultants is proposing a modernized study design and sampling plan that applies current best practices for waste characterization studies.

### c. Technical Considerations

MSW Consultants is proposing a variety of improvements that will impact almost every phase of the study:

- **Initial Review of Nebraska Disposal Data:** The very first step in this 2025 update will be to review annual facility reports and to compile statewide municipal solid waste (MSW) and construction & demolition (C&D) disposal tonnage by facility and by region of the state. This review will include both landfills and transfer stations. The goal of the review will be to classify facilities and regions based on whether they serve urban or rural areas, and to tabulate how much waste they are receiving of both MSW and C&D.
- **Limited Gate Surveying of Prospective Host Facilities:** Unlike the 2009 Study, which conducted gate surveys at only one landfill, MSW Consultants is proposing 15 days of gate surveying, which may include more than just the eight facilities that hosted 2009 data collection. Gate surveys will better highlight the blend of residential and commercial wastes arriving at prospective host facilities, and will confirm landfills that are receiving an inordinate share of inbound waste from transfer trailers. In such cases, the gate survey and subsequent interview with landfill management can identify originating transfer stations where sampling and sorting would be more informative.
- **Potential for Focused C&D/Bulk Waste Characterization:** At NDEE's request, MSW Consultants is prepared to incorporate 16 days of visual, volumetric characterization of C&D and bulky waste loads, which are customarily delivered in open top roll-off boxes, box trucks, stakebed trucks, and other non-compacting vehicles. C&D waste composition is distinctly different from MSW composition, and MSW Consultants can explain the benefits of separating C&D from MSW characterization.
- **Enhanced Material Categorization:** The 2009 Study did provide a conventional breakdown of material composition by material groups, such as Paper, Plastic, Metal and Glass. Of course, the same breakdown will be developed for the 2025 Study. However, MSW Consultants also customarily incorporates an alternative classification of materials based on their "recoverability" or "divertibility." This concept is explained in our detailed scope of services. We also believe it will be appropriate to expand the material categories for the 2025 update.

As a final note, we have provided four options for the scope of work for the 2025 Study update:

- **Baseline, 2009 Sample Allocation:** This option would substantially duplicate the sample targets and allocation of the 2009 Study. Note that MSW Consultants is unable to complete this scope of work within the available project budget.
- **Alternative 1 - Balanced Sample Allocation, 2009 Targets:** This alternative would re-allocate samples more equally to the various host facilities. Doing so would improve accuracy of composition estimates for underlying demographic strata (urban/rural) and by generator sector (residential/commercial). This alternative also exceeds the published budget for the project.



## TECHNICAL APPROACH

- **Alternative 2 - Balanced Sample Allocation Within Budget:** This alternative is recommended to meet the available budget, and uses balanced sample allocation.
- **Alternative 3 - Balanced Sample Allocation plus C&D Visuals Within Budget:** Finally, to better differentiate and quantify MSW and C&D wastes, this final alternative conforms Nebraska’s statewide waste composition profile to other recently completed statewide studies by completing manual sorting of MSW loads, and adding in visual surveying of C&D/bulky wastes to accurately characterize that stream.

The sample targets by facility for each of these approaches is shown in Table 5 below. Note that the 320 samples in Alternative 3 reflect visual, volumetric estimates of C&D and bulk waste loads.

**Table 5 – Technical Approach Alternatives**

Disposal Facilities	Gate Survey Days		Sample Allocations				
	2009 Final Tally	Proposed	2009 Final Tally	Baseline: 2009 Allocation	Alternative 1: Balanced Allocation, 2009 Targets	Alternative 2: Balanced Allocation Within Current Budget	Alternative 3: Balanced Allocation with C&D Visuals
Pheasant Point Landfill	3	2	208	200	80	50	40
Bluff Road Landfill	0	1	166	160	80	50	40
Norfolk Area Transfer Station	0	1	59	60	80	50	40
Lexington Landfill	0	1	56	50	80	40	40
Hastings Landfill	0	1	54	50	80	40	40
Sidney Landfill	0	1	38	40	80	40	40
Chadron Transfer Station	0	1	34	30	60	40	30
Valentine Landfill	0	1	9	10	60	40	30
To Be Determined	0	6	0	0	*	*	320
<b>Totals</b>	<b>3</b>	<b>15</b>	<b>624</b>	<b>600</b>	<b>600</b>	<b>350</b>	<b>620</b>

We hope these options allow NDEE to select a scope of work and approach that balances technical objectives and budgetary constraints. We believe our approach will significantly improve the research protocol for waste characterization studies and provide Nebraska with an accurate and reliable estimate of disposed waste composition. The concise approach to perform this statewide waste characterization study is detailed below.

### d. Detailed Project Work Plan

Our approach follows the tasks as defined in the RFP:

#### Task 1 – Pre-Sort Workshop, Project Management & Project Initiation

There are multiple tasks that must be accomplished in the planning and initiation phase in addition to the pre-sort workshop. This task includes additional project initiation and project management tasks.

##### Task 1.1 – Participate in a Kick-Off Meeting & Submit Data Request

MSW Consultants will conduct a kick-off conference call with NDEE staff to initiate the project. We will further submit a request for information needed to develop the sampling plan and review/compile responses. We will review available data to understand the volumes and delivery schedule of materials

# TECHNICAL APPROACH

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generated throughout the state and delivered to the facilities. This research will confirm the sampling targets and distribution of samples across inbound generator types.

## **Task 1.2 – Pre-Sort Workshop**

MSW Consultants will collaborate with NDEE to develop a PowerPoint overview of the project, identify prospective host facilities and contacts, schedule a web meeting, and deliver an overview of the project. We are proposing to do the meetings virtually, with the option for NDEE to record the entire meeting for viewing by parties that could not make the scheduled date and time.

Note that NDEE will have the opportunity to review the draft slide deck in advance of the call. MSW Consultants recommends that this task occur chronologically after the development of the 2025 study update methodology (Task 3).

## **Task 1.3 – Project Management**

MSW Consultants recommends that a standing monthly web meeting be scheduled to provide routine communications with NDEE throughout the project. For each call, MSW Consultants will prepare a brief agenda, and will circulate summary notes at the conclusion of the meeting.

MSW Consultants will also prepare monthly status reports to be delivered with any project invoices. We believe these steps help both parties remain on schedule and minimize unexpected developments during the project.

## **Task 2 – Review Previous Waste Sort Methodology**

MSW Consultants has already made a cursory review of the prior study to assist in our formulation of an approach to update this body of work. In this task, we will more quantitatively review the prior study. This will include:

- Compiling more detailed sample data
- Evaluating the statistical methods in greater detail
- Uncovering (hopefully) the basis of the sample allocation and methods of aggregating statewide results
- Comparing results with other studies at that time to better evaluate the accuracy of the report

This last bullet is important, because if the primary objective of this update is to compare results in 2025 with results in 2009, then the 2009 analytical methods should be verified to be accurate based on best practices as described in the ASTM standard and based on other protocol improvements that have taken place in the past 15 years.

It is assumed that a technical memorandum would be prepared to summarize the results of this review, and that the findings would be discussed in a routine project status meeting.

## **Task 3 – Develop 2024-25 Methodology**

MSW Consultants will incorporate all modifications to the project methodology into an updated draft and final Study Design. Our budget assumes that NDEE will separately coordinate with the US EPA should it be necessary to also update the QAPP (although MSW Consultants will assist with this upon request and a change order). The 2025 study methodology will address the following elements:

**Sampling Plan:** Our sampling plan alternatives are contained in the Technical Considerations section above.

**Validate/Refine Material Categories:** NDEE has provided a list of MSW manual sort categories from the prior study, shown in Table 6 below. MSW Consultants has reviewed these categories, and our proposed price assumes the use of these categories plus some expanded material categories.

**Table 6 – Material Categories used in the 2009 Study**

Group	Category	Group	Category
<b>Paper</b>	Cardboard	<b>Metals</b>	Aluminum Cans
	Office Paper		Tin Cans
	Newsprint		Other Aluminum
	Magazines		Other Tin
	Paperboard/Liner Boars	Other Mixed Metals	
	Mixed Paper	<b>Other Materials</b>	Food
<b>Plastic</b>	PET #1		Diapers
	HDPE #2		Textiles/Rubbers/Leather
	Other Numbered Containers		Yard Waste
	Plast Film/Wrap/Bags		Household Hazardous Waste
	Other Plastics		Electronic Waste
<b>Glass</b>	Clear Glass Containers		Dry-Cell Batteries
	Brown Glass Containers		Misc. C/D Waste
	Green Glass Containers		Wood
	Blue Glass Containers		Empty Aerosol Cans
	Other Glass		Non-Distinct Waste
		Other Misc. Wastes	

We anticipate recommending the following material category changes in a way that will allow mapping back to the 2009 study findings:

- Adding cartons and aseptic packaging to the Paper categories
- Possibly consolidating recyclable paper categories to reflect the current Residential Mixed Paper standard
- Expanding the plastics categories to provide better granularity of resin types, expanded vs rigid vs film plastic, and to measure certain newly recyclable plastics
- Separating compostable organic materials such as certain paper and clean wood
- Greatly expanding the list of Other Materials to provide better visibility into the types of special, problem, universal, and household hazardous wastes
- Developing a separate set of material categories for C&D visual surveying, if this alternative is accepted by NDEE

We will nonetheless review the categories with NDEE and jointly confirm a final list of categories during the study design.

**Define Recoverability Classes:** As a supplement to the material category definitions, MSW Consultants will collaborate with NDEE to develop recoverability classes. Such classifications may include recyclable fiber, recyclable containers, compostable organics, HHW program waste, and materials divertible through third parties (e.g., scrap metal to scrap dealers; clean wood to mulching operations). In the final report, the composition results by material group (paper, plastic, metal, glass, etc.) will be recast to reflect the recoverability of the disposed waste stream. In the experience of

# TECHNICAL APPROACH

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MSW Consultants, characterizing wastes based on alternatives to landfill is highly informative for setting realistic recycling goals.

**MSW Generator Sectors:** Consistent with the prior study, MSW Consultants will classify all samples based on their generator sector. Note that especially at large regional landfills, which are presumed to receive a significant fraction of transfer trailer loads, we will categorize mixed loads but do not recommend or intend to sample and sort/survey these mixed loads arriving in transfer trailers. This is because transfer trailer waste and other mixed loads combine both residential and commercial wastes, as well as C&D debris and even other wastes.

**Seasonality:** Field data collection will be performed over four seasons. Note that it would be possible to reduce the overall project budget by reducing it from four to two seasons.

**Sample Weights:** Consistent with industry standards (ASTM D 5231-92 (2016)), 200-to-250-pound samples will be the targeted sample weight for the MSW hand sorts. Conversely, entire loads of C&D and bulky wastes will be volumetrically surveyed.

**Health & Safety Plan:** MSW Consultants maintains a customized Health and Safety Plan for waste characterization studies. A copy of this plan will be updated and customized for this project if we are selected to perform the work.

An updated 2025 Study Methodology will be delivered in draft and final form for acceptance by NDEE.

## Task 4 – Conduct Waste Sorts

This effort is divided into the following subtasks

- Logistical Coordination
- Gate Surveys
- Manual Characterization of MSW
- Visually Volumetric Surveying of C&D (if approved by NDEE)

### Task 4.1 – Logistical Coordination

It will be critical to make appropriate arrangements for the personnel and equipment needed to execute the field data collection portion of this project. MSW Consultants will reach out to each facility to discuss logistics, such as:

- Confirming procedures requiring coordination between the host facility personnel and MSW Consultants.
- Information about available space for sampling and sort crews and the availability of operational resources, such as a loader.
- Information on vehicle traffic (by time of day) including delivery patterns, and numbers of vehicles arriving, by vehicle type and/or by waste subsector.
- Finalizing locations for setting up the work area, taking samples, queuing samples, discarding sorted samples, and other in-process activities.
- Answering any questions and addressing the concerns of the Facility Managers.

MSW Consultants will arrange for the experienced staff and provide all sorting equipment (table, bins, carry cans, scales, small tools, and personal protective equipment) needed for the project.

The purpose of the gate survey is to obtain representative data identifying the breakdown of waste by type and by generator sector for each host facility. The generator sector for some inbound wastes can

likely be determined based on the hauler and on the truck type. However, many frontload and rearload packer trucks carry both commercial and multi-family wastes, and self-haul loads may be delivered by residential or commercial generators or may contain C&D and/or bulky debris. Finally, commercial landfills likely receive a high volume of transfer trailers, which contain predominantly mixed waste including residential and commercial MSW as well as C&D debris.

Survey results will be paired with scale weight data to calculate the precise contribution of single family, multi-family, institutional/commercial/industrial, C&D/bulky, and self-haul waste for both compacting and non-compacting route trucks.

The following steps are proposed to complete gate surveys that will inform the study with respect to the overall breakdown of load types and generators.

### **Task 4.2 – Gate Survey**

This task will include the following components:

#### **Gate Survey Plan**

- **Prepare Survey Instrument:** MSW Consultants will develop a gate survey form to capture truck number and type, hauler, generator sector, and other information that may be needed to develop waste disposal estimates by generator sector.
- **Site data review:** MSW Consultants will review recent annual tons by facility as provided by the NDEE.
- **Verify gate survey schedule:** We are proposing one or two person-days at each facility to meet with the operations management team, and to conduct gate surveying on inbound trucks. We will establish a schedule with NDEE and all host facilities for performing the gate surveys. We are open to increasing or decreasing this level of effort based on NDEE input and budget.

#### **Perform Gate Surveying**

Inbound vehicles will be surveyed to determine what type of waste is being delivered and the generator sector. To the extent possible, MSW Consultants surveyors will work with host facility scalehouse personnel and ask drivers concise questions to determine the material type and generating sector, recording truck type, size, and weight. We are proposing that all gate surveys be completed prior to the manual sorting and visual surveying so results can be used to inform the final sample allocation and study design. MSW Consultants intends to collect gate survey data on tablet computers using an optimized electronic form.

#### **Prepare Gate Survey Summary**

Following completion of the gate surveys, a brief written summary of activities (dates, sites, loads and tons by generator, etc.) and survey results will be provided to the state along with an Excel file of raw data.

### **Task 4.3 – MSW Manual Sorts**

Key details of the MSW Consultants methodology for conducting MSW characterization data collection include:

#### **Staffing**

We propose to use a two-person professional staff to manage and supervise all sampling and sorting activities, supported by a combination of professional sorters and local light industrial laborers to conduct actual sorting. The field data collection team will include the following individuals:

## TECHNICAL APPROACH

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- **Field Supervisor:** MSW Consultants will provide a dedicated Field Supervisor. The Field Supervisor will have lead responsibility for planning each sampling and sorting event, and for interacting with the facility personnel whose cooperation will be needed throughout the field data collection. The Field Supervisor will generally lead the sampling selection process and will oversee the physical taking of samples. The Field Supervisor is ultimately responsible for the successful completion of the project.
- **Crew Chief:** The Crew Chief will be the second professional staff person. The Crew Chief is responsible for managing the manual sorting area, including crew management, sorting productivity and accuracy, data recording, work site health and safety, and cleaning up at the end of the day.
- **Sorting Labor:** MSW Consultants has cultivated a professional traveling team of sorters who are deployed to projects when available. We supplement our sorting team with locally recruited personnel. As a last resort, we will team with a local staffing firm to supply remaining labor. Training and oversight will be provided by the field operations management staff above. We have proven experience in training and retaining temporary labor in the conduct of waste composition analysis. Our budget assumes that training takes place on the first day of the sort.

### Sampling

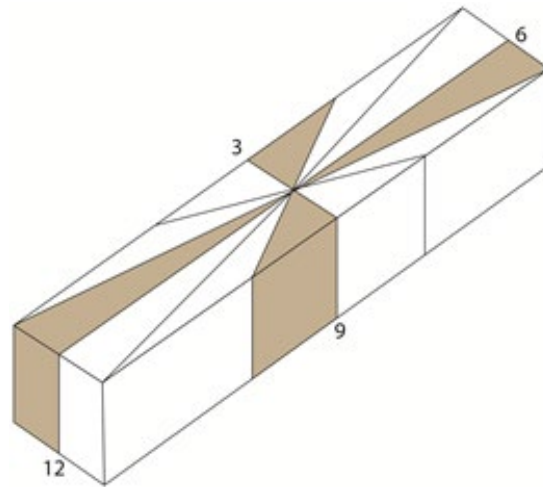
Accurate characterization of solid waste is a complex and demanding undertaking, which requires precise coordination and planning among team members and rigorous adherence to standards of quality. Our approach to sampling is provided below:

- **Sample Selection:** The Field Supervisor will predominantly apply stratified, systematic selection of inbound vehicles to meet sampling targets, asking incoming drivers for basic information which is noted to identify the load. This method is often referred to as an “nth truck” approach. Information from the weight ticket for each vehicle will be obtained for every incoming truck either from the driver, or through communication with the scale house. Once the interview is complete, the Field Supervisor will direct the vehicle to the sampling area.
- **Taking Samples from Selected Loads:** Selected loads of waste designated for sorting will be tipped in the designated area at the landfill or transfer station. We expect that the tipping area will be designated near the tipping face or in a designated bay, and that it will be possible to erect a tent over the sort area, if necessary. It is assumed a loader and operator will be dedicated at the landfill to assist with the sampling.<sup>2</sup>
- **From each selected load, one sample of waste will be selected** based on systematic “grabs” from the perimeter of the load. For example, if the tipped pile is viewed from the top as a clock face with 12:00 being the part of the load closest to the front of the truck, the first samples will be taken from 3, 6, 9, and 12 o’clock, and then from 1, 4, 7, and 10 o’clock, and so-on as shown on Figure 2below.

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<sup>2</sup> Over the course of a typical day, the Project Team typically needs assistance from a loader from 8 to 12 loads. For each load, the loader will be asked to grab wastes from a pre-selected location. This process takes less than 5 minutes on average, and the Team strives to minimize the impact on facility operations personnel. Should it be necessary for MSW Consultants to provide its own loader at certain host facilities, this will be considered an additional service and will require a change order. Alternatively, NDEE may opt to exclude host facilities that cannot accommodate this level of support.

**Figure 2 – Systematic Sampling Guide for Tipped Loads**



Samples will be loaded into 35-gallon barrels, pre-weighed to achieve target weight for each sample, and for storage prior to sorting. Each sample will be labeled by its unique identifying number and digitally photographed.

### Sorting

MSW Consultants will provide the sorting equipment, which includes a sorting table, 5-gallon buckets, 18-gallon bins, and 35-gallon barrels for the most prevalent materials. Sorters are asked to specialize in certain material groups, with someone handling the paper categories, another the plastics, another the glass and metals, and so on. In this way, sorters become highly knowledgeable in a short period of time as to the definitions of individual material categories. The Crew Chief will monitor the bins as each sample is sorted, re-sorting materials that may be improperly classified. Open bins allow the Crew Chief to see the material at all times. As seen on Figure 3 below.

**Figure 3 – Sort Table and Bins**



### Data Recording

The Crew Chief will use a rugged tablet computer synced to the cloud via cellular service or Wi-Fi each day to record composition weights. Each sample will be cross-referenced against the Field

# TECHNICAL APPROACH

Supervisor’s sample input to assure accurate tracking of the samples each day. The real-time data entry offers several important advantages:

- The template contains built-in logic and error checking to prevent erroneous entries.
- The template sums sample weights in real time so the Crew Chief can confirm achievement of weight targets for each and every sample.
- The data files are synced routinely while in the field, provided cell service is available. In the least, the data is synced each evening and can be accessed and checked by MSW Consultants QA/QC staff back at the office.

A screen shot of the electronic weigh-out form is provided in the exhibit Figure 4 below.

**Figure 4 – Screenshot of MSW Weigh-Out Interface**



## Task 4.4 – C&D/Bulky Waste Visual Surveying (Optional for Alternative 3)



C&D and bulky waste characterization project planning and preparation will be completed in conjunction with the planning for the MSW manual sorts. The following subtasks summarize the critical elements that will be undertaken for completion of the C&D and bulky self-haul study.

### **Staffing**

Project Team professional staff with prior visual characterization experience will conduct the field data collection.

### **Sample Surveying**

Our assigned staff will coordinate with the scale house, tip area spotter, and inbound deliveries to select loads for surveying. It is understood a loader and operator will be available to assist in spreading the loads from time to time if they are not spread during the offload so we can see the interior of the loads. On most occasions, the driver is able to spread the load out as it is tipped.

### **Number of Samples**

The Project Team has the capacity to visually characterize from 15 to 25 loads per day, assuming there is sufficient inbound traffic at the host facility. Our preliminary sampling targets are shown in the Overview section above.

### **Distribution of Samples**

Samples will be allocated in proportion to preferred generating sectors (residential, nonresidential, etc.) and truck types (dump trucks, roll-offs, truck/trailer, etc.) delivering to the facility, based on results of the gate survey.

### **Sample Selection**

We will select the Nth vehicle based on estimated daily arrivals of C&D and bulky waste loads.

### **Composition Estimation Methodology**

The following methodology is used with our accurate visual surveying protocol:

- Measure and record the dimensions of the incoming load prior to tipping and (if possible) estimate the percent full of the vehicle/container.
- Tip the load. If it is a large load of non-homogeneous materials, have a loader spread out the material so that it is possible to discern dense materials such as blocks, bricks, 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—Wood Waste, Organics, Fiber, etc. Estimate the percentage of the load made up of these major materials.
- Make a second pass around the load, noting the secondary material categories contained in the load—Wooden Pallets, Sawn Lumber, OCC, etc. Estimate the percentage of the load made up of these materials.
- Validate that the estimated percentages sum to 100 percent, and that the sum of estimated weight is within an acceptable range and realistic given the overall truck dimensions and volume.
- Compare the calculated weight of the load to the actual scale weight of the load, identify possible sources of discrepancy, and make adjustments to volumetric estimates and/or density factors to reduce the degree of difference. This last step is critical to the accuracy of the data.

For Visual Surveying activity for the C&D/Bulky material stream, a proprietary app-based field form has been developed to provide real-time balancing based on vehicle/container size, consumed

# TECHNICAL APPROACH

capacity, and material densities to allow immediate data quality control. Figure 5 shows a sample of our electronic form.

Figure 5 – Sample C&D/Bulky Waste Visual Survey Interface

**Brown Station Road Sanitary Landfill - Visual Sort** Back

**Enter Visual Estimates**  
Use this form to enter estimated percentages by material categories for new samples. You may also update existing percentages for previously submitted samples.

Sample ID: 0817-MBSR-SH-53 Update Sample Sample Notes: Other bulky = spa/jacuzzi Wednesday, August 17, 2022 03:39 pm

Load Weight (tons): 1.26

Facility: Brown Station Road SL

Generator: Self-Haul

Origin: select one

Hauler: The Junk Collector

Truck Type: Box/Dump Truck

Truck Number:

Ticket Number: 522475

Total Truck Volume (CY): 11.9  
L.ftb W.ftb H.ftb Area (CY) (cu) 12.5 95

Total Trailer Volume (CY): 0.0  
L.ftb W.ftb H.ftb Area (CY) (cu)

Sum of Groups (%): 100%  
Total Volume (CY): 11.9  
Actual Weight (tons): 1.26  
Actual Sum of Lbs.: 2,520  
Sum of Estimated Lbs.: 2,626  
Variance (%): 4%

Paper (%)	5	Metal (%)	15	Wood (%)	15	Furniture (%)	10
Plastics (%)	5	General C&D (%)	25	Glass (%)		Other (%)	25

1	Uncoated OCC - Recyclable	100	105				63
2	Other Paper		157				0
3	Durable Plastic Items	25	35				5
4	Film Plastic (Comm./Indus.)	5	38				1
5	Other Plastic	70	50				21
6	Appliances	15	145				39
7	Ferrous Metal	25	230				102
8	Non-Ferrous Metal						

Sample Photos

© 2022 Wasteinsight | a trademark of MidAtlantic Solid Waste Consultants, LLC MSW Main Site

## Data Management

Following each season, a brief written summary of characterization activities (dates, sites, samples, etc.) will be provided to the state along with an Excel file of raw data. Information from the final season will be incorporated into the Draft Report and Excel data files delivered.

## Task 5 – Quarterly Reporting

Following each season, a brief written summary of characterization activities (dates, sites, samples, etc.) will be provided to the state along with an Excel file of raw data. Information from the final season will be incorporated into the Draft Report and the Excel raw data files delivered.

## Task 6 – Data Analysis

The analysis of statewide waste composition data is highly intensive and relies on a combination of reported tonnage, statistical analysis, and experience. MSW Consultants has budgeted the

development of comprehensive findings and analysis of the 2025 study update, as well as a comparison of the state's waste stream against the 2009 study. Data analysis tasks are shown below.

### **Waste Generation**

MSW Consultants will collaborate with NDEE to finalize a snapshot of statewide waste generation based on facility reports and other data sources and apply the results of the gate survey to estimate the total tons generated by sector (and potentially by waste type if NDEE selects Alternative 3). We will segregate imported tons based on gate survey results. The resulting generation calculations will be used as the basis for applying waste composition results.

### **Waste Composition**

Residential, ICI and aggregate MSW composition, as well as C&D/bulky waste composition, will be calculated through the statistical measures cited in the ASTM standard, shown below. As specified in the RFP, results will be calculated at a 95 percent level of confidence.

- **Sample Mean:** The sample mean, or average, composition is considered the “most likely” fraction for each material category in the waste stream.
- **Standard Deviation:** The standard deviation measures how widely the values within the data set are dispersed from the sample mean. A higher standard deviation denotes higher variation in the underlying samples for each material, while a lower standard deviation reflects lower variation among the individual samples. (Standard deviations are not presented in the results but are needed in the calculation of the margin of error.)
- **Margin of Error:** The margin of error (MOE) is a measure of the accuracy of the sample mean and is reported as a single value and measured at a 90 percent level of confidence. (The MOE can be used to determine confidence intervals, which is a statistical concept that indicates the likely range within which the true value lies. Although not reported directly in this report, confidence intervals can be calculated by subtracting (lower interval) and adding (upper interval) the MOE to the sample mean. Confidence intervals reflect the upper and lower range within which the population mean can be expected to fall.)

### **Comparison with 2009 Study**

Finally, the analysis will include a side-by-side comparison of key findings from the 2009 study in both tabular and graphical format.

### **Task 7 – Final Report Completion**

MSW Consultants undertakes the following steps to prepare detailed technical reports such as this study report.

#### **Report Outline**

MSW Consultants will develop an outline of the full study report to be approved by NDEE prior to proceeding with the Draft Report.

#### **Draft Report**

MSW Consultants will prepare a draft report that describes the purpose, study methodology, sampling, and surveying details, and that summarizes the essential composition findings for each waste sector and each survey conducted. Specifically, the report will include:

- An executive summary providing key findings in standard solid waste industry terminology.
- Introduction and background for the study, including objectives.

# TECHNICAL APPROACH

- A summary of the gate survey methodology and results.
- A description of the methodology used in the study of MSW and C&D/Bulky wastes, including a sampling and sorting plan.
- Data sources for all calculations.
- Results of the types and quantities of materials in the waste stream,
- Comparisons with the 2009 Study,
- A summary of findings, conclusions, and supporting documentation (charts, tables, forms, questionnaires, etc.)
- Raw data in an Excel format, as well as photographs of samples and field work.

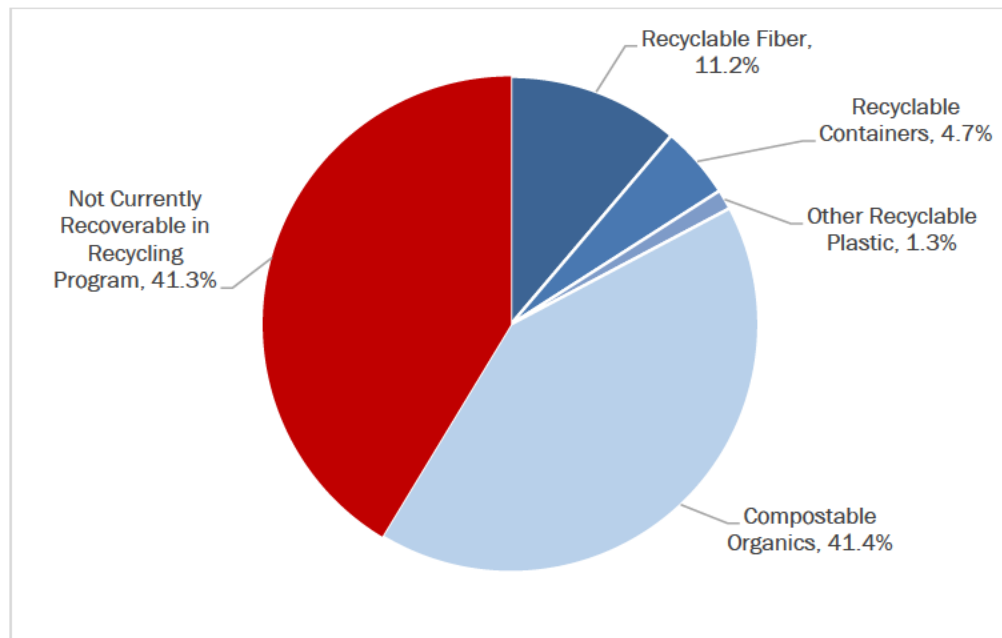
MSW Consultants will provide a draft report for review and comment by NDEE. We will meet with NDEE staff to discuss the report. Table 7 and Figure 6 shows samples of the various tabular and graphical results.

**Table 7 – Sample Waste Composition Tabular Results**

Material Category	Est.	Conf.	Tonnage	Material Category	Est.	Conf.	Tonnage
	Percent	Int (+/-)			Percent	Int (+/-)	
<b>Paper</b>	<b>26.0%</b>	<b>1.4%</b>	<b>1,001,551</b>	<b>Plastic</b>	<b>15.3%</b>	<b>2.8%</b>	<b>590,979</b>
OCC/Kraft	8.5%	1.1%	326,094	PET (#1) Bottles/Jars	1.4%	0.1%	54,764
Newsprint	1.5%	0.5%	56,588	PET (#1) Non-Bottle Containers	0.2%	0.1%	8,321
Magazines	0.9%	0.2%	35,327	HDPE (#2) Natural Containers	0.4%	0.0%	15,399
High Grade Office Paper	1.3%	0.3%	51,027	HDPE (#2) Colored Containers	0.5%	0.1%	19,462
Mixed Recyclable Paper	4.0%	0.4%	155,827	Clean Film Bags	0.3%	0.1%	11,948
Compostable Paper	8.1%	0.5%	312,127	Clean Ind'l/Com'l Film	0.7%	0.3%	26,524
Remainder/Composite Paper	1.7%	0.6%	64,562	Contaminated Film/Other Film	5.9%	0.8%	229,256
<b>Glass</b>	<b>2.8%</b>	<b>0.3%</b>	<b>108,996</b>	Plastic Containers #3 thru #7	1.0%	0.1%	38,140
Clear Glass Containers	1.4%	0.2%	53,206	Expanded Polystyrene #6	0.7%	0.1%	27,908
Brown Glass Containers	0.8%	0.2%	32,428	Bulky Durable Plastic Products	1.9%	0.3%	72,746
Green Glass Containers	0.2%	0.0%	8,310	Remainder/Composite Plastic	2.2%	0.4%	86,510
Remainder/Composite Glass	0.4%	0.1%	15,052	<b>Textiles</b>	<b>4.8%</b>	<b>1.2%</b>	<b>186,773</b>
<b>Metal</b>	<b>4.4%</b>	<b>0.5%</b>	<b>168,079</b>	Textiles - Clothing	2.3%	0.4%	87,347
Aluminum Cans & Containers	0.6%	0.1%	24,498	Textiles - Non-Clothing	1.9%	0.3%	73,652
Other Aluminum	0.3%	0.0%	11,985	Shoes/Belts/Leather	0.7%	0.1%	25,775
Tin/Steel Containers	1.0%	0.1%	39,365	<b>Inorganics</b>	<b>12.7%</b>	<b>0.9%</b>	<b>491,013</b>
Other Ferrous	1.8%	0.4%	70,018	Fines	1.7%	0.2%	65,106
Other Non-Ferrous	0.5%	0.2%	20,802	Drywall/Gypsum Board	0.6%	0.3%	23,013
Oil Filters	0.0%	0.0%	1,411	Asphalt, Brick, Concrete & Rocks	0.5%	0.2%	18,639
<b>Organics</b>	<b>32.4%</b>	<b>0.6%</b>	<b>1,248,872</b>	Carpet & Carpet Padding	2.6%	0.7%	100,713
Food Waste	15.0%	1.3%	578,315	Other Construction & Demolition	1.6%	0.5%	60,431
Wood - Clean/Untreated	3.7%	1.2%	141,024	Bulky Items/Furniture	3.1%	0.6%	121,343
Wood - Painted/Stained/Treated	4.5%	1.0%	173,266	Mattresses/Boxsprings	0.7%	0.3%	26,118
Disposable Diapers & Sanitary Prod.	3.1%	0.4%	118,429	Tires	0.8%	0.4%	31,399
Yard Waste	2.6%	0.7%	101,921	Other/Not Classified	1.1%	0.9%	44,249
Remainder/Composite Organic	3.5%	0.6%	135,918	<b>HHW</b>	<b>0.4%</b>	<b>0.1%</b>	<b>15,974</b>
<b>Electronics</b>	<b>1.2%</b>	<b>0.4%</b>	<b>46,216</b>	Household Hazardous Waste	0.4%	0.1%	15,974
Electronic Waste	1.2%	0.4%	46,216				
				<b>Grand Total</b>	<b>100%</b>		<b>3,858,452</b>
				<b>No. of Samples</b>	<b>254</b>		

*Confidence intervals calculated at the 90% confidence level. Percentages for materials may not exactly equal category subtotals due to rounding.*

Figure 6 – Sample Recoverability Assessment



**Final Report**

MSW Consultants will integrate one round of official comments into the final report. Electronic copies of the report will be provided in Adobe Acrobat, and source files in Word can be provided to NDEE upon request. All results tables, raw data, and sample photos will also be uploaded to NDEE.

**Task 8 – Presentation of Study Results**

MSW Consultants has budgeted to prepare a comprehensive presentation of study results, with one round of comments provided by NDEE. Our budget assumes that the presentation will be delivered in-person at a location designated by NDEE. We also offer to conduct a virtual presentation (before or after the primary in-person presentation) at no additional charge.

**e. Deliverables & Due Dates**

MSW Consultants has reviewed the desired project schedule as shown in the RFP and we are able to meet this timeline. However, we recommend moving the Task 1 Pre-sort Workshop to occur after the completion of Tasks 2 and 3, so that prospective host facilities will have the benefit of knowing about the 2025 Study update detailed plan. See Table 8 below.

## TECHNICAL APPROACH

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**Table 8 – Project Schedule Tasks**

Tasks	Dates
Task 1: Pre-Sort Workshop	Nov 2024
Task 2: Review Previous Waste Sort Methodology	Sep 2024
Task 3: Develop 2024-25 Nebraska Statewide Waste Characterization Study Methodology	Oct 2024
Task 4: Conduct Waste Sorts	Winter 2025 - Fall 2025
Task 5: Quarterly Reporting	Apr 2025 Jul 2025 Oct 2025 Jan 2026
Task 6: Data Analysis	April 2026
Task 7: Final Report Completion	No later than June 2026
Task 8: Presentation of Study Results	No later than September 2026

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# APPENDIX A

## Required Documents

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## REQUEST FOR PROPOSAL FOR CONTRACTUAL SERVICES FORM

### BIDDER MUST COMPLETE THE FOLLOWING

By signing this Request for Proposal for Contractual Services form, the bidder guarantees compliance with the procedures stated in this Request for Proposal and agrees to the terms and conditions unless otherwise indicated in writing, certifies that contractor maintains a drug free workplace, and certifies that bidder is not owned by the Chinese Communist Party.

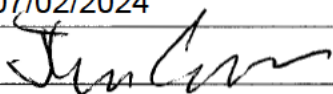
Per Nebraska's Transparency in Government Procurement Act, Neb. Rev Stat § 73-603 DAS is required to collect statistical information regarding the number of contracts awarded to Nebraska Contractors. This information is for statistical purposes only and will not be considered for contract award purposes.

\_\_\_\_ NEBRASKA CONTRACTOR AFFIDAVIT: Bidder hereby attests that bidder is a Nebraska Contractor. "Nebraska Contractor" shall mean any bidder who has maintained a bona fide place of business and at least one employee within this state for at least the six (6) months immediately preceding the posting date of this Solicitation.

\_\_\_\_ I hereby certify that I am a Resident disabled veteran or business located in a designated enterprise zone in accordance with Neb. Rev. Stat. § 73-107 and wish to have preference, if applicable, considered in the award of this contract.

\_\_\_\_ I hereby certify that I am a blind person licensed by the Commission for the Blind & Visually Impaired in accordance with Neb. Rev. Stat. § 71-8611 and wish to have preference considered in the award of this contract.

### FORM MUST BE SIGNED MANUALLY IN INK OR BY DOCUSIGN

BIDDER:	MidAtlantic Solid Waste Consultants, LLC
COMPLETE ADDRESS:	11875 High Tech Ave., Ste. 150, Orlando, FL 32817
TELEPHONE NUMBER:	407-380-8951
FAX NUMBER:	800-679-9220
DATE:	07/02/2024
SIGNATURE:	
TYPED NAME & TITLE OF SIGNER:	John Cubertson, Principal

**Form A**  
**Bidder Proposal Point of Contact**  
**Request for Proposal Number 6897 Z1**

Form A should be completed and submitted with each response to this Request for Proposal. This is intended to provide the State with information on the bidder's name and address, and the specific person(s) who are responsible for preparation of the bidder's response.

Preparation of Response Contact Information	
Bidder Name:	MidAtlantic Solid Waste Consultants, LLC
Bidder Address:	11875 High Tech Ave., Ste. 150 Orlando, FL 32817
Contact Person & Title:	Gisele Papadakis, Marketing Director
E-mail Address:	gpapadakis@mswconsultants.com
Telephone Number (Office):	800-679-9220 x.24
Telephone Number (Cellular):	407-392-0378
Fax Number:	800-679-9220

Each bidder should also designate a specific contact person who will be responsible for responding to the State if any clarifications of the bidder's response should become necessary. This will also be the person who the State contacts to set up a presentation/demonstration, if required.

Communication with the State Contact Information	
Bidder Name:	MidAtlantic Solid Waste Consultants, LLC
Bidder Address:	11875 High Tech Ave., Ste. 150 Orlando, FL 32817
Contact Person & Title:	John Culbertson, Principal
E-mail Address:	jculbertson@mswconsultants.com
Telephone Number (Office):	800-679-9220 x. 11
Telephone Number (Cellular):	407-380-8951
Fax Number:	800-679-9220

## II. TERMS AND CONDITIONS

Bidders should complete Sections II thru VI as part of their proposal. Bidder is expected to read the Terms and Conditions and should initial either accept, reject, or reject and provide alternative language for each clause. The bidder should also provide an explanation of why the bidder rejected the clause or rejected the clause and provided alternate language. By signing the Request for Proposal, bidder is agreeing to be legally bound by all the accepted terms and conditions, and any proposed alternative terms and conditions submitted with the proposal. The State reserves the right to negotiate rejected or proposed alternative language. If the State and bidder fail to agree on the final Terms and Conditions, the State reserves the right to reject the proposal. The State of Nebraska is soliciting proposals in response to this Request for Proposal. The State of Nebraska reserves the right to reject proposals that attempt to substitute the bidder's commercial contracts and/or documents for this Request for Proposal.

The bidders should submit with their proposal any license, user agreement, service level agreement, or similar documents that the bidder wants incorporated in the Contract. The State will not consider incorporation of any document not submitted with the bidder's proposal as the document will not have been included in the evaluation process. These documents shall be subject to negotiation and will be incorporated as addendums if agreed to by the Parties.

If a conflict or ambiguity arises after the Addendum to Contract Award have been negotiated and agreed to, the Addendum to Contract Award shall be interpreted as follows:

1. If only one Party has a particular clause then that clause shall control,
2. If both Parties have a similar clause, but the clauses do not conflict, the clauses shall be read together,
3. If both Parties have a similar clause, but the clauses conflict, the State's clause shall control.

### A. GENERAL

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

1. The contract resulting from this Request for Proposal shall incorporate the following documents:
  - a. Request for Proposal, including any attachments and addenda;
  - b. Amendments to the Request for Proposal;
  - c. Questions and Answers;
  - d. Bidder's properly submitted proposal, including any terms and conditions or agreements submitted by the bidder; and
  - e. Amendments and Addendums to the Contract.

These documents constitute the entirety of the contract.

Unless otherwise specifically stated in a future contract amendment, in case of any conflict between the incorporated documents, the documents shall govern in the following order of preference with number one (1) receiving preference over all other documents and with each lower numbered document having preference over any higher numbered document: 1) Amendment or Addendum to the executed Contract with the most recent dated amendment or addendum having the highest priority, 2) Amendments to the Request for Proposal, 3) Questions and Answers, 4) the original Request for Proposal document and any Addenda or attachments, and 5) the Contractor's submitted Proposal, including any terms and conditions or agreements that are accepted by the State.

Unless otherwise specifically agreed to in writing by the State, the State's standard terms and conditions, as executed by the State, shall always control over any terms and conditions or agreements submitted or included by the Contractor.

Any ambiguity or conflict in the contract discovered after its execution, not otherwise addressed herein, shall be resolved in accordance with the rules of contract interpretation as established in the State of Nebraska.

**B. NOTIFICATION**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Bidder and State shall identify the contract manager who shall serve as the point of contact for the executed contract.

Communications regarding the executed contract shall be in writing and shall be deemed to have been given if delivered personally; electronically, return receipt requested; or mailed, return receipt requested. All notices, requests, or communications shall be deemed effective upon receipt.

Either party may change its address for notification purposes by giving notice of the change and setting forth the new address and an effective date.

**C. BUYER'S REPRESENTATIVE**

The State reserves the right to appoint a Buyer's Representative to manage or assist the Buyer in managing the contract on behalf of the State. The Buyer's Representative will be appointed in writing, and the appointment document will specify the extent of the Buyer's Representative authority and responsibilities. If a Buyer's Representative is appointed, the bidder will be provided a copy of the appointment document and is expected to cooperate accordingly with the Buyer's Representative. The Buyer's Representative has no authority to bind the State to a contract, amendment, addendum, or other change or addition to the contract.

**D. GOVERNING LAW (Nonnegotiable)**

Notwithstanding any other provision of this contract, or any amendment or addendum(s) entered into contemporaneously or at a later time, the parties understand and agree that, (1) the State of Nebraska is a sovereign state and its authority to contract is therefore subject to limitation by the State's Constitution, statutes, common law, and regulation; (2) this contract will be interpreted and enforced under the laws of the State of Nebraska; (3) any action to enforce the provisions of this agreement must be brought in the State of Nebraska per state law; (4) the person signing this contract on behalf of the State of Nebraska does not have the authority to waive the State's sovereign immunity, statutes, common law, or regulations; (5) the indemnity, limitation of liability, remedy, and other similar provisions of the final contract, if any, are entered into subject to the State's Constitution, statutes, common law, regulations, and sovereign immunity; and, (6) all terms and conditions of the final contract, including but not limited to the clauses concerning third party use, licenses, warranties, limitations of liability, governing law and venue, usage verification, indemnity, liability, remedy or other similar provisions of the final contract are entered into specifically subject to the State's Constitution, statutes, common law, regulations, and sovereign immunity.

The Parties must comply with all applicable local, state, and federal laws, ordinances, rules, orders, and regulations.

**E. DISCOUNTS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Prices quoted shall be inclusive of ALL trade discounts. Cash discount terms of less than thirty (30) days will not be considered as part of the proposal. Cash discount periods will be computed from the date of receipt of a properly executed claim voucher or the date of completion of delivery of all items in a satisfactory condition, whichever is later.

**F. PRICES**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
		JL	<b>See page 14 of Technical Proposal for alternative/ comments.</b>

Prices quoted shall be net, including transportation and delivery charges fully prepaid by the bidder, F.O.B. destination named in the Request for Proposal. No additional charges will be allowed for packing, packages, or partial delivery costs. When an arithmetic error has been made in the extended total, the unit price will govern.

All prices, costs, and terms and conditions submitted in the proposal shall remain fixed and valid commencing on the opening date of the proposal until the contract terminates or expires.

The State reserves the right to deny any requested price increase. No price increases are to be billed to any State Agencies prior to written amendment of the contract by the parties.

The State will be given full proportionate benefit of any decreases for the term of the contract.

**G. BEGINNING OF WORK & SUSPENSION OF SERVICES**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The bidder shall not commence any billable work until a valid contract has been fully executed by the State and the successful Contractor. The Contractor will be notified in writing when work may begin.

The State may, at any time and without advance notice, require the Contractor to suspend any or all performance or deliverables provided under this Contract. In the event of such suspension, the Contract Manager or POC, or their designee, will issue a written order to stop work. The written order will specify which activities are to be immediately suspended and the reason(s) for the suspension. Upon receipt of such order, the Contractor shall immediately comply with its terms and take all necessary steps to mitigate and eliminate the incurrence of costs allocable to the work affected by the order during the period of suspension. The suspended performance or deliverables may only resume when the State provides the Contractor with written notice that such performance or deliverables may resume, in whole or in part.

**H. AMENDMENT**

This Contract may be amended in writing, within scope, upon the agreement of both parties.

**I. CHANGE ORDERS OR SUBSTITUTIONS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The State and the Contractor, upon the written agreement, may make changes to the contract within the general scope of the Request for Proposal. Changes may involve specifications, the quantity of work, or such other items as the State may find necessary or desirable. Corrections of any deliverable, service, or work required pursuant to the

contract shall not be deemed a change. The Contractor may not claim forfeiture of the contract by reasons of such changes.

The Contractor shall prepare a written description of the work required due to the change and an itemized cost sheet for the change. Changes in work and the amount of compensation to be paid to the Contractor shall be determined in accordance with applicable unit prices if any, a pro-rated value, or through negotiations. The State shall not incur a price increase for changes that should have been included in the Contractor's proposal, were foreseeable, or result from difficulties with or failure of the Contractor's proposal or performance.

No change shall be implemented by the Contractor until approved by the State, and the Contract is amended to reflect the change and associated costs, if any. If there is a dispute regarding the cost, but both parties agree that immediate implementation is necessary, the change may be implemented, and cost negotiations may continue with both Parties retaining all remedies under the contract and law.

**\*\*\*Contractor will not substitute any item that has been awarded without prior written approval of NDEE\*\*\***

**J. RECORD OF VENDOR PERFORMANCE**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The State may document the vendor's performance, which may include, but is not limited to, the customer service provided by the vendor, the ability of the vendor, the skill of the vendor, and any instance(s) of products or services delivered or performed which fail to meet the terms of the purchase order, contract, and/or Request for Proposal specifications. In addition to other remedies and options available to the State, the State may issue one or more notices to the vendor outlining any issues the State has regarding the vendor's performance for a specific contract ("Vendor Performance Notice"). The State may also document the Vendor's performance in a report, which may or may not be provided to the vendor ("Vendor Improvement Request"). The Vendor shall respond to any Vendor Performance Notice or Vendor Improvement Request in accordance with such notice or request. At the sole discretion of the State, such Vendor Performance Notices and Vendor Improvement Requests may be placed in the State's records regarding the vendor and may be considered by the State and held against the vendor in any future contract or award opportunity.

**K. CORRECTIVE ACTION PLAN**

If Contractor is failing to meet the Scope of Work, in whole or in part, the State may require the Contractor to complete a corrective action plan ("CAP"). The State will identify issues with the Contractor's performance and will set a deadline for the CAP to be provided. The Contractor must provide a written response to each identified issue and what steps the Contractor will take to resolve each issue, including the timeline(s) for resolution. If the Contractor fails to adequately provide the CAP in accordance with this section, fails to adequately resolve the issues described in the CAP, or fails to resolve the issues described in the CAP by the relevant deadline, the State may withhold payments and exercise any legal remedy available.

**L. NOTICE OF POTENTIAL CONTRACTOR BREACH**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

If Contractor breaches the contract or anticipates breaching the contract, the Contractor shall immediately give written notice to the State. The notice shall explain the breach or potential breach, a proposed cure, and may include a request for a waiver of the breach if so desired. The State may, in its discretion, temporarily or permanently waive the breach. By granting a waiver, the State does not forfeit any rights or remedies to which the State is entitled by law or

equity, or pursuant to the provisions of the contract. Failure to give immediate notice, however, may be grounds for denial of any request for a waiver of a breach.

**M. BREACH**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			Please expand the options for delivering notice to include electronic mail

Either Party may terminate the contract, in whole or in part, if the other Party breaches its duty to perform its obligations under the contract in a timely and proper manner. Termination requires written notice of default and a thirty (30) calendar day (or longer at the non-breaching Party's discretion considering the gravity and nature of the default) cure period. Said notice shall be delivered by email to the contractor's point of contact with acknowledgement from the contractor, Certified Mail - Return Receipt Requested, or in person with proof of delivery. Allowing time to cure a failure or breach of contract does not waive the right to immediately terminate the contract for the same or different contract breach which may occur at a different time. In case of default of the Contractor, the State may contract the service from other sources and hold the Contractor responsible for any excess cost occasioned thereby.

The State's failure to make payment shall not be a breach, and the Contractor shall retain all available statutory remedies and protections.

**N. NON-WAIVER OF BREACH**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			


The acceptance of late performance with or without objection or reservation by a Party shall not waive any rights of the Party nor constitute a waiver of the requirement of timely performance of any obligations remaining to be performed.

**O. SEVERABILITY**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

If any term or condition of the contract is declared by a court of competent jurisdiction to be illegal or in conflict with any law, the validity of the remaining terms and conditions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the contract did not contain the provision held to be invalid or illegal.

**P. INDEMNIFICATION**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			

**1. GENERAL**

The Contractor agrees to defend, indemnify, and hold harmless the State and its employees, volunteers, agents, and its elected and appointed officials (“the indemnified parties”) from and against any and all third party claims, liens, demands, damages, liability, actions, causes of action, losses, judgments, costs, and expenses of every nature, including investigation costs and expenses, settlement costs, and attorney fees and expenses (“the claims”), sustained or asserted against the State for personal injury, death, or property loss or damage, arising out of, resulting from, or attributable to the willful misconduct, negligence, error, or omission of the Contractor, its employees, Subcontractors, consultants, representatives, and agents, resulting from this contract, except to the extent such Contractor liability is attenuated by any action of the State which directly and proximately contributed to the claims.

**2. INTELLECTUAL PROPERTY**

The Contractor agrees it will, at its sole cost and expense, defend, indemnify, and hold harmless the indemnified parties from and against any and all claims, to the extent such claims arise out of, result from, or are attributable to, the actual or alleged infringement or misappropriation of any patent, copyright, trade secret, trademark, or confidential information of any third party by the Contractor or its employees, Subcontractors, consultants, representatives, and agents; provided, however, the State gives the Contractor prompt notice in writing of the claim. The Contractor may not settle any infringement claim that will affect the State’s use of the Licensed Software without the State’s prior written consent, which consent may be withheld for any reason.

If a judgment or settlement is obtained or reasonably anticipated against the State’s use of any intellectual property for which the Contractor has indemnified the State, the Contractor shall, at the Contractor’s sole cost and expense, promptly modify the item or items which were determined to be infringing, acquire a license or licenses on the State’s behalf to provide the necessary rights to the State to eliminate the infringement, or provide the State with a non-infringing substitute that provides the State the same functionality. At the State’s election, the actual or anticipated judgment may be treated as a breach of warranty by the Contractor, and the State may receive the remedies provided under this Request for Proposal.

**3. PERSONNEL**

The Contractor shall, at its expense, indemnify and hold harmless the indemnified parties from and against any claim with respect to withholding taxes, worker’s compensation, employee benefits, or any other claim, demand, liability, damage, or loss of any nature relating to any of the personnel, including subcontractor’s and their employees, provided by the Contractor.

**4. SELF-INSURANCE**

The State of Nebraska is self-insured for any loss and purchases excess insurance coverage pursuant to Neb. Rev. Stat. § 81-8,239.01. If there is a presumed loss under the provisions of this agreement, Contractor may file a claim with the Office of Risk Management pursuant to Neb. Rev. Stat. §§ 81-8,239.01 to 81-8,306 for review by the State Claims Board. The State retains all rights and immunities under the State Miscellaneous (Neb. Rev. Stat. § 81-8,294), Tort (Neb. Rev. Stat. § 81-8,209), and Contract Claim Acts (Neb. Rev. Stat. § 81-8,302), as outlined in state law and accepts liability under this agreement only to the extent provided by law.

**5. ALL REMEDIES AT LAW**

Nothing in this agreement shall be construed as an indemnification by one Party of the other for liabilities of a Party or third parties for property loss or damage or death or personal injury arising out of and during the performance of this contract. Any liabilities or claims for property loss or damages or for death or personal injury by a Party or its agents, employees, contractors or assigns or by third persons, shall be determined according to applicable law.



6. The Parties acknowledge that Attorney General for the State of Nebraska is required by statute to represent the legal interests of the State, and that any provision of this indemnity clause is subject to the statutory authority of the Attorney General.

**Q. ATTORNEY'S FEES**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

In the event of any litigation, appeal, or other legal action to enforce any provision of the contract, the Parties agree to pay all expenses of such action, as permitted by law and if ordered by the court, including attorney's fees and costs, if the other Party prevails.

**R. ASSIGNMENT, SALE, OR MERGER**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Either Party may assign the contract upon mutual written agreement of the other Party. Such agreement shall not be unreasonably withheld.

The Contractor retains the right to enter into a sale, merger, acquisition, internal reorganization, or similar transaction involving Contractor's business. Contractor agrees to cooperate with the State in executing amendments to the contract to allow for the transaction. If a third party or entity is involved in the transaction, the Contractor will remain responsible for performance of the contract until such time as the person or entity involved in the transaction agrees in writing to be contractually bound by this contract and perform all obligations of the contract.

**S. CONTRACTING WITH OTHER NEBRASKA POLITICAL SUBDIVISIONS OF THE STATE OR ANOTHER STATE**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The Contractor may, but shall not be required to, allow agencies, as defined in Neb. Rev. Stat. § 81-145(3), to use this contract. The terms and conditions, including price, of the contract may not be amended. The State shall not be contractually obligated or liable for any contract entered into pursuant to this clause. A listing of Nebraska political subdivisions may be found at the website of the Nebraska Auditor of Public Accounts.

The Contractor may, but shall not be required to, allow other states, agencies or divisions of other states, or political subdivisions of other states to use this contract. The terms and conditions, including price, of this contract shall apply to any such contract, but may be amended upon mutual consent of the Parties. The State of Nebraska shall not be contractually or otherwise obligated or liable under any contract entered into pursuant to this clause. The State shall be notified if a contract is executed based upon this contract.

**T. FORCE MAJEURE**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Neither Party shall be liable for any costs or damages, or for default resulting from its inability to perform any of its obligations under the contract due to a natural or manmade event outside the control and not the fault of the affected Party ("Force Majeure Event") that was not foreseeable at the time the Contract was executed. The Party so affected shall immediately make a written request for relief to the other Party and shall have the burden of proof to justify the request. The other Party may grant the relief requested; relief may not be unreasonably withheld. Labor disputes with the impacted Party's own employees will not be considered a Force Majeure Event.

**U. CONFIDENTIALITY**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

All materials and information provided by the Parties or acquired by a Party on behalf of the other Party shall be regarded as confidential information. All materials and information provided or acquired shall be handled in accordance with federal and state law, and ethical standards. Should said confidentiality be breached by a Party, the Party shall notify the other Party immediately of said breach and take immediate corrective action.

It is incumbent upon the Parties to inform their officers and employees of the penalties for improper disclosure imposed by the Privacy Act of 1974, 5 U.S.C. 552a. Specifically, 5 U.S.C. 552a (i)(1), which is made applicable by 5 U.S.C. 552a (m)(1), provides that any officer or employee, who by virtue of his/her employment or official position has possession of or access to agency records which contain individually identifiable information, the disclosure of which is prohibited by the Privacy Act or regulations established thereunder, and who knowing that disclosure of the specific material is prohibited, willfully discloses the material in any manner to any person or agency not entitled to receive it, shall be guilty of a misdemeanor and fined not more than \$5,000.

**V. EARLY TERMINATION**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The contract may be terminated as follows:

1. The State and the Contractor, by mutual written agreement, may terminate the contract, in whole or in part, at any time.
2. The State, in its sole discretion, may terminate the contract, in whole or in part, for any reason upon thirty (30) calendar day's written notice to the Contractor. Such termination shall not relieve the Contractor of warranty or other service obligations incurred under the terms of the contract. In the event of termination, the Contractor shall be entitled to payment, determined on a pro rata basis, for products or services satisfactorily performed or provided.
3. The State may terminate the contract, in whole or in part, immediately for the following reasons:

- a. if directed to do so by statute,
- b. Contractor has made an assignment for the benefit of creditors, has admitted in writing its inability to pay debts as they mature, or has ceased operating in the normal course of business,
- c. a trustee or receiver of the Contractor or of any substantial part of the Contractor's assets has been appointed by a court,
- d. fraud, misappropriation, embezzlement, malfeasance, misfeasance, or illegal conduct pertaining to performance under the contract by its Contractor, its employees, officers, directors, or shareholders,
- e. an involuntary proceeding has been commenced by any Party against the Contractor under any one of the chapters of Title 11 of the United States Code and (i) the proceeding has been pending for at least sixty (60) calendar days; or (ii) the Contractor has consented, either expressly or by operation of law, to the entry of an order for relief; or (iii) the Contractor has been decreed or adjudged a debtor,
- f. a voluntary petition has been filed by the Contractor under any of the chapters of Title 11 of the United States Code,
- g. Contractor intentionally discloses confidential information,
- h. Contractor has or announces it will discontinue support of the deliverable; and,
- i. In the event funding is no longer available.

**W. CONTRACT CLOSEOUT**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			


Upon contract closeout for any reason the Contractor shall within 30 days, unless stated otherwise herein:

1. Transfer all completed or partially completed deliverables to the State,
2. Transfer ownership and title to all completed or partially completed deliverables to the State,
3. Return to the State all information and data, unless the Contractor is permitted to keep the information or data by contract or rule of law. Contractor may retain one copy of any information or data as required to comply with applicable work product documentation standards or as are automatically retained in the course of Contractor's routine back up procedures,
4. Cooperate with any successor Contactor, person or entity in the assumption of any or all of the obligations of this contract,
5. Cooperate with any successor Contactor, person or entity with the transfer of information or data related to this contract,
6. Return or vacate any state owned real or personal property; and,
7. Return all data in a mutually acceptable format and manner.

Nothing in this Section should be construed to require the Contractor to surrender intellectual property, real or personal property, or information or data owned by the Contractor for which the State has no legal claim.

### III. CONTRACTOR DUTIES

#### A. INDEPENDENT CONTRACTOR / OBLIGATIONS

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			

It is agreed that the Contractor is an independent contractor and that nothing contained herein is intended or should be construed as creating or establishing a relationship of employment, agency, or a partnership.

The Contractor is solely responsible for fulfilling the contract. The Contractor or the Contractor's representative shall be the sole point of contact regarding all contractual matters.

The Contractor shall secure, at its own expense, all personnel required to perform the services under the contract. The personnel the Contractor uses to fulfill the contract shall have no contractual or other legal relationship with the State; they shall not be considered employees of the State and shall not be entitled to any compensation, rights or benefits from the State, including but not limited to, tenure rights, medical and hospital care, sick and vacation leave, severance pay, or retirement benefits.

By-name personnel commitments made in the bidder's proposal shall not be changed without the prior written approval of the State. Replacement of these personnel, if approved by the State, shall be with personnel of equal or greater ability and qualifications.

All personnel assigned by the Contractor to the contract shall be employees of the Contractor or a subcontractor and shall be fully qualified to perform the work required herein. Personnel employed by the Contractor or a subcontractor to fulfill the terms of the contract shall remain under the sole direction and control of the Contractor or the subcontractor respectively.

With respect to its employees, the Contractor agrees to be solely responsible for the following:

1. Any and all pay, benefits, and employment taxes and/or other payroll withholding,
2. Any and all vehicles used by the Contractor's employees, including all insurance required by state law,
3. Damages incurred by Contractor's employees within the scope of their duties under the contract,
4. Maintaining Workers' Compensation and health insurance that complies with state and federal law and submitting any reports on such insurance to the extent required by governing law,
5. Determining the hours to be worked and the duties to be performed by the Contractor's employees; and,
6. All claims on behalf of any person arising out of employment or alleged employment (including without limit claims of discrimination alleged against the Contractor, its officers, agents, or subcontractors or subcontractor's employees).

If the Contractor intends to utilize any subcontractor, the subcontractor's level of effort, tasks, and time allocation should be clearly defined in the bidder's proposal. The Contractor shall agree that it will not utilize any subcontractors not specifically included in its proposal in the performance of the contract without the prior written authorization of the State.

The State reserves the right to require the Contractor to reassign or remove from the project any Contractor or subcontractor employee.

Contractor shall insure that the terms and conditions contained in any contract with a subcontractor does not conflict with the terms and conditions of this contract.

The Contractor shall include a similar provision, for the protection of the State, in the contract with any Subcontractor engaged to perform work on this contract.

**B. EMPLOYEE WORK ELIGIBILITY STATUS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The Contractor is required and hereby agrees to use a federal immigration verification system to determine the work eligibility status of employees physically performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program authorized by the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of an employee.

If the Contractor is an individual or sole proprietorship, the following applies:

1. The Contractor must complete the United States Citizenship Attestation Form, available on the Department of Administrative Services website at <https://das.nebraska.gov/materiel/docs/pdf/Individual%20or%20Sole%20Proprietor%20United%20States%20Attestation%20Form%20English%20and%20Spanish.pdf>
2. The completed United States Attestation Form should be submitted with the Request for Proposal response.
3. If the Contractor indicates on such attestation form that he or she is a qualified alien, the Contractor agrees to provide the US Citizenship and Immigration Services documentation required to verify the Contractor's lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.
4. The Contractor understands and agrees that lawful presence in the United States is required, and the Contractor may be disqualified or the contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. § 4-108.

**C. COMPLIANCE WITH CIVIL RIGHTS LAWS AND EQUAL OPPORTUNITY EMPLOYMENT / NONDISCRIMINATION (Nonnegotiable)**


The Contractor shall comply with all applicable local, state, and federal statutes and regulations regarding civil rights laws and equal opportunity employment. The Nebraska Fair Employment Practice Act prohibits Contractors of the State of Nebraska, and their Subcontractors, from discriminating against any employee or applicant for employment, with respect to hire, tenure, terms, conditions, compensation, or privileges of employment because of race, color, religion, sex, disability, marital status, or national origin (Neb. Rev. Stat. §§ 48-1101 to 48-1125). The Contractor guarantees compliance with the Nebraska Fair Employment Practice Act, and breach of this provision shall be regarded as a material breach of contract. The Contractor shall insert a similar provision in all Subcontracts for goods and services to be covered by any contract resulting from this Request for Proposal.

**D. COOPERATION WITH OTHER CONTRACTORS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Contractor may be required to work with or in close proximity to other contractors or individuals that may be working on same or different projects. The Contractor shall agree to cooperate with such other contractors or individuals and shall not commit or permit any act which may interfere with the performance of work by any other contractor or individual. Contractor is not required to compromise Contractor's intellectual property or proprietary information unless expressly required to do so by this contract.

**E. PERMITS, REGULATIONS, LAWS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			

The contract price shall include the cost of all royalties, licenses, permits, and approvals, whether arising from patents, trademarks, copyrights or otherwise, that are in any way involved in the contract. The Contractor shall obtain and pay for all royalties, licenses, and permits, and approvals necessary for the execution of the contract. The Contractor must guarantee that it has the full legal right to the materials, supplies, equipment, software, and other items used to execute this contract.

**F. OWNERSHIP OF INFORMATION AND DATA / DELIVERABLES**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			<b>See page 14 of Technical Proposal for alternative/ comments.</b>

The State shall have the unlimited right to publish, duplicate, use, and disclose all information and data developed or obtained by the Contractor on behalf of the State pursuant to this contract.

The State shall own and hold exclusive title to any deliverable developed as a result of this contract. Contractor shall have no ownership interest or title, and shall not patent, license, or copyright, duplicate, transfer, sell, or exchange, the design, specifications, concept, or deliverable.

**G. INSURANCE REQUIREMENTS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			<b>See page 15 of Technical Proposal for alternative/ comments.</b>

The Contractor shall throughout the term of the contract maintain insurance as specified herein and provide the State a current Certificate of Insurance/Acord Form (COI) verifying the coverage. The Contractor shall not commence work on the contract until the insurance is in place. If Contractor subcontracts any portion of the Contract the Contractor must, throughout the term of the contract, either:

1. Provide equivalent insurance for each subcontractor and provide a COI verifying the coverage for the subcontractor,
2. Require each subcontractor to have equivalent insurance and provide written notice to the State that the Contractor has verified that each subcontractor has the required coverage; or,
3. Provide the State with copies of each subcontractor's Certificate of Insurance evidencing the required coverage.

The Contractor shall not allow any Subcontractor to commence work until the Subcontractor has equivalent insurance. The failure of the State to require a COI, or the failure of the Contractor to provide a COI or require subcontractor insurance shall not limit, relieve, or decrease the liability of the Contractor hereunder.

In the event that any policy written on a claims-made basis terminates or is canceled during the term of the contract or within (one) (1) year of termination or expiration of the contract, the contractor shall obtain an extended discovery

or reporting period, or a new insurance policy, providing coverage required by this contract for the term of the contract and (one) (1) year following termination or expiration of the contract.

If by the terms of any insurance a mandatory deductible is required, or if the Contractor elects to increase the mandatory deductible amount, the Contractor shall be responsible for payment of the amount of the deductible in the event of a paid claim.

Notwithstanding any other clause in this Contract, the State may recover up to the liability limits of the insurance policies required herein.

**1. WORKERS' COMPENSATION INSURANCE**

The Contractor shall take out and maintain during the life of this contract the statutory Workers' Compensation and Employer's Liability Insurance for all of the contractors' employees to be engaged in work on the project under this contract and, in case any such work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees to be engaged in such work. This policy shall be written to meet the statutory requirements for the state in which the work is to be performed, including Occupational Disease. **The policy shall include a waiver of subrogation in favor of the State. The COI shall contain the mandatory COI subrogation waiver language found hereinafter.** The amounts of such insurance shall not be less than the limits stated hereinafter. For employees working in the State of Nebraska, the policy must be written by an entity authorized by the State of Nebraska Department of Insurance to write Workers' Compensation and Employer's Liability Insurance for Nebraska employees.

**2. COMMERCIAL GENERAL LIABILITY INSURANCE AND COMMERCIAL AUTOMOBILE LIABILITY INSURANCE**

The Contractor shall take out and maintain during the life of this contract such Commercial General Liability Insurance and Commercial Automobile Liability Insurance as shall protect Contractor and any Subcontractor performing work covered by this contract from claims for damages for bodily injury, including death, as well as from claims for property damage, which may arise from operations under this contract, whether such operation be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall not be less than limits stated hereinafter.

The Commercial General Liability Insurance shall be written on an **occurrence basis**, and provide Premises/Operations, Products/Completed Operations, Independent Contractors, Personal Injury, and Contractual Liability coverage. **The policy shall include the State, and others as required by the contract documents, as Additional Insured(s). This policy shall be primary, and any insurance or self-insurance carried by the State shall be considered secondary and non-contributory. The COI shall contain the mandatory COI liability waiver language found hereinafter.** The Commercial Automobile Liability Insurance shall be written to cover all Owned, Non-owned, and Hired vehicles.

<b>REQUIRED INSURANCE COVERAGE</b>	
<b>COMMERCIAL GENERAL LIABILITY</b>	
General Aggregate	\$2,000,000
Products/Completed Operations Aggregate	\$2,000,000
Personal/Advertising Injury	\$1,000,000 per occurrence
Bodily Injury/Property Damage	\$1,000,000 per occurrence
Medical Payments	\$10,000 any one person
Damage to Rented Premises (Fire)	\$300,000 each occurrence
Contractual	Included
XCU Liability (Explosion, Collapse, and Underground Damage)	Included
Independent Contractors	Included
Abuse & Molestation	Included
<b>WORKER'S COMPENSATION</b>	
Employers Liability Limits	\$500K/\$500K/\$500K
Statutory Limits- All States	Statutory - State of Nebraska
Voluntary Compensation	Statutory
<b>COMMERCIAL AUTOMOBILE LIABILITY</b>	
Bodily Injury/Property Damage	\$1,000,000 combined single limit
Include All Owned, Hired & Non-Owned Automobile liability	Included
Motor Carrier Act Endorsement	Where Applicable
<b>UMBRELLA/EXCESS LIABILITY</b>	
Over Primary Insurance	\$5,000,000 per occurrence
<b>PROFESSIONAL LIABILITY</b>	
All Other Professional Liability (Errors & Omissions)	\$1,000,000 Per Claim / Aggregate
<b>COMMERCIAL CRIME</b>	
Crime/Employee Dishonesty Including 3rd Party Fidelity	\$1,000,000
<b>MANDATORY COI SUBROGATION WAIVER LANGUAGE</b>	
"Workers' Compensation policy shall include a waiver of subrogation in favor of the State of Nebraska."	
<b>MANDATORY COI LIABILITY WAIVER LANGUAGE</b>	
"Commercial General Liability & Commercial Automobile Liability policies shall name the State of Nebraska as an Additional Insured and the policies shall be primary and any insurance or self-insurance carried by the State shall be considered secondary and non-contributory as additionally insured."	

**3. EVIDENCE OF COVERAGE**

The Contractor shall furnish the Contract Manager, via email, with a certificate of insurance coverage complying with the above requirements prior to beginning work at:

Nebraska Department of Environment and Energy  
 Attn: NDEE c/o Douglas Barry  
 RFP # 6897 Z1  
 email: douglas.barry@nebraska.gov

Nebraska Department of Environment and Energy  
 245 Fallbrook Avenue, Suite 100  
 Lincoln, NE 68521

These certificates or the cover sheet shall reference the RFP number, and the certificates shall include the name of the company, policy numbers, effective dates, dates of expiration, and amounts and types of coverage afforded. If the State is damaged by the failure of the Contractor to maintain such insurance, then the Contractor shall be responsible for all reasonable costs properly attributable thereto.

Reasonable notice of cancellation of any required insurance policy must be submitted to the contract manager as listed above when issued and a new coverage binder shall be submitted immediately to ensure no break in coverage.

**4. DEVIATIONS**

The insurance requirements are subject to limited negotiation. Negotiation typically includes, but is not necessarily limited to, the correct type of coverage, necessity for Workers' Compensation, and the type of automobile coverage carried by the Contractor.



**H. ANTITRUST**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The Contractor hereby assigns to the State any and all claims for overcharges as to goods and/or services provided in connection with this contract resulting from antitrust violations which arise under antitrust laws of the United States and the antitrust laws of the State.

**I. CONFLICT OF INTEREST**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

By submitting a proposal, bidder certifies that no relationship exists between the bidder and any person or entity which either is, or gives the appearance of, a conflict of interest related to this Request for Proposal or project.

Bidder further certifies that bidder will not employ any individual known by bidder to have a conflict of interest nor shall bidder take any action or acquire any interest, either directly or indirectly, which will conflict in any manner or degree with the performance of its contractual obligations hereunder or which creates an actual or appearance of conflict of interest.

If there is an actual or perceived conflict of interest, bidder shall provide with its proposal a full disclosure of the facts describing such actual or perceived conflict of interest and a proposed mitigation plan for consideration. The State will then consider such disclosure and proposed mitigation plan and either approve or reject as part of the overall bid evaluation.

**J. SITE RULES AND REGULATIONS**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The Contractor shall use its best efforts to ensure that its employees, agents, and Subcontractors comply with site rules and regulations while on State premises. If the Contractor must perform on-site work outside of the daily operational hours set forth by the State, it must make arrangements with the State to ensure access to the facility and the equipment has been arranged. No additional payment will be made by the State on the basis of lack of access, unless the State fails to provide access as agreed to in writing between the State and the Contractor.

**K. ADVERTISING**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

The Contractor agrees not to refer to the contract award in advertising in such a manner as to state or imply that the company or its goods or services are endorsed or preferred by the State. Any publicity releases pertaining to the project shall not be issued without prior written approval from the State.

**L. DISASTER RECOVERY/BACK UP PLAN**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
		JL	See page 15 of Technical Proposal for alternative/ comments.

The Contractor shall have a disaster recovery and back-up plan, of which a copy should be provided upon request to the State, which includes, but is not limited to equipment, personnel, facilities, and transportation, in order to continue delivery of goods and services as specified under the specifications in the contract in the event of a disaster.

**M. DRUG POLICY**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Contractor certifies it maintains a drug free workplace environment to ensure worker safety and workplace integrity. Contractor agrees to provide a copy of its drug free workplace policy at any time upon request by the State.

**N. WARRANTY**

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Despite any clause to the contrary, the Contractor represents and warrants that its services hereunder shall be performed by competent personnel and shall be of professional quality consistent with generally accepted industry standards for the performance of such services and shall comply in all respects with the requirements of this Agreement. For any breach of this warranty, the Contractor shall, for a period of ninety (90) days from performance of the service, perform the services again, at no cost to the State, or if Contractor is unable to perform the services as warranted, Contractor shall reimburse the State all fees paid to Contractor for the unsatisfactory services. The rights and remedies of the parties under this warranty are in addition to any other rights and remedies of the parties provided by law or equity, including, without limitation actual damages, and, as applicable and awarded under the law, to a prevailing party, reasonable attorneys' fees and costs.

**O. TIME IS OF THE ESSENCE**

Time is of the essence with respect to Contractor's performance and deliverables pursuant to this Contract.

## IV. PAYMENT

### A. PROHIBITION AGAINST ADVANCE PAYMENT (Nonnegotiable)

Pursuant to Neb. Rev. Stat. § 81-2403, “[n]o goods or services shall be deemed to be received by an agency until all such goods or services are completely delivered and finally accepted by the agency.”

### B. TAXES (Nonnegotiable)

The State is not required to pay taxes and assumes no such liability as a result of this Request for Proposal. The Contractor may request a copy of the Nebraska Department of Revenue, Nebraska Resale or Exempt Sale Certificate for Sales Tax Exemption, Form 13 for their records. Any property tax payable on the Contractor's equipment which may be installed in a state-owned facility is the responsibility of the Contractor.

### C. INVOICES

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			Request a reduction from 45 to 30 days

Invoices for payments must be submitted by the Contractor to the agency requesting the services with sufficient detail to support payment. Invoices shall be submitted no more than monthly to [ndee.accounting@nebraska.gov](mailto:ndee.accounting@nebraska.gov). The terms and conditions included in the Contractor's invoice shall be deemed to be solely for the convenience of the parties. No terms or conditions of any such invoice shall be binding upon the State, and no action by the State, including without limitation the payment of any such invoice in whole or in part, shall be construed as binding or estopping the State with respect to any such term or condition, unless the invoice term or condition has been previously agreed to by the State as an amendment to the contract. **The State shall have forty-five (45) calendar days to pay after a valid and accurate invoice is received by the State.**

### D. INSPECTION AND APPROVAL

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
JL			

Final inspection and approval of all work required under the contract shall be performed by the designated State officials.

The State and/or its authorized representatives shall have the right to enter any premises where the Contractor or Subcontractor duties under the contract are being performed, and to inspect, monitor or otherwise evaluate the work being performed. All inspections and evaluations shall be at reasonable times and in a manner that will not unreasonably delay work.

### E. PAYMENT (Nonnegotiable)


Payment will be made by the responsible agency in compliance with the State of Nebraska Prompt Payment Act (See Neb. Rev. Stat. § 81-2403). The State may require the Contractor to accept payment by electronic means such as ACH deposit. In no event shall the State be responsible or liable to pay for any goods and services provided by the Contractor prior to the Effective Date of the contract, and the Contractor hereby waives any claim or cause of action for any such services.

### F. LATE PAYMENT (Nonnegotiable)

The Contractor may charge the responsible agency interest for late payment in compliance with the State of Nebraska Prompt Payment Act (See Neb. Rev. Stat. §§ 81-2401 through 81-2408).

**G. SUBJECT TO FUNDING / FUNDING OUT CLAUSE FOR LOSS OF APPROPRIATIONS (Nonnegotiable)**  
 The State's obligation to pay amounts due on the Contract for fiscal years following the current fiscal year is contingent upon legislative appropriation of funds. Should said funds not be appropriated, the State may terminate the contract with respect to those payments for the fiscal year(s) for which such funds are not appropriated. The State will give the Contractor written notice thirty (30) calendar days prior to the effective date of termination. All obligations of the State to make payments after the termination date will cease. The Contractor shall be entitled to receive just and equitable compensation for any authorized work which has been satisfactorily completed as of the termination date. In no event shall the Contractor be paid for a loss of anticipated profit.

**H. RIGHT TO AUDIT (First Paragraph is Nonnegotiable)**  
 The State shall have the right to audit the Contractor's performance of this contract upon a thirty (30) days' written notice. Contractor shall utilize generally accepted accounting principles, and shall maintain the accounting records, and other records and information relevant to the contract (Information) to enable the State to audit the contract. (Neb. Rev. Stat. § 84-304 et seq.) The State may audit, and the Contractor shall maintain, the Information during the term of the contract and for a period of five (5) years after the completion of this contract or until all issues or litigation are resolved, whichever is later. The Contractor shall make the Information available to the State at Contractor's place of business or a location acceptable to both Parties during normal business hours. If this is not practical or the Contractor so elects, the Contractor may provide electronic or paper copies of the Information. The State reserves the right to examine, make copies of, and take notes on any Information relevant to this contract, regardless of the form or the Information, how it is stored, or who possesses the Information. Under no circumstance will the Contractor be required to create or maintain documents not kept in the ordinary course of contractor's business operations, nor will contractor be required to disclose any information, including but not limited to product cost data, which is confidential or proprietary to contractor.

Accept (Initial)	Reject (Initial)	Reject & Provide Alternative within RFP Response (Initial)	NOTES/COMMENTS:
			

The Parties shall pay their own costs of the audit unless the audit finds a previously undisclosed overpayment by the State. If a previously undisclosed overpayment exceeds three percent (3%) of the total contract billings, or if fraud, material misrepresentations, or non-performance is discovered on the part of the Contractor, the Contractor shall reimburse the State for the total costs of the audit. Overpayments and audit costs owed to the State shall be paid within ninety (90) days of written notice of the claim. The Contractor agrees to correct any material weaknesses or condition found as a result of the audit.

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# APPENDIX B

## Resumes

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# John Culbertson

## Principal

### EXPERTISE

Strategic/Master Planning  
Financial Analysis & Rate Development  
Procurement Assistance & Contract Negotiation  
Waste & Recycling Composition Analysis  
Recycling Program Development

### EXPERIENCE

29 Years in the Industry  
19 Years with the Firm  
100+ Managed Consulting Engagements for municipalities

### CREDENTIALS

B. A. Economics, Yale University  
SWANA Certified Municipal Solid Waste Management Systems Manager

### AFFILIATIONS

Technical Advisor for Waste Management Industry, Gerson Lehman Group Council of Advisors, 2004-2016  
Member, Solid Waste Association of North America, 2000-Present

John Culbertson is the Vice President and Co-founder of MSW Consultants, a management consulting firm specializing in the waste and recycling industry. A Yale graduate with a degree in economics, John has an extensive background in solid waste planning and financial analysis and statistics. He has dedicated career to providing waste management and recycling consulting services to public, private, and institutional sector organizations in Florida and across the nation.

John's expertise encompasses all aspects of the waste management industry, including solid waste system planning and strategic analysis; financial analysis and system funding; procurement assistance and contract negotiation; collection efficiency and routing; transfer and long-haul logistics; MRF operations and efficiency; waste stream and waste generation analysis; and a wide range of information management and statistical analysis.

John is the architect of the firm's online market data repository and analytics platform, *WasteInsight.net*. He manages the firm's Orlando, Florida headquarters.

### WASTE CHARACTERIZATION EXPERIENCE

**Confidential Technology Developer – Military Dining Facility Food Waste Audit (2024):** Principal-in-Charge, Technical Advisor

**Confidential University – Food Service Waste Audits (2024):** Technical Advisor

**Vermont Department of Environmental Conservation – 2023 Statewide Waste Characterization Study (2024):** Principal-in-Charge and Technical Advisor – *Reference listed in the Technical Proposal.*

**Dow Chemical – ReNew Energy Bag Audits (2023):** Technical Advisor

**City of Spokane Valley, WA – Curbside Recycling Composition Audit (2023):** Technical Advisor

**Confidential Cruise Line – Shipboard Waste Generation & Composition Audit (2023):** Principal-in-Charge, Study Design, Technical Advisor

**Confidential Waste Processor – Multiple MSW-as-a-Feedstock Audits (2023):** Principal-in-Charge, Study Design, Technical Advisor

**Confidential Hotel & Conference Center – Waste, Recycling and Organics Audit (2023):** Study Design, Technical Advisor

**CalRecycle – Statewide MRF Residue Study in Support of SB 383 (2023):** Principal-in-Charge, Study Design – *Reference listed in the Technical Proposal.*

**New York City Department of Sanitation/Sims Municipal Recycling – 2023 Residential Waste, Paper, MGP and Organics Composition Study:** Principal-in-Charge, Study Design, and Technical Advisor

**City of Minneapolis, MN – Residential Refuse, Recycling and SSO Cart Audits (2022):** Principal-in-Charge, Study Design, Technical Advisor

**Pennsylvania Department of Environmental Protection – 2022 Statewide MRF Audits:** Principal-in-Charge, study design, and technical advisor

**Massachusetts Department of Environmental Protection – Bulky Waste Composition Study (2022):** Principal-in-Charge, Study Design, Technical Advisor



**City of Philadelphia Streets and Sanitation – Residential Waste and Recycling Composition Study (2021):** Principal-in-Charge, Study Design, Technical Advisor – *Reference listed in the Technical Proposal.*

**Pennsylvania Department of Environmental Protection – 2021 Statewide Waste Characterization Study:** Principal-in-Charge, Study Design, Technical Advisor

**Maryland Department of the Environment – 2017 Statewide Waste Composition Study:** Principal-in-Charge, Study Design, Technical Advisor

**Missouri Department of Natural Resources – Statewide Solid Waste Composition Study (2017):** Principal in charge, Study Design, Technical advisor

**City of Greeley, CO – Residential Waste Composition Study (2023):** Principal-in-Charge, Study Design, Technical Advisor

## GENERAL EXPERIENCE

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**City of Oviedo, FL – Commercial Franchise Administration Support (Ongoing):** Principal-in-Charge and Technical Advisor

**Ontario Co, NY – Landfill Alternatives Analysis (Ongoing):** Principal-in-Charge and Technical Advisor

**City of Newton, MA – Materials Management Plan (Ongoing):** Principal-in-Charge

**Orange County, FL – Recycling Cart Monitoring Program (Ongoing):** Principal-in-Charge, Project Support, Development, Administration, and Coordination.

**Town of Indian River Shores, FL – Collection Procurement Assistance (2024):** Principal-in-charge, Procurement Advisor

**Town of Front Royal, VA – Sanitation Cost/Rate Study (2024):** Principal-in-Charge, Financial advisor

**City and County of Denver, CO – Commercial Recycling Measurement Scoping (2024):** Technical Advisor

**Confidential Engineer – New England Disposal Market Study (2024):** Technical Advisor

**Chatham County, GA – Solid Waste Cost/Rate Study (2023):** Principal-in-Charge, Technical Advisor

**City of Miami Beach, FL – Commercial and Multi-family Collection Procurement Assistance (2023):** Principal-in-Charge, Procurement Advisor

**New York Department of Sanitation – Multi-family Building Set-out Measurement Study (2023):** Principal-in-Charge, Study Design, Technical Advisor

**City of Auburn, AL – Solid Waste Rate Study (2023):** Financial Advisor

**City of Kingsport, TN – Sanitation Study (2023):** Financial Advisor

**Confidential Oversight Board – Recyclables Processing Procurement Assistance (2023):** Principal-in-Charge, Procurement Advisor

**Bulloch County, GA – Solid Waste Cost/Rate Study (2022):** Principal-in-Charge, Technical Advisor

**City of Decatur, GA – Residential Capture Rate Study (2021):** Principal-in-Charge

**Liberty County, GA – Solid Waste Cost/Rate Study (2018):** Principal-in-Charge, Technical Advisor

**Massachusetts Department of Environmental Protection – Statewide Capacity Study (2018):** Principal-in-Charge, Technical Advisor





# Cynthia Mormile

## Sr. Project Manager

### EXPERTISE

Project Management  
Financial Analysis,  
Budgeting/Capital Planning  
Collections Analysis  
Facility Planning  
Waste Minimization &  
Sustainability  
Landfill & Recovery Facilities  
Operations

### EXPERIENCE

20 years serving the City of  
Columbia Public Works and  
Utilities Departments  
Successfully managed  
Collection, Bioreactor Landfill,  
Composting and Material  
Recovery Facility Operations  
Manages operations analyses,  
waste characterization, capture  
rate studies, cost of service,  
and rate study projects

### CREDENTIALS

B.S. Business Administration-  
Finance, Northeast Missouri  
State University  
MBA, William Woods  
University  
Engineering Coursework,  
University of Missouri -  
Columbia

### AFFILIATIONS

Member, Missouri Recycling  
Association (MORA)  
Member, Solid Waste  
Association of North America  
(SWANA), 1998-2007, 2010-  
Current

Cynthia Mormile has dedicated her career to being a resource to officials responsible for integrated solid waste management in governmental, institutional, and commercial entities.

Mrs. Mormile's experience encompasses all aspects of a vertically integrated collection, disposal, and recovery solid waste utility. She has the unique understanding of all facility operations, including planning and budgeting, personnel management, procurement/contracts, and capital projects; landfill operations, including regulatory compliance, heavy equipment, subtitle D, and bioreactor operation; collections, including rolling fleet and routing; and recovery, including waste analysis, minimization, and sustainability programs.

### PROJECT EXPERIENCE

#### Orange County, FL – Recycling Improvement Program (Ongoing)

The County was experiencing high contamination and resulting MRF load rejection and initiated a cart monitoring program to assess carts curbside and educate households for improving the quality of recyclables set out. Mrs. Mormile coordinates project phasing, staffing, and reporting and acts as liaison with County staff, subcontractors, and daily operations.

#### Vermont Department of Environmental Conservation (VT-DEC) – Waste Characterization Study (2024)

Mrs. Mormile is managing a statewide waste characterization study for the Vermont Department of Environmental Conservation that includes two seasons of MSW hand sorts, two seasons of C&D/Bulky Waste Characterization, MRF Residue hand sorts, and three surveys to gather data regarding Residential Food Scrap Management, Organics Transportation Management, and Direct-to-Broker Economic Recycling. *Reference listed in the Technical Proposal.*

#### Orange County, FL – GAP Analysis (2023)

Mrs. Mormile is managing the update of Orange County Utilities Solid Waste Division operational assessment and gap analysis. The project will identify current performance levels compared to the last analysis in 2010 and provide observations and recommendations for improvement.

#### Kingsport, TN – Sanitation Study (2023)

The city collects MSW and bulky for citizens and some nearby residents. This study, led by Mrs. Mormile, is establishing the cost of service and routing efficiency baseline to evaluate resumption of recyclables collection, alternatives to the bulky collection programs, and other possible improvements.

#### Union County, NC – Rate Study (2022)

Union County operates a C&D Landfill, MSW Transfer Station, Compost Facility, 5 remote residential waste and recycling centers (RWRC) and a central RWRC adjacent to the landfill. Mrs. Mormile is managing the project to include cost of service and rate design including development of availability fees to cover the operation of the RWRCs which have historically been heavily subsidized by the transfer station and landfill.



#### **Bulloch County, GA – Solid Waste Program Evaluation (2022)**

Mrs. Mormile is managing a program evaluation, cost of service, and alternative analysis study for Bulloch County. Services are provided through 22 unmanned locations for citizens to drop off MSW and yard waste. The County has a material recovery facility that has not been operated for a couple years which is included in the evaluation.

#### **Liberty County, GA – Curbside Service Feasibility Study (2022)**

Liberty County collects garbage and bulky wastes and recyclables for citizens in unincorporated areas via convenience centers. Mrs. Mormile is managing a study to evaluate provision of curbside garbage collection with associated consolidation considerations for the convenience centers.

#### **Sevier Solid Waste, Inc. (SSWI), TN – Solid Waste Consulting Services (2021)**

SSWI operates the only flow-control sourced MSW composting facility in the country, sending all MSW generated in Sevier County, TN through the biodigesters prior to landfilling remaining inerts. Mrs. Mormile managed a project to evaluate the operations and costs of SSWI as well as its owner members – Sevier County and the Cities of Gatlinburg, Pigeon Forge and Sevierville.

#### **Boston Mountain Solid Waste Management District, AR – Waste Reduction and Recycling Master Plan (2021)**

This northwest region of Arkansas desires to move forward recyclables, organics, and C&D diversion for the region. Mrs. Mormile managed the planning project through exploration and laying out feasible materials management expansion for the future of the region.

#### **Northwest Arkansas Council, AR – Benton County Regional Recycling Plan (2021)**

Mrs. Mormile managed the completion of a plan for Benton County to capitalize on the synergies of the planning process completed for the Boston Mountain Solid Waste District.

#### **Minnesota Pollution Control Agency, MN – C&D Waste Generation and Composition Study and Analysis (2019)**

Mrs. Mormile managed a project to characterize construction and demolition waste at C&D disposal facilities as well as quantify the amount of similar materials flowing through recycling and reuse operations. Mrs. Mormile conducted two weeklong seasons of characterization around the state, managing all aspects of the project, including an online survey. The results will be used for future program development in efforts to increase statewide diversion.

#### **Onondaga County Resource Recovery Authority, NY – C&D Characterization (2019)**

As part of a larger study, Mrs. Mormile conducted two seasons of C&D characterization at the OCRRA Ley Creek Transfer Station utilizing MSW Consultants' proprietary visual characterization volume-weight balancing app.

#### **Dakota County, MN – 5 Facility Waste Sorts (2019)**

The Dakota County Environmental Department wanted to learn the status of the diversion programs at five county facilities. Mrs. Mormile managed the project, coordinating sort activities and reporting for trash, recycling, and organics stream sorts at three County office/service complexes, a County campground, and an events center.

#### **Lincoln, NE – Waste Characterization Study (2018)**

Conducted a two-season waste characterization study of compacted MSW loads to establish a baseline prior to a cardboard ban at the landfill, then provide a characterization reflecting the impact of the ban. Mrs. Mormile managed the project, including field work, data analysis and reporting.

#### **State of Missouri Department of Natural Resource, MO – Waste Composition Study (2017)**

Mrs. Mormile managed the state's 2016-2017 Waste Composition Study, a process of sorting landfill and transfer station MSW load samples, visually characterizing non-MSW loads, analyzing the data and writing a summarizing report for use in state diversion projects. She also supervised the 2008 statewide waste composition study, the last time the study was completed.



# Joseph Vetrano, LEED AP

## Project Manager

### EXPERTISE

Extensive environmental experience in the management and design of sustainability programs and initiatives

Advancement of core environmental values and corporate excellence

### EXPERIENCE

23 Years in the Industry

8 Years with the Firm

200+ Diverse Projects

### CREDENTIALS

B.S. Biology/Marine Biology, Fairfield University

Post Graduate work, Endangered Habitats, California State University

### CERTIFICATIONS

Leadership in Energy & Environmental Design Accredited Professional (LEED AP)

Forty-Hour OSHA HAZWOPER Program, 29 CFR 1910.120.

Asbestos Inspector / Management Planner

IAQ/IEQ Mold & Bioaerosols Investigations Training Program

Joe Vetrano is an environmental professional with a diverse skill set that encompasses project management, strategic planning, recycling, zero waste systems design, environmental permitting, and contingency planning. He has conducted sustainability assessments, environmental compliance audits, property condition surveys, waste stream analyses, and environmental due diligence.

### PROJECT EXPERIENCE

#### State of New Hampshire Department of Environmental Services (DES) – Statewide Waste Composition Study (Ongoing)

Mr. Vetrano is serving as project manager and senior team member on the field data collection team, providing key logistics and field guidance during this two-season study, which will involve landfill and transfer stations throughout the State of New Hampshire.

#### Baltimore County, MD – Waste Characterization Studies (2022-2024)

Mr. Vetrano has been managing and serving as the field data collection manager of a series of ongoing studies for the County that are continuing to provide important input to the County's Solid Waste Master Plan, specific in reference to the presence of organics in the waste stream.

#### City of Philadelphia, PA – Waste Characterization and Recycling Studies (2018-2024)

Mr. Vetrano has been serving as the field data collection manager of a series of ongoing studies for the City that are continuing to provide important input to the City's Solid Waste Master Plan. Citywide representative sample collection routinely occurs at a permitted solid waste transfer station, and a single stream recyclable sorting facility, both located within the city.

#### Vermont Department of Environmental Conservation (VT-DEC) – Statewide Waste Composition Study (2024)

Mr. Vetrano served as a senior team member on the field data collection team, providing key logistics and field guidance during this two-season study, which covered landfill, transfer stations, and recycling MRFs throughout the State of Vermont. *Reference listed in the Technical Proposal.*

#### New York City, NY – Waste Characterization Study (2013-2023)

Mr. Vetrano recently served as a field data collection manager and sorting crew chief of multiple, comprehensive five-borough studies that have been providing important input to the City's understanding of its residential waste and recycling streams. Sample analysis occurred over multiple seasons in 2013, 2018, and 2023 and included intensive sorting of residential waste, traditional recyclables as metals, glass, plastic, and paper, as well as organics (yard and food wastes). *Reference listed in the Technical Proposal.*

#### Delaware Solid Waste Authority (DSWA) – Recycling Contamination Study (2022-2023)

Mr. Vetrano managed this project to identify and qualify contamination rates of major recycling haulers in the State of Delaware.



#### **Pennsylvania Department of Environmental Protection (PA DEP) – Statewide Waste Composition Study (2020-2021)**

Mr. Vetrano served as a senior team member on the field data collection team, providing key logistics and field guidance during this four-season study, which covered landfill, transfer stations, and recycling MRFs throughout the State of Pennsylvania. *Reference listed in the Technical Proposal.*

#### **Chittenden Solid Waste District (CSWD) of Vermont – Residential Waste Composition Study (2020)**

Mr. Vetrano managed this two-season project which characterized residential waste at the Casella Waste Systems Transfer Station in Williston, Vermont. MSW Consultants targeted representative communities in proportion to the volume each community contributed to the CSWD's overall waste stream.

#### **Solid Waste Authority of Central Ohio (SWACO) – 2018-2019 Waste Characterization Study**

Mr. Vetrano served as the project manager of field team operations on this four-season study, which serves to assess the composition of commercial and residential waste throughout the City of Columbus, Ohio, and the surrounding area.

#### **University of Massachusetts – Campus Waste System Evaluation (2019 and 2020)**

This project involves a project team charged with mapping the UMass waste system and identifying areas to increase waste diversion. Mr. Vetrano managed MSW Consultants' role in this multi-firm project, which involved the preparation of a waste, recycling, and organics sample and composition sorting plan for the university. Upon completion, waste characterization profiles were created for each campus building type.

#### **City of Lincoln, NE – Bluff Road Landfill Waste Composition Study (2018)**

This two-season, weeklong Waste Characterization Study was performed for City of Lincoln to assess the composition of multiple waste loads delivered to the Bluff Road Landfill by various vehicle types. Mr. Vetrano managed a team of four sorting staff for the purposes of sorting discrete samples of waste into 35 categories. Mr. Vetrano was responsible for training the sorting staff in characterization methods, site health and safety, as well as quality control of field data.

#### **City of Buffalo, NY – Waste Composition Study (2018)**

The City of Buffalo was in the process of completing an updated Comprehensive Recycling Analysis (CRA) for the city to comply with New York State Department of Environmental Conservation (NYSDEC) regulations. The last CRA was developed in 1995 and finalized in 1999. As part of the update to the CRA, the City of Buffalo engaged MSW Consultants to perform its first ever citywide Waste Characterization Study (WCS). Mr. Vetrano managed the Waste Composition Study portion of the project, developing the study design and sample collection strategy, leading the data collection effort, as well as drafting the report and offering critical inputs and baseline recycling system data needed for the CRA update.

#### **City of Austin, Department of Resource Recovery, TX – Citywide Waste Composition Study (2018)**

Mr. Vetrano trained three sort teams totaling 15 people as part of the first waste composition study for the City of Austin. Mr. Vetrano conducted training in material category definitions, as well as general health and safety during the fieldwork.

#### **CalRecycle, CA 2018 – Statewide Waste Characterization Study (2018)**

Mr. Vetrano served as a Field Team Leader on this comprehensive project that extended throughout the 2018 calendar year, encompassing characterization analysis, and waste hauler surveys at disposal facilities and businesses across California. *Reference listed in the Technical Proposal.*

#### **Maryland Department of the Environment (MDE) – Food Waste Reduction Technical Assistance (2018)**

Mr. Vetrano served as project manager on this USEPA-funded project for the MDE which assisted two organizations, a university, and a produce supplier, in assessing their food waste generation, recognizing how food waste could be reduced, and providing the tools to track reduction of food waste by utilizing concrete strategies customized for each facility.



# Natalee Mannion

## Analyst

### EXPERTISE

Project Management  
Program implementation and evaluation  
Business Development/Marketing  
Report Writing  
Data Analysis  
Office Management

### EXPERIENCE

14 years in the waste management and recycling industry.

### CREDENTIALS

BS, Biology, Mount Saint Mary's University, Emmitsburg, MD  
M.S. Environmental Studies, San Jose State University, San Jose, CA (Continuing Education)

Natalee has been in the industry for fourteen years, specializing in recycling and diversion program development and implementation; solid waste and zero waste planning; waste characterization analyses; and stormwater management. Having previously worked on the West Coast for both municipal government and private consulting firms, Natalee now works out of the Philadelphia area on behalf of MSW Consultants. She has worked with MSW Consultants for almost seven years as an accomplished analyst, working on a large variety of projects related to planning, operational, and financial analysis. Natalee works on projects for both private and public sector clients while specializing in leading the firm's waste characterization studies across the U.S. Many of her projects have been commissioned by clients looking to achieve sustainability goals involving zero waste, enhanced recycling and organics programs, responsible purchasing, and resource conservation.

### PROJECT EXPERIENCE

#### **New York City, NY – Waste Characterization Study (2017 & 2023)**

Serving as one of the Project Managers on this large scale, citywide waste and recycling study, assisting in overseeing sort operations, labor, budget, procurement, data analysis and quality assurance. *Reference listed in the Technical Proposal.*

#### **Covanta & Wheelabrator, MA – Waste Composition Study (2022)**

Served as Crew Chief for subcontract to perform waste sorts at WTE facilities across MA.

#### **Ontario County, NY – Waste Composition Study (2022)**

Acted as Project Manager/Field Supervisor and report writer for the waste composition study at the County's primary landfill that receives residential and commercial waste.

#### **Pennsylvania Department of Environmental Protection (PA-DEP) –Statewide Waste Characterization (2020-2022)**

Served as Project Manager/Field Supervisor for this project to characterize the MSW for Pennsylvania's residential and commercial/institutional statewide study. *Reference listed in the Technical Proposal.*

#### **Prince George's County, Maryland Environmental Service (MES) – Waste Composition Study (2021 2022)**

Served as Project Manager/Field Supervisor for the four-season waste composition study performed at the PG County landfill.

#### **The Recycling Partnership (TRP) and Prince George's County & MES, MD – Capture Rate Study (2022)**

Served as the Project Manager/Field Supervisor for the opportunity MSW Consultants brought forward to add-on a TRP recycling capture rate study to the County's four-season waste composition study.

#### **University of Kentucky, KY – Waste & Recycling Composition Study (2022)**

Served as Project Manager/Field Supervisor and lead report writer for a repeat of the University's waste composition study which included the add-on of a recycling capture rate study.



**CalRecycle, CA – Statewide Waste Composition Study (2021)**

Sort Crew Chief and data QA/QC for subcontract for landfill waste characterizations throughout northern and southern CA. *Reference listed in the Technical Proposal.*

**The Recycling Partnership (TRP) and City of Philadelphia, PA – Capture Rate Study, PA (2021)**

Field Supervisor/Sort Crew Chief and data analysis for a pre- and post-implementation study of the TRP/City recycling container tagging and monitoring program.

**The Recycling Partnership (TRP) and City of Newark, NJ – Residential Recycling Contamination Study (2019, 2021)**

Field Supervisor/Sort Crew Chief and data analysis for a pre- and post-implementation study of the City's recycling outreach program.

**Camden County, NJ – MRF Audits (2021)**

Project Manager and independent observer for a MRF run test including inspecting equipment pre- and post- test and sampling and sorting from residue ejection points.

**Howard County, MD – Waste Characterization Study (2019-2020)**

Field supervisor/sort crew chief and data analysis for residential recycling study.

**CalRecycle, CA – Statewide Waste Composition Study (2018-2019)**

Project manager, field supervisor/sort crew chief and data analysis for subcontract to audit disposal facilities and MRFs throughout CA.

**City of San Jose, CA – MRF Residual Composition Study (2019)**

Project manager, field supervisor and data analysis.

**Solid Waste Authority of Central Ohio (SWACO) – Waste Characterization Study (2018-2019)**

Field Supervisor/Sort Crew Chief, data analysis.

**University of Kentucky, KY – Waste Composition Study (2018-2019)**

Project manager, sort crew chief, data analysis and lead report writer for the University's comprehensive study of all campus buildings including the football stadium, medical complexes, laboratories, dormitories, offices, and classrooms.

**Temple University, PA – Waste Composition Study (2018)**

Field supervisor and data analysis for a subcontract to perform the University's waste composition study.

**University of Pennsylvania, PA – Local Business Audit (2018)**

Field supervisor and data analysis for a subcontract to perform a waste composition of a UPenn building and surrounding retail and restaurant establishments.

**Confidential Client, Philadelphia, Miami, Portland, Vancouver, BC – Waste Characterization and Feedstock Study (2018)**

Fieldwork, data analysis, and report writing for study of feedstock for energy and building products.

**Confidential Client, NE – Waste Composition and Capture Rate Study (2018)**

Field supervisor during study to analyze pre- and post-implementation impacts of a local film recycling program on MRF inputs and outputs.

**New York City Transit Authority, NY – Waste Composition Study (2018)**

Sort Crew Chief.

**Maryland Department of the Environment, MD – Statewide Waste Characterization (2017)**

Sort Crew Chief, site logistics coordination, data analysis and report writing.



## Carl Muth

### Project Manager

#### EXPERTISE

Market Research  
Data Analysis  
Product Development  
Microsoft Office  
Adobe Creative Suite

#### EXPERIENCE

7 Years in the Industry  
7 Years with the Firm  
Multiple Consulting  
Engagements for municipalities

#### CREDENTIALS

B.A. Interdisciplinary Studies,  
University of Central Florida

#### AFFILIATIONS

Young Professionals Group,  
Solid Waste Association of  
North America (SWANA)

Carl Muth is a project manager and an expert in the waste and recycling industry. Blending his long-held environmental interests with a unique academic background in social sciences, communications, and marketing, Carl joined MSW Consultants in 2017, and specializes in data analysis, research, and field operations planning.

His early work as a crew chief involved hands-on experience, training and leading field teams in data collection and sort methodology and instilling in them a sense of purpose and responsibility for the project. He has planned and executed customized operational research initiatives. He has been instrumental in shaping and field-testing the firm's recycling cart monitoring protocols, data management tools, and health and safety practices. As a project manager, Carl has led a variety of projects, liaising with clients to ensure goals are being met in the manner the client envisioned; creating budgets, study designs, and methodologies; assembling teams; coordinating schedules, equipment, facilities, and tasks; and training crew chiefs or the field team directly. He is accomplished in translating raw data into accessible language and visual presentation for different levels of end users and serves as the lead author on project deliverables.

Carl is the architect of a proprietary app for a large-scale project to provide data to the City of New York Department of Sanitation. This app allows for the recording and live updating of not only standard waste generation and setout measurements but further allows for the data collection of distinct characteristics such as square footage and location in relationship to generating buildings. Paramount to the design was ease-of-use for staff performing field collection and flexibility of data for later application and analysis.

#### PROJECT EXPERIENCE

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##### **Orange County, FL – Recycling Quality Improvement Program (Ongoing)**

Served as field supervisor for ongoing recycling cart monitoring project. Conducted interviews of prospective cart monitors, conducted classroom and in-field training, and oversees daily operations of field teams. Responsible for logistics, supplies purchases, monitor tracking, and regular reporting to the client. Also acts as field supervisor for recycling audits, overseeing representative sampling collection, and sorting activities.

##### **Arizona Department of Transportation, AZ – Statewide Litter Study (Ongoing)**

Served as field lead for survey crews for litter study field data collection teams. Lead on of the teams traveling to designated sites throughout the state, provided training to all field personnel regarding survey protocol and data collection tools, and additionally provided guidance on issues as they arose throughout the field operations.

##### **Confidential Cruise Line – Waste Characterization Study (2024)**

Acted as crew chief for a waste characterization study aboard a cruise ship, overseeing the weighing in and characterization of all generated waste throughout the cruise ship over the duration of a five-day cruise in the Caribbean. Additionally acted as sort lead for representative sampling of inbound material.

##### **Confidential Food Distributor – Waste Composition Study (2023)**

Performed a series of audits of food distribution centers on behalf of the client, calculating the composition of disposed items/products and reviewing expiration dates to determine opportunities for diversion.



#### **Greeley, CO – Waste Characterization Study (2023)**

Served as project manager for this multi-season waste characterization study. Developed project study design and sampling plan and acted as the primary point of contact for the client and the subcontractor assigned to perform the field operations. Collaborated with local haulers and landfill operations staff to secure necessary data and supervised the execution of field operations in accordance with the study design. Also oversaw all data analysis and was responsible for development and delivery of the report.

#### **New York City Department of Sanitation, NY – Citywide Waste Composition Study (2017 & 2023)**

Operated the recyclable materials table responsible for collecting, sorting, and recording recoverable materials collected from truck routes around the five boroughs of the City. *Reference listed in the Technical Proposal.*

#### **Park City, UT – Waste Generation Study (2021)**

Acted as project manager, collaborating with City to develop a keen understanding of the residential and commercial waste generation landscape of the City's downtown business development district and its accompanying suburbs. Also worked with City to develop a comprehensive custom study design that would suit the unique needs of the client. Served as field supervisor, collecting samples from businesses in the downtown business district and residential samples from collection trucks at the landfill. Also supervised the sorting of collected material and was instrumental in the analysis and reporting of collected data.

#### **CalRecycle – California Statewide Waste Characterization Study (2018 & 2021)**

Created and issued surveys to targeted landfills across California to gather crucial data and to schedule waste composition sorting events at more than two dozen sites throughout the state. Served as field data supervisor, training a professional team of sorters, and ensuring rigorous adherence to sort protocols. Responsible for building regular reports of field operations progress and data QA/QC. *Reference listed in the Technical Proposal.*

#### **Hamilton County, OH – Recycling Audit (2021)**

Served as project manager and field supervisor for this project conducted on behalf of the Mattress Recycling Council. Toured Northern California Mattress Recycling Facilities and performed audits of residual materials, the goal being to identify areas of opportunity for greater diversion of material destined for landfill disposal. Trained and supervised a team of workers to separate and sort residual material generated as byproducts from the mattress recycling process. Oversaw field data collection process, performed data QA/QC, and conducted data analysis and reporting.

#### **Ada County, ID – Waste Composition Study (2020)**

Supervised the training of prime contractor personnel to fill the crew chief role for future projects. Instructed, by example, the best methods for capturing data in the field in waste sort activities, and how to properly train and manage field teams in this effort. Also managed data organization.

#### **Hamilton County, OH – Recycling Audit (2019)**

Acted as crew chief, managing local labor, and serving as the primary data collection specialist on the project.

#### **Onondaga County, NY – Waste Characterization Study (2019)**

Acted as the crew chief, managing field labor and data acquisition for the solid waste and recyclables portion of study.

#### **Summit County, UT – Waste Composition Study (2019)**

Served as the project manager and field supervisor for Summit County's Waste Composition Study, collaborating with the host facility to ensure a representative sampling of solid waste and recyclable material from across the county. Managed the project's data organization and analysis efforts.





# Nick O'Callaghan

## Analyst

### EXPERTISE

Data Analysis  
Data Visualization  
Database Design  
SQL  
Microsoft Office  
Microsoft PowerBi  
Microsoft PowerApps  
Map Hub  
Client Relations  
Customer Support  
Project Management

### EXPERIENCE

2 Years in the Industry  
2 Year with the Firm  
Data Analysis

### CREDENTIALS

BS, Finance, Florida  
International University

Nick. O'Callaghan joined MSW Consultants in 2021 to provide the team with data analysis. His academic background includes a B.S. in finance as well as a full year of independent analytical studies. Mr. O'Callaghan is passionate about sustainability and has a desire to make the world a healthier place. He performs data analytics, data modeling, and market research for a variety of projects.

### PROJECT EXPERIENCE

#### **New York City, NY – Waste Characterization Study (2024)**

Developed detailed waste characterization results using statistical weighting. Mr. O'Callaghan is assisting in report development and delivery. *Reference listed in the Technical Proposal.*

#### **City of Columbia, MO – Waste Composition Study (2023)**

Mr. O'Callaghan employed statistical weighting methodologies of detailed municipal waste data and created figures and tables that facilitated a clear understanding of the waste stream.

#### **Hamilton County, OH – Waste Characterization Study (2023)**

Mr. O'Callaghan utilized statistical weighting techniques to derive detailed waste characterization results. Mr. O'Callaghan then crafted numerous figures to effectively convey the results.

#### **The Recycling Partnership/City of Orlando, FL - Multi-Family Capture Rate Study (2023)**

Mr. O'Callaghan assisted in the sorting and collection of the sample data as well as compiling and calculating composition results for report tables.

#### **Mifflin County, PA – Solid Waste Management Plan (2023)**

In an effort to create a plan for sustainable and efficient solid waste management, Mr. O'Callaghan formulated an effective methodology to estimate generation projections based on population and demographics research.

#### **Confidential University – Food Waste Audits (2023)**

Mr. O'Callaghan was responsible for developing the waste generation estimates and generating weighted composition results for the various waste generators.

#### **University of Kentucky, KY – Waste Characterization Study (2023)**

Mr. O'Callaghan developed detailed waste characterization results using statistical weighting. Mr. O'Callaghan then created numerous figures and tables to convey the information.

#### **New York City, NY – Multi-Unit Building Study (2023)**

Mr. O'Callaghan created a proprietary data collection app to enable field members to seamlessly gather information. Mr. O'Callaghan then created summary reports to readily communicate the information.

#### **Oneida Nation, WI – Waste and Recycling Program Assessment (2023)**

Mr. O'Callaghan conducted a service level analysis to estimate the waste generated by Oneida Nation. Mr. O'Callaghan then used the waste composition results to estimate an annual waste profile.



**Coalfield Development Corporation, WV – Plastic Recycling Assessment (2023)**

Mr. O’Callaghan conducted market research on the plastics market within the reuse corridor. Mr. O’Callaghan then made estimated projections of potential recycling volumes throughout the region, contributing valuable insights to informed decision-making for effective recycling programs.

**Howard County, MD – Waste Characterization Study (2023)**

Developed detailed waste characterization results using statistical weighting. Mr. O’Callaghan assisted in report development and delivery.

**Bartow County, GA – Waste Characterization Study (2023)**

Provided analytical support for project’s data findings and report tables.

**City of Philadelphia, PA – Desktop Waste Characterization (2022)**

Researched comparable waste profiles and estimated the waste composition of non-residential sectors using statistical weighting.

**The Recycling Partnership/SWACO, OH – Franchise Waste Contractors (2022)**

Provided analytical support for project’s data findings and report tables.

**Miami Beach, FL – Capture Rate Study (2022)**

In an effort to issue a franchise agreement for commercial and residential waste collection, the city of Miami Beach contracted MSW to perform benchmarking and regional research. Mr. O’Callaghan was responsible for developing and distributing a survey that has been used to evaluate essential franchise services.

**Ottawa Tribe, MI – Integrated Solid Waste Management (2022)**

Mr. O’Callaghan formulated a methodology to estimate tonnage data for the tribe based on population and demographics research.

**City of Philadelphia, PA – Recycling Audits (2022)**

Responsible for implementing a route randomization tool critical for maintaining statistical integrity in the selection of trucks for sampling during the recycling audits. Mr. O’Callaghan then calculated composition results which included updated rolling averages to convey the results.

**Liberty Ashes, NY – Waste Zone Planning (2022)**

Led the development of a cost analysis and budget model for conducting waste audits.

**Pennsylvania Department of Environmental Protection, DEP – Waste Characterization Study (2022)**

Responsible for determining the criteria for the urban, suburban, and rural generating sectors as well as developing numerous figures to convey the study results. *Reference listed in the Technical Proposal.*

**Richmond, VA – Waste System Assessment (2022)**

Responsible for completing market research on the materials market in the Richmond region. Mr. O’Callaghan also conducted utilization rate analysis to determine new collection schedules.

**Centre County, PA – Waste Characterization Study (2022)**

Prepared detailed waste characterization results using statistical weighting. Mr. O’Callaghan then created numerous figures to easily convey the information.



## David Mann

### Director of IT

#### EXPERTISE

Applications Programming  
Data Management, Protection,  
and Security  
Network/Database Setup,  
Design, and Monitoring  
Web Design  
Data Mining and Analytics  
Disaster Recovery  
Technical Inventory  
User/Database Administration  
and GUI  
Proficient in PHP, SQL, C++,  
Perl, JavaScript, jQuery,  
HTML5, CSS  
Technical Training and Support  
Microsoft Office/Adobe  
Products  
WordPress, Drupal  
Computer Literacy/Support  
Client Relations  
Customer Care

#### EXPERIENCE

24 Years in the Industry  
6 Years with the Firm

#### CREDENTIALS

Audio Engineering, MIDI  
programming, Honors  
Graduate, Audio Recording  
Technology Institute, Inc.  
(Orlando, FL)  
Photojournalism/Writer  
coursework/The Alligator,  
University of Florida  
(Gainesville, FL)

David Mann is the architect of Wastelnsight™, MSW Consultants' proprietary waste market database, and a specialist in data-driven solid waste management analysis. As head of the company's IT and Research Division, David manages and facilitates the process of populating the Wastelnsight portal with collection and disposal data from all 50 U.S. states. A multi-talented information technologist for more 20 years, he also develops cloud-based analytical tools for all MSW Consultants lines of business.

#### Wastelnsight™ Database and the GAP System



WASTEINSIGHT™

David developed the framework and database for MSW Consultants' online waste collection program repository and data calculation system. He is currently managing the build-out of this cloud-based market data tracking tool as part of a comprehensive benchmarking effort to catalog government and institutional waste management programs, facilities, waste characterization studies and solid waste management plans nationwide.

He converted the existing spreadsheet-based waste stream statistical analysis tools to the web-based statistical application in *Wastelnsight™* for use in synchronizing field data collection in real-time. This functionality has also been developed for the *Wastelnsight™* Grading and Purity (GAP) System, a data collection method for determining contamination rates for waste streams or bales of recycled materials.

David also developed *Wastelnsight™*'s calculation methods for the sorting protocol for MSW Consultants specialized approach to characterize waste; sub-sort a variety of packaging and durable materials based on product type; and calculate recycling capture rates.

#### PROJECT EXPERIENCE

Manages data and result calculations, technical QA/QC for many of MSW Consultants projects including:

- Vermont Department of Environmental Conservation (VT DEC) – Statewide Waste Characterization Study. *Reference listed in the Technical Proposal.*
- New York Department of Sanitation, NY – Waste Characterization Study. *Reference listed in the Technical Proposal.*
- **The Recycling Partnership** – Nationwide Capture Rate and Contamination Studies in multiple cities
- **Confidential Shipping Company** – Commercial Waste Audits for facilities in multiple cities
- **Camden County Division of Environmental Affairs, NJ** – Residue Analysis of a Material Recover Facility
- **Confidential Client, NY** – Residential Food Waste Characterization Study at multiple housing properties
- **Polk County Waste & Recycling Division, FL** – Countywide Recycling Audit and Analysis at a Landfill
- **Orange County Utilities Solid Waste Division, FL** – Countywide Recycling Audit and Analysis at a Material Recover Facility



- **City of North Port Department of Public Works, FL – Citywide Recycling Audit and Analysis at a Material Recover Facility**
- **Confidential Client, NY – Recycling Audit and Analysis at a Material Recover Facility**
- **Chittenden County Solid Waste District, VT – Countywide Residential Waste Characterization Study**
- **Pennsylvania Department of Environmental Protection – Statewide Waste Characterization Study and Construction & Demolition Visual Survey. *Reference listed in the Technical Proposal.***
- **City of Reading Public Works Department, PA – Citywide Waste Composition Study of Trash and Recycling Loads**
- **Confidential Client, MN – Organics Characterization Study at a Recycling Center and Transfer Station**
- **City of Philadelphia Department of Streets, PA – Citywide Waste Composition Study of Trash and Recycling Loads**
- **Dow Packaging, NE – Material Composition Studies evaluating EnergyBag Programs at facilities in multiple cities.**
- **Confidential Restaurant – Darden Restaurants, FL – Commercial Waste Audits for restaurants in multiple cities.**

**Oneida Nation of Wisconsin, WI – Waste and Recycling Program Assessment, Development and Management (2023)**

Providing support to assess the Nation’s waste and recycling rates and options to improve waste diversion and reduce carbon footprint. Assisting in efforts to streamline the current waste disposal and recycling processes and develop a program structure that the tribe can take over once the three-year project is complete.

**Liberty County, GA – Curbside Collection Feasibility Study (2023)**

Assisting with an evaluation of the establishment of curbside automated refuse collection in the unincorporated County.

**Town of Manchester, CT – Cost-of-Service Study and Disposal Market Pricing Analysis (2022)**

Directed the development of a residential collection and C&D landfill cost-of-service and rate study. Identified 10-year rate path to eliminate internal subsidy of residential curbside collection service from excess landfill revenues. A disposal market pricing study was also conducted in conjunction with this effort.

**Multiple Clients – National Community Recycling Surveys (1996–2000)**

Managing seven national surveys of community recycling programs for various trade associations. These projects seek to systematically survey and statistically tabulate the extent of curbside and drop-off recycling programs, as well as the materials targeted across the country.



















11875 High Tech Avenue, Ste. 150 | Orlando, FL 32817  
mswconsultants.com | 800.679.9220