# SCOPE OF WORK

## PROJECT TASKS AND OBJECTIVES

This RFP is for completing a statewide waste characterization study, with representative samples taken and analyzed during two seasons, characterized by county and waste generation area, source of waste, and waste types.

## TASK 1 – COMMUNICATION

* + - 1. Conduct kick-off meeting and on-going project update meetings with BSMM representatives.
      2. Collaborate with BSMM representatives on data collection, study design, and findings.

## TASK 2 – RESEARCH DESIGN

* + - 1. Use the ASTM D 5231-92 (2016) to determine the sample size average weight and number of waste transfer and disposal sites throughout Nevada, spaced over (2) two seasons. The sampling will be done at the same sites for each season.
      2. Prepare and submit a study plan with the parameters below for approval by NDEP.
      3. The following is a list of transfer and disposal site areas to be included in this study: Reno Metropolitan Area (includes Washoe, Storey, Carson City, Douglas, and Lyon counties), I-80 Corridor (includes Pershing, Humboldt, and Elko counties), HWY 50 Corridor (includes Churchill, Lander, Eureka, and White Pine counties), HWY 6 Corridor (includes Mineral, Esmeralda, and Nye (Northern) counties), Las Vegas

Metropolitan Area (includes Nye (Southern), Lincoln, and Clark counties).

* + - 1. Contractor will collaborate with NDEP on selecting the sites, and NDEP will review,

selected sample for approval prior to surveying. NDEP will provide contact information for these facilities to the awarded Contractor.

* + - 1. The following is a list of waste sector (generator) categories to be evaluated on this study: residential waste, commercial waste, and self-hauled waste.
      2. The following is a list of the seasons of sampling for this study: Season 1 of 2 (Spring) March 2025 - May 2025 and Season 2 of 2 (Fall) September 2025 to November 2025.
      3. The following is a list of the proposed material category list to be included in this study. Contractor will work with NDEP to refine this list:

|  |  |
| --- | --- |
| **Material Component Category** | **Subcategory** |
| Paper | Newsprint, office paper, computer paper, magazines/catalogs, glossy paper, wax  paper, compostable paper, books, uncoated OCC, coated OCC, cartons (Aseptic/gable  top containers), mixed paper – recyclable, other paper |
| Plastic | PET (#1) Bottles, PET (#1) non-bottles, Natural HDPE (#2) bottles, Colored HDPE (#2) bottles, PP (#5) packaging, PS Foam  (#6), Plastic grocery/retrial bags, Packaging film plastic, Other (#3, #4, #6, #7)  packaging, Bulky rigid plastics, Plastic garbage bags, Compostable plastics, Other  plastics |
| Glass | Clear Containers – Beverage, Colored containers – Beverage, Glass food  containers, Other |
| Metal | Aluminum cans, Aluminum foil/containers, other aluminum, ferrous (“tin”) cans, other ferrous scrap, other non-ferrous metal,  other metal |
| Organics | Mixed yard waste, pet waste, clean wood, vegetables, meat/fat/oil, and other organics |
| Construction and Demolition | Treated/painted/dimensional lumber, plywood/sheeted/engineered wood,  drywall/gypsum board, pallet/crates, PVC pipe, insulation, brick/concrete/pavement,  carpet/carpet padding, other C&D |
| Consumer Products | TV – non-CRT, TV – CRT, TV Peripherals, CPU monitors - LCD; CPU monitors – CRT, CPU, CPU peripherals, Printers,  Embedded battery products, Major  appliances, Small appliances, Household  Furniture, Mattresses, Textiles, Tires, Solar Panels, LED bulbs, Other Consumer  Products |
| Household Hazardous Waste/Special Waste | Florescent tubes, Aerosol cans, Paint, Solvents, Caustic cleaners, Dry cell batteries – single, dry cell batteries –  recharge, wet cell batteries, vehicle fluids, medical waste, pharmaceuticals & vitamins, diapers/sanitary products, other,  HHW/Special waste |

* + - 1. In addition to the county waste characterization study above, schedule one casino (or inspect a truck load at respective landfill coming from a casino) in Las Vegas (Clark County) and Reno (Washoe County) to visit during study. Perform the study using the same criteria for county studies above. The casino studies are in addition to their

respective county studies and do not account for any Clark or Washoe County study. The contractor will recruit casinos for this study from an approved list from NDEP.

## TASK 3 – DATA COLLECTION

* + - 1. Following ASTM D5231 – 92 (2016), Conduct site visits and perform hand sorts for

truck hauled waste, gate surveys for residential self-hauled waste, and visual surveys for construction and demolition waste.

* + - 1. Determine the vehicle loads to sample.
      2. Collect selected samples from solid waste collection routes representative of the socio- economic sectors within the communities, businesses, and industries of the counties,

including residential routes, commercial routes and waste loads that are self-hauled.

* + - 1. Sort the samples into pre-determined material categories and measure the quantity of each material.
      2. Organize the findings by pounds of each material category for each individual sample, tracked by sector (generator type), county of origin, date, and time.
      3. Conduct a vehicle survey at each sampling site during each season to determine how many tons of disposed waste are associated with each of the waste sectors.
      4. Provide completed data forms, electronic data files, and waste composition data tables to NDEP.

## TASK 4 – ANALYSIS AND DEVELOPMENT OF REPORT

* + - 1. Compile and analyze data into a draft final report. Statistically evaluate data from the sorting events to determine the mean, 90% confidence intervals, and standard deviation for individual material categories by site, generator types, and any other categories as

determined by NDEP and the vendor.

* + - 1. Provide a summary or abstract, a body with detailed descriptions of all procedures and components carried out during study. Summarize results. Include all supporting

documents used during data collection. Provide all raw data.

* + - 1. NDEP to review draft report.
      2. Present final report to NDEP, in person, with virtual capabilities to cooperate with members of the sites visited.

# DELIVERABLES

## COMMUNICATION

* + - 1. Schedule with BSMM a kick-off meeting to include key personnel introductions, identification of key actions, presentation of project timeline/schedule to ensure project will be completed on time, documentation of meeting minutes, and scheduling of follow- up meetings with BSMM.
      2. Schedule on-going monthly meetings to discuss updates and findings from research and collaborate on data.

## RESEARCH DESIGN

* + - 1. Provide finalized list of facilities and casino hotel resorts, with dates, to visit.
      2. Provide refined material category list (based on collaboration with NDEP) to best meet allocated budget.
      3. Provide finalized study design and plan to be approved by NDEP, which will include targeted material categories/subcategories, sorting protocols for each sorting type and facility location, staffing, and safety precautions.

## DATA COLLECTION

* + - 1. Provide a written summary of each sorting event including location, date, staff, and findings.
      2. Provide all raw data.

## ANALYSIS AND DEVELOPMENT OF REPORT

* + - 1. Prepare and submit draft final report for NDEP review and approval, along with

scheduled meeting to discuss draft final report. The report will contain the following elements:

* + - * 1. An executive summary providing key findings in standard solid waste industry terminology.
        2. Introduction and background for the study, including goals and objectives.
        3. A description of the methodology, data collection, and analytical techniques used.
        4. A summary of the samples characterized.
        5. Material composition profiles
        6. Results of the types and estimated quantities of materials (in tonnages) in the waste stream and a statistical evaluation of data for various categories.

Include summary of statistical models used.

* + - * 1. A summary of findings, conclusions, and supporting documentation (charts, tables, forms, questionnaires, etc.)
        2. Glossary/Definitions section
        3. Raw data in Excel format
      1. Submit final report in both physical and electronic form. Present findings in-person to NDEP staff, with virtual accommodation made for all participating facilities and casinos.