

SCOPE OF WORK
CHARACTERIZATION STUDY OF SOLID WASTES 2021

I. Introduction:

Hurricanes Irma and María had a negative impact on solid waste management in Puerto Rico. Due to the large amounts of disaster debris, existing landfills had their capacity reduced by around two (2) years and will require to be closed earlier than anticipated, requiring the construction of new facilities by year 2025. In addition, the recovery and reconstruction efforts to be initiated during 2021 will generate a large volume of construction and demolition debris requiring disposal space within the existing landfills in Puerto Rico. These activities will further affect the availability of remaining landfill space in those facilities in operation in 2021. Thus, urgent revisions to solid waste management strategies in Puerto Rico are necessary to overcome present and future waste disposal and environmental and public health challenges.

II. Purpose:

To assist the Department of Natural and Environmental Resources (DNER) addressing the solid waste management and planning efforts in Puerto Rico, a Solid Waste Characterization Study (SWCS) should be conducted to clarify post-hurricane waste composition, generation rates and waste diversion potentials, all of which have been impacted by natural disasters in Puerto Rico.

For these purposes, the DNER requests the preparation of a Solid Waste Characterization Study. The SWCS will provide a baseline of Puerto Rico's current waste composition and allow the DNER develop management strategies and needed infrastructure to assist DNER Solid Waste Management implementing the following measures and initiatives:

1. Establish mechanisms geared to reduce the volume of the waste generated in Puerto Rico.
2. Promote the development of municipal partnerships for the establishment of reduction and recycling programs.
3. Establish programs of source separation at the Municipal level.
4. Stimulate the participation of private organizations and corporations in the construction and operation of NEW disposal, energy recovery and recycling facilities.
5. Develop Community Orientation Programs aimed to promote active participation from all sectors in these endeavors.
6. Foster the use of recycled and recyclables materials in the making of NEW products, as well as their consumption.

III. Legal Authority:

The DNER is the governmental entity called to establish the public policy of the Government of Puerto Rico, regarding the conservation of natural resources and the environment. DNER is also tasked with ensuring that landfills, transfer stations, material recovery facilities, and all other waste infrastructure operations in Puerto Rico comply with permitting requirements and promote human health and environmental compliance. This is in compliance with Article VI, Section 19 of the Constitution of Puerto Rico, Act No. 23 of June 20, 1972, as amended, better known as the Organic Law of the Department of Natural and Environmental Resources, the Reorganization Plan No. 1 of December 9, 1993 and Law # 171 of August 2, 2018 covering the most recent Reorganization Plan of the DNER.

In 1994, the government of Puerto Rico obtained the delegation and was authorized to implement the Program for the Solid Waste Management and Sanitary Landfill Systems (SRS) as required by Subtitle D of the federal Resources Conservation and Recovery Act (RCRA), 40 CFR Parts 258 and 259. As such, DNER is responsible for solid waste management permits and program in Puerto Rico, pursuant to the Puerto Rico Environmental Public Policy Act, Law Number 416 of September 22, 2004. To carry out this mandate, the DNER must secure all data required to allow the development of the required Public Policies aimed to protect the public health within our communities and the environment in Puerto Rico.

IV. Scope of Work:

DNER is issuing this Request for Proposals (RFP) to request from interested firms and corporations the development of an Island wide SWCS. Proponents must have the demonstrated and required experience together with qualified personnel to provide the professional services required. The SWCS must include the 29 Municipal solid waste landfills in operation in Puerto Rico as of July 2021.

The SWCS should be initiated during the last quarter of 2021. Proposals will be received until November 30, 2021 at 3:00 pm at DNER Headquarters, Secretariat Area, first floor, State Road #. 8838, Km 6.3 El Cinco Ward, Río Piedras, PR.

The Scope of the Professional Services requested for contract includes the following:

1. Physical characterization in a minimum of 16 landfills. The characterization will be executed in a business week period in each of the landfills (five days, five days and a half, or six days, as it may be the case), as a minimum. The landfills where this study to be executed will be in the following municipal and private landfills: Fajardo, Humacao, Salinas, Ponce, Yauco, Cabo Rojo, Arecibo, Toa Baja, Mayagüez, Jayuya, Peñuelas Eco Systems, Peñuelas Valley, Vega Baja,

Juncos, Vieques, Culebra, and others, if necessary. It must be pointed out that for the landfills located at the municipalities of Cabo Rojo, Fajardo, Vieques and Culebra's an additional sample must be taken during the 2022 Holy Week period to measure the impact of the floating population in these municipalities.

2. The tasks to determine the weight and volume of the solid waste in the 29 landfills, shall be executed in a business week period per landfill.
3. The SWCS shall include measuring, by means of weighing, the amount of solid waste that is received in the 29 landfills in operation. It must identify the place of origin of each vehicle that goes in the landfills to dispose solid waste, including: (1) date, (2) municipality, (3) route number and (4) collection schedules.
4. Physical characterization of the waste that is disposed in the sanitary landfill systems. The sampling methodology to be implemented, must incorporate at a minimum, the Active Standard ASTM D5231-92 (2016), Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste needed to obtain an adequate profile of the waste generated in Puerto Rico.
5. Analyze census data and the waste disposal information available at the DNER contained in the recently completed Landfill Capacity Study, among other sources, to calculate the amounts of solid waste generated by municipality and subdivided by the residential, commercial-institutional, and industrial sectors.
6. Provide Bi-Monthly Progress reports that contain digital photos with date and time depicting the field works performed and corresponding tables (two copies must be provided in electronic format such as CD's, Email, One Drive & Google Drive).
7. A SWCS Protocol must be developed with the following objectives and focus on answering the following questions:
 - a. What is the origin of solid waste from each of the municipalities in the Island, including Vieques and Culebra? This shall include the following categories: commercial, industrial, institutional, or residential, urban, or rural sector,
 - b. What type or nature of solid wastes disposed in Puerto Rico originated from the following sectors: residential, commercial-institutional, and industrial?
 - c. How much waste, in weight and volume, is generated in Puerto Rico, its municipalities within the following sectors: residential, commercial-institutional, and industrial?

V. Components to be Evaluated:

In the physical characterization efforts to be undertaken, the following categories will be studied: Plastic Type 1, Plastic Type 2, Plastic Types 3 to 7, high quality paper, low quality paper, corrugated cardboard, ferrous metals, nonferrous metals, glass, yard / vegetative waste, organic or putrescible

waste, construction & demolition waste (concrete, rebar, lumber, gypsum board, etc.), and other wastes. Those that do not qualify in the previous categories must be included, such as: disposable diapers, biomedical wastes, batteries, and juice packages of different kinds of materials, among others.

The DNER reserves the right of modifying the list of waste categories, when necessary, both in the number of landfills where the physical characterization will be executed and in adding, eliminating, or regrouping the categories previously indicated.

VI. DNER SWCS Key Staff:

Contract Officer Representatives for DNER:

Mrs. Evelisse Colón Carrero

DNER's Headquarters

Land Pollution Control Area, third floor,
State Road 8838, Km 6.3 Sector El Cinco,
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Supplemental SWCS Staff DNER:

Mrs. María Victoria Rodríguez

DNER's Headquarters

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Mr. Antonio Ríos

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VII. SWCS Task Descriptions:

Task 1: Study Logistics & Working Schedule:

Within ten (10) days of contract award, the selected contractor (Contractor) shall meet either in person or through teleconferencing with DNER representatives to discuss the proposal presented and its elements.

These proposal elements include: (1) the project timeline, (2) project budget, (3) work plan, (4) materials list, (5) sampling methodology, (6) the Quality Assurance Project Plan (QAPP), (7) Health and Safety Plan, (8) Personnel Qualifications and (9) confirmation of the required sampling sites.

At DNER's request, the U.S. Environmental Protection Agency Region 2 (EPA) will participate in DNER's discussions with the Contractor regarding the proposal elements and SWCS. With respect to the SWCS Task Descriptions set forth in this section, EPA, at DNER's request, will participate in the reviews and/or approvals of revisions, deliverables, and reports; however, final decisions will be made by DNER.

The Contractor shall propose an adequate sampling methodology to characterize a representative sample of Puerto Rico's municipal solid waste in those Landfills listed below. The Contractor shall characterize, and sort sample materials based on the following list: Plastic Type 1, Plastic Type 2, Plastic Types 3 to 7, glass, high quality paper, low quality paper, corrugated cardboard, ferrous metals, nonferrous metals, yard waste, organic or putrescible waste, construction & demolition waste (concrete, rebar, lumber, gypsum board, etc.), electronic waste, textiles, and other wastes. Items that do not easily fit in the previous categories must be included in a miscellaneous category. The miscellaneous category may include items such as disposable diapers, biomedical wastes, and batteries, among others.

The Contractor shall present a detailed table containing the material categories, material items, and material descriptions to be sorted and measured during sampling. In the event that the Contractor proposes to include additional materials and material categories to be included in the study this must be presented to the DNER Contract Officer for needed evaluation, modification, and approval.

The Contractor must use the list of landfill sites where sampling efforts will be undertaken describing the sampling sites, location of sampling sites, and number of samples to be taken at each sampling site. The proposed sampling sites will be the following: Fajardo, Humacao, Salinas, Ponce, Yauco, Cabo Rojo, Arecibo, Toa Baja, Mayagüez, Jayuya, Peñuelas Valley, Peñuelas Eco Systems, Vega Baja, Juncos, Vieques, Culebra, and others, if necessary. In addition, the Contractor must determine the weight and volume of the solid waste received in all the 29 landfills in operation in Puerto Rico, efforts that must be executed in a business week period per landfill.

The sampling methodology to be implemented, must incorporate at a minimum, the Active Standard ASTM D5231 - 92(2016), Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste. In addition, Contractor must present a complete Health and Safety Plan, Sampling

Plan, Quality Assurance Project Plan and Quality Assurance Surveillance Plan incorporating the methods and standards mentioned above.

The Contractor must submit all proposed revisions to the proposal to DNER representatives for needed approval. Required approval will be submitted to the Contractor by the DNER representative in ten (10) business days.

Deliverable 1:

Within ten (10) days of contract award and contract execution, the Contractor shall meet in person or through teleconferencing with DNER representatives to schedule the initiation of the SWCS required. The Contractor must have completed the presentation of all required documentation and needed approvals are secured from the DNER to initiate tasks listed below.

Task 2: Contact Landfill Operators and Establish Inspection Schedules:

The Contractor shall contact the landfill site operators (Operators) of the agreed upon landfill sites to schedule dates and times to perform sampling activities. In the case where a proposed Operator is unable to accommodate the necessary space and time for sampling, the Contractor shall notify DNER. The Contractor shall propose an alternative landfill site as a backup to maintain an adequate sampling plan and methodology on schedule whenever required, and as requested by the contractor, DNER may provide advanced notice and coordinate with all landfill owners on the upcoming waste characterization activities. This effort will consider among other: (1) entry to the landfill site, (2) access to landfill areas, and (3) the collection and possible publication of data (tipping fee, collection rate, municipalities being served, etc.).

The Contractor shall acquire the sampling equipment's and the required Personal Protective Equipment's (PPE) necessary to perform sampling and to ensure proper health and safety of field staff. The Contractor shall complete a Health and Safety Plan (Plan) for sampling and ensure that the Plan is suitable for Puerto Rico's climate and varying landfill operations. A copy of the Plan must be provided to the DNER Contract Officer. The Plan must be certified by the contractor president / vice-president and must establish the effective date of the Plan. Together, the Plan must include the training levels of each of the staff undertaking any field work on the required SWCS.

Deliverable 2:

Within thirty (30) days of initiating Task 2, the Contractor shall submit confirmation communication and approval from each landfill site operator to DNER Contract Officer. The Contractor shall submit the fieldwork schedule, health and safety plan, and documents confirming equipment inventory to DNER Contract Officer and landfill operators.

Task 3: Perform Sampling and Data Collection:

The Contractor shall contract, supervise, and pay the wage and fringe benefits of all field personnel. The Contractor shall ensure that field personnel are trained in all aspects of security, health, and procedures that follow the agreed upon sampling methodology and health and safety plan. The Contractor shall provide the needed sampling equipment's and materials required to execute the study, including the personal protection equipment for the security of the employees (gloves, masks, uniforms, shade, and hydration stations among others).

The Contractor shall collect and analyze all available and pertinent data, from reliable and recent sources, necessary to estimate the amount of waste generated annually by each municipality and sector in Puerto Rico. The selected Contractor should include data from the 2018 Landfill Capacity Study developed by the EPA in their analysis. This Study should be requested to the designated DNER Contract Officer Representative. In addition to available data, the Contractor shall measure the weight and volume of each vehicle delivering solid waste to the established sampling sites over a period adequate to estimate the annual generation rate of incoming sources.

The Contractor shall perform waste sampling and data collection using the agreed upon sampling plan and methodology. The Contractor shall utilize the Quality Assurance Project Plan (QAPP) to ensure samples are taken and sorted accurately. The sampling plan and methodology must include criteria for selecting incoming vehicles and samples for characterization. The Contractor shall propose a method to collect samples from incoming vehicles such that the sample is representative of the vehicle load and bias is not introduced. The Contractor shall undertake all initiatives listed in the sampling plan and methodology, as well as implement the qualitative measures to be used to identify and track individual samples throughout the study (e.g., sample ID, date, site name, weather conditions, erroneous events, etc).

Deliverable 3:

The Contractor will submit a bimonthly report to the DNER Contract Officer within fifteen (15) days of the start of Task 3. Subsequent bimonthly reports will be submitted fifteen (15) days after the first report and until the final SWCS report and data is submitted.

Task 4: Data Entry and Quality Assurance:

The Contractor shall enter all sample data into an Excel 2013 workbook. The Excel workbook will utilize a format and contain all necessary sample data recommended by the Contractor and agreed upon by the DNER representatives during Task 1. The Contractor shall utilize elements of the QAPP to ensure data entered in the Excel workbook is accurate. Once all data is entered and measures are taken to ensure accuracy, the Contractor shall submit the Excel workbook to DNER Contracting Officer for review.

Deliverable 4:

The Contractor shall provide DNER representatives with the complete Excel workbook with all sample data for review forty-five (45) days before submitting final field data and the final report. DNER Contracting Officer will review the data and provide comments to the Contractor within fifteen (15) business days.

Task 5: Submit Data and Reports:

The Contractor shall address comments received from DNER representatives on the integrity of the sample data. The Contractor shall finalize the Excel workbook containing all sampled data.

The Contractor shall detail the work of the SWCS, the analysis of municipality and sector, waste generation estimates, and the analysis of waste characterization sample results in the final report. The Contractor shall display the resulting data in charts, tables, and illustrative diagrams in the report. The Contractor shall translate the final report and provide a version in Spanish and a version in English.

Deliverable 5:

The Contractor shall submit to DNER Contracting Officer the final report with an Executive Summary describing among others: (1) Study Background, (2) Scope of Works, (3) Study Purpose, (4) Study Design, (5) Methods utilized, (6) and Study Results. In addition, the Contractor shall submit the final Excel workbook. All final material shall be submitted within sixty (60) days of completing field sampling activities.

VIII. Schedule of Delivery Dates:

1. Deliverable # 1 starts when the contract is signed and is delivered 10 days later.
2. Deliverable # 2 starts after final approval and is delivered 30 days later
3. Deliverable # 3 is submitted 15 days after sampling is initiated and performed in 15 days' intervals.
4. Deliverable # 4 starts when sampling is complete and is completed 45 days before the final report is submitted.
5. Deliverable # 5 starts after Task 1 completion and is delivered within 60 days of completing sampling field activities.

Figure # 1

Deliverable	Month					
	1	2	3	4	5	6
1						
2						
3						
4						
5						

IX. Sampling Methodology:

DNER Contracting Officer will monitor the Contractor's performance in accordance with the Quality Assurance Surveillance Plan (QASP) to be submitted by the contractor and approved by the DNER. The DNER retains the right to change and modify the monitoring or surveillance methods consistent with the Inspection Program developed and approved by the DNER.

DNER Contracting Officer will review and approve all Contractor deliverables. Moreover, DNER Contracting Officer will observe Contractor personnel while performing activities required under this RFP in accordance with the QASP approved for the implementation of the SWCS. The DNER may hire an outside consultant with the required experience to oversee the work been provided

by the Contractor. Input from EPA TAC Group located at Edison, New Jersey Laboratory will be requested if needed. Whenever appropriate, the DNER Contracting Officer may utilize feedback learning and customer's satisfaction surveys tools and test to monitor the effectiveness and success of the services provided by the Contractor.

X. Task Order Modifications:

The DNER Contracting Officer is the only person authorized to make changes to this service contract considering inputs provided by the EPA. Any changes must be approved by the DNER Contracting Officer must be in writing and considered as a modification to this Task Order and / or contract modification. In addition, ONLY the DNER Contracting Officer is authorized to provide technical direction on the implementation of the SWCS.

XI. DNER SWCS Responsibilities:

1. Assist the selected Contractor in the determination of any additional categories of the materials to be studied.
2. Confirm the landfills included in the solid waste characterization physical study.
3. Confirm that weight and volume information and data will be collected in all 29 landfills in operation in Puerto Rico.
4. Assist the selected Contractor in the coordination of the activities to be made in the landfills.
5. Inspect, participate, and provide written inputs to the study.

XII. Contractor's Organization:

1. Contract, supervise, and pay the legally established wage and fringe benefits to all employees who are undertaking the characterization and the weight and volume measurements and that is part of the SWCS Company administrative resources.
2. Train the field personnel in all aspects of security, health, and the procedure to be followed during the waste characterization of the solid wastes in Puerto Rico.
Provided the equipment and necessary material to execute the study, including the personal protection equipment's to safeguard the health of all field personnel (gloves, masks, uniforms, among others).
3. Develop and coordinate all necessary field works and activities.
4. Develop the statistical analysis of the secured.
5. Develop any additional activities requested by the DNER.
6. At DNER's request, EPA representatives can review and make recommendations on technical direction / additional activities requested by DNER.

7. Coordinate with the tasks to be undertaken at the 29 landfills, including the scope of work needed for the development of the contracted field tasks.
8. Submit the Protocol of the SWCS Study, Fieldwork Schedule, a Health and Safety Plan, Sampling Plan, Quality Assurance Project Plan and Quality Assurance Surveillance Plan, and documents confirming equipment to be used as well as landfill contact information, quarterly progress reports and the final report. In addition, a copy of all physical form (written document/hard copy) and a copy using an electronic format such as word processor Word 2013 must be provided to the DNER Contracting Officer. The database also will be handed in electronic format using the program Excel 2013.
9. Submittal of a Monthly Progress Report.
10. Develop and submit an Executive Report.

XIII Company Qualifications:

Each proponent interested in providing a Proposal to undertake the SWCS must provide the following information:

1. List of Similar SWCS Projects successfully completed,
2. How long your company has been providing such services,
3. Provide an Organizational Chart of the Proposed Team, including respective roles for each of the Team Members,
4. Provide a list of equipment's and a summary of human resources available to undertake the SWCS,
5. A detailed description of your company abilities to complete the tasks included in this RFP, &
6. The Contractor should demonstrate their ability/knowledge/qualifications to effectively carryout quality assurance (QA) activities in accordance with the QASP.

XIV Contractor Key Personnel:

The Contractor must provide the necessary information for each one of the key employees who will work in the study and his or her role in it. The proposal shall provide the following information for each Key Personnel to be assigned to this project:

1. Name and title.
2. Responsibility regarding the study.
3. Years with the company or organization.
4. Education.
5. Experience.
6. Vaccination Certificate.
7. Health Certificate.
8. Health and Safety Plan Certification

XV. Every company that submits a proposal must include the following information:

1. Company Name
2. Address, telephone, fax and electronic address
3. Company's main contact
4. Certificate of incorporation
5. Department of State Good Standing Corporate Certification
6. Treasury Department five (5) years Income Tax Certification
7. Administration for Child Support Enforcement's Debt Certification

XVI. Insurances:

The company presenting a proposal must provide a copy of the General Liability Insurance including the DNER as Co -Insured.

XVII. Instructions to respond to the Request for Proposal:

The proposal will have to provide all the necessary and requested information. Each proposal will be organized in the following form:

1. Subject exposition.
2. Proposed Protocol (ASTM suggested)
3. Preliminary Health and Safety Plan
4. Work Plan and Schedule
5. Budget.
6. Expert experience (expertise).

The proponent shall submit one (1) original and five (5) hard copies of the proposal, signed by an authorized representative of the corporation together with one (1) copy of the document in electronic format using the word processor Word 2013. The SWCS should be initiated during the last quarter of 2021. The proposals will be received until September 30, 2021 at 3:00 PM at DNER's Headquarters, Secretariat Area, first floor, State Road #. 8838, Km 6.3, El Cinco Ward, Río Piedras, PR.

XVIII. Proposal's Evaluation Criteria's:

The Evaluation Criteria's listed in Table below will be utilized in the evaluation of all Proposals received.

Criteria to be Evaluated	Weight % Assigned
Knowledge in the Subject	30%

Ability and capacity to execute the SWCS in a timely fashion	25%
Academic preparation and professional experience of the work group in projects of similar complexity and nature	20%
Budget	10%
Local Corporation	15%

An Evaluation Committee (EC) will be organized and appointed by the DNER Secretary to undertake the evaluation of all proposals received. Said EC will be integrated by four DNER officials.

The Evaluating Committee will review, study, and analyze the submitted proposals and will issue a report with needed recommendations on the matter. The Committee’s Report will be submitted to the Secretary of DNER for the final determination and approval of the selected company or organization to carry out the SWCS. The final decision will be sent to all proponents through written notification.

XIX Additional Requirements:

All Proponents must be registered at the general Service Administration (GSA) Suppliers Unified Registry (RUL in Spanish)

XX Related Dates Associated with this RFP:

Action Required	Due Date & Filing Time
RFP Publication Date	October 29, 2021
Last date to present Questions related with the RFP	November 5, 2021 @ 3:00 PM (Puerto Rico Time)
Date where Responses will be published	November 9, 2021
Proposals Filing Due Date	November 30, 2021 @ 3:00 PM (Puerto Rico Time)
Proposal Filing Location	DNER Headquarters, Secretariat Area, first floor

All questions related with this RFP must be delivered to Mrs. Maria V. Rodriguez at:

mariavrodriguez@jca.pr.gov

All Proponents interested in submitting proposal shall submit their intention to

mariavrodriguez@jca.pr.gov