

**GOVERNMENT OF PUERTO RICO  
PUERTO RICO PUBLIC SERVICE REGULATORY BOARD  
PUERTO RICO ENERGY BUREAU**

<b>NEPR</b>
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**IN RE:**

IN RE: REVIEW OF THE PUERTO RICO  
ELECTRIC POWER AUTHORITY'S 10-  
YEAR INFRASTRUCTURE PLAN-  
DECEMBER 2020

**CASE NO. NEPR-MI-2021-0002**

**SUBJECT: Motion Submitting Two Amended  
FEMA Approvals of Projects, Request for  
Confidentiality and Supporting Memorandum of  
Law**

**MOTION SUBMITTING TWO AMENDED FEMA APPROVALS OF  
PROJECTS, REQUEST FOR CONFIDENTIALITY AND SUPPORTING  
MEMORANDUM OF LAW**

**TO THE PUERTO RICO ENERGY BUREAU:**

**COME NOW LUMA Energy, LLC, and LUMA Energy ServCo, LLC,** (jointly referred to as “LUMA”), through the undersigned legal counsel, respectfully submits the following:

**I. Submittal of Two Amended FEMA Approvals of Projects and Request for Confidentiality**

1. On March 26, 2021, this Honorable Puerto Rico Energy Bureau (“Energy Bureau”) issued a Resolution and Order in the instant proceeding, ordering, in pertinent part, that the Puerto Rico Electric Power Authority (“PREPA”) submit to the Energy Bureau the specific transmission and distribution projects (“T&D Projects” or “Projects”) to be funded with Federal Emergency Management Agency (“FEMA”) funds or any other federal funds at least thirty (30) calendar days prior to submitting these Projects to the Puerto Rico Central Office for Recovery, Reconstruction and Resiliency (“COR3”), FEMA or any other federal agency (“March 26<sup>th</sup> Order”). It also directed PREPA to continue reporting to the Energy Bureau and FEMA, within the next five years, on the progress of all ongoing efforts related to the approval of the submitted Projects that have not yet been approved by the Energy Bureau. The Energy Bureau thereafter determined that this directive should be applied to PREPA and LUMA. *See* Resolution and Order of August 20, 2021.

2. On April 24, 2023, LUMA submitted a *Motion Submitting Scope of Work and Request for Confidentiality and Supporting Memorandum of Law* (“April 24<sup>th</sup> Motion”), whereby it submitted one (1) SOW for the Energy Bureau’s review and approval prior to submitting it to COR3 and FEMA (“April 24<sup>th</sup> Motion”). The SOW submitted by LUMA was for the “Island-Wide Vegetation Clearing” T&D Project.

3. On May 5, 2023, the Energy Bureau issued a Resolution and Order in which it approved the “Island-Wide Vegetation Clearing” SOW and determined it necessary to improve the system’s reliability (“May 5<sup>th</sup> Order”). Further, the Energy Bureau ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the projects, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

4. On June 14, 2024, LUMA submitted a *Motion Submitting One FEMA Approval of Project, Request for Confidential Treatment and Supporting Memorandum of Law*, whereby, in compliance with the May 5<sup>th</sup> Order, LUMA submitted a copy of the project approval issued by FEMA on June 4, 2024 for the “FAAST [Region 1 -San Juan Group A] (Vegetation)” T&D project.

5. On September 26, 2025, LUMA submitted a *Motion Submitting Eighteen FEMA Approvals of Projects, Request for Confidential Treatment and Supporting Memorandum of Law*, whereby, in compliance with the May 5<sup>th</sup> Order,<sup>1</sup> LUMA submitted a copy of the project approval issued by FEMA on September 17, 2025, for the “FAAST [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)” T&D project.

6. In compliance with the May 5<sup>th</sup>, LUMA hereby submits copies of the following amended approvals by FEMA, which state they were re-obligated on March 1<sup>st</sup>, 2026: “FAAST [Region 1 -San Juan Group A] (Vegetation)” and “FAAST [Ponce Region 6 Line 39000 (115kV)

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<sup>1</sup> Among other orders approving different SOWs.

– Aguas Buenas Substation to Hacienda San Jose] (Vegetation)” T&D Projects. *See Exhibit 1*<sup>2</sup> to this Motion.

7. Version 1 of the “FAAST [Region 1 -San Juan Group A] (Vegetation)” approved T&D project was created to amend the Environmental Historical Preservation REC document; the number of distribution lines mentioned was 148, whereas the correct number is 150. *See Exhibit 1* of this Motion, FEMA re-obligation of this project, p. 13. Version 2 was created to align the scope and cost associated with mitigating vegetation surrounding T&D assets. The amendment submitted will address additions to the scope specific to feeders that were previously not submitted, and will align all scopes throughout the DSOW with the five (5) other Regional Group A DSOWs. Also included in this amendment request are revised and aligned costs related to clearing vegetation materials to directly reduce the potential for future similar damages to the T&D system that pose an immediate threat to the power distribution lines of the PREPA electrical grid in Region 1 (San Juan). *See Exhibit 1* of this Motion, FEMA re-obligation for this project, p. 26

8. As for the “FAAST [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)” approved T&D Project, in version 1, FEMA has amended this project to adjust the PA Vegetation Clearance scope of work and cost according to new documentation. In essence, version 1 adds additional miles and includes hazard mitigation for the entire project (the original was without hazard mitigation). *See Exhibit 1* of this Motion, FEMA re-obligation for this project, pp. 13, 15.

9. LUMA is submitting herein a redacted public version of the amended FEMA approvals (**Exhibit 1**) protecting confidential information associated with Critical Energy Infrastructure Information (“CEII”). As explained in this Motion, portions of the amended FEMA

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<sup>2</sup> Please note that **Exhibit 1** has digitalization and table format issues, which are found on the documents as issued by FEMA.

approvals of projects are protected from disclosure as CEII, *see, e.g.*, 6 U.S.C. §§ 671-674; 18 C.F.R. § 388.113 (2020), and pursuant to the Energy Bureau’s Policy on Management of Confidential Information. *See* Energy Bureau’s Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, as amended by Resolution dated September 20, 2016.

## **II. Memorandum of Law in Support of Request for Confidentiality**

### **A. Applicable Laws and Regulations to Submit Information Confidentially Before the Energy Bureau**

10. The bedrock provision on the management of confidential information filed before this Energy Bureau is Section 6.15 of Act 57-2014, known as the “Puerto Rico Energy Transformation and Relief Act.” It provides, in pertinent part, that: “[i]f any person who is required to submit information to the [Energy Bureau] believes that the information to be submitted has any confidentiality privilege, such person may request the [Energy Bureau] to treat such information as such [...]” 22 LPRA § 1054n. If the Energy Bureau determines, after appropriate evaluation, that the information should be protected, “it shall grant such protection in a manner that least affects the public interest, transparency, and the rights of the parties involved in the administrative procedure in which the allegedly confidential document is submitted.” *Id.* § 1054n(a).

11. Access to confidential information shall be provided “only to the lawyers and external consultants involved in the administrative process after the execution of a confidentiality agreement.” *Id.* § 1054n(b). Finally, Act 57-2014 provides that this Energy Bureau “shall keep the documents submitted for its consideration out of public reach only in exceptional cases. In these cases, the information shall be duly safeguarded and delivered exclusively to the personnel of the [Energy Bureau] who need to know such information under nondisclosure agreements. However,

the [Energy Bureau] shall direct that a non-confidential copy be furnished for public review.” *Id.* § 1054n(c).

12. Relatedly, in connection with the duties of electric power service companies, Section 1.10 (i) of Act 17-2019 provides that electric power service companies shall provide the information requested by customers, except for confidential information, in accordance with the Rules of Evidence of Puerto Rico.

13. Moreover, the Energy Bureau’s Policy on Management of Confidential Information details the procedures a party should follow to request that a document or portion thereof be afforded confidential treatment. In essence, the referenced Policy requires identifying the confidential information and filing a memorandum of law explaining the legal basis and supporting a request to file the information confidentially. *See* CEPR-MI-2016-0009, Section A, as amended by the Resolution of September 20, 2016, CEPR-MI-2016-0009. The memorandum should also include a table identifying the confidential information, a summary of the legal basis for the confidential designation, and an explanation of why each claim or designation conforms to the applicable legal basis for confidentiality. *Id.* at ¶ 3. The party seeking confidential treatment of information filed with the Energy Bureau must also submit both a “redacted” or “public version” and an “unredacted” or “confidential” version of the document containing confidential information. *Id.* at ¶ 6.

14. The Energy Bureau’s Policy on Management of Confidential Information states the following with regard to access to validated CEII:

Critical Energy Infrastructure Information (“CEII”)

The information designated by the [Energy Bureau] as Validated Confidential Information on the grounds of being CEII may be accessed by the parties’ authorized representatives only after they have executed and delivered the Nondisclosure Agreement.

Those authorized representatives who have signed the Non-Disclosure Agreement may only review the documents validated as CEII at the [Energy Bureau] or the Producing Party's offices. During the review, the authorized representatives may not copy or disseminate the reviewed information and may bring no recording device to the viewing room.

*Id.* at § D (on Access to Validated Confidential Information).

15. Regulation No. 8543, *Regulation on Adjudicative, Notice of Noncompliance, Rate Review, and Investigation Proceedings*, also includes a provision for filing confidential information in proceedings before this Energy Bureau. To wit, Section 1.15 provides that “a person has the duty to disclose information to the [Energy Bureau] considered to be privileged pursuant to the Rules of Evidence, said person shall identify the allegedly privileged information, request the [Energy Bureau] the protection of said information, and provide supportive arguments, in writing, for a claim of information of privileged nature. The [Energy Bureau] shall evaluate the petition and, if it understands [that] the material merits protection, proceed according to [...] Article 6.15 of Act No. 57-2015, as amended.” *See also* Energy Bureau Regulation No. 9137 on *Performance Incentive Mechanisms*, § 1.13 (addressing disclosure before the Energy Bureau of Confidential Information and directing compliance with Resolution CEPR-MI-2016-0009).

#### **B. Request for Confidentiality**

16. The two amended FEMA approvals included in **Exhibit 1** contain portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the amended FEMA approvals with CEII warrants confidential treatment to protect critical infrastructure from threats that could undermine the system and negatively affect electric power services to the detriment of the interests of the public, customers, and citizens of Puerto Rico. In several proceedings, this Energy Bureau has considered and granted requests by PREPA

to submit CEII under seal of confidentiality.<sup>3</sup> In at least two Data Security and Physical Security proceedings,<sup>4</sup> this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

17. Similarly, the Energy Bureau has granted LUMA's requests for confidential treatment of portions of the FEMA approvals submitted for approval in the present case. Notably, the Energy Bureau has granted LUMA's request for confidential treatment of portions of FEMA Approvals of Projects submitted for consideration and authorization. Furthermore, this Energy Bureau designated portions of submitted FEMA Approvals of Projects as confidential CEII in its Resolution and Order of March 20, 2023; *see* Table 1 on pages 1-2.

18. As mentioned above, the Energy Bureau's Policy on Management of Confidential Information provides for the management of CEII. It directs that the parties' authorized representatives access information validated as CEII only after executing and delivering a Non-Disclosure Agreement.

19. CEII or critical infrastructure information is generally exempted from public disclosure because it involves assets and information that pose public security, economic, health, and safety risks. Federal Regulations on CEII, particularly 18 C.F.R. § 388.113, state that:

Critical energy infrastructure information means specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure that:

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<sup>3</sup> *See e.g., In re Review of LUMA's System Operation Principles*, NEPR-MI-2021-0001 (Resolution and Order of May 3, 2021); *In re Review of the Puerto Rico Power Authority's System Remediation Plan*, NEPR-MI-2020-0019 (order of April 23, 2021); *In re Review of LUMA's Initial Budgets*, NEPR-MI-2021-0004 (order of April 21, 2021); *In re Implementation of Puerto Rico Electric Power Authority Integrated Resource Plan and Modified Action Plan*, NEPR MI 2020-0012 (Resolution of January 7, 2021, granting partial confidential designation of information submitted by PREPA as CEII); *In re Optimization Proceeding of Minigrad Transmission and Distribution Investments*, NEPR-MI 2020-0016 (where PREPA filed documents under seal of confidentiality invoking, among others, that a filing included confidential information and CEII); *In re Review of the Puerto Rico Electric Power Authority Integrated Resource Plan*, CEPR-AP-2018-0001 (Resolution and Order of July 3, 2019 granting confidential designated and request made by PREPA that included trade secrets and CEII. However, *see* Resolution and Order of February 12, 2021, reversing in part, grant of confidential designation).

<sup>4</sup> *In re Review of the Puerto Rico Electric Power Authority Physical Security Plan*, NEPR-MI-2020-0018.

- (i) Relates details about the production, generation, transportation, transmission, or distribution of energy;
- (ii) Could be useful to a person in planning an attack on critical infrastructure;
- (iii) Is exempt from mandatory disclosure under the Freedom of Information Act, 5 U.S.C. 552; and
- (iv) Does not simply give the general location of the critical infrastructure.

*Id.*

18. Additionally, “[c]ritical electric infrastructure means a system or asset of the bulk-power system, whether physical or virtual, the incapacity or destruction of which would negatively affect national security, economic security, public health or safety, or any combination of such matters. *Id.* Finally, “[c]ritical infrastructure means existing and proposed systems and assets, whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters.” *Id.*

19. The Critical Infrastructure Information Act of 2002, 6 U.S.C. §§ 671-674 (2020), part of the Homeland Security Act of 2002, protects critical infrastructure information (“CII”).<sup>5</sup>

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<sup>5</sup> Regarding protection of voluntary disclosures of critical infrastructure information, 6 U.S.C. § 673, provides in pertinent part, that CII:

- (A) shall be exempt from disclosure under the Freedom of Information Act;
- (B) shall not be subject to any agency rules or judicial doctrine regarding ex parte communications with a decision-making official;
- (C) shall not, without the written consent of the person or entity submitting such information, be used directly by such agency, any other Federal, State, or local authority, or any third party, in any civil action arising under Federal or State law if such information is submitted in good faith;
- (D) shall not, without the written consent of the person or entity submitting such information, be used or disclosed by any officer or employee of the United States for purposes other than the purposes of this part, except—
  - (i) in furtherance of an investigation or the prosecution of a criminal act; or
  - (ii) when disclosure of the information would be--
    - (I) to either House of Congress, or to the extent of matter within its jurisdiction, any committee or subcommittee thereof, any joint committee thereof or subcommittee of any such joint committee; or
    - (II) to the Comptroller General, or any authorized representative of the Comptroller General, in the course of the performance of the duties of the Government Accountability Office
- (E) shall not, be provided to a State or local government or government agency; of information or records;
  - (i) be made available pursuant to any State or local law requiring disclosure of information or records;

CII is defined as “information not customarily in the public domain and related to the security of critical infrastructure or protected systems [...]” 6 U.S.C. § 671 (3).<sup>6</sup>

20. Portions of the amended FEMA approvals in **Exhibit 1** qualify as CEII because these documents contain the express coordinates to power transmission and distribution facilities (18 C.F.R. § 388.113(iv)), and these specific coordinates and addresses could potentially be helpful to a person planning an attack on the energy facilities listed as part of this amended FEMA approval. The information identified as confidential in this paragraph is not common knowledge and is not made publicly available. Therefore, it is respectfully submitted that, on balance, the public interest in protecting CEII weighs in favor of protecting the relevant portions of the amended FEMA approvals with CEII in **Exhibit 1** from disclosure, given the nature and scope of the details included in those portions of the Exhibit.

21. Based on the above, LUMA respectfully submits that portions of the amended FEMA approvals should be designated as CEII. This designation is a reasonable and necessary

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- (ii) otherwise be disclosed or distributed to any party by said State or local government or government agency without the written consent of the person or entity submitting such information;
  - or
  - (iii) be used other than for the purpose of protecting critical Infrastructure or protected systems, or in furtherance of an investigation or the prosecution of a criminal act.
- (F) does not constitute a waiver of any applicable privilege or protection provided under law, such as trade secret protection.

<sup>6</sup> CII includes the following types of information:

- (A) actual, potential, or threatened interference with, attack on, compromise of, or incapacitation of critical infrastructure or protected systems by either physical or computer-based attack or other similar conduct (including the misuse of or unauthorized access to all types of communications and data transmission systems) that violates Federal, State, or local law, harms interstate commerce of the United States, or threatens public health or safety;
- (B) the ability of any critical infrastructure or protected system to resist such interference, compromise, or incapacitation, including any planned or past assessment, projection, or estimate of the vulnerability of critical infrastructure or a protected system, including security testing, risk evaluation thereto, risk management planning, or risk audit; or
- (C) any planned or past operational problem or solution regarding critical infrastructure or protected systems, including repair, recovery, construction, insurance, or continuity, to the extent it is related to such interference, compromise, or incapacitation.

measure to protect the specific location of the energy facilities listed or discussed in the amended FEMA approval in **Exhibit 1**. Given the importance of ensuring the safe and efficient operation of the generation assets and the T&D System, LUMA respectfully submits that these materials constitute CEII that should be maintained confidentially to safeguard their integrity and protect them from external threats.

**C. Identification of Confidential Information**

22. In compliance with the Energy Bureau’s Policy on Management of Confidential Information (CEPR-MI-2016-0009) below, find a table summarizing the portions of the amended FEMA approval for which we present this request for confidential treatment.

<b>Document</b>	<b>Name</b>	<b>Pages in which Confidential Information is Found, if applicable</b>	<b>Summary of Legal Basis for Confidentiality Protection, if applicable</b>	<b>Date Filed</b>
Exhibit 1	FAAST [Region 1 - San Juan Group A] (Vegetation)	Pages 1-2, 13-14, 26, 28, 36	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAAST [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)	Pages 1, 3, 7, 13, 15	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026

**WHEREFORE**, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned; **accept** the copy of the amended FEMA approvals attached herein as **Exhibit 1**; and **grant** the request for confidential treatment of **Exhibit 1**.

**RESPECTFULLY SUBMITTED.**

We hereby certify that we filed this Motion using the electronic filing system of this Energy Bureau. We will send an electronic copy of this Motion to PREPA via Alexis Rivera, [alexis.rivera@prepa.pr.gov](mailto:alexis.rivera@prepa.pr.gov), and through its counsel of record, Natalia Zayas Godoy, [nzayas@gmlex.net](mailto:nzayas@gmlex.net), Richard Cruz Franqui, [rcruzfranqui@gmlex.net](mailto:rcruzfranqui@gmlex.net), and Mirelis Valle Cancel, [mvalle@gmlex.net](mailto:mvalle@gmlex.net), to Genera PR LLC, through its counsel of record, Jorge Fernández-Reboredo, [jfr@sbgblaw.com](mailto:jfr@sbgblaw.com), José J. Díaz Alonso, [jdiaz@sbgblaw.com](mailto:jdiaz@sbgblaw.com), Stephen Romero Valle, [sromero@sbgblaw.com](mailto:sromero@sbgblaw.com), and Francisco Santos, [francisco-santos@genera-pr.com](mailto:francisco-santos@genera-pr.com).

In Guaynabo, Puerto Rico, on this 5<sup>th</sup> day of March 2026.



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*/s/ Yahaira De la Rosa Algarín*

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Exhibit 1

*(public version, confidential version to be filed under seal of confidentiality)*

**Department of Homeland Security  
Federal Emergency Management Agency**

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## General Info

<b>Project #</b>	723883	<b>P/W #</b>	11696	<b>Project Type</b>	Specialized
<b>Project Category</b>	F - Utilities	<b>Applicant</b>	PR Electric Power Authority (000-UA2QU-00)		
<b>Project Title</b>	FAASt [Region 1 -San Juan Group A] (Vegetation)			<b>Event</b>	4339DR-PR (4339DR)
<b>Project Size</b>	Large	<b>Declaration Date</b>	9/20/2017		
<b>Activity Completion Date</b>	9/20/2027	<b>Incident Start Date</b>	9/17/2017		
<b>Process Step</b>	Obligated	<b>Incident End Date</b>	11/15/2017		

## Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

### Damage #1333874; FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

#### General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 1 San Juan Transmission/Distribution 38 KV and below
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines, as well as more than 400 substations. The facilities addressed in this project are all the overhead transmission and distribution lines (16,000+ miles), as well as substations. To ensure the functioning of this infrastructure to the level of service needed, keeping this equipment clear from vegetation is significant.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED]

## Final Scope

### 1333874 FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

PA Scope Section in GM/GP Project 136271 (here in after PREPA FAASt Project) authorized \$9,459,885,412.39 (Federal Share) to be awarded to the Puerto Rico Electric Power Authority (PREPA, Subrecipient) as a fixed cost estimate (FAASt FCE agreement) based on eligible work without detailed scopes of work to restore disaster-damaged facilities. Eligible work for the Transmission and Distribution (T&D) system included restoration of:

- Broken structures due to high winds such as poles/towers (counted as broken when poles were inclined, bent, torn, and/or cracked); and other damages/broken components such as transformers, insulators, conductors, grounding system, jumpers, Gang Operated Air Breakers (GOABs), pole hardware, guy wires and anchors.

FEMA deferred the 406 Hazard Mitigation Proposal (HMP) fixed cost offer in the PREPA FAASt Project until the Subrecipient submits its actual recovery solutions. FEMA also issued a clarification letter regarding whether hazard mitigation funding under Section 404 or Section 406 of the Stafford Act may be made available for the execution of a one-time, island-wide vegetation clearing and removal operation intended to mitigate the threat to the existing vegetation, if unintended to, poses to Puerto Rico's electric T&D system. See FEMA's letter to COR3, document Signed Vegetation Management March 24 2023.pdf.

The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation clearance and removal operation intended to mitigate the threat to the existing vegetation, if untended to, poses to Puerto Rico's electric T&D system. The actual recovery solution seeks to mitigate the Puerto Rico's electric T&D system, including areas without infrastructure repairs.

The actual recovery solution (scope and cost) will be captured in multiple individual projects (hereinafter Vegetation clearance HMP Sub-FAAST projects) to provide flexibility and enable multiple programmatic reviews simultaneously. The Vegetation clearance HMP Sub-FAAST projects do not include infrastructure repair work.

This project captures a portion of the Island-wide actual recovery solution, specifically the one-time vegetation clearance and removal operation intended to mitigate the San Juan Region 1 Group A (see project note #1 and #2).

FEMA 406 Hazard Mitigation (HM) team will review this actual recovery solution and issue a FCE offer for the portion of the recovery solution that reduces risk of future similar damages. The Work to be Completed will be captured in the 406 HM scope section. To address the overlap between the incidental vegetation work needed to carry out the repairs and the mitigation work, the Vegetation clearance HMP Sub-FAAST projects will be adjusted as describe in FEMA-4339-DR[1]PR Public Assistance PREPA FAAST Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See document FAASTVegetationHMPApproach\_Distribution\_02.06.2024.pdf.

### **Project Notes:**

1. This is a Distribution-Vegetation clearance HMP Sub-FAAST project.
2. Vegetation clearance HMP Sub-FAAST projects will be written according to line type (Distribution: 13.2kv and down, and Transmission: 38 kV, 115 kV, and 230 kV) because of the different ROWs and other characteristics. Multiple projects of each type will be submitted and reviewed for eligible PA 406 HM funding. Vegetation clearing work will only be submitted for those areas that vegetation represents strike potential (may cause future similar damage to the T&D system when subject to high winds). However, at times there is overlap between these lines (i.e., multiple distribution lines (13.2kV and down) coexist on the same pole infrastructure, transmission lines (38 KV and up) can be located above distribution lines within the same right of way, various lines may pass each other with overlapping right of ways, etc.). In the submittal of this project the Subrecipient's Authorized Representative attests that only the vegetation clearance submitted is to reduce strike potential and that the ROW for these lines have been, and will be, counted only once to avoid duplication within the vegetation clearance projects.
3. For more details of the requirements and conditions for the execution of a one-time, island-wide vegetation clearance and removal operation considered as an eligible Section 406 hazard mitigation proposal (HMP), please refer to document labeled: "Attachment A - FEMA letter dated March 24 2023.pdf.
4. As this is a section 406 hazard mitigation project, PA scope of work (SOW) and cost is not required. Project cost will be included in mitigation step.

## **406 HMP Scope**

**Project number:** 723883; FAAST [Region 1 -San Juan Group A] (Vegetation)

**Damage #:** 1333874; FAAST [Region 1 San Juan Transmission/Distribution 38 KV and below]

**Applicant:** PR Electric Power Authority (000-UA2QU-00)

**Location:** San Juan, Puerto Rico

**GPS Latitude/Longitude:** [REDACTED]

### **Introduction**

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane Maria in September 2017. The hurricane caused widespread disruptions to transmission and distribution systems, largely due to vegetation impacts that collapsed distribution and transmission lines. Substantial infrastructure was damage when trees downed power lines and poles, causing most of the transmission/distribution system fail. Post-hurricane vegetation clearance to enable grid repair and restoration progressed slowly, considerably delaying overall electrical recovery. Remaining excess vegetation continues to cause operational outages, as ground faults occur when vegetation contacts power lines even during normal weather events. After the passage of Hurricane María, minimal cleaning work was carried out exclusively to clear the areas to carry out emergency repairs to the electrical system. These works were covered by Category B - Emergency Protective Measure, but excess vegetation on the electrical system remains an outstanding vulnerability.

The Puerto Rico's grid modernization and mitigation one time ROW clearance strategy will prioritize effective and proactive vegetation management protocols to prevent prolonged storm-related outages, thereby increasing the reliability of the electric system. These reliability and resiliency gaps are especially impactful to Puerto Rico which has been facing increasingly frequent natural hazards such as hurricanes. This project is part of the for Vegetation Reset Programs which will

impact the Transmission and Distribution system for each of the 78 municipalities.

### **Hazard Mitigation Narrative**

The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation remediation clearance for the above work included in the PREPA FAASSt Project, as according to the Public Assistance Alternative Procedures (PAAP) (Section 428) Guide for Permanent Work FEMA-4339-DR-PR (hereinafter PR PAAP Guide) and FEMA's letter to COR3, document Signed Island-Wide Vegetation Clearance March 24, 2023 (Refer to "Attachment A - FEMA letter dated March 24 2023.pdf"). Section 406 hazard mitigation funds are funds that can be added to projects for the restoration of disaster-damaged facilities and must prevent similar future damage caused by the declared event. Under DR-4339-PR, Section 406 hazard mitigation funds are based on eligible, technically feasible, and cost-effective mitigation activities proposed to reduce risk to the function of the disaster-damaged facilities. The portion of the recovery solution that reduces risk of future similar damages may be considered as eligible 406 mitigation.

The island-wide transmission and distribution grid was significantly damaged by the strong winds and heavy rainfall during the atmospheric event hurricane Maria. This resulted in many trees and other vegetation becoming a direct hazard to the electrical grid. A one-time 406 hazard mitigation island-wide vegetation clearance will benefit the reliability and resiliency of the Puerto Rico electrical grid, including the number and duration of customer outages during and after the work to complete the repairs to the electrical grid through other PREPA 428 FAASSt Projects.

This 406 HM work is limited to what is necessary to directly reduce the potential of future similar damage to the T&D system assets, that exceeds what is necessary to clear vegetation for accessing facilities when carrying out repairs which are already established as eligible for FEMA funding utilizing the 428 FAASSt Grant. Each 406 HM project will correlate to an eligible 428 Transmission and/or Distribution (T&D) project in association with the PREPA power grid. There will be 5 Regional DSOW's developed in Region 1 San Juan, capturing planned actions within scopes of work formulated with an established criteria detailed for Distribution and Transmission lines/facility locations within the San Juan Region. The first DSOW is Group A within the San Juan Region without known local environmental sensitivities; the second DSOW is Group B without known local environmental sensitivities; the third DSOW is Group C - with known local environmental sensitivities; the fourth DSOW is 115kV Facilities; and the fifth DSOW is Substation and Telecommunication Facilities. There will also be one DSOW for all 230kV Facilities that is not region-specific.

This SOW is aligned with and leverages FEMA's Island-Wide Benefits Cost Analysis (IWBCA), which was used for this purpose and fully support the mitigation measures employed within this project scope of work.

The Subrecipient's authorized representative (LUMA) estimates that this 406-hazard mitigation proposal for island-wide vegetation clearance will have immediate and future widespread benefits, including:

- Mitigation of the hazards due to vegetation impacts and damages.
- 70% annual reduction of outages caused by vegetation.
- 35-45% annual reduction of customer interruptions.
- Faster restoration for impacted customers.
- Improved safety for utility workers and the public.
- Support the rebuilding of the grid and effective execution of large-scale construction projects.

The PREPA distribution and transmission systems are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them compatible or incompatible with the safe and reliable energy delivery service. The Subrecipient's authorized representative recognizes the diversity of species in tropical ecosystems, and the general remediation strategy is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Within Appendix A and B are lists of protected flora species and incompatible flora species expected to be encountered during scope performance.

### **Proposed 428 Public Assistance Scope of Work (SOW):**

This project does not include Section 428 mitigation work. However, necessary vegetation clearing will be conducted during execution of distribution and transmission line repair and rehabilitation projects, such as pole and line replacement and access road clearing to reach work areas (access road). These public assistance-covered works will be deducted from the Section 406 Hazard Mitigation project costs to avoid duplication of benefits.

FEMA PA and HM Subject Matter Experts (SMEs) in collaboration with HM Specialists with professional engineer background experience in the Puerto Rico's electric (T&D) system, determined the following unit cost per mile to be prudent as a deduction to avoid funding overlapping work between the PA and HMP Sub- FAASSt projects. The unit cost will be used to calculate the applicable reduction in the Vegetation HMP Sub-FAASSt projects' FCE offers; \$9,610.44 per mile of Distribution System

Note: This unit cost specifically applies to the Distribution System projects. The Transmission System projects will require a separate evaluation to determine a unit cost according to the assets characteristics.

Refer to "FAAStVegetationHMPApproach\_Distribution\_02.06.2024.pdf" for the methodology used to calculate the applicable reduction in the Vegetation HMP Sub FAASt projects offers.

**Hazard Mitigation Proposal (HMP) Scope of Work:**

As a result of DR-4339-PR, vegetation surrounding T&D assets are falling onto these facilities and interfering with the safe and reliable operation of the assets. The vegetation at present is currently causing outages when vegetation is in contact with the T&D assets. To mitigate the future damage across T&D assets and protect the 428 repairs and replacement along these facilities, clearing vegetation materials will be required. This 406 Hazard Mitigation Scope of Work is to directly reduce the potential of future, similar damages to the T&D system by clearing vegetative materials that pose an immediate threat to the power distribution lines, and identification for corrective actions related to clearing vegetation (consisting of shrubs, branches, limbs, stumps, bamboo, and trees that are directly impacting the resilience and productivity of the power grid) applicable to the existing PREPA electrical grid within Region 1 (San Juan) of Puerto Rico.

The extent of this scope includes performing condition assessments for determining the most appropriate remediation, preparing work orders for executing the necessary vegetation remediation, by ways of tree felling, vegetation remediation, mechanical vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, recycling, and use of environmentally approved herbicide applications where applicable in Right of Ways (ROW) of the PREPA power Transmission and Distribution lines. For this project version, no additional works for access roads clearance are being contemplated.

**Parameters for Performing 406 Hazard Mitigation Vegetation Clearing**

Regulation 7282 requires that only shrubs and plants (no trees) be planted within the Right of Way under power lines. Climbing plants and vines, as well as bamboo, are prohibited from being planted within a Right of Way. The branches of trees planted outside the Right of Way must not obstruct free passage of the power lines. For power distribution lines, Regulation 7282 defines the vertical distance from vegetation as 12 feet . By law, any trees, shrubs, or plants planted in violation of Regulation 7282 may be uprooted, removed, or cut down in accordance with the provisions of Regulation 7282 – for both compatible and incompatible species.

Industry standard practices will determine how the work will be performed. A healthy tree is less likely to fall over in a storm and damage overhead lines; therefore, vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Vegetation that is improperly pruned could become susceptible to disease and decay, resulting in a hazard to both the line and public safety. ANSI A300 is the tree care industry standard of care in the USA. It was developed by Tree Care Industry Association and maintained by a consensus of various industry stakeholders through periodically reviewing and updating the guidelines. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant. In all cases, Subrecipient's authorized representative's vegetation clearing contractors will be required to perform clearing activities in a manner consistent with ANSI A300 and Regulation 7282. Standard Right of Way widths for distribution lines are given in the table below:

Line Type	Voltage Class	Standard Right of Way Width Edge to Edge (from Centerline)
Single Phase (1Ø)	7.6/13.2kV	10' (5')
Multi-phase (2-3Ø)	7.6/13.2kV	10' (5')
Double circuit 3Ø	7.6/13.2kV	10' (5')
Aerial Spacer Cable	7.6/13.2kV	10' (5')
Single Phase (1Ø)	4.8/8.3kV	10' (5')
Multi-phase (2-3Ø)	4.8/8.3kV	10' (5')

## Scope of Work Inside Right of Way – Incompatible Species

For the power distribution lines, all Incompatible Species will be cleared from the full width of the Right of Way. "Clearing" in this context includes the following activities: tree removal, severing of vines, cutting, mechanical mastication, and application of herbicides.

- Tree removal: Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place. The stump is then treated with an herbicide to permanently eliminate the tree from the site.
- Severing of vines: Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. The stumps of vines that have been removed are typically treated with an herbicide to permanently eliminate them. Vines are severed and treated by a qualified worker at ground level. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter Incompatible Species by hand. Freshly cut stumps are treated with an herbicide to permanently eliminate the tree from the site.
- Mechanical mastication: Mastication work involves heavy clearing of trees using heavy equipment fitted with a variety of cutting heads capable of reducing standing trees to woody debris.

Use of herbicides: While physically removing Incompatible Species addresses the immediate risk, cut vegetation will re-sprout and grow vigorously. Application of an herbicide eliminates the plant by killing the root system. Cut stump applications involve treating the cut face of the stump, remaining bark to ground line and the surface of any exposed roots.

## Scope of Work Inside Right of Way – Compatible Species

Compatible vegetation species will be cleared consistent with the distances identified in Regulation 7282, which means that any species with the potential to encroach within 12 feet of the conductors at full size will be removed using the same methods discussed above. Even though the distances identified in Regulation 7282 are vertical clearances, Compatible Species encroaching on the conductors from any direction can pose a hazard to the line. Therefore, the 12-foot clearance is being applied to both vertical and horizontal clearances.

In rare cases where Subrecipient's authorized representative encounters significant resistance from landowners or stakeholders to remediate vegetation, Subrecipient's authorized representative will work with landowners or stakeholders to determine if Incompatible and Compatible Species can be pruned to mitigate the hazard to the lines instead of being completely removed. Depending on the size and species of the tree, tree growth regulators will be injected into the soil root plate around the base of the tree to reduce the rate of stem elongation following pruning and reduce the tree's regrowth response.

## Scope of Work Outside Right of Way – Species Growing into the Right of Way

There is the potential for vegetation outside or along the boundary of the Right of Way to interfere with the operation of power distribution lines. Appropriate clearances around the conductors must be achieved to protect the lines from future damage. For distribution lines, Subrecipient's authorized representative has established a minimum clearance distance of 12 feet from all conductors. This distance is consistent with the vertical distance established in Regulation 7282. If there are species encroaching on the 12-foot clearance outside or along the boundary of the Right of Way, these species will be pruned to obtain at least 12 feet of clearance from the conductors at the time clearance work occurs. In cases where following ANSI A300 best practices require clearance beyond 12 feet, the maximum distance cleared will not exceed 15 feet. Diagrams illustrating these clearing distances are provided as Attachment B-"FAASTVegetationHMPApproach\_Distribution\_02.06.2024.pdf".

Tree pruning: Qualified personnel work from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.

### **Power Distribution Primary Group A - Vegetation Clearing Work Locations, Cost, and Description**

Distribution lines typically start at substations and branch out in multiple directions to serve end-use customers. The GPS coordinate points provided in "Appendix C", are for the PREPA substations where the Distribution lines start. GIS shapefiles, which show the locations of the lines and the end points, have been uploaded to Grants Portal.

#### Hazard Mitigation Proposal (HMP) Cost:

HM Vegetation Clearance Cost per Mile (w/Soft Cost) = \$36,141.03 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$ 9,610.44 / mile)

**Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile**

Project Total Miles (PN723883) = 684.15805 miles  
Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile  
Hazard Mitigation Total Cost = \$18,151,116.72

Note:

The \$26,530.59 / mile calculation represents the total cost (base costs + soft costs). For this project, breaking down that total cost further yields the approximate figures below. For additional information please see the attached document.

Total Net Hazard Mitigation Cost (Base Cost) = \$12,258,477.12  
+ HM (Applicant A&E, Management & General Conditions) = \$ 5,892,639.60  
Hazard Mitigation Total Cost = \$18,151,116.72

**HMP Cost-Effectiveness Calculations:**

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAAST) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects." Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is \$18,151,116.72 (Hazard Mitigation Total Cost). The cost of this HMP combined with all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

**\*\*See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents (HMP, HMP cost estimate, Supporting documents file).**

## Cost

Code	Quantity	Unit	Total Cost	Section
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$0.00
Total 406 HMP Cost	\$18,151,116.72
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$18,151,116.72
Federal Share (90.00%)	\$16,336,005.05
Non-Federal Share (10.00%)	\$1,815,111.67

## Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.

## Insurance

### Additional Information

11/21/2025

Does the Applicant have a Commercial Policy: Yes

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No

Property insurance coverage for the electrical distribution facilities represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. Applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

**Patricia A. Perez, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR**

## O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## 406 Mitigation

There is no additional mitigation information on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

**Yes**

## EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- NEPA: All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a

Sub-recipient or their contractor beginning borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at close-out and must include fill type (private, commercial, etc.), name, fill site GPS coordinates (not of the company/governmental office), address, and type of material. Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out. For forty-two (42) DLs (refer to GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A"), the following applies: 1- Upon completion of the assessment phase, the project must be versioned and resubmitted for EHP review. Work for these DLs may not begin until EHP review is complete and documented in a Record of Environmental Consideration (REC) that is attached in Grants Manager. Failure to version the project at the close of the assessment phase will result in a project that is not compliant with federal EHP laws and executive orders, which may jeopardize funding, may affect eligibility, and could result in the project becoming ineligible for federal funding. 2- For new and/or temporary access roads, including opening of a hiking path for walking crews, identified as part of this project scope, LUMA is required to submit detail information including type of work to be completed, location (shapefile with linear GIS data) and dimensions (length, width, depth), to FEMA for EHP evaluation prior to any construction, ground disturbance activities and/or any vegetation management.

- NHPA: 1- For forty-two (42) DLs (refer to GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A": FEMA will request the Subrecipient to conduct a Level II Desk Review and Background Research, as described in Stipulation II.D.3.b of the PSPA, for all Undertakings within the APE of all distribution and transmission power lines (T&D) in suburban and rural areas that cannot be accessed from an existing road or transportation right-of-way. The Level II Desk Review should consider information about the vegetation clearing techniques to be used, method of accessing the PREPA ROW and other work areas and will include the review of available information in the SHPO and ICP databases and archaeological survey reports within a 200-meter buffer around the APEs (i.e., 200 meters on either side of the APE). In accordance with Stipulation II.D.5-6 of the PSPA, the Subrecipient will use an SOI-Qualified Archaeologist to carry out the requested desktop review and research and the results must be documented in a Phase I Analysis Report which must be submitted to FEMA for review prior the initiation of any work in the above defined areas. 2- The Subrecipient and/or Subrecipient's contractor shall follow the Low Impact Debris Removal Stipulations (LIDRS) as stated in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022. 3- Unexpected Discoveries: Pursuant to Stipulation III.B of the PSPA, if, in the course of implementing this Individual Undertaking(s), previously unidentified structures, sites, buildings, objects, districts, or archaeological deposits, that may be eligible for listing in the National Register, or human remains are uncovered, or if it appears that an Individual Undertaking has affected or will affect a previously identified historic property in an unanticipated manner, the contractor must notify Subrecipient who will immediately notify the Recipient. Work must stop in the vicinity of the discovery and measures must be taken to protect the discovery and avoid additional harm. 4- Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out.
- CWA: 1. The Applicant shall comply with one of the following conditions including any coordination (emails, letters, documented calls) pertaining to these compliance activities must be documented and maintained in the Applicant's permanent files. Correspondence (email, letter, documented phone conversation, etc. from/with a representative from the U.S. Army Corps of Engineers (USACE) and/or State) indicating that the activity did not require a USACE/State permit authorization (at closeout); OR; A copy of a permit authorization or compliance letter issued by the USACE/State for the specific project and scope of work. If the issued permit required that a compliance certification be submitted to the USACE following the completion of work, please provide a copy of that compliance certification as well; OR; All permits or Pre-Construction Notification (PCN) (at closeout). 2. Chemical methods (i.e., herbicides) could have impacts to surface water, wetland habitat, and groundwater. The proposed project is likely to impact waters of the United States, the subrecipients will be responsible for obtaining all applicable federal, Commonwealth, and local permit approvals and requirements.
- EO11988: 1. Debris may not be staged, stored, or disposed of in the floodplain without obtaining a letter/permit from the state or local floodplain administrator prior to initiating work. 2. Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- ESA: Conservation Measures #1-7 for Puerto Rican Boa for nineteen (19) DLs: 1. Inform all project personnel about the potential presence of the Puerto Rican (PR) boa and Virgin Islands (VI) boa in areas where the proposed work will be conducted and provide training on PR and VI boa identification. A pre-construction meeting will be conducted to inform all project personnel about the need to avoid harming these species. All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act of 1973. An educational poster or sign with photo or illustration of these species will be displayed at the project site. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area and any area to be excluded and protected will be clearly marked in the project plan and in the field to avoid further habitat degradation outside of the footprint of the project. 3. Once areas are clearly marked, and right before the use of heavy machinery and any construction activity (including removal of

vegetation and earth movement), biologist or designated project personnel with experience on these species will survey the areas to be cleared to verify the presence of any PR or VI boa within the Action Area. If a PR or VI boa is found during the search, it should be captured and managed as per #6 below. Once the removal of vegetation begins, the biologist or designated personnel must remain at the work site and be ready to capture any boa that might be in harm's way as the result of the habitat disturbance (see #6). 4. For VI boas, once the Action Area has been searched, vegetation will be cut about one meter above ground prior to the use of heavy machinery for land clearing. Cutting vegetation by hand will allow VI boas present on site to move away on their own to adjacent available habitat. If there is no suitable habitat adjacent to the project site, any VI boa found will be relocated accordingly (see #6). 5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. Data will also include a photo of the animal (dead or alive), relocation site GPS coordinates, time and date of the relocation, and comments on how the animal was detected and its behavior. 6. If any PR or VI boa (dead or alive) is found within the Action Area and on harm's way, the action will stop, and information will be recorded (see #5). All attempts will be made to immediately safely capture and relocate the animal within suitable habitat (forested) at least 1km from the Action Area and away from construction areas. PR boa relocation sites will be pre-determined before the project starts and sites shared with the Service for revision and concurrence. Relocation of PR boas will be conducted by trained, designated personnel ensuring the animal is not harmed or injured during the capture and relocation process. 7. Measures will be taken to avoid and minimize PR boa and VI boa casualties by heavy machinery or motor vehicles being left in the Action Area. \*. Any heavy machinery left on site (staging areas) or near potential PR or VI boa habitat will be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the heavy machinery. If a PR boa or VI boa is found within vehicles or heavy machinery, boas will be safely captured accordingly. If not possible, the animal will be left alone until it leaves the vehicle or machine by itself. \*. The PR boa and VI boa may seek shelter within debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in new debris piles as a result of project activities. New debris piles should be placed in areas as far as possible from forested areas. Prior to moving, disposing, or shredding, debris piles should be carefully inspected for the presence of PR boas and VI boas. If debris piles will be left on site, we recommend they be placed in an undisturbed area. \*. In the event a PR boa and VI boa is found dead within the project area, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. \*. If a PR boa or a VI boa is accidentally injured or killed during capture and relocation activities during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. \*. Should the forms of take reach the amount of exempted take during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. For questions and to submit reports, the Service's Point of Contact (POC) is José Cruz-Burgos, Endangered Species Coordinator, and can be contacted at: \*. Mobile: 305-304-1386 \*. Office phone: 786-244-0081 \*. Office Direct Line: 939-320-3120 \*. Email: Caribbean\_es@fws.gov or jose\_cruz-burgos@fws.gov Banara vanderbiltii (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A"): 1. For twenty-one (21) DLs: 1201-01, 1203-0, 11203-03, 1204-02, 1204-03, 1204-04, 1206-02, 1206-03, 1206-04, 1303-01, 1303-02, 1303-04, 1303-05, 1345-01, 1345-02, 1345-03, 1346-04, 1346-06, 1602-05, 1620-05 and 1646-01, the Applicant must complete surveys for Banara vanderbiltii in these worksites. Once completed, the surveys must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant. Otoschulzia rhodoxylon (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A"): 1. For DL 1530-08, the Applicant must complete surveys for Otoschulzia rhodoxylon in these worksites. Once completed, the survey must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant. Otoschulzia rhodoxylon (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A"): 1. For DL 1530-08, the Applicant must complete surveys for Otoschulzia rhodoxylon in these worksites. Once completed, the survey must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant. The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.

- EO11990: 1. The applicant is responsible for proper identification of wetlands. Under EO11990 (Protection of Wetlands); the applicant is responsible for coordinating with and obtaining any required Section 404 Permit(s) from the United States Army Corps of Engineers (USACE) prior to initiating work. The applicant shall comply with all conditions of the required permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files. 2. Debris may not be staged, stored, or disposed of in wetlands without the required permits.
- RCRA: 1- The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction and/or vegetative debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered

during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.

## EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## Final Reviews

### Final Review

**Reviewed By** Amaro, Luis N.

**Reviewed On** 05/17/2024 11:08 AM PST

#### Review Comments

LNA 05/17/24. This project has been reviewed, found eligible and cost reasonable, and it is ready to continue the award process.

### Recipient Review

**Reviewed By** Salgado, Gabriel

**Reviewed On** 05/17/2024 12:59 PM PST

#### Review Comments

Recipient review completed. Applicant must ensure to compliance with all regulatory requirements and PA policy. Project is ready for applicant review.

## Project Signatures

**Reviewed By** Miller, Thomas

**Reviewed On** 05/17/2024 1:36 PM PST

## General Info

<b>Project #</b>	723883	<b>P/W #</b>	11696	<b>Project Type</b>	Specialized
<b>Project Category</b>	F - Utilities	<b>Applicant</b>	PR Electric Power Authority (000-UA2QU-00)		
<b>Project Title</b>	FAASt [Region 1 -San Juan Group A] (Vegetation)		<b>Event</b>	4339DR-PR (4339DR)	
<b>Project Size</b>	Large	<b>Declaration Date</b>	9/20/2017		
<b>Activity Completion Date</b>	9/20/2027	<b>Incident Start Date</b>	9/17/2017		
<b>Process Step</b>	Obligated	<b>Incident End Date</b>	11/15/2017		

## Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

**Damage #1333874; FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]**

**General Facility Information:**

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 1 San Juan Transmission/Distribution 38 KV and below
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines, as well as more than 400 substations. The facilities addressed in this project are all the overhead transmission and distribution lines (16,000+ miles), as well as substations. To ensure the functioning of this infrastructure to the level of service needed, keeping this equipment clear from vegetation is significant.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED] 1

## Final Scope

1333874 **FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]**

\*\*\*\*\*Version 1 \*\*\*\*\*

Version 1 was created to amend EHP REC document. One of the data mentioned in this document is the number of Distribution lines of the project, in the document only 148 were mentioned, and it is going to be remade with the correct number of 150 DL. Refer to document: 723883-DR4339PR-Request Amendment V1.pdf. At this time, no additional SOW and costs changes are included in this version.

The DDD and SOW of this DI remains the same as in Version 0.

Note: SOW from previous version has been removed from current SOW. It can be found in the "Versioning and Amendments" tab in GM.

### 406 HMP Scope

Project number: 723883; FAASt [Region 1 -San Juan Group A] (Vegetation)

**Damage #:** 1333874; FAASSt [Region 1 San Juan Transmission/Distribution 38 kV and below]

**Applicant:** PR Electric Power Authority (000-UA2QU-00)

**Location:** San Juan, Puerto Rico

**GPS Latitude/Longitude:** [REDACTED]

### Introduction

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane Maria in September 2017. The hurricane caused widespread disruptions to transmission and distribution systems, largely due to vegetation impacts that collapsed distribution and transmission lines. Substantial infrastructure was damaged when trees downed power lines and poles, causing most of the transmission/distribution system to fail. Post-hurricane vegetation clearance to enable grid repair and restoration progressed slowly, considerably delaying overall electrical recovery. Remaining excess vegetation continues to cause operational outages, as ground faults occur when vegetation contacts power lines even during normal weather events. After the passage of Hurricane María, minimal cleaning work was carried out exclusively to clear the areas to carry out emergency repairs to the electrical system. These works were covered by Category B - Emergency Protective Measure, but excess vegetation on the electrical system remains an outstanding vulnerability.

The Puerto Rico's grid modernization and mitigation one-time ROW clearance strategy will prioritize effective and proactive vegetation management protocols to prevent prolonged storm-related outages, thereby increasing the reliability of the electric system. These reliability and resiliency gaps are especially impactful to Puerto Rico which has been facing increasingly frequent natural hazards such as hurricanes. This project is part of the Vegetation Reset Programs which will impact the Transmission and Distribution system for each of the 78 municipalities.

### Hazard Mitigation Narrative

The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation remediation clearance for the above work included in the PREPA FAASSt Project, as according to the Public Assistance Alternative Procedures (PAAP) (Section 428) Guide for Permanent Work FEMA-4339-DR-PR (hereinafter PR PAAP Guide) and FEMA's letter to COR3, document Signed Island-Wide Vegetation Clearance March 24, 2023 (Refer to "Attachment A - FEMA letter dated March 24 2023.pdf"). Section 406 hazard mitigation funds are funds that can be added to projects for the restoration of disaster-damaged facilities and must prevent similar future damage caused by the declared event. Under DR-4339-PR, Section 406 hazard mitigation funds are based on eligible, technically feasible, and cost-effective mitigation activities proposed to reduce risk to the function of the disaster-damaged facilities. The portion of the recovery solution that reduces risk of future similar damages may be considered as eligible 406 mitigation.

The island-wide transmission and distribution grid was significantly damaged by the strong winds and heavy rainfall during the atmospheric event hurricane Maria. This resulted in many trees and other vegetation becoming a direct hazard to the electrical grid. A one-time 406 hazard mitigation island-wide vegetation clearance will benefit the reliability and resiliency of the Puerto Rico electrical grid, including the number and duration of customer outages during and after the work to complete the repairs to the electrical grid through other PREPA 428 FAASSt Projects.

This 406 HM work is limited to what is necessary to directly reduce the potential of future similar damage to the T&D system assets, that exceeds what is necessary to clear vegetation for accessing facilities when carrying out repairs which are already established as eligible for FEMA funding utilizing the 428 FAASSt Grant. Each 406 HM project will correlate to an eligible 428 Transmission and/or Distribution (T&D) project in association with the PREPA power grid. There will be 5 Regional DSOW's developed in Region 1 San Juan, capturing planned actions within scopes of work formulated with an established criteria detailed for Distribution and Transmission lines/facility locations within the San Juan Region. The first DSOW is Group A within the San Juan Region without known local environmental sensitivities; the second DSOW is Group B without known local environmental sensitivities; the third DSOW is Group C - with known local environmental sensitivities; the fourth DSOW is 115kV Facilities; and the fifth DSOW is Substation and Telecommunication Facilities. There will also be one DSOW for all 230kV Facilities that is not region-specific.

This SOW is aligned with and leverages FEMA's Island-Wide Benefits Cost Analysis (IWBCA), which was used for this purpose and fully support the mitigation measures employed within this project scope of work.

The Subrecipient's authorized representative (LUMA) estimates that this 406-hazard mitigation proposal for island-wide vegetation clearance will have immediate and future widespread benefits, including:

- Mitigation of the hazards due to vegetation impacts and damages.
- 70% annual reduction of outages caused by vegetation.
- 35-45% annual reduction of customer interruptions.
- Faster restoration for impacted customers.

- Improved safety for utility workers and the public.
- Support the rebuilding of the grid and effective execution of large-scale construction projects.

The PREPA distribution and transmission systems are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them compatible or incompatible with the safe and reliable energy delivery service. The Subrecipient's authorized representative recognizes the diversity of species in tropical ecosystems, and the general remediation strategy is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Within Appendix A and B are lists of protected flora species and incompatible flora species expected to be encountered during scope performance.

**Proposed 428 Public Assistance Scope of Work (SOW):**

This project does not include Section 428 mitigation work. However, necessary vegetation clearing will be conducted during execution of distribution and transmission line repair and rehabilitation projects, such as pole and line replacement and access road clearing to reach work areas (access road). These public assistance-covered works will be deducted from the Section 406 Hazard Mitigation project costs to avoid duplication of benefits.

FEMA PA and HM Subject Matter Experts (SMEs) in collaboration with HM Specialists with professional engineer background experience in the Puerto Rico's electric (T&D) system, determined the following unit cost per mile to be prudent as a deduction to avoid funding overlapping work between the PA and HMP Sub- FAAS projects. The unit cost will be used to calculate the applicable reduction in the Vegetation HMP Sub-FAAS projects' FCE offers; \$9,610.44 per mile of Distribution System

Note: This unit cost specifically applies to the Distribution System projects. The Transmission System projects will require a separate evaluation to determine a unit cost according to the assets characteristics.

Refer to "FAASVegetationHMPApproach\_Distribution\_02.06.2024.pdf" for the methodology used to calculate the applicable reduction in the Vegetation HMP Sub FAAS projects offers.

**Hazard Mitigation Proposal (HMP) Scope of Work:**

As a result of DR-4339-PR, vegetation surrounding T&D assets are falling onto these facilities and interfering with the safe and reliable operation of the assets. The vegetation at present is currently causing outages when vegetation is in contact with the T&D assets. To mitigate the future damage across T&D assets and protect the 428 repairs and replacement along these facilities, clearing vegetation materials will be required. This 406 Hazard Mitigation Scope of Work is to directly reduce the potential of future, similar damages to the T&D system by clearing vegetative materials that pose an immediate threat to the power distribution lines, and identification for corrective actions related to clearing vegetation (consisting of shrubs, branches, limbs, stumps, bamboo, and trees that are directly impacting the resilience and productivity of the power grid) applicable to the existing PREPA electrical grid within Region 1 (San Juan) of Puerto Rico.

The extent of this scope includes performing condition assessments for determining the most appropriate remediation, preparing work orders for executing the necessary vegetation remediation, by ways of tree felling, vegetation remediation, mechanical vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, recycling, and use of environmentally approved herbicide applications where applicable in Right of Ways (ROW) of the PREPA power Transmission and Distribution lines. For this project version, no additional works for access roads clearance are being contemplated.

**Parameters for Performing 406 Hazard Mitigation Vegetation Clearing**

Regulation 7282 requires that only shrubs and plants (no trees) be planted within the Right of Way under power lines. Climbing plants and vines, as well as bamboo, are prohibited from being planted within a Right of Way. The branches of trees planted outside the Right of Way must not obstruct free passage of the power lines. For power distribution lines, Regulation 7282 defines the vertical distance from vegetation as 12 feet . By law, any trees, shrubs, or plants planted in violation of Regulation 7282 may be uprooted, removed, or cut down in accordance with the provisions of Regulation 7282 – for both compatible and incompatible species.

Industry standard practices will determine how the work will be performed. A healthy tree is less likely to fall over in a storm and damage overhead lines; therefore, vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Vegetation that is improperly pruned could become susceptible to disease and decay, resulting in a hazard to both the line and public safety. ANSI A300 is the tree care industry standard of care in the USA. It was developed by Tree Care Industry Association and maintained by a consensus of various industry stakeholders through periodically reviewing and updating the guidelines. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant. In all cases, Subrecipient's authorized representative's vegetation clearing contractors will be required to perform clearing activities in a manner consistent with ANSI A300 and Regulation 7282. Standard Right of Way widths for distribution lines are given in the table below:

Line Type	Voltage Class	Standard Right of Way Width Edge to Edge (from Centerline)
Single Phase (1Ø)	7.6/13.2kV	10' (5')
Multi-phase (2-3Ø)	7.6/13.2kV	10' (5')
Double circuit 3Ø	7.6/13.2kV	10' (5')
Aerial Spacer Cable	7.6/13.2kV	10' (5')
Single Phase (1Ø)	4.8/8.3kV	10' (5')
Multi-phase (2-3Ø)	4.8/8.3kV	10' (5')

### Scope of Work Inside Right of Way – Incompatible Species

For the power distribution lines, all Incompatible Species will be cleared from the full width of the Right of Way. "Clearing" in this context includes the following activities: tree removal, severing of vines, cutting, mechanical mastication, and application of herbicides.

- Tree removal: Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place. The stump is then treated with an herbicide to permanently eliminate the tree from the site.
- Severing of vines: Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. The stumps of vines that have been removed are typically treated with an herbicide to permanently eliminate them. Vines are severed and treated by a qualified worker at ground level. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter Incompatible Species by hand. Freshly cut stumps are treated with an herbicide to permanently eliminate the tree from the site.
- Mechanical mastication: Mastication work involves heavy clearing of trees using heavy equipment fitted with a variety of cutting heads capable of reducing standing trees to woody debris.

Use of herbicides: While physically removing Incompatible Species addresses the immediate risk, cut vegetation will re-sprout and grow vigorously. Application of an herbicide eliminates the plant by killing the root system. Cut stump applications involve treating the cut face of the stump, remaining bark to ground line and the surface of any exposed roots.

### Scope of Work Inside Right of Way – Compatible Species

Compatible vegetation species will be cleared consistent with the distances identified in Regulation 7282, which means that any species with the potential to encroach within 12 feet of the conductors at full size will be removed using the same methods discussed above. Even though the distances identified in Regulation 7282 are vertical clearances, Compatible Species encroaching on the conductors from any direction can pose a hazard to the line. Therefore, the 12-foot clearance is being applied to both vertical and horizontal clearances.

In rare cases where Subrecipient's authorized representative encounters significant resistance from landowners or stakeholders to remediate vegetation, Subrecipient's authorized representative will work with landowners or stakeholders to determine if Incompatible and Compatible Species can be pruned to mitigate the hazard to the lines instead of being completely removed. Depending on the size and species of the tree, tree growth regulators will be injected into the soil root plate around the base of the tree to reduce the rate of stem elongation following pruning and reduce the tree's regrowth response.

### Scope of Work Outside Right of Way – Species Growing into the Right of Way

There is the potential for vegetation outside or along the boundary of the Right of Way to interfere with the operation of power distribution lines. Appropriate clearances around the conductors must be achieved to protect the lines from future damage. For distribution lines, Subrecipient's authorized representative has established a minimum clearance distance of 12 feet from all conductors. This distance is consistent with the vertical distance established in Regulation 7282. If there are species encroaching on

the 12-foot clearance outside or along the boundary of the Right of Way, these species will be pruned to obtain at least 12 feet of clearance from the conductors at the time clearance work occurs. In cases where following ANSI A300 best practices require clearance beyond 12 feet, the maximum distance cleared will not exceed 15 feet. Diagrams illustrating these clearing distances are provided as Attachment B-“FAASTVegetationHMPApproach\_Distribution\_02.06.2024.pdf”.

Tree pruning: Qualified personnel work from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.

**Power Distribution Primary Group A - Vegetation Clearing Work Locations, Cost, and Description**

Distribution lines typically start at substations and branch out in multiple directions to serve end-use customers. The GPS coordinate points provided in “Appendix C”, are for the PREPA substations where the Distribution lines start. GIS shapefiles, which show the locations of the lines and the end points, have been uploaded to Grants Portal.

Hazard Mitigation Proposal (HMP) Cost:

HM Vegetation Clearance Cost per Mile (w/Soft Cost) = \$36,141.03 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$ 9,610.44 / mile)

**Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile**

Project Total Miles (PN723883) = 684.15805 miles

Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile

**Hazard Mitigation Total Cost = \$18,151,116.72**

Note:

The \$26,530.59 / mile calculation represents the total cost (base costs + soft costs). For this project, breaking down that total cost further yields the approximate figures below. For additional information please see the attached document.

Total Net Hazard Mitigation Cost (Base Cost) = \$12,258,477.12

+ HM (Applicant A&E, Management & General Conditions) = \$ 5,892,639.60

**Hazard Mitigation Total Cost = \$18,151,116.72**

HMP Cost-Effectiveness Calculations:

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAAST) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects." Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is \$18,151,116.72 (Hazard Mitigation Total Cost). The cost of this HMP combined with all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

**\*\*See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents (HMP, HMP cost estimate, Supporting documents file).**

## Cost

Code	Quantity	Unit	Total Cost	Section
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$0.00
Total 406 HMP Cost	\$18,151,116.72
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$18,151,116.72
Federal Share (90.00%)	\$16,336,005.05
Non-Federal Share (10.00%)	\$1,815,111.67

## Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.

## Insurance

### Additional Information

11/21/2025

Does the Applicant have a Commercial Policy: Yes

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No

Property insurance coverage for the electrical distribution facilities represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. Applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

**Patricia A. Perez, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR**

## O&M Requirements

There are no Obtain and Maintain Requirements on **FAAST [Region 1 -San Juan Group A] (Vegetation)**.

## 406 Mitigation

There is no additional mitigation information on **FAAST [Region 1 -San Juan Group A] (Vegetation)**.

## Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

**Yes**

## EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- NEPA: 1. All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a

Sub-recipient or their contractor beginning borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at close-out and must include fill type (private, commercial, etc.), name, fill site GPS coordinates (not of the company/governmental office), address, and type of material. 2. Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out. For forty-two (42) DLs (refer to GM data file "723883\_20240624\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revise"), the following applies: 3. Upon completion of the assessment phase, the project must be versioned and resubmitted for EHP review. Work for these DLs may not begin until EHP review is complete and documented in a Record of Environmental Consideration (REC) that is attached in Grants Manager. Failure to version the project at the close of the assessment phase will result in a project that is not compliant with federal EHP laws and executive orders, which may jeopardize funding, may affect eligibility, and could result in the project becoming ineligible for federal funding. 4. For new and/or temporary access roads, including opening of a hiking path for walking crews, identified as part of this project scope, LUMA is required to submit detail information including type of work to be completed, location (shapefile with linear GIS data) and dimensions (length, width, depth), to FEMA for EHP evaluation prior to any construction, ground disturbance activities and/or any vegetation management.

- NHPA: 1- For forty-two (42) DLs (refer to GM data file "723883\_20240624\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revise"): FEMA will request the Subrecipient to conduct a Level II Desk Review and Background Research, as described in Stipulation II.D.3.b of the PSPA, for all Undertakings within the APE of all distribution and transmission power lines (T&D) in suburban and rural areas that cannot be accessed from an existing road or transportation right-of-way. The Level II Desk Review should consider information about the vegetation clearing techniques to be used, method of accessing the PREPA ROW and other work areas and will include the review of available information in the SHPO and ICP databases and archaeological survey reports within a 200-meter buffer around the APEs (i.e., 200 meters on either side of the APE). In accordance with Stipulation II.D.5-6 of the PSPA, the Subrecipient will use an SOI-Qualified Archaeologist to carry out the requested desktop review and research and the results must be documented in a Phase I Analysis Report which must be submitted to FEMA for review prior the initiation of any work in the above defined areas. 2- The Subrecipient and/or Subrecipient's contractor shall follow the Low Impact Debris Removal Stipulations (LIDRS) as stated in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022. 3- Unexpected Discoveries: Pursuant to Stipulation III.B of the PSPA, if, in the course of implementing this Individual Undertaking(s), previously unidentified structures, sites, buildings, objects, districts, or archaeological deposits, that may be eligible for listing in the National Register, or human remains are uncovered, or if it appears that an Individual Undertaking has affected or will affect a previously identified historic property in an unanticipated manner, the contractor must notify Subrecipient who will immediately notify the Recipient. Work must stop in the vicinity of the discovery and measures must be taken to protect the discovery and avoid additional harm. 4- Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out.
- CWA: 1. The Applicant shall comply with one of the following conditions including any coordination (emails, letters, documented calls) pertaining to these compliance activities must be documented and maintained in the Applicant's permanent files. Correspondence (email, letter, documented phone conversation, etc. from/with a representative from the U.S. Army Corps of Engineers (USACE) and/or State) indicating that the activity did not require a USACE/State permit authorization (at closeout); OR; A copy of a permit authorization or compliance letter issued by the USACE/State for the specific project and scope of work. If the issued permit required that a compliance certification be submitted to the USACE following the completion of work, please provide a copy of that compliance certification as well; OR; All permits or Pre-Construction Notification (PCN) (at closeout). 2. Chemical methods (i.e., herbicides) could have impacts to surface water, wetland habitat, and groundwater. The proposed project is likely to impact waters of the United States, the subrecipients will be responsible for obtaining all applicable federal, Commonwealth, and local permit approvals and requirements.
- EO1988 Floodplains: 1. Debris may not be staged, stored, or disposed of in the floodplain without obtaining a letter/permit from the state or local floodplain administrator prior to initiating work. 2. Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
- ESA: Conservation Measures #1-7 for Puerto Rican Boa for nineteen (19)DLs: 1. Inform all project personnel about the potential presence of the Puerto Rican (PR) boa and Virgin Islands (VI) boa in areas where the proposed work will be conducted and provide training on PR and VI boa identification. A pre-construction meeting will be conducted to inform all project personnel about the need to avoid harming these species. All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act of 1973. An educational poster or sign with photo or illustration of these species will be displayed at the project site. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area and any area to be excluded and protected will be clearly marked in the project plan and in the field to avoid further habitat degradation outside of the footprint of the project. 3. Once

areas are clearly marked, and right before the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), biologist or designated project personnel with experience on these species will survey the areas to be cleared to verify the presence of any PR or VI boa within the Action Area. If a PR or VI boa is found during the search, it should be captured and managed as per #6 below. Once the removal of vegetation begins, the biologist or designated personnel must remain at the work site and be ready to capture any boa that might be in harm's way as the result of the habitat disturbance (see #6). 4. For VI boas, once the Action Area has been searched, vegetation will be cut about one meter above ground prior to the use of heavy machinery for land clearing. Cutting vegetation by hand will allow VI boas present on site to move away on their own to adjacent available habitat. If there is no suitable habitat adjacent to the project site, any VI boa found will be relocated accordingly (see #6). 5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. Data will also include a photo of the animal (dead or alive), relocation site GPS coordinates, time and date of the relocation, and comments on how the animal was detected and its behavior. 6. If any PR or VI boa (dead or alive) is found within the Action Area and on harm's way, the action will stop, and information will be recorded (see #5). All attempts will be made to immediately safely capture and relocate the animal within suitable habitat (forested) at least 1km from the Action Area and away from construction areas. PR boa relocation sites will be pre-determined before the project starts and sites shared with the Service for revision and concurrence. Relocation of PR boas will be conducted by trained, designated personnel ensuring the animal is not harmed or injured during the capture and relocation process. 7. Measures will be taken to avoid and minimize PR boa and VI boa casualties by heavy machinery or motor vehicles being left in the Action Area. \*. Any heavy machinery left on site (staging areas) or near potential PR or VI boa habitat will be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the heavy machinery. If a PR boa or VI boa is found within vehicles or heavy machinery, boas will be safely captured accordingly. If not possible, the animal will be left alone until it leaves the vehicle or machine by itself. \*. The PR boa and VI boa may seek shelter within debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in new debris piles as a result of project activities. New debris piles should be placed in areas as far as possible from forested areas. Prior to moving, disposing, or shredding, debris piles should be carefully inspected for the presence of PR boas and VI boas. If debris piles will be left on site, we recommend they be placed in an undisturbed area. \*. In the event a PR boa and VI boa is found dead within the project area, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. \*. If a PR boa or a VI boa is accidentally injured or killed during capture and relocation activities during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. \*. Should the forms of take reach the amount of exempted take during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. For questions and to submit reports, the Service's Point of Contact (POC) is José Cruz-Burgos, Endangered Species Coordinator, and can be contacted at: \*. Mobile: 305-304-1386 \*. Office phone: 786-244-0081 \*.Office Direct Line: 939-320-3120 \*. Email: Caribbean\_es@fws.gov or jose\_cruz-burgos@fws.gov

- EO11990 Wetlands: 1. The applicant is responsible for proper identification of wetlands. Under EO11990 (Protection of Wetlands); the applicant is responsible for coordinating with and obtaining any required Section 404 Permit(s) from the United States Army Corps of Engineers (USACE) prior to initiating work. The applicant shall comply with all conditions of the required permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files. 2. Debris may not be staged, stored, or disposed of in wetlands without the required permits.
- RCRA: 1- The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction and/or vegetative debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- Endangered Species Act (ESA) - The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- Endangered Species Act (ESA) - *Banara vanderbiltii* (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised"): 1. For twenty-one (21) DLs: 1201-01, 1203-0, 11203-03, 1204-02, 1204-03, 1204-04, 1206-02, 1206-03, 1206-04, 1303-01, 1303-02, 1303 -04, 1303-05, 1345-01, 1345-02, 1345-03, 1346-04, 1346-06, 1602-05, 1620-05 and 1646-01, the Applicant must complete surveys for *Banara vanderbiltii* in these worksites. Once completed, the surveys must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant.
- Endangered Species Act (ESA) - *Ottoschulzia rhodoxylon* (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised"): 1. For DL 1530-08, the Applicant must complete

surveys for *Ottoschulzia rhodoxylon* in these worksites. Once completed, the survey must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant.

- Endangered Species Act (ESA) - Conservation Measures for *Eretmochelys imbricata*, *Dermochelys coriacea*, *Chelonia mydas* and *Caretta caretta* for DL 1102-05. 11. During sea turtle nesting season (March 1 to November 30), a qualified sea turtle monitor must survey beach work areas each morning for possible nests. Nests found in the area should be marked or flagged in place. Outside of nesting season, these areas should be surveyed at least twice a week. Debris removal or construction on beaches may only begin after morning surveys are completed by the sea turtle monitor, and nests are clearly marked. \* All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act of 1973, as amended. \* Surveys shall be conducted by sea turtle permit holders or trained personnel following PRDNER/DPNR-DFW protocols. (See image and list of contacts below.) \* Nests located adjacent to the work area should be marked with flagging, creating a 10-foot square roped-off buffer with an unobstructed path leading from the nest to the water. \* Nest surveys must be conducted in the mornings, immediately before any construction activity commences. \* Sea turtle monitoring groups should possess site-specific information for nests in their designated areas and should communicate these details to work crews to ensure avoidance. For Puerto Rico contact: \* ATMAR: 787-448-8627 \* Chelonia: 787-306-0916 \* DRNA Loiza: - 787-453-6484 \* DRNA Rio Grande: - 787-646-9689 \* Reserva Natural de Humacao: 787-594-6568 \* Siete Quillas: 787-688-6763 \* TICATOVE Vieques: 787-438-4493 \* Tortugueros del CEN: 787-635-4493 \* Tortugueros de Culebra: 787-685-7820 \* Tortugueros de Isla Verde: 787-604-4959 \* Tortugueros del Sur: 787-341-8888 \* Vida Marina: 787-380-5254, 787-206-6800 \*. Yo Amo el Tinglar: 939-276-9901 12. During the sea turtle nesting season, repair or replacement of structures shall occur in the same location or footprint of the previously permitted structure. If the current project's footprint does not stay within previously permitted structure's footprint, then the Service must be consulted. 13. Relocation of sea turtle nests to accommodate construction is not authorized. 14. All project activity shall be confined to daylight hours following the completion of all necessary marine turtle surveys and conservation activities. The sea turtle monitor shall be available via telephone after the initial inspection throughout the workday. 15. If planting will occur, only native plant species are authorized to be planted. Existing native dune vegetation shall be disturbed to the minimum extent necessary. Removal of standing and live coastal vegetation (e.g., sea grapes, mangroves) that are not a hazard is unauthorized. No sea grass, sea weeds, algae nor beach sand shall be removed during beach debris removal efforts. Any vegetation planting shall be installed by hand labor and tools. Irrigation systems shall not be installed within nesting habitat. Prior to any planting, the Applicant will submit a vegetation plan to the Service at: [caribbean\\_es@fws.gov](mailto:caribbean_es@fws.gov). If a sea turtle nest is disturbed or uncovered during vegetation planting activity or project excavation, all work shall cease, and the sea turtle monitor shall be immediately contacted to assess the situation and provide guidance on the appropriate steps to safeguard the nest. If a nest(s) cannot be safely avoided during construction, all activity within the affected project area shall be delayed until complete hatching and emergence of the nest. 16. Placement of fill shall not occur within 10 feet of or in any area seaward of a marked sea turtle nest. Nests shall be marked in place with a roped off 10-foot buffer. Dependent upon the fill volume and slope, distance offset from marked turtle nests may be required to be larger to avoid indirect impacts (e.g., fill slumping) to the nest. If the turtle nest cannot be avoided by this distance due to the scope of the project, all work near the nest must be postponed until nestlings emerge from the nest and make their way safely to the sea. If a sea turtle nest is found after November; work should be postponed until the nestlings have safely hatched and made their way to the sea. 17. All excavations and temporary alteration of beach topography shall be contoured or leveled to the natural beach profile prior to dusk each day. This includes raking of tire ruts, filling pits or holes where debris was removed, etc. Any potential obstructions such as debris piles, equipment, etc. shall also be removed from the beach by the end of each workday. Fill must be placed as landward as practicable to establish or repair dune features. The existing or pre-disaster beach and dune profile must be considered when determining the appropriate siting of fill to provide reasonable longevity of the project. 18. No vehicles, equipment, staging or debris should be used, parked, or stored landward of the primary dune or in vegetated areas. Staging/parking/storage areas shall be located on paved surfaces as much as possible and outside of vegetated areas. Lightweight, all terrain style vehicles, with tire pressures of 10 psi or less can operate on the beach and are the preferred transportation method. However, use of heavy equipment on the beach can be allowed provided it is taken off the beach by 1600 AST local time every night using an approved and designated beach access. All driving on the beach shall be between the high-water mark and the water's edge. 19. Removal of vegetation, fence installation, construction activities, and light installation shall be limited within 50 meters from the high tide line. 20. No construction involving lights shall be used during the nesting season. Outside of the nesting season, in Puerto Rico and the U.S. Virgin Islands, it is mandatory to have a lighting plan that incorporates sea turtle-friendly lights for coastal areas whenever lights are being repaired or newly installed. For projects in Puerto Rico, compliance with Puerto Rico Law 218 of 2008, which addresses the Control and Prevention of Lighting Pollution in Puerto Rico, and the PR EQB 2016 Regulation to Control and Prevent Light Contamination, is also required. These lighting plans should be submitted to the [Serviceatcaribbean\\_es@fws.gov](mailto:Serviceatcaribbean_es@fws.gov) for review. When submitting the lighting plan, please include: \*The name and location of the project. \*A brief description of the project. \*An associated tracking number (if available). \*A Point of Contact. After the plan has been fully implemented, the Applicant is responsible for conducting a lighting inspection to identify and correct any remaining problematic lights. 21. If an unmarked sea turtle crawl is encountered during or prior to project activity, the work crew shall not disturb the integrity of the crawl. Project personnel shall follow the crawl up the beach or into the dune and contact the qualified sea turtle monitor to inform of the location of the crawl. Care shall be taken to avoid walking or driving equipment over or near a crawl so that a potential nest is not damaged. 22. Any collision(s) with and/or injury to any sea turtle in water, occurring during the construction of a project, shall be reported immediately to PRDNER/DPNR-DFW and the National Marine Fisheries Service's (NMFS) Protected Resources Division (PRD) at (1-727-824-5312) or by email to

take report.nmfsser@noaa.gov and SAJ-RD-Enforcement@usace.army.mil. 23. All sea turtle sightings and incidents involving nesting sea turtles or hatchlings shall be reported to PRDNER/DPNR-DF and the Service. The Service's point of contact is José Cruz-Burgos, Endangered Species Program Coordinator: Mobile: 305-304-1386 Office phone: 786-244-0081 Office Direct Line: 939-320-3120 Email: caribbean\_es@fws.gov

## EHP Additional Info

There is no additional environmental historical preservation on **FAAST [Region 1 -San Juan Group A] (Vegetation)**.

## Final Reviews

### Final Review

**Reviewed By** Amaro, Luis N.

**Reviewed On** 07/16/2024 5:32 PM PST

#### Review Comments

LNA 07/16/24. This project has been reviewed and it is ready to continue the process.

### Recipient Review

**Reviewed By** Mulero, Noel

**Reviewed On** 07/19/2024 3:32 PM PST

#### Review Comments

Version #1 was created only for EHP document correction (REC). Project total of overhead (OH) DLs (previously 148) is modified to one-hundred and fifty (150) to include DLs 1133-05 and 1619-02, and special conditions were included for sea turtles. Version did not have SOW or CE change. Recipient review completed. Applicant must ensure to compliance with all regulatory requirements and PA policy. Project is ready for applicant review.

## Project Signatures

**Reviewed By** Miller, Thomas

**Reviewed On** 07/19/2024 5:16 PM PST

## General Info

<b>Project #</b>	723883	<b>P/W #</b>	11696	<b>Project Type</b>	Specialized
<b>Project Category</b>	F - Utilities	<b>Applicant</b>	PR Electric Power Authority (000-UA2QU-00)		
<b>Project Title</b>	FAASt [Region 1 -San Juan Group A] (Vegetation)			<b>Event</b>	4339DR-PR (4339DR)
<b>Project Size</b>	Large	<b>Declaration Date</b>	9/20/2017		
<b>Activity Completion Date</b>	9/20/2027	<b>Incident Start Date</b>	9/17/2017		
<b>Process Step</b>	Obligated	<b>Incident End Date</b>	11/15/2017		

## Damage Description and Dimensions

The Disaster # 4339DR, which occurred between 09/17/2017 and 11/15/2017, caused:

### Damage #1333874; FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

#### General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 1 San Juan Transmission/Distribution 38 KV and below
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines, as well as more than 400 substations. The facilities addressed in this project are all the overhead transmission and distribution lines (16,000+ miles), as well as substations. To ensure the functioning of this infrastructure to the level of service needed, keeping this equipment clear from vegetation is significant.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED]

## Final Scope

### 1333874 FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

\*\*\*\*\*Version 2 \*\*\*\*\*

Version 2 was created to align the scope and cost associated with mitigating vegetation surrounding Transmission and Distribution (T&D) Assets. The amendment submitted will address additions to the scope specific to Feeders being included that were previously not submitted and includes alignment of all scope throughout the DSOW to align with the 5 other Regional Group A DSOWs. Also included in this amendment request are revised and aligned costs as it relates to clearing vegetation materials to directly reduce the potential of future similar damages to the T&D system that pose an immediate threat to the power distribution lines of the PREPA electrical grid with Region 1 (San Juan).

Note: SOW from previous version has been removed from current SOW. It can be found in the “Versioning and Amendments” tab in GM.

Project 136271 (hereinafter PREPA FAASt Project) authorized \$9,459,885,412.39 (Federal Share) to be awarded to the Puerto Rico Electric Power Authority (PREPA, Subrecipient) as a fixed cost estimate (FAASt FCE agreement) based on eligible work without detailed scopes of work to restore disaster-damaged facilities. Eligible work for the Transmission and Distribution (T&D) system included restoration of:

Broken structures due to high winds such as poles/towers (counted as broken when poles were inclined, bent, torn, and/or

cracked); and other damages/broken components such as transformers, insulators, conductors, grounding system, jumpers, Gang Operated Air Breakers (GOABs), pole hardware, guy wires and anchors.

FEMA deferred the 406 Hazard Mitigation Proposal (HMP) fixed cost offer in the PREPA FAASSt Project until the Subrecipient submits its actual recovery solutions. FEMA also issued a clarification letter regarding whether hazard mitigation funding under Section 404 or Section 406 of the Stafford Act may be made available for the execution of a one-time, island-wide vegetation clearing and removal operation intended to mitigate the threat to the existing vegetation, if untended to, poses to Puerto Rico's electric T&D system. See FEMA's letter to COR3, document Signed Vegetation Management March 24 2023.pdf. The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation clearance and removal operation intended to mitigate the threat to the existing vegetation, if untended to, poses to Puerto Rico's electric T&D system. The actual recovery solution seeks to mitigate the Puerto Rico's electric T&D system, including areas without infrastructure repairs.

The actual recovery solution (scope and cost) will be captured in multiple individual projects (hereinafter Vegetation clearance HMP Sub-FAASSt projects) to provide flexibility and enable multiple programmatic reviews simultaneously. The Vegetation clearance HMP Sub-FAASSt projects do not include infrastructure repair work.

This project captures a portion of the Island-wide actual recovery solution, specifically the one-time vegetation clearance and removal operation intended to mitigate the San Juan Region 1 Group A (see project note #1 and #2).

FEMA 406 Hazard Mitigation (HM) team will review this actual recovery solution and issue a FCE offer for the portion of the recovery solution that reduces risk of future similar damages. The Work to be Completed will be captured in the 406 HM scope section. To address the overlap between the incidental vegetation work needed to carry out the repairs and the mitigation work, the Vegetation clearance HMP Sub-FAASSt projects will be adjusted as describe in FEMA-4339-DR-PR Public Assistance PREPA FAASSt Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See documents: FAASStVegetationHMPApproach\_Distribution\_02.06.2024.pdf for (V0) and FAASStVegetationHMPApproach\_Distribution\_03.24.2025.pdf for (V2). The PA Scope of Work and Cost is limited to the incidental vegetation clearance. No permanent infrastructure repairs are included as part of this scope. WTBC Cost (PA) = \$9,610.44 per mile (for V0) and WTBC Cost (PA) = \$30,385.95 per mile (for V2). Therefore, the total cost (PA) for this project will be \$6,573,069.54.

PA cost summary (V2):

DI#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PAA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1333874	\$9,610.44	684.15805	\$6,575,059.89	(\$81,530.74)	<b>\$6,493,529.15</b>

DI#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PAA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1333874	\$30,385.95	2.65	\$80,522.77	\$(982.38)	<b>\$79,540.39</b>

**Work to be completed: \$6,655,582.66**

**A&E Deduction (Global A&E FAASSt 335168): -\$82,513.12**

**V2 Project Total: \$6,573,069.54**

Project Notes:

1. This is a Distribution-Vegetation clearance HMP Sub-FAASSt project.
2. Vegetation clearance HMP Sub-FAASSt projects will be written according to line type (Distribution: 13.2kV and down, and Transmission: 38 kV, 115kV, and 230 kV) because of the different ROWs and other characteristics. Multiple projects of each

type will be submitted and reviewed for eligible PA 406 HM funding. Vegetation clearing work will only be submitted for those areas that vegetation represents strike potential (may cause future similar damage to the T&D system when subject to high winds). However, at times there is overlap between these lines (i.e., multiple distribution lines (13.2kV and down) coexist on the same pole infrastructure, transmission lines (38 KV and up) can be located above distribution lines within the same right of way, various lines may pass each other with overlapping right of ways, etc.). In the submittal of this project the Subrecipient's Authorized Representative attests that only the vegetation clearance submitted is to reduce strike potential and that the ROW for these lines has been, and will be, counted only once to avoid duplication within the vegetation clearance projects.

3. For more details of the requirements and conditions for the execution of a one-time, island-wide vegetation clearance and removal operation considered as an eligible Section 406 hazard mitigation proposal (HMP), please refer to document labeled: Attachment A - FEMA letter dated March 24 2023.pdf. 4. For details on the SOW, refer to filename Region 1 San Juan Group A - PW 723883 V2 DSOW 11\_13\_2025.pdf.

5. Vegetation clearance funds will not be allocated to SubFAASt projects in San Juan Region locations.

6. The A&E cost included in this project will be reduced from this project and obligated under the FAASt Project #335168, A&E, as shown in the table above. The A&E project was obligated to track and account for costs associated with individual FAASt projects.

### 406 HMP Scope

\*\*\*\*\*Version 2\*\*\*\*\*

#### Version 2 Notes:

- In Version 2 of the project, the following feeders were added: 1100-05, 1105-02, 1105-04, 1109-02, and 1109-04, totaling 3.75 miles to the project. When performing a duplication analysis, 1.10 miles of these feeders pass under 38KV transmission lines. The project amendment will only consider the 2.65 mile difference using the average mile cost agreed upon in the last Group A project.
- No adjustments in cost per mile will be made to the original obligated project.
- The San Juan Group A project was obligated without checking for duplication with transmission lines. It was found that 22.98 miles of the obligated project pass under transmission lines. This duplication will be adjusted in the transmission project when vegetation projects for transmission lines are evaluated.
- Unlike the Group A submitted projects, this project includes both High Density and Low Density areas within the project.
- Summary: In version 2, the duplication of miles that were added to San Juan project will be removed. Duplications in the original obligated project will be deducted from the transmission projects as they are evaluated.
- In Version 0, \$18,151,116.72 was obligated. In Version 2, additional funds (\$220,273.30) are included to cover additional feeders.
- The IEP update cost applies only to the V2 of the project.

**Project number:** 723883; FAASt [Region 1 -San Juan Group A] (Vegetation)

**Damage #:** 1333874; FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

**Applicant:** PR Electric Power Authority (000-UA2QU-00)

**Location:** San Juan, Puerto Rico

**GPS Latitude/Longitude:** [REDACTED]

#### Introduction

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane Maria in September 2017. The hurricane caused widespread disruptions to transmission and distribution systems, largely due to vegetation impacts that collapsed distribution and transmission lines. Substantial infrastructure was damaged when trees downed power lines and poles, causing most of the transmission/distribution system fail. Post-hurricane vegetation clearance to enable grid repair and restoration progressed slowly, considerably delaying overall electrical recovery. Remaining excess vegetation continues to cause operational outages, as ground faults occur when vegetation contacts power lines even during normal weather events. After the passage of Hurricane Maria, minimal cleaning work was carried out exclusively to clear the areas to carry out emergency repairs to the electrical system. These works were covered by Category B - Emergency Protective Measure, but excess

vegetation on the electrical system remains an outstanding vulnerability.

The Puerto Rico's grid modernization and mitigation one time Right of Way (ROW) clearance strategy will prioritize effective and proactive vegetation management protocols to prevent prolonged storm-related outages, thereby increasing the reliability of the electric system. These reliability and resiliency gaps are especially impactful to Puerto Rico which has been facing increasingly frequent natural hazards such as hurricanes. This project is part of the for Vegetation Reset Programs which will impact the Transmission and Distribution system for each of the 78 municipalities.

#### **Hazard Mitigation Narrative**

In order to minimize damages in a future event, the Subrecipient is proposing as a mitigation measure a one-time Island-wide vegetation remediation clearance projects in accordance with the FEMA's letter to COR3, document Signed Island-Wide Vegetation Clearance March 24, 2023 (Refer to "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"). Section 406 Hazard Mitigation funds are funds that can be added to projects for the restoration of disaster-damaged facilities and must prevent future similar damage caused by the declared event. Under DR-4339-PR, Section 406 Hazard Mitigation funds are based on eligible, technically feasible, and cost-effective mitigation activities proposed to reduce risk to the function of the disaster-damaged facilities. The portion of the recovery solution that reduces risk of future similar damages may be considered as eligible 406 mitigation.

The island-wide transmission and distribution grid was significantly damaged by the strong winds and heavy rainfall during the atmospheric event hurricane Maria. This resulted in many trees and other vegetation becoming a direct hazard to the electrical grid. A one-time 406 hazard mitigation island-wide vegetation clearance will benefit the reliability and resiliency of the Puerto Rico electrical grid, including the number and duration of customer outages during and after the work to complete the repairs to the electrical grid through other PREPA 428 FAASSt Projects. The scope of the global 406 Hazard Mitigation (HM) projects includes vegetation clearing across the entire width of the easement, plus a radius of 12 to 15 feet from energized conductors to directly reduce the potential for future damage to the "transmission and/or distribution" (T&D) systems (refer to "LUMA Vegetation Management 10ft and 12ft clearance diagram (1).pdf" in project documents). Each 406 HM Vegetation Reset project is correlated with an eligible 428 T&D project, in association with PREPA's electrical grid. Different regional projects are developed to impact all lines of the electrical system, including distribution lines and high-voltage transmission lines. Also, projects are defined in terms of line type (distribution or transmission) and population density of the area (high or low) to simplify the evaluation by the Environmental and Historical Preservation team (EHP).

The Global project will be divided into the following's regions:

- Region 1 - San Juan
- Region 2 - Arecibo,
- Region 3 - Bayamon
- Region 4 - Caguas
- Region 5 - Mayaguez
- Region 6 - Ponce.

For each region, five (5) Groups were defined in individual projects with their own DSOW. Group A and B will be divided into high/low density projects based on the population of the area located to facilitate the evaluation by EHP.

- Group A – High/Low density distribution lines.
- Group B - 38KV transmission.
- Group C - Overlapped Distribution and Transmissions lines.
- 115kV facilities
- Substation and telecommunication Facilities. (for substations that do not include vegetation clearing in their projects)

This 406 HM work is limited to what is necessary to directly reduce the potential of future damage to the T&D system assets, that exceeds what is necessary to clear vegetation for accessing facilities when carrying out repairs which are already established as eligible for FEMA funding utilizing the 428 FAASSt Grant. Each 406 HM will correlate to an eligible 428 Transmission and/or Distribution (T&D) project in association with the PREPA power grid. There will be 7 Regional DSOW's developed capturing planned actions within scopes of work formulated with an established criteria detailed for Distribution and Transmission lines/facility locations. The first DSOW is Group A - High Density areas with a low reflection of infrared light, which is associated with impervious locations within the San Juan Region where the majority of the distribution lines are located parallel or adjacent to maintained roads, along maintained land near residential and industrial areas; including disturbed forest fragments around power facilities and non-agricultural areas 13.2kV and below; the second DSOW is Group A Low Density locations where more vegetation density is present, which is determined by a higher level of reflection of infrared associated with Vegetation for 13.2kV and below locations; the third DSOW is Group B locations at 38kV level; the fourth DSOW is Group C - with known local environmental sensitivities at 38kV and below levels locations; the fifth DSOW is 115kV Facilities; and the sixth DSOW is Substation and Telecommunication Facilities. There will also be a 230 kV Facilities (these installations have a separate Vegetation Clearance project that is not region- specific).

This SOW is aligned with and leverages FEMA's Island-Wide Benefits Cost Analysis (IWBCA), which was used for this purpose and fully support the mitigation measures employed within this project scope of work.

The Subrecipient's authorized representative (LUMA) estimates that this 406 Hazard Mitigation proposal for island-wide vegetation clearance will have immediate and future widespread benefits, including:

- Mitigation of the hazards due to vegetation impacts and damages.
- 70% annual reduction of outages caused by vegetation.
- 35-45% annual reduction of customer interruptions.
- Faster restoration for impacted customers.
- Improved safety for utility workers and the public.
- Support the rebuilding of the grid and effective execution of large-scale construction projects.

The following terms, when used in this document, shall have the meaning described below.

Compatible Species – Compatible species are those that are congruent with the intended use of the site, and include small trees, shrubs and herbaceous vegetation that will never grow into conflict with overhead conductors.

Incompatible Species – Incompatible species are those that are not congruent with the intended use of the site and include tall growing trees and other plant forms (e.g., bamboo and palms) with the potential to conflict with overhead conductors.

Clearance - The minimum distance between two conductors, between conductors and their supports or other objects, or between conductors and the ground. The National Electrical Safety Code (NESC) and PREPA's Technical Communication (See 12-02 attached) determine the minimum requirements regarding distances (vertical and horizontal) between an energized conductor or device and a structure, building or surface. Vegetation Clearing will be limited to clearing any vegetation affecting these clearances. This term is not synonymous with easement. Clearances can be met without being within an easement. Clearance requirements must be complied with either when the Authority builds its facilities, as well as when a third party builds a structure. Clearances, in both cases, must be complied with by regulation, regardless of whether an easement exists.

Easement - is a lien imposed on a property for the benefit of another belonging to a different owner. The property, in favor of which the easement is constituted, is called the dominant estate; the one who suffers it, servant property. An easement for electrical power lines provides PREPA and LUMA as its agent various rights including: reasonable access to the electric infrastructure to provide maintenance, repair, expand, operate and is established on the strips or portions of land where facilities of the T&D system are located or will be located, such as: lines, poles, towers, equipment, and accessories. These acquired rights make it easier to carry out vegetation clearing work.

The PREPA distribution and transmission systems are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them compatible or incompatible with the safe and reliable energy delivery service. The Subrecipient's authorized representative recognizes the diversity of species in tropical ecosystems, and the general remediation strategy is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Within Appendix A and B are lists of protected flora species and incompatible flora species expected to be encountered during scope performance.

**(I) Proposed 428 Public Assistance Scope of Work (SOW):**

This project includes Public Assistance (PA) works; however, PA Scope of Work and Cost is limited to the incidental vegetation clearance. No permanent infrastructure repairs are included as part of this scope. WTBC Cost (PA) = \$30,385.95 per mile.

PA incidental works will be deducted from the Section 406 Hazard Mitigation project costs to avoid duplication of works. To address the overlap between the incidental vegetation work needed to carry out the repairs and the mitigation work, the Vegetation clearance HMP Sub-FAAST projects will be adjusted as describe in FEMA-4339-DR-PR Public Assistance PREPA FAAsT Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution "FAAsTVegetationHMPApproach\_Distribution\_03.24.2025.pdf".

Note: This unit cost specifically applies to the Distribution System projects. The Transmission System projects will require a separate evaluation to determine a unit cost according to the assets characteristics.

**(II) Hazard Mitigation Proposal (HMP) Scope of Work:**

As a result of DR-4339-PR, vegetation surrounding T&D assets are falling onto these facilities and interfering with the safe and reliable operation of the assets. The vegetation at present is currently causing outages when vegetation is in contact with the T&D assets. To mitigate the future damage across T&D assets and protect the 428 repairs and replacement along these facilities, clearing vegetation materials will be required. This 406 Hazard Mitigation Scope of Work is to directly reduce the potential of future damages to the T&D system by clearing vegetative materials that pose an immediate threat to the power distribution lines, and identification for corrective actions related to clearing vegetation (consisting of shrubs, branches, limbs, stumps, bamboo, and trees that are directly

impacting the resilience and productivity of the power grid) applicable to the existing PREPA electrical grid within Region 1 (San Juan) of Puerto Rico.

The extent and execution of this scope includes performing verification of facilities, assets, and condition assessments for determining the most appropriate remediation, preparing work orders for executing the necessary vegetation remediation, by ways of tree felling, vegetation remediation, mechanical vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, and recycling where applicable in easement of the PREPA power Distribution lines. LUMA is not planning to construct access roads. If the work to be done is not adjacent to an existing road, our contractor tree crews will minimize environmental disturbance by utilizing vegetation crews hiking by foot in and out of our existing easement.

**Parameters for Performing 406 Hazard Mitigation Vegetation Clearing**

Regulation 7282 requires that only shrubs and plants (no trees) be planted within the easement under power lines. Climbing plants and vines, as well as bamboo, are prohibited from being planted within an easement. The branches of trees planted outside the easement must not obstruct free passage of the power lines. The National Electrical Safety Code (NESC) and PREPA’s Technical Communication establish the minimum required distances, both vertical and horizontal, between an energized conductor or device and any structure, building, or surface. Vegetation clearing will be restricted to removing any vegetation that interferes with these clearances. For power distribution lines, NESC and Regulation 7282 defines the vertical distance from vegetation as 12 feet. By law, any trees, shrubs, or plants planted in violation of Regulation 7282 may be uprooted, removed, or cut down in accordance with the provisions of Regulation 7282 – for both compatible and incompatible species.

Industry standard practices will determine how the work will be performed. A healthy tree is less likely to fall over in a storm and damage overhead lines; therefore, vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Vegetation that is improperly pruned could become susceptible to disease and decay, resulting in a hazard to both the line and public safety. ANSI A300 is the tree care industry standard of care in the USA. It was developed by Tree Care Industry Association and maintained by a consensus of various industry stakeholders through periodically reviewing and updating the guidelines. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant. In all cases, Subrecipient’s authorized representative’s vegetation clearing contractors will be required to perform clearing activities in a manner consistent with ANSI A300, NESC, and Regulation 7282 alignment with Resolution 4987, Organic Law 83 (amended version), Communication 12-02, and PREPA ‘s Comprehensive Vegetation Management Plan establishing standard Distribution easement widths. Easement Clearance widths for distribution lines are given in the table below.

Line Type	Voltage Class	Easement Width Edge to Edge (from Centerline)
Single Phase (1Ø)	7.6/13.2kV	10’ (5’)
Multi-phase (2-3Ø)	7.6/13.2kV	10’ (5’)
Double circuit 3Ø	7.6/13.2kV	10’ (5’)
Aerial Spacer Cable	7.6/13.2kV	10’ (5’)
Single Phase (1Ø)	4.8/8.3kV	10’ (5’)
Multi-phase (2-3Ø)	4.8/8.3kV	10’ (5’)

**Scope of Work Inside Easement – Incompatible Species**

Incompatible species are those that are not congruent with the intended use of the site and include tall growing trees and other plant forms (e.g., bamboo and palms) with the potential to conflict with overhead conductors. For the power distribution lines, all Incompatible Species will be cleared from the full width of the Right of Way. “Clearing” in this context includes the following activities: tree removal, severing of vines, cutting, mechanical mastication.

- Tree removal: Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place.
- Severing of vines: Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. Vines are severed and treated by a qualified working at ground level. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter Incompatible Species by hand.
- Mechanical mastication: Mastication work involves heavy clearing of trees using heavy equipment fitted with a variety of cutting heads capable or reducing standing trees to woody debris.

**Scope of Work Inside Easement – Compatible Species**

Compatible vegetation species will be cleared consistent with the distances identified in Regulation 7282, which means that any species with the potential to encroach within 12 feet of the conductors at full size will be removed using the same methods discussed above. Even though the distances identified in Regulation 7282 are vertical clearances, Compatible Species encroaching on the conductors from any direction can pose a hazard to the distribution system, with the maximum edge of the conductors to be 12 feet wide centered on the pole. Therefore, the 12-foot clearance is being applied to both vertical and horizontal clearances. For areas with overhead distribution systems located in the backyard or side yard, the certified easement width from LUMA Land Records office will use for clearing.

In rare cases where Subrecipient's authorized representative encounters significant resistance from landowners or stakeholders to remediate vegetation, Subrecipient's authorized representative will work with landowners or stakeholders to determine if Incompatible and Compatible Species can be pruned to mitigate the hazard to the lines instead of being completely removed.

**Scope of Work Outside Easement – Species Growing into the Easement**

There is the potential for vegetation outside or along the boundary of the easement to interfere with the operation of power distribution lines. Appropriate clearances around the conductors must be achieved to protect the lines from future damage. For distribution lines, Subrecipient's authorized representative has established a minimum clearance distance of 12 feet from all conductors, with the maximum edge of the conductors to be 12 feet wide centered on the pole. This distance is consistent with the vertical distance established in Regulation 7282. If there are species encroaching on the 12-foot clearance outside or along the boundary of the easement, these species will be pruned to obtain at least 12 feet of clearance from the conductors at the time clearance work occurs. In cases where following ANSI A300 best practices require clearance beyond 12 feet, the maximum distance cleared will not exceed 15 feet. Diagrams illustrating these clearing distances are provided as attachments within Grants Portal. The following clearing methods will be provided as Attachment B-“FAASTVegetationHMPApproach\_Distribution\_03.24.2025.pdf”.

- **Tree pruning:** Qualified personnel work from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.
- **Tree removal:** Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place.
- **Severing of vines:** Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. Vines are severed and treated by a qualified worker at ground level. The upper portion of the vine remains attached and is not removed.
- **Cutting:** Cutting typically involves the removal of small diameter species by hand.
- **Vegetation mastication:** also known as mulching, slash-busting, or brush-cutting, involves technique for reducing the size of vegetation and downed material in forests. It involves grinding, shredding, or chopping vegetation into smaller pieces, which are then left on the site as mulch.

**Power Distribution Primary Group A - Vegetation Clearing Work Locations, Cost, and Description**

Distribution lines typically start at substations and branch out in multiple directions to serve end-use customers. The GPS coordinate points provided in “Appendix C”, are for the PREPA substations where the Distribution lines start. GIS shapefiles, which show the locations of the lines and the end points, have been uploaded to Grants Portal.

**(III) Hazard Mitigation Proposal (HMP) Cost:**

Vegetation Clearance Cost per Mile (Base Cost) =	\$108,102.81 / mile
*Risk Factor approved by the DR4339-PR leadership (5%) =	<u>\$16,215.42 / mile</u>
Vegetation Clearance Cost per Mile (w/risk factor applied) =	\$124,318.23 / mile
PA Vegetation Clearance Overlap per Mile (Deduction) =	<u>(\$30,385.95 / mile)</u>
<b>Hazard Mitigation Total Cost per Mile =</b>	<b>\$83,122.00 / mile</b>

Project Total Miles (PN723883) =	2.65 miles
Hazard Mitigation Total Cost per Mile =	<u>\$83,122.00 / mile</u>
<b>Hazard Mitigation Total Cost =</b>	<b>\$220,273.30</b>

**Note:**

The \$83,122.00 / mile calculation represents the total cost (base costs + soft costs – PA Overlap). For this project, breaking down that total cost further yields the approximate figures below. For additional information please see the attached document.

Total Net Hazard Mitigation Cost (Base Cost) =	\$209,694.92
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$10,578.38</u>
<b>Hazard Mitigation Total Cost =</b>	<b>\$220,273.30</b>

**(IV) Hazard Mitigation Proposal (HMP) Cost Distribution:**

Architecture and Engineering (A&E) =	\$2,687.33
Remaining Vegetation Clearance Cost =	<u>\$ 217,585.97</u>
<b>Hazard Mitigation Total Cost =</b>	<b>\$220,273.30</b>

**(V) HMP Cost-Effectiveness Calculations:**

FEMA’s Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2, Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAASt) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the Subrecipient responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects. Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein corresponding to version 2 is **\$220,273.30** (Hazard Mitigation Total Cost). The cost of this HMP combined with all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

\*\*See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents (HMP, HMP cost estimate, Supporting documents file).

**(VI) Compliance and Assurance Requirements:**

## HMP GENERAL NOTES:

By agreeing to implement the hazard mitigation measures in this HMP, the Applicant/Sub-Applicant is bound by the specific guidelines listed within this document.

**COSTS AND GENERAL CONDITIONS:** The vegetation removal cost is established according to the average base cost of **\$108,102.81 / mile**. Additionally, the DR4339-PR leadership has approved the application of a 5% risk factor to the average cost per mile, resulting in **\$113,507.95 / mile**. After deducting Public Assistance (PA) \$30,385.95 amount (incidental work-refer to document FAAStVegetationHMPApproach\_Distribution\_03.24.2025.pdf), the final total is **\$83,122.00 / mile**.

**DOCUMENTATION REQUIREMENTS:** The subrecipient shall document all vegetation removal work, including but not limited to the following:

- Before and after photographs of the total distance included in the HMP Scope of work that clearly show the condition of the area before and after the vegetation clearance.
- A digital map in ArcGIS format showing all areas where vegetation removal was performed. Location information must be provided, including the physical address, GPS coordinates from start to finish of clearance work, and contact information for private property (when applicable).
- Work orders must account for the entire feeder length distance and include a description of the sections both with and without vegetation. Material disposal documentation must specify whether the material was chipped and removed, left on-site, or transported to a landfill.

Note: All vegetation clearance projects must include the above documentation to define the work completed prior to project closeout.

**COST DISTRIBUTION:** Recognizing that the established cost is an average per mile, it is understood that actual expenses for each feeder or area may deviate (either underrun or overrun) from the estimated project amount. The 406 HMP scope and cost agreement sets an average cost per mile for vegetation clearance, allowing the subrecipient to manage funds across the various projects that comprise the vegetation asset. The Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR, January 1, 2022 (PR PAAP Guide), states that if funds for 406 Mitigation are included in the fixed-cost subaward, the subrecipient must complete the approved Scope of Work (SOW) of the Hazard Mitigation Proposal (HMP) in order to retain the 406 Mitigation funding. Consequently, only completed distance in the HM Scope of work, supported by the necessary back-up documentation (e.g., verified mitigated clearance distance), will be eligible for fund retention. Any uncompleted work from the HM SOW (e.g., miles not documented with mitigated clearance distance) will be de-obligated during the closeout process.

**SCOPE OF WORK DEVELOPMENT OF HAZARD MITIGATION:** FEMA will evaluate each mitigation opportunity to first determine what measures or portions of solutions could be funded through Section 406 mitigation. FEMA analyzes the proposed mitigation measures for cost-effectiveness, technical feasibility, and compliance with EHP laws, regulations, and Eos. FEMA, the Applicant, Recipient, and Sub-recipients will develop and agree to scopes of work (SOW) and cost estimates to repair, restore, or replace eligible facilities including 406 Hazard Mitigation" (Page 6).

**COMPLETION OF HAZARD MITIGATION SCOPE OF WORK:** If this HMP is approved and the mitigation is not performed, the Applicant must apply for a change in the Scope of Work and a de-obligation of the HMP funding. Failure to complete the work of the HMP may limit future FEMA funding of repairs at the site in the event that a similar disaster event results in similar damage at the site.

**CHANGES TO THE HAZARD MITIGATION SCOPE OF WORK FOR LARGE PROJECTS:**

Per PAAP PA Process (Section 428), Guide for Permanent Work, February 10, 2020, "A Subrecipient may alter the 406-hazard mitigation SOW (HMP) after FEMA, the Recipient, and Subrecipient agree on the cost estimate for the initial proposal. After the project is obligated, the SOW for the HMP can be changed only once and the timeline for this change will be established based on a facility-by-facility basis. The proposed change will require evaluation by FEMA for eligibility and EHP. As part of the eligibility review, FEMA will evaluate the SOW, technical feasibility, the level of protection, the revised cost estimate, and cost effectiveness of the new hazard mitigation proposal, and, if approved, will adjust the scope and cost estimate accordingly." (Page 14)

**HAZARD MITIGATION UNDERSTANDING STATEMENT:** This HMP is for estimating purposes only and not to be construed as a project design. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

**HAZARD MITIGATION PERFORMANCE:** The Applicant must provide & maintain competent & adequate project performance & supervision during the execution phase to ensure that the completed work conforms to the approved plans & specifications & all applicable material & industry standards.

As a condition of the FEMA mitigation grant, the Applicant is responsible for the determination of and compliance with all applicable requirements, codes, standards and specifications in connection with the project, including but not limited to the Puerto Rico Building Code of 2018 (2018 PRBC), IBC, IRBC, NFIP Floodplain Management Regulations outlined in 44 C.F.R 60.3, ASCE 24, ASCE 7, and receiving all applicable permits & approvals prior to construction.

**MAINTENANCE OF HAZARD MITIGATION:** The Applicant shall ensure proper maintenance of the installed mitigation measures, per manufacturer and designer specifications. Any adaptations or installations not approved or that renders the hazard mitigation measure ineffective shall be removed by the Applicant. Examples include, but are not limited to, improper installation of roof-mounted equipment or installation of window-mounted air-conditioning units.

**ENVIRONMENTAL AND HISTORIC PRESERVATION:** Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the site. This project will undergo a EHP compliance review, after obligation any changes to the SOW will likely trigger an additional EHP compliance review of the revised SOW.

**HEAVY MACHINERY USED ON SITE:** Tree uprooting and/or removal may be necessary to comply with Regulation 7282. However, uprooting will be minimized and will only be carried out when necessary to ensure the safety of people or protect the asset. There will not be any synthetic or biological chemicals utilized for tree stump removals, however, there may be heavy machinery used for uprooting trees, tree removal, and mulching includes specialized equipment designed for efficient and safe vegetation management.

Below is a description of commonly utilized heavy machinery:

#### I. Tree Removal and Uprooting

- **Excavators with Grapple Attachments:** Equipped with powerful hydraulic grapples or thumbs to grab and uproot trees, these machines are ideal for handling large trees and stumps.
- **Bulldozers:** Used to push over trees and remove roots. Bulldozers with a ripper attachment can also break up soil and roots.
- **Skid Steers with Tree Pullers:** Compact and versatile, skid steers fitted with tree puller attachments can uproot smaller trees and shrubs effectively.
- **Backhoes:** Used for digging out tree stumps and roots, particularly in areas requiring precision.
- **Stump Grinders:** Specialized machines that grind tree stumps into mulch, leaving the area ready for replanting or other uses.

#### II. Mulching

- **Forestry Mulchers:** These machines are designed to shred trees, branches, and other vegetation into mulch directly on-site. They are typically mounted on excavators, skid steers, or tractors and are suitable for clearing large areas of vegetation.
- **Chippers:** Convert cut branches, tree limbs, and smaller logs into wood chips for disposal or reuse.

#### III. Additional Equipment

- **Cranes:** Used for safely removing large trees in sections, especially in urban or constrained environments.
- **Tree Spades:** Specialized for uprooting and transplanting trees while keeping the root system intact.
- **Tracked Feller Bunchers:** Machines that cut and gather trees in a single operation, useful for logging or large-scale clearing projects.
- **Log Loaders:** Used for handling and transporting felled trees and logs.
- **Brush Cutters:** Heavy-duty cutters designed to clear dense vegetation and small trees.

Each piece of equipment is selected based on the size of the trees, site conditions, environmental considerations, and project goals.

**ARBORICULTURE TECHNIQUES:** The ANSI A300 standards for arboriculture establish industry best practices for tree care and maintenance. They provide guidelines for techniques such as pruning, planting, transplanting, soil management, support systems (cabling and bracing), lightning protection, and risk

assessment. These standards aim to promote tree health, safety, and structural integrity while minimizing environmental impact. They serve as a resource for professionals, property owners, and organizations to develop effective tree care specifications and ensure consistent, high-quality practices.

**ATTACHMENTS:**

Please refer the following documents.

- “Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf”
- “LUMA Vegetation Management 10ft and 12ft clearance diagram(1).pdf”
- “FAAStVegetationHMPApproach\_Distribution\_03.24.2025.pdf”
- “Appendix A and B - Protected Flora and Incompatible Flora Species.pdf”
- “TWBCA HMP Package.pdf”
- “Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters.pdf”
- “Region 1 San Juan Group A - PW 723883 version 2 DSOW 12\_09\_2024.pdf”
- “PN723883-DR4339PR-HMCE-V2-20251121-JIIR.xlsx”
- “PN723883-DR4339PR-HMP-V2-20251121-JIIR.pdf”

\*\*\*\*\*Version 0 and Version 1\*\*\*\*\*

**Project number:** 723883; FAASt [Region 1 -San Juan Group A] (Vegetation)

**Damage #:** 1333874; FAASt [Region 1 San Juan Transmission/Distribution 38 KV and below]

**Applicant:** PR Electric Power Authority (000-UA2QU-00)

**Location:** San Juan, Puerto Rico

**GPS Latitude/Longitude:** [REDACTED]

**Introduction**

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane Maria in September 2017. The hurricane caused widespread disruptions to transmission and distribution systems, largely due to vegetation impacts that collapsed distribution and transmission lines. Substantial infrastructure was damaged when trees downed power lines and poles, causing most of the transmission/distribution system fail. Post-hurricane vegetation clearance to enable grid repair and restoration progressed slowly, considerably delaying overall electrical recovery. Remaining excess vegetation continues to cause operational outages, as ground faults occur when vegetation contacts power lines even during normal weather events. After the passage of Hurricane María, minimal cleaning work was carried out exclusively to clear the areas to carry out emergency repairs to the electrical system. These works were covered by Category B - Emergency Protective Measure, but excess vegetation on the electrical system remains an outstanding vulnerability.

The Puerto Rico's grid modernization and mitigation one time ROW clearance strategy will prioritize effective and proactive vegetation management protocols to prevent prolonged storm-related outages, thereby increasing the reliability of the electric system. These reliability and resiliency gaps are especially impactful to Puerto Rico which has been facing increasingly frequent natural hazards such as hurricanes. This project is part of the for Vegetation Reset Programs which will impact the Transmission and Distribution system for each of the 78 municipalities.

**Hazard Mitigation Narrative**

The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation remediation clearance for the above work included in the PREPA FAASt Project, as according to the Public Assistance Alternative Procedures (PAAP) (Section 428) Guide for Permanent Work FEMA-4339-DR-PR (hereinafter PR PAAP Guide) and FEMA's letter to COR3, document Signed Island-Wide Vegetation Clearance March 24, 2023 (Refer to “Attachment A - FEMA letter dated March 24 2023.pdf”). Section 406 hazard mitigation funds are funds that can be added to projects for the restoration of disaster-damaged facilities and must prevent similar future damage caused by the declared event. Under DR-4339-PR, Section 406 hazard mitigation funds are based on eligible, technically feasible, and cost-effective mitigation activities proposed to reduce risk to the function of the disaster-damaged facilities. The portion of the recovery solution that reduces risk of future similar damages may be considered as eligible 406 mitigation.

The island-wide transmission and distribution grid was significantly damaged by the strong winds and heavy rainfall during the atmospheric event hurricane Maria.

This resulted in many trees and other vegetation becoming a direct hazard to the electrical grid. A one-time 406 hazard mitigation island-wide vegetation clearance will benefit the reliability and resiliency of the Puerto Rico electrical grid, including the number and duration of customer outages during and after the work to complete the repairs to the electrical grid through other PREPA 428 FAASSt Projects.

This 406 HM work is limited to what is necessary to directly reduce the potential of future similar damage to the T&D system assets, that exceeds what is necessary to clear vegetation for accessing facilities when carrying out repairs which are already established as eligible for FEMA funding utilizing the 428 FAASSt Grant. Each 406 HM project will correlate to an eligible 428 Transmission and/or Distribution (T&D) project in association with the PREPA power grid. There will be 5 Regional DSOW's developed in Region 1 San Juan, capturing planned actions within scopes of work formulated with an established criteria detailed for Distribution and Transmission lines/facility locations within the San Juan Region. The first DSOW is Group A within the San Juan Region without known local environmental sensitivities; the second DSOW is Group B without known local environmental sensitivities; the third DSOW is Group C - with known local environmental sensitivities; the fourth DSOW is 115kV Facilities; and the fifth DSOW is Substation and Telecommunication Facilities. There will also be one DSOW for all 230kV Facilities that is not region-specific.

This SOW is aligned with and leverages FEMA's Island-Wide Benefits Cost Analysis (IWBCA), which was used for this purpose and fully support the mitigation measures employed within this project scope of work.

The Subrecipient's authorized representative (LUMA) estimates that this 406-hazard mitigation proposal for island-wide vegetation clearance will have immediate and future widespread benefits, including:

- Mitigation of the hazards due to vegetation impacts and damages.
- 70% annual reduction of outages caused by vegetation.
- 35-45% annual reduction of customer interruptions.
- Faster restoration for impacted customers.
- Improved safety for utility workers and the public.
- Support the rebuilding of the grid and effective execution of large-scale construction projects.

The PREPA distribution and transmission systems are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them compatible or incompatible with the safe and reliable energy delivery service. The Subrecipient's authorized representative recognizes the diversity of species in tropical ecosystems, and the general remediation strategy is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Within Appendix A and B are lists of protected flora species and incompatible flora species expected to be encountered during scope performance.

#### **Proposed 428 Public Assistance Scope of Work (SOW):**

This project does not include Section 428 mitigation work. However, necessary vegetation clearing will be conducted during execution of distribution and transmission line repair and rehabilitation projects, such as pole and line replacement and access road clearing to reach work areas (access road). These public assistance-covered works will be deducted from the Section 406 Hazard Mitigation project costs to avoid duplication of benefits.

FEMA PA and HM Subject Matter Experts (SMEs) in collaboration with HM Specialists with professional engineer background experience in the Puerto Rico's electric (T&D) system, determined the following unit cost per mile to be prudent as a deduction to avoid funding overlapping work between the PA and HMP Sub- FAASSt projects. The unit cost will be used to calculate the applicable reduction in the Vegetation HMP Sub-FAASSt projects' FCE offers; \$9,610.44 per mile of Distribution System

Note: This unit cost specifically applies to the Distribution System projects. The Transmission System projects will require a separate evaluation to determine a unit cost according to the assets characteristics.

Refer to "FAASStVegetationHMPApproach\_Distribution\_02.06.2024.pdf" for the methodology used to calculate the applicable reduction in the Vegetation HMP Sub FAASSt projects offers.

#### **Hazard Mitigation Proposal (HMP) Scope of Work:**

As a result of DR-4339-PR, vegetation surrounding T&D assets are falling onto these facilities and interfering with the safe and reliable operation of the assets. The vegetation at present is currently causing outages when vegetation is in contact with the T&D assets. To mitigate the future damage across T&D assets and protect the 428 repairs and replacement along these facilities, clearing vegetation materials will be required. This 406 Hazard Mitigation Scope of Work is to directly reduce the potential of future, similar damages to the T&D system by clearing vegetative materials that pose an immediate threat to the power distribution lines, and

identification for corrective actions related to clearing vegetation (consisting of shrubs, branches, limbs, stumps, bamboo, and trees that are directly impacting the resilience and productivity of the power grid) applicable to the existing PREPA electrical grid within Region 1 (San Juan) of Puerto Rico.

The extent of this scope includes performing condition assessments for determining the most appropriate remediation, preparing work orders for executing the necessary vegetation remediation, by ways of tree felling, vegetation remediation, mechanical vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, recycling, and use of environmentally approved herbicide applications where applicable in Right of Ways (ROW) of the PREPA power Transmission and Distribution lines. For this project version, no additional works for access roads clearance are being contemplated.

**Parameters for Performing 406 Hazard Mitigation Vegetation Clearing**

Regulation 7282 requires that only shrubs and plants (no trees) be planted within the Right of Way under power lines. Climbing plants and vines, as well as bamboo, are prohibited from being planted within a Right of Way. The branches of trees planted outside the Right of Way must not obstruct free passage of the power lines. For power distribution lines, Regulation 7282 defines the vertical distance from vegetation as 12 feet . By law, any trees, shrubs, or plants planted in violation of Regulation 7282 may be uprooted, removed, or cut down in accordance with the provisions of Regulation 7282 – for both compatible and incompatible species.

Industry standard practices will determine how the work will be performed. A healthy tree is less likely to fall over in a storm and damage overhead lines; therefore, vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Vegetation that is improperly pruned could become susceptible to disease and decay, resulting in a hazard to both the line and public safety. ANSI A300 is the tree care industry standard of care in the USA. It was developed by Tree Care Industry Association and maintained by a consensus of various industry stakeholders through periodically reviewing and updating the guidelines. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant. In all cases, Subrecipient’s authorized representative’s vegetation clearing contractors will be required to perform clearing activities in a manner consistent with ANSI A300 and Regulation 7282. Standard Right of Way widths for distribution lines are given in the table below:

Line Type	Voltage Class	Standard Right of Way Width Edge to Edge (from Centerline)
Single Phase (1Ø)	7.6/13.2kV	10' (5')
Multi-phase (2-3Ø)	7.6/13.2kV	10' (5')
Double circuit 3Ø	7.6/13.2kV	10' (5')
Aerial Spacer Cable	7.6/13.2kV	10' (5')
Single Phase (1Ø)	4.8/8.3kV	10' (5')
Multi-phase (2-3Ø)	4.8/8.3kV	10' (5')

**Scope of Work Inside Right of Way – Incompatible Species**

For the power distribution lines, all Incompatible Species will be cleared from the full width of the Right of Way. "Clearing" in this context includes the following activities: tree removal, severing of vines, cutting, mechanical mastication, and application of herbicides.

- Tree removal: Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place. The stump is then treated with an herbicide to permanently eliminate the tree from the site.
- Severing of vines: Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. The stumps of vines that have been removed are typically treated with an herbicide to permanently eliminate them. Vines are severed and treated by a qualified worker at ground level. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter Incompatible Species by hand. Freshly cut stumps are treated with an herbicide to permanently eliminate the tree from the site.

- Mechanical mastication: Mastication work involves heavy clearing of trees using heavy equipment fitted with a variety of cutting heads capable of reducing standing trees to woody debris.

Use of herbicides: While physically removing Incompatible Species addresses the immediate risk, cut vegetation will re-sprout and grow vigorously. Application of an herbicide eliminates the plant by killing the root system. Cut stump applications involve treating the cut face of the stump, remaining bark to ground line and the surface of any exposed roots.

**Scope of Work Inside Right of Way – Compatible Species**

Compatible vegetation species will be cleared consistent with the distances identified in Regulation 7282, which means that any species with the potential to encroach within 12 feet of the conductors at full size will be removed using the same methods discussed above. Even though the distances identified in Regulation 7282 are vertical clearances, Compatible Species encroaching on the conductors from any direction can pose a hazard to the line. Therefore, the 12-foot clearance is being applied to both vertical and horizontal clearances.

In rare cases where Subrecipient's authorized representative encounters significant resistance from landowners or stakeholders to remediate vegetation, Subrecipient's authorized representative will work with landowners or stakeholders to determine if Incompatible and Compatible Species can be pruned to mitigate the hazard to the lines instead of being completely removed. Depending on the size and species of the tree, tree growth regulators will be injected into the soil root plate around the base of the tree to reduce the rate of stem elongation following pruning and reduce the tree's regrowth response.

**Scope of Work Outside Right of Way – Species Growing into the Right of Way**

There is the potential for vegetation outside or along the boundary of the Right of Way to interfere with the operation of power distribution lines. Appropriate clearances around the conductors must be achieved to protect the lines from future damage. For distribution lines, Subrecipient's authorized representative has established a minimum clearance distance of 12 feet from all conductors. This distance is consistent with the vertical distance established in Regulation 7282. If there are species encroaching on the 12-foot clearance outside or along the boundary of the Right of Way, these species will be pruned to obtain at least 12 feet of clearance from the conductors at the time clearance work occurs. In cases where following ANSI A300 best practices require clearance beyond 12 feet, the maximum distance cleared will not exceed 15 feet. Diagrams illustrating these clearing distances are provided as Attachment B-"FAASTVegetationHMPApproach\_Distribution\_02.06.2024.pdf".

Tree pruning: Qualified personnel work from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.

**Power Distribution Primary Group A - Vegetation Clearing Work Locations, Cost, and Description**

Distribution lines typically start at substations and branch out in multiple directions to serve end-use customers. The GPS coordinate points provided in "Appendix C", are for the PREPA substations where the Distribution lines start. GIS shapefiles, which show the locations of the lines and the end points, have been uploaded to Grants Portal.

**Hazard Mitigation Proposal (HMP) Cost:**

HM Vegetation Clearance Cost per Mile (w/Soft Cost) = \$36,141.03 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$ 9,610.44 / mile)

**Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile**

Project Total Miles (PN723883) = 684.15805 miles

Hazard Mitigation Total Cost per Mile = \$26,530.59 / mile

**Hazard Mitigation Total Cost = \$18,151,116.72**

Note:

The \$26,530.59 / mile calculation represents the total cost (base costs + soft costs). For this project, breaking down that total cost further yields the approximate figures below. For additional information please see the attached document.

Total Net Hazard Mitigation Cost (Base Cost) =	\$12,258,477.12
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$ 5,892,639.60</u>
<b>Hazard Mitigation Total Cost =</b>	<b>\$18,151,116.72</b>

**HMP Cost-Effectiveness Calculations:**

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The Hazard Mitigation Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAAST) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the applicant's responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects." Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein is \$18,151,116.72 (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

**\*\*See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents (HMP, HMP cost estimate, Supporting documents file).**

## Cost

Code	Quantity	Unit	Total Cost	Section
9201	1	Lump Sum	\$0.00	Completed
9001	1	Lump Sum	\$6,655,582.66	Uncompleted
3510	1	Lump Sum	(\$82,513.12)	Uncompleted

CRC Gross Cost	\$6,573,069.54
Total 406 HMP Cost	\$18,371,390.02
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$24,944,459.56
Federal Share (90.00%)	\$22,450,013.61
Non-Federal Share (10.00%)	\$2,494,445.95

## Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.

## Insurance

### Additional Information

11/21/2025

Does the Applicant have a Commercial Policy: Yes

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No

Property insurance coverage for the electrical distribution facilities represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. Applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

**Patricia A. Perez, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR**

## O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## 406 Mitigation

There is no additional mitigation information on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

**Yes**

## EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- Conservation Measures #1-7 for Puerto Rican Boa for nineteen (19)DLs: 1. Inform all project personnel about the potential presence of the Puerto Rican (PR) boa and Virgin Islands (VI) boa in areas where the proposed work will be conducted and provide training on PR and VI boa identification. A pre-construction meeting will be conducted to inform all project personnel about the need to avoid harming these species. All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act of 1973. An educational poster or sign with

- photo or illustration of these species will be displayed at the project site. 2. Prior to any construction activity, including removal of vegetation and earth movement, the boundaries of the project area and any area to be excluded and protected will be clearly marked in the project plan and in the field to avoid further habitat degradation outside of the footprint of the project. 3. Once areas are clearly marked, and right before the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), biologist or designated project personnel with experience on these species will survey the areas to be cleared to verify the presence of any PR or VI boa within the Action Area. If a PR or VI boa is found during the search, it should be captured and managed as per #6 below. Once the removal of vegetation begins, the biologist or designated personnel must remain at the work site and be ready to capture any boa that might be in harm's way as the result of the habitat disturbance (see #6).
- 4. For VI boas, once the Action Area has been searched, vegetation will be cut about one meter above ground prior to the use of heavy machinery for land clearing. Cutting vegetation by hand will allow VI boas present on site to move away on their own to adjacent available habitat. If there is no suitable habitat adjacent to the project site, any VI boa found will be relocated accordingly (see #6). 5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. Data will also include a photo of the animal (dead or alive), relocation site GPS coordinates, time and date of the relocation, and comments on how the animal was detected and its behavior. 6. If any PR or VI boa (dead or alive) is found within the Action Area and on harm's way, the action will stop, and information will be recorded (see #5). All attempts will be made to immediately safely capture and relocate the animal within suitable habitat (forested) at least 1km from the Action Area and away from construction areas. PR boa relocation sites will be pre-determined before the project starts and sites shared with the Service for revision and concurrence. Relocation of PR boas will be conducted by trained, designated personnel ensuring the animal is not harmed or injured during the capture and relocation process.
  - 1- For forty-two (42) DLs (refer to GM data file "723883\_20240624\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised": FEMA will request the Subrecipient to conduct a Level II Desk Review and Background Research, as described in Stipulation II.D.3.b of the PSPA, for all Undertakings within the APE of all distribution and transmission power lines (T&D) in suburban and rural areas that cannot be accessed from an existing road or transportation right-of-way. The Level II Desk Review should consider information about the vegetation clearing techniques to be used, method of accessing the PREPA ROW and other work areas and will include the review of available information in the SHPO and ICP databases and archaeological survey reports within a 200-meter buffer around the APEs (i.e., 200 meters on either side of the APE). In accordance with Stipulation II.D.5-6 of the PSPA, the Subrecipient will use an SOI-Qualified Archaeologist to carry out the requested desktop review and research and the results must be documented in a Phase I Analysis Report which must be submitted to FEMA for review prior the initiation of any work in the above defined areas. 2- The Subrecipient and/or Subrecipient's contractor shall follow the Low Impact Debris Removal Stipulations (LIDRS) as stated in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022. 3- Unexpected Discoveries: Pursuant to Stipulation III.B of the PSPA, if, in the course of implementing this Individual Undertaking(s), previously unidentified structures, sites, buildings, objects, districts, or archaeological deposits, that may be eligible for listing in the National Register, or human remains are uncovered, or if it appears that an Individual Undertaking has affected or will affect a previously identified historic property in an unanticipated manner, the contractor must notify Subrecipient who will immediately notify the Recipient. Work must stop in the vicinity of the discovery and measures must be taken to protect the discovery and avoid additional harm. 4- Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out.
  - 7. Measures will be taken to avoid and minimize PR boa and VI boa casualties by heavy machinery or motor vehicles being left in the Action Area. \*. Any heavy machinery left on site (staging areas) or near potential PR or VI boa habitat will be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the heavy machinery. If a PR boa or VI boa is found within vehicles or heavy machinery, boas will be safely captured accordingly. If not possible, the animal will be left alone until it leaves the vehicle or machine by itself. \*. The PR boa and VI boa may seek shelter within debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in new debris piles as a result of project activities. New debris piles should be placed in areas as far as possible from forested areas. Prior to moving, disposing, or shredding, debris piles should be carefully inspected for the presence of PR boas and VI boas. If debris piles will be left on site, we recommend they be placed in an undisturbed area. \*. In the event a PR boa and VI boa is found dead within the project area, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. \*. If a PR boa or a VI boa is accidentally injured or killed during capture and relocation activities during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. \*. Should the forms of take reach the amount of exempted take during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours to reinstate consultation. The Federal Agency will consult with the Service to determine whether authorized activities should continue as proposed and whether modifications are warranted. For questions and to submit reports, the Service's Point of Contact (POC) is José Cruz-Burgos, Endangered Species Coordinator, and can be contacted at: \*. Mobile: 305-304-1386 \*. Office phone: 786-244-0081 \*.Office Direct Line: 939-320-3120 \*. Email: Caribbean\_es@fws.gov or jose\_cruz-burgos@fws.gov
  - Banara vanderbiltii (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised"): 1. For twenty-

- one (21) DLs: 1201-01, 1203-0, 11203-03, 1204-02, 1204-03, 1204-04, 1206-02, 1206-03, 1206-04, 1303-01, 1303-02, 1303-04, 1303-05, 1345-01, 1345-02, 1345-03, 1346-04, 1346-06, 1602-05, 1620-05 and 1646-01, the Applicant must complete surveys for *Banara vanderbiltii* in these worksites. Once completed, the surveys must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant.
- *Ottoschulzia rhodoxylon* (GM data file "723883\_20240508\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised"): 1. For DL 1530-08, the Applicant must complete surveys for *Ottoschulzia rhodoxylon* in these worksites. Once completed, the survey must be submitted to FEMA to complete the ESA Section 7 consultation process prior to any construction, ground disturbance activities and/or any vegetation management. After FEMA completes the ESA Section 7 consultation process with USFWS, a determination will be provided to the Applicant.
  - 1. The Applicant shall comply with one of the following conditions including any coordination (emails, letters, documented calls) pertaining to these compliance activities must be documented and maintained in the Applicant's permanent files. Correspondence (email, letter, documented phone conversation, etc. from/with a representative from the U.S. Army Corps of Engineers (USACE) and/or State) indicating that the activity did not require a USACE/State permit authorization (at closeout); OR: A copy of a permit authorization or compliance letter issued by the USACE/State for the specific project and scope of work. If the issued permit required that a compliance certification be submitted to the USACE following the completion of work, please provide a copy of that compliance certification as well; OR: All permits or Pre-Construction Notification (PCN) (at closeout).
  - 2. Chemical methods (i.e., herbicides) could have impacts to surface water, wetland habitat, and groundwater. The proposed project is likely to impact waters of the United States, the subrecipients will be responsible for obtaining all applicable federal, Commonwealth, and local permit approvals and requirements.
  - 1- The Applicant shall handle, manage, and dispose of all types of hazardous waste in accordance with requirements of local, state, and federal laws, regulations, and ordinances. In addition, the Applicant shall ensure that all debris is separated and disposed of in a manner consistent with the PR DNER guidelines at a permitted site or landfill. The contractor/applicant will be responsible for the proper disposition of construction and/or vegetative debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities.
  - 2. Unusable equipment, debris, white goods, scrap metal any other material shall be disposed in approved manner and location. In the event significant items are discovered during the implementation or development of the project the Applicant shall handle, manage and dispose petroleum products, hazardous materials and toxic waste in accordance to the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
  - 2. Debris may not be staged, stored, or disposed of in wetlands without the required permits.
  - 2. Applicant must obtain any required permits from the Puerto Rico Permits Management Office (OGPe) prior to initiating work and comply with any conditions of the permit established by the Planning Board (JP) for constructions in floodplains. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
  - 1. The applicant is responsible for proper identification of wetlands. Under EO11990 (Protection of Wetlands); the applicant is responsible for coordinating with and obtaining any required Section 404 Permit(s) from the United States Army Corps of Engineers (USACE) prior to initiating work. The applicant shall comply with all conditions of the required permit. All coordination (emails, letters, documented phone calls) pertaining to these activities and compliance must be provided and maintained in the Applicant's permanent files.
  - 1. Debris may not be staged, stored, or disposed of in the floodplain without obtaining a letter/permit from the state or local floodplain administrator prior to initiating work.
  - Conservation Measures #11-23 for *Eretmochelys imbricata*, *Dermochelys coriacea*, *Chelonia mydas* and *Caretta caretta* for DL 1102-05: 11. During sea turtle nesting season (March 1 to November 30), a qualified sea turtle monitor must survey beach work areas each morning for possible nests. Nests found in the area should be marked or flagged in place. Outside of nesting season, these areas should be surveyed at least twice a week. Debris removal or construction on beaches may only begin after morning surveys are completed by the sea turtle monitor, and nests are clearly marked. \*. All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act of 1973, as amended. \*. Surveys shall be conducted by sea turtle permit holders or trained personnel following PRDNER/DPNR-DFW protocols. (See image and list of contacts below.) \*. Nests located adjacent to the work area should be marked with flagging, creating a 10-foot square roped-off buffer with an unobstructed path leading from the nest to the water. \*. Nest surveys must be conducted in the mornings, immediately before any construction activity commences. \*. Sea turtle monitoring groups should possess site-specific information for nests in their designated areas and should communicate these details to work crews to ensure avoidance. For Puerto Rico contact: \*. ATMAR: 787-448-8627 \*. *Chelonia*: 787-306-0916 \*. DRNA Loiza: - 787-453-6484 \*. DRNA Rio Grande: - 787-646-9689 \*. Reserva Natural de Humacao: 787-594-6568 \*. Siete Quillas: 787-688-6763 \*. TICATOVE Vieques: 787-438-4493 \*. Tortugueros del CEN: 787-635-4493 \*. Tortugueros de Culebra: 787-685-7820 \*. Tortugueros de Isla Verde: 787-604-4959 \*. Tortugeros del Sur: 787-341-8888 \*. Vida Marina: 787-380-5254, 787-206-6800 \*. Yo Amo el Tinglar: 939-276-9901
  - 12. During the sea turtle nesting season, repair or replacement of structures shall occur in the same location or footprint of the previously permitted structure. If the current project's footprint does not stay within previously permitted structure's footprint, then the Service must be consulted. 13. Relocation of sea turtle nests to accommodate construction is not authorized. 14. All project activity shall be confined to daylight hours following the completion of all necessary marine turtle surveys and conservation activities. The sea turtle monitor shall be available via telephone after the initial inspection throughout the workday. 15. If planting

will occur, only native plant species are authorized to be planted. Existing native dune vegetation shall be disturbed to the minimum extent necessary. Removal of standing and live coastal vegetation (e.g., sea grapes, mangroves) that are not a hazard is unauthorized. No sea grass, sea weeds, algae nor beach sand shall be removed during beach debris removal efforts. Any vegetation planting shall be installed by hand labor and tools. Irrigation systems shall not be installed within nesting habitat. Prior to any planting, the Applicant will submit a vegetation plan to the Service at: caribbean\_es@fws.gov. If a sea turtle nest is disturbed or uncovered during vegetation planting activity or project excavation, all work shall cease, and the sea turtle monitor shall be immediately contacted to assess the situation and provide guidance on the appropriate steps to safeguard the nest. If a nest(s) cannot be safely avoided during construction, all activity within the affected project area shall be delayed until complete hatching and emergence of the nest.

- 16. Placement of fill shall not occur within 10 feet of or in any area seaward of a marked sea turtle nest. Nests shall be marked in place with a roped off 10-foot buffer. Dependent upon the fill volume and slope, distance offset from marked turtle nests may be required to be larger to avoid indirect impacts (e.g., fill slumping) to the nest. If the turtle nest cannot be avoided by this distance due to the scope of the project, all work near the nest must be postponed until nestlings emerge from the nest and make their way safely to the sea. If a sea turtle nest is found after November, work should be postponed until the nestlings have safely hatched and made their way to the sea.
- 17. All excavations and temporary alteration of beach topography shall be contoured or leveled to the natural beach profile prior to dusk each day. This includes raking of tire ruts, filling pits or holes where debris was removed, etc. Any potential obstructions such as debris piles, equipment, etc. shall also be removed from the beach by the end of each workday. Fill must be placed as landward as practicable to establish or repair dune features. The existing or pre-disaster beach and dune profile must be considered when determining the appropriate siting of fill to provide reasonable longevity of the project.
- 18. No vehicles, equipment, staging or debris should be used, parked, or stored landward of the primary dune or in vegetated areas. Staging/parking/storage areas shall be located on paved surfaces as much as possible and outside of vegetated areas. Lightweight, all-terrain style vehicles, with tire pressures of 10 psi or less can operate on the beach and are the preferred transportation method. However, use of heavy equipment on the beach can be allowed provided it is taken off the beach by 1600 AST local time every night using an approved and designated beach access. All driving on the beach shall be between the high-water mark and the water's edge.
- 19. Removal of vegetation, fence installation, construction activities, and light installation shall be limited within 50 meters from the high tide line.
- 20. No construction involving lights shall be used during the nesting season. Outside of the nesting season, in Puerto Rico and the U.S. Virgin Islands, it is mandatory to have a lighting plan that incorporates sea turtle-friendly lights for coastal areas whenever lights are being repaired or newly installed. For projects in Puerto Rico, compliance with Puerto Rico Law 218 of 2008, which addresses the Control and Prevention of Lighting Pollution in Puerto Rico, and the PR EQB 2016 Regulation to Control and Prevent Light Contamination, is also required. These lighting plans should be submitted to the Service at caribbean\_es@fws.gov for review. When submitting the lighting plan, please include:
  - \*. The name and location of the project.
  - \*. A brief description of the project.
  - \*. An associated tracking number (if available).
  - \*. A Point of Contact.
 After the plan has been fully implemented, the Applicant is responsible for conducting a lighting inspection to identify and correct any remaining problematic lights.
- 21. If an unmarked sea turtle crawl is encountered during or prior to project activity, the work crew shall not disturb the integrity of the crawl. Project personnel shall follow the crawl up the beach or into the dune and contact the qualified sea turtle monitor to inform of the location of the crawl. Care shall be taken to avoid walking or driving equipment over or near a crawl so that a potential nest is not damaged.
- 22. Any collision(s) with and/or injury to any sea turtle in water, occurring during the construction of a project, shall be reported immediately to PRDNER/DPNR-DFW and the National Marine Fisheries Service's (NMFS) Protected Resources Division (PRD) at (1-727-824-5312) or by email to takereport.nmfsser@noaa.gov and SAJ-RD-Enforcement@usace.army.mil.
- 23. All sea turtle sightings and incidents involving nesting sea turtles or hatchlings shall be reported to PRDNER/DPNR-DFW and the Service. The Service's point of contact is José Cruz-Burgos, Endangered Species Program Coordinator:
  - ¿ Mobile: 305-304-1386
  - ¿ Office phone: 786-244-0081
  - ¿ Office Direct Line: 939-320-3120
  - ¿ Email: caribbean\_es@fws.gov
- All borrow or fill material must come from pre-existing stockpiles, material reclaimed from maintained roadside ditches (provided the designed width or depth of the ditch is not increased), or commercially procured material from a source existing prior to the event. For any FEMA-funded project requiring the use of a non-commercial source or a commercial source that was not permitted to operate prior to the event (e.g., a new pit, agricultural fields, road ROWs, etc.) in whole or in part, regardless of cost, the Applicant must notify FEMA and the Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and executive orders prior to a Sub-recipient or their contractor beginning borrow extraction. Consultation and regulatory permitting may be required. Non-compliance with this requirement may jeopardize receipt of federal funding. Documentation of borrow sources utilized is required at close-out and must include fill type (private, commercial, etc.), name, fill site GPS coordinates (not of the company/governmental office), address, and type of material.
- Additional staging areas and/or work pads within work site area haven't been identified yet. The Recipient/Subrecipient and/or private operator must provide the information of any additional staging areas or work pads for EHP evaluation as soon as available specially if any construction activity will be necessary to prepare the site(s). Information for staging areas and/or work pads confined to previously disturbed or hardened surfaces can be provided at close-out.
- For forty-two (42) DLs (refer to GM data file "723883\_20240624\_Version\_0\_C\_Reg\_1\_San\_Juan\_Group\_A\_Revised"), the following applies: 1- Upon completion of the assessment phase, the project must be versioned and resubmitted for EHP review. Work for these DLs may not begin until EHP review is complete and documented in a Record of Environmental Consideration

(REC) that is attached in Grants Manager. Failure to version the project at the close of the assessment phase will result in a project that is not compliant with federal EHP laws and executive orders, which may jeopardize funding, may affect eligibility, and could result in the project becoming ineligible for federal funding. 2- For new and/or temporary access roads, including opening of a hiking path for walking crews, identified as part of this project scope, LUMA is required to submit detail information including type of work to be completed, location (shapefile with linear GIS data) and dimensions (length, width, depth), to FEMA for EHP evaluation prior to any construction, ground disturbance activities and/or any vegetation management.

## EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Region 1 -San Juan Group A] (Vegetation)**.

## Final Reviews

### Final Review

**Reviewed By** LEFRANC-GARCIA, CARLOS L.

**Reviewed On** 12/01/2025 5:22 PM PST

#### Review Comments

Updated scope and cost for PA and HM based on duplication of factors and soft costs encountered in the project. The revised cost per mile can be seen in the updated scope of work. Reviewed, found eligible and reasonable. CLG 12/01/2025

### Recipient Review

**Reviewed By** Mulero, Noel

**Reviewed On** 12/02/2025 9:51 PM PST

#### Review Comments

Recipient review completed. Applicant must ensure to compliance with all regulatory requirements, Record of Environmental Consideration (REC) Special Conditions and PA policy. Project is ready for applicant review.

## Project Signatures

**Reviewed By** Unsigned

**Reviewed On** Unsigned

## Fixed Cost Offer

As a Public Assistance (PA) Subrecipient PR Electric Power Authority (000-UA2QU-00), in accordance with Section 428 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the Applicant agrees to accept a permanent work subaward based on a Fixed Cost Offer in the amount of \$24,944,459.56 for subaward number 11696 under Disaster # 4339. The Applicant accepts responsibility for all costs above the Fixed Cost Offer.

The Applicant understands that by participating in this pilot program they will be reimbursed for allowable costs in accordance with 2 CFR Part 200, and the reimbursement will not exceed the Fixed Cost Offer. The Applicant also understands that by agreeing to this Fixed Cost Offer, they will not receive additional funding related to the facilities or sites included in the subaward. The Applicant also acknowledges that failure to comply with the requirements of applicable laws and regulations governing assistance provided by FEMA and the PA Alternative Procedures Pilot Program Guidance (such as procurement and contracting; environmental and historic preservation compliance; and audit and financial accountability) may lead to loss of federal funding.

## Award Information

### Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
0	Eligible	Awarded	PA-02-PR-4339-PW-11696(15290)	\$18,151,116.72	90%	\$16,336,005.05	6/4/2024
1	Eligible	Notified		\$0.00	90%	\$0.00	

### Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
7/22/2024	4339DRPRP00116961	20173OKR-07192024	7/18/2024	\$4,084,001.26

### Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #
0	6/4/2024	\$16,336,005.05	90%	Accepted	4339DRPRP00116961
2	3/1/2026	\$6,114,008.56	90%	Accepted	4339DRPRP00116961

# Department of Homeland Security Federal Emergency Management Agency

v0

## General Info

<b>Project #</b>	956356	<b>P/W #</b>	108159	<b>Project Type</b>	Specialized
<b>Project Category</b>	F - Utilities	<b>Applicant</b>	PR Electric Power Authority (000-UA2QU-00)	<b>Event</b>	4339DR-PR (4339DR)
<b>Project Title</b>	FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)			<b>Declaration Date</b>	9/20/2017
<b>Project Size</b>	Large	<b>Incident Start Date</b>	9/17/2017	<b>Incident End Date</b>	11/15/2017
<b>Activity Completion Date</b>	9/20/2027				
<b>Process Step</b>	Obligated				

## Damage Description and Dimensions

The Disaster # 4339DR, which occurred between *09/17/2017* and *11/15/2017*, caused:

### Damage #1716306; Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose

#### General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose
- **Facility Description:** Transmission line 39000 is a single circuit line with a total length of 2.81 miles.
- **Approx. Year Built:** 1980
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

## Final Scope

1716306

### Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose

#### INTRODUCTION

Pursuant to FEMA's Post-Fixed Cost Estimate Obligation SOP (the "SOP") for FAASt projects, FAASt subrecipients must provide to FEMA recovery project scopes of work ("SOW") for the proposed construction work to be performed. The SOP states that the SOW may include § 406 hazard mitigation proposals ("HMPs"). This project version does not include 406 hazard mitigation proposals. The SOW defines the activities that will be performed using Public Assistance ("PA") funding.

According to the SOP, FEMA "anticipates that [SOW] submissions might include preliminary designs, including drawings and cost estimates. FEMA also recognizes that, generally, architects and/or engineers do not include or delineate the information needed to enable FEMA to complete programmatic reviews. Therefore, in those cases, subrecipients must ensure to submit all the information described [in the SOP] and not limit the submission to a drawing set. Refer to Part C - II. Recipient/Subrecipient Checklist for Submissions as a guide to review completeness." SOP at 4.

This document contains the detailed SOW for FEMA PA project # 956356 under DR-4339-PR Public Assistance. The document provides a detailed description of the project, the scope of PA construction activities to be completed, common EHP review information and project cost estimates. The Subrecipient seeks approval from COR3 and FEMA for PA funding for the scope described herein.

LUMA submits this Detailed SOW pursuant to the Transmission and Distribution Operations and Maintenance Agreement between the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A"), and LUMA, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A, which collectively provides the necessary consent for LUMA, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the transmission and distribution ("T&D") system submitted

to FEMA. References to "Subrecipient" herein refer to PREPA pursuant to this agreement and consent for LUMA to act as its agent with respect to federal funds.

## **PROJECT DESCRIPTION**

### **Transmission Line 39000 Vegetation Clearance**

This is a LUMA priority single transmission line vegetation clearing project for an entire segment of the 115kV Line 39000 in Ponce Region 6 that starts at Aguas Buenas Substation and ends at Hacienda San Jose. The DSOW captures the scope of work and cost estimate for Vegetation Clearing intended to mitigate the threat that the existing vegetation along Line 39000, if left untended to, poses a threat to Puerto Rico's electric grid reliability.

LUMA utilized a vegetation removal contractor, Wright Tree, to assess the conditions of .831 miles of the subject TL 39000 segment. This represents 29.6% of the line segment length. The purpose of this assessment is to generate a project specific scope of work and cost with a high level of accuracy. This estimate is unique to the actual conditions assessed by the contractor and the resulting cost estimate for TL 39000 Aguas Buenas Substation to Hacienda San Jose. LUMA will provide line specific assessments for scope and cost estimates applicable to other priority 115kV lines vegetation clearing projects.

The project scope and cost details the proposal to clear 0.913 miles of vegetation on TL 39000 at an agreed to and validated cost of \$367,454.17 per mile as detailed in the scope of work and represented in the cost estimate.

FEMA has recognized that a one-time, island-wide vegetation clearance and removal operation may be considered an eligible § 406 HMP. As instructed by FEMA Public Assistance leadership, LUMA is submitting the full scope of vegetation clearance for Line 39000 Aguas Buenas Substation to Hacienda San Jose as a § 428 cost in this DSOW. Following obligation, FEMA PA leadership agreed that LUMA will submit an amendment to move the costs related to LUMA's Vegetation Clearing Program.

## **FACILITIES**

### **1.1 FACILITIES LIST – BUILDINGS AND SUBSTATIONS**

The following list includes the name, year of construction, and GPS coordinates of each building or substation included in this project:

- N/A

### **1.2 FACILITIES LIST – OTHER FACILITIES**

Transmission line 39000 is a single circuit line. Vegetation clearance will be performed in the identified segments of the following transmission line:

Table 1: Transmission Line and the segments in which vegetation clearing is to occur.

Line Segment	Line Number	GPS Start	GPS End	Total Mileage submitted	Total Mileage Validated by FEMA
Aguas Buenas Substation to Hacienda San Jose	39000	[REDACTED]	[REDACTED]	2.82	0.913

**PROJECT AREA MAP WITH BOUNDARIES OF CONSTRUCTION**

1.0 Please see Appendix D – TL39000 .kmz/Shapefile.

**§ 428 SCOPE OF WORK**

**The type of project proposed:**

Standard Project: Restores the facility/facilities to pre-disaster design and function to locally-adopted codes/standards and/or FEMA-approved industry standards.

Improved Project: Restores the pre-disaster function of the facilities and incorporates improvements or changes to its pre-disaster design not required by codes or standards.

Subrecipient’s request letter included, see Appendix \_\_\_\_.

Recipient’s approval letter included, see Appendix \_\_\_\_.

Alternate Project: Does not restore the pre-disaster function of the damage facility. The Subrecipient, through the Recipients, must obtain approval from FEMA.

Subrecipient’s request letter included, see Appendix \_\_\_\_.

Recipient’s approval letter included, see Appendix \_\_\_\_.

**1.3 DESCRIPTION OF PROPOSED WORK TO BE PERFORMED**

Vegetation Clearing Assessments

Vegetation removal contractor Wright Tree performed the initial verification to determine the scope of work for the necessary vegetation mitigation measures at each facility or asset and the appropriate clearing method, such as including tree felling, vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, and recycling.

Vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). These ANSI A300 Standard Practices are outlined in **Appendix E** ANSI A300 – Pruning Standards, which includes tree inspection, tools and equipment, pruning cuts, pruning objectives, pruning types, specialty pruning, palm pruning, and utility pruning standard practices. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant.

## Vegetation With the Potential to Encroach Within 20 Feet of Conductor — Compatible or Incompatible

In all cases, LUMA's vegetation clearing contractors will perform clearing activities in a manner consistent with ANSI A300, NESC, and Regulation 7282 alignment with Resolution 4987, Organic Law 83 (amended version), PREPA Technical Communication 12-02, and LUMA's VMP.

- Any vegetation species—whether Compatible or Incompatible—that have the potential (when at full size) to encroach within 20 feet of the conductor will be cleared using one of the methods discussed below
- Tree removal: Qualified line clearance crews will work at ground level, climb trees from ground level, or use aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place.
- Severing of vines: Vines will be severed by qualified line clearance crews at the base with an airgap created between the root system and the portion of the vine climbing on the structure. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter species by hand. Qualified line clearance crews will work at ground level, climb trees from ground level, or use aerial platforms to remove vegetation.
- Vegetation mastication: also known as mulching, slash-busting, or brush-cutting, involves technique for reducing the size of vegetation and downed material in forests. It involves grinding, shredding, or chopping vegetation into smaller pieces, which are then left on the site as mulch.

## All Other Incompatible Species within the Recommended Easement Width

All other Incompatible Species will be cleared from the full width of the recommended easement width. The clearing methods described above (tree removal, severing of vines, cutting, and vegetation mastication) will be utilized.

In rare cases where LUMA encounters significant resistance from landowners or stakeholders to remediate vegetation, LUMA will work with landowners or stakeholders to determine if incompatible and compatible species can be pruned to mitigate the hazard to the lines instead of being completely removed.

## Vegetation Originating Outside the Easement

Vegetation outside or along the boundary of the easement has the potential to interfere with the operation of power transmission lines will be managed to achieve appropriate clearance around the conductors and lines to protect from future damage. For Rural Single Phase 115kV transmission lines, this requires a clearance distance of 20 feet from all conductors per LUMA's VMP. The clearing methods described above (tree removal, severing of vines, cutting, and vegetation mastication) will be utilized where possible within the easement, in addition to:

- Tree pruning: Qualified line clearance crews from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.

- Mechanical Vegetation Control: mechanical vegetation control uses mechanical machinery to clear out dense weed infestations at facilities or to clear brush and vegetation. Mechanical vegetation control includes mowing and cutting. The following general guidelines apply to mechanical control methods:

- § Targeted clearing will be completed – avoiding the removal of vegetation that is providing slope stability or erosion control unless necessary.

- § Only trained operators will be permitted to use mechanical/heavy equipment (mowers, chainsaws, mulchers).

In cases where following ANSI A300 best practices for vegetation clearing and pruning required beyond 20 feet, the maximum distance cleared will not exceed an additional 3 feet from set clearing distance. Diagrams illustrating these clearing distances are provided as attachments within Grants Portal.

## Disposal

Excess woody debris will be removed from the easement. See Vegetative Removal in section 11.0, below.

## Scope of Work Limitations

The scope of Vegetation Clearance is limited in two ways. First, not all vegetation will be completely removed. PREPA's T&D easements are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them incompatible with safe and reliable energy delivery service. Recognizing the diversity of species in tropical ecosystems, the general strategy for Vegetation Clearing is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Please refer to Appendices A and B for lists of protected flora species and incompatible flora species expected to be encountered during project performance.

The following terms, when used in this document, shall have the meaning described below:

- Compatible Species – Compatible species are those that are congruent with the intended use of the site. They include small trees, shrubs, and herbaceous vegetation that are not expected to grow into conflict with overhead conductors.
- Incompatible Species – Incompatible species are those that are not congruent with the intended use of the site. They include tall growing trees and other plant forms (e.g., bamboo and palms) with the potential to conflict with overhead conductors.

The Regulation 7282 prohibits climbing plants, shrubs, creepers (vines), and bamboo within the easement. Trees or plants with roots that could damage buried installations are also prohibited. Any trees, shrubs, or plants planted in violation of Regulation Number 7282 may be uprooted, removed, or cut down. Vegetation within the easement cannot obstruct overhead lines. The branches of trees planted outside the easement must not obstruct free passage of the power lines.

Second, Vegetation Clearance of Compatible Species will be limited to work that is necessary to directly reduce the potential of future, similar damage to the T&D system that exceeds what is necessary to simply clear vegetation to access facilities and carry out repairs. This means that LUMA will clear only that vegetation with the potential to encroach on safety and access clearances established in LUMA's VMP, which may be less than the full width of the easement. PREPA Regulation 7282 permits compatible vegetation (but not trees) to be planted in easements, provided that the following vertical distances measured from the highest part of the vegetation within the easement to the lowest conductor of the power line be maintained.

The Regulation provides these clearances for conductor safety, but LUMA has determined they do not go far enough to allow full access to and maintenance of infrastructure in the easement. LUMA's VMP, discussed below, provides the clearances to be used for its Vegetation Clearance Program.

The following terms, when used in this document, shall have the meaning described below:

- Clearance - The minimum distance between two conductors, between conductors and their support or other objects, or between conductors and the ground. According to the National Electrical Safety Code ("NESC"), clearances are the minimum distances required between an energized conductor or appliance and a structure, building, or surface. Minimum separation distances are established by in the NESC and PREPA's rules and procedures (See Technical Communication 12-02, attached). This term is not synonymous with easement. Clearances can be met without being within an easement. Clearance requirements must be met both when PREPA builds its facilities, as well as when a third-party builds a structure. Clearances, in both cases, must be complied with by regulation, regardless of whether an easement exists.
- Easement – An easement is the right to use property owned by another for a specific purpose. An easement for electrical power lines provides PREPA, and LUMA as its agent, various rights including: reasonable access to the electric infrastructure to provide maintenance, repair, expand, or operate. PREPA's Regulation 7282 (Feb. 24,2007) describes the minimum requirements that easements must meet for PREPA infrastructure, and the rights afforded to PREPA by easement.

For overhead power lines, Regulation 7282 recommends the following minimum widths for easements:

Recommended Easement Width for Overhead Transmission & Sub-transmission Lines (feet)				
Construction Type	Area	Voltage		
		38	115	230
Single Circuit	Urban	25'	30'	40'
	Rural	50'	100'	100'
Double Circuit, Same Structure	Urban	25'	40'	60'
	Rural	50'	100'	100'
Double Circuit, Different Structures	Rural	50'	100'	100'

Regulation 7282 also includes requirements governing the type of vegetation that may be planted within these easements, and some of the activities and rights granted to PREPA related to vegetation management.

The actual easement width for a particular line may differ from the recommendations in Regulation 7282 and can be determined by consulting the certified easement as recorded in the Property Registry or filed with PREPA/LUMA Department of Lands and Permit.

- NESC Rule 218 provides that, “[v]egetation that may damage un-grounded supply conductors should be pruned or removed. Vegetation Management should be performed as experience has shown necessary.”

Based on all of the above, LUMA’s VMP defines the Vegetation Clearing standards LUMA is implementing through its Vegetation Clearance program. All Incompatible Species will be cleared from the recommended easement width applicable to the type of line segment, as listed above. In addition, both Compatible and Incompatible Species (whether originating from inside or outside the easement) with the potential to encroach on the conductor will be cleared horizontally to the following distances measured from the outermost conductor’s edge:

Voltage Class	Horizontal Clearance
230 kV	25’ or edge of easement, whichever is less
115 kV	20’ or edge of easement, whichever is less
38 kV	15’ or edge of easement, whichever is less

This scope of work includes repair related vegetation removal included in the sub-FAASt recovery project below. No duplicate costs for repair-related vegetation clearance will be captured in the sub-FAASt recovery project.

Table 2: FAASt Recovery Projects on the Same Line Identified in this Sub-FAASt Project.

FAASt Recovery Project #	Project Name	GPS Start	GPS End	Miles

177191	Line 39000 - Aguas Buenas TC to Caguas TC			5.75
Total Mileage				5.75

#### 1.4 CODES & STANDARDS

The following will be referenced when applying specific codes, specifications, and standards to the project design:

- a. Consensus-based codes, per FEMA's Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR (Feb. 2020).
- b. Industry standards per FEMA Recovery Policy FP-104-009-5, Version 2, Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.
- c. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.
- d. Subrecipient's authorized representative's latest Design Criteria Document (DCD) which aggregates the design considerations for most of the consensus-based codes, specifications, and standards listed in FEMA Recovery Interim Policy 104-009-11 Version 2.1 (Dec. 20, 2019).

All work will be conducted in compliance with applicable industry standards and best practices, including:

- a. LUMA Vegetation Management Plan (2024) which incorporates the following:
  - i. Reglamento de Servidumbres para la Autoridad de Energía Eléctrica 7282 (2007) (Regulation 7282).
  - ii. NESC – National Electrical Safety Code, Rule 218 (2017), adopted by PREPA through Rule 7014.
  - iii. PREPA Technical Communication 12-2 (Technical Press Releases and Circulars 2012).
  - iv. ANSI A300 Tree, Shrub, and other Woody Plant Management- Standard Practices:
    - 1) Part 1 Pruning (2017).
    - 2) Part 7 Integrated Vegetation Management (2018).
    - 3) Part 9 Tree Risk Assessment (2017).

#### PROJECT COST ESTIMATE (PCE)

The project scope and cost details the proposal to clear 0.913 miles of vegetation on TL 39000 at an agreed to and validated cost of \$367,454.17 per mile as detailed in the scope of work and represented in the cost estimate.

For more details on this cost estimate, refer to **Appendix C.1 – DR-4339PR-FEMA Cost Estimate.**

Project	Line	Line length	Vegetation Line length (Miles)	10% Adm. Buffer Acceptance (Miles)	% of Vegetation	FEMA Cost	FEMA Final Cost	3% Basic Construction Services (A&E)	Total Project Cost without A&E
		(Miles)							
56356	39000	2.82	0.83	0.913	32.38%	\$367,454.17	\$335,485.66	\$10,064.57	\$325,421.09

Work to be completed: \$335,485.66

A&E Deduction (Global A&E FAAsT 335168): - \$10,064.57

**Project Total Cost: \$325,421.09**

**Project Notes:**

1. Refer to detailed SOW provided in document labeled: "956356-DR4339PR-Vegetation Clearance for FAAS 956356\_ Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose.FEMA.pdf"
2. Refer to detailed Cost Estimate provided in document labeled: "Appendix C.1 - DR4339PR-FEMA Cost Estimate.pdf"
3. This project is part of Donor FAAS 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAAS Project.
4. For clarification of cost estimate adjustment, please refer to email correspondence: "956356 - DR4339PR - PREPA FAAS projects (115kV) Email Correspondance"
5. A&E costs included in this project will be reduced from this project and obligated under the FAAS Project #335168, A&E, as shown in the table above. The A&E project was obligated to track and account for costs associated with individual FAAS projects.
6. Attachments:
  - a. Appendices A and B - Lists of Protected Flora Species and Incompatible Flora Species
  - b. Appendix C.1 - DR4339PR-FEMA Cost Estimate
  - c. Appendix D - KMZ/Shapfile – Mapping
  - d. Appendix E - ANSI A300
  - e. Appendix F - Example TL 39000 Density Photographs

**406 HMP Scope**

It was agreed with subrecipient this project will be moved forward in Version 0, without hazard Mitigation funds. Is the responsibility from the sub-applicant complete the field assessments to establish the after and before report of clearance and the project office folder including all the expenses incurred on the project: (labor, material, workmanship, contractors and office expenses directly related to the project). The subrecipient must ensure that the work is executed with reasonable use of resources and costs, using the most cost-effective method. Once the sub-applicants complete the vegetation clearance activities, the information will be submitted to FEMA for the validation and future reimbursement of the PA 406 funds to the main FAAS.

## Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$335,485.66	Uncompleted
3510	1	Lump Sum	(\$10,064.57)	Uncompleted

CRC Gross Cost	\$325,421.09
Total 406 HMP Cost	\$0.00
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$325,421.09
Federal Share (90.00%)	\$292,878.99
Non-Federal Share (10.00%)	\$32,542.10

## Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.

## Insurance

### Additional Information

12/23/2025

No adjustments to be made to the previous insurance coverage determination, no revisions to narrative needed, updated applicant tracker if

needed, providing administrative function and forwarding project for completion.

**Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo P.R.**

**8/11/2025**

Does the Applicant have a Commercial Policy: Yes.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No.

Property insurance coverage for the electrical distribution facilities represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. Applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

**Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR**

### O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

### 406 Mitigation

There is no additional mitigation information on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

### Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

**Yes**

### EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Environmental Review Project Conditions. On May 16, 2025, the Secretary of the U.S. Department of Energy (DOE) issued Order

202-25-2 (Order), pursuant to the authority vested in him by section 202(c) of the Federal Power Act (FPA), 16 U.S.C. § 824a(c), and section 301(b) of the Department of Energy Organization Act, 42 U.S.C. § 7151(b). The Order sought to expedite repair and maintenance efforts to the electrical grid of Puerto Rico by directing the Puerto Rico Electric Power Authority (PREPA) to perform vegetation management, including vegetation clearing to re-establish a right-of-way, for particular transmission facilities in the Territory as specified in the Order. On August 15, 2025, DOE reissued the Order to direct PREPA to also perform asset management, including component refurbishment and replacement. The Order required PREPA to identify certain parameters by which the directed work would be performed, and required that all work be performed, to the maximum extent practicable, in a manner consistent with all applicable Federal, State, or local environmental laws or regulations and minimize any adverse environmental impacts. However, pursuant to Section 202(c)(3) of the FPA, to the extent any omission or action taken by PREPA that was necessary to comply with the Order, including any omission or action taken to voluntarily comply with the Order, caused PREPA to not comply with any Federal, State, or local environmental law or regulation, including any environmental conditions in this REC's "Standard Conditions," such omission or action shall not be considered a violation of such environmental law or regulation, or subject PREPA to any requirement, civil or criminal liability, or citizen suit under such environmental law or regulation. Consequently, in consideration of Section 202(c)(3) of the FPA and aligned with the Order, FEMA has incorporated all available information and data for this project pertaining to applicable environmental laws and regulations into this REC for documentation purposes, but FEMA has neither reviewed, nor made a determination, regarding the project's compliance with any applicable environmental laws or regulations.

### EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

## Final Reviews

### Final Review

**Reviewed By** LEFRANC-GARCIA, CARLOS L.

**Reviewed On** 09/12/2025 2:25 PM PST

#### Review Comments

Reviewed, found eligible and reasonable- CLG 09.12

### Recipient Review

**Reviewed By** Mulero, Noel

**Reviewed On** 09/15/2025 1:33 PM PST

#### Review Comments

Recipient review completed. It was agreed with subrecipient this project will be moved forward in Version 0, without hazard Mitigation funds. FEMA PA leadership agreed that Applicant will submit an amendment to move the costs PA 406 funds related to Vegetation Clearing Program project. Applicant must ensure to compliance with all regulatory requirements, Record of Environmental Consideration (REC) Special Conditions and PA policy. Project is ready for applicant review.

## Project Signatures

**Reviewed By** Unsigned

**Reviewed On** Unsigned

## General Info

<b>Project #</b>	956356	<b>P/W #</b>	108159	<b>Project Type</b>	Specialized
<b>Project Category</b>	F - Utilities			<b>Applicant</b>	PR Electric Power Authority (000-UA2QU-00)
<b>Project Title</b>	FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)			<b>Event</b>	4339DR-PR (4339DR)
<b>Project Size</b>	Large			<b>Declaration Date</b>	9/20/2017
<b>Activity Completion Date</b>	9/20/2027			<b>Incident Start Date</b>	9/17/2017
<b>Process Step</b>	Obligated			<b>Incident End Date</b>	11/15/2017

## Damage Description and Dimensions

The Disaster # 4339DR, which occurred between **09/17/2017** and **11/15/2017**, caused:

### Damage #1716306; Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose

#### General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose
- **Facility Description:** Transmission line 39000 is a single circuit line with a total length of 2.81 miles.
- **Approx. Year Built:** 1980
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

## Final Scope

1716306

### Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose

\*\*\*\*\* Version 1 \*\*\*\*\*

*Version 1 was created to adjust the PA Vegetation Clearance scope of work and cost according to new documentation. SOW from previous version has been removed from current SOW. It can be found in the "Versioning and Amendments" tab in GM.*

Project 136271 (hereinafter PREPA FAASt Project) authorized \$9,459,885,412.39 (Federal Share) to be awarded to the Puerto Rico Electric Power Authority (PREPA, Subrecipient) as a fixed cost estimate (FAASt FCE agreement) based on eligible work without detailed scopes of work to restore disaster-damaged facilities. Eligible work for the Transmission and Distribution (T&D) system included restoration of:

Broken structures due to high winds such as poles/towers (counted as broken when poles were inclined, bent, torn, and/or cracked); and other damages/broken components such as transformers, insulators, conductors, grounding system, jumpers, Gang Operated Air Breakers (GOABs), pole hardware, guy wires and anchors.

FEMA deferred the 406 Hazard Mitigation Proposal (HMP) fixed cost offer in the PREPA FAASt Project until the Subrecipient submits its actual recovery solutions. FEMA also issued a clarification letter regarding whether hazard mitigation funding under Section 404 or Section 406 of the Stafford Act may be made available for the execution of a one-time, island-wide vegetation clearing and removal operation intended to mitigate the threat to the existing vegetation, if unintended to, poses to Puerto Rico's electric T&D system. See FEMA's letter to COR3, document Signed Vegetation

Management March 24 2023.pdf. The Subrecipient's actual recovery solution seeks a one-time Island-wide vegetation clearance and removal operation intended to mitigate the threat to the existing vegetation, if unintended, poses to Puerto Rico's electric T&D system. The actual recovery solution seeks to mitigate the Puerto Rico's electric T&D system, including areas without infrastructure repairs.

The actual recovery solution (scope and cost) will be captured in multiple individual projects (hereinafter Vegetation clearance HMP Sub-FAAST projects) to provide flexibility and enable multiple programmatic reviews simultaneously. The Vegetation clearance HMP Sub-FAAST projects do not include infrastructure repair work.

This project captures a portion of the Island-wide actual recovery solution, specifically the one-time vegetation clearance and removal operation intended to mitigate the Ponce Region 6 Line 39000 115kV] (see project note #1 and #2).

FEMA 406 Hazard Mitigation (HM) team will review this actual recovery solution and issue a FCE offer for the portion of the recovery solution that reduces risk of future similar damages. The Work to be Completed will be captured in the 406 HM scope section. To address the overlap between the incidental vegetation work needed to carry out the repairs and the mitigation work, the Vegetation clearance HMP Sub-FAAST projects will be adjusted as describe in FEMA-4339- DR-PR Public Assistance PREPA FAAsT Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: 115kV/230kV. SeedocumentFAAsTVegetationHMPApproach\_115-230kVTrans\_20250 805.docx. The PA Scope of Work and Cost is limited to the incidental vegetation clearance. No permanent infrastructure repairs are included as part of this scope. WTBC Cost (PA) = \$71,987.50 per mile. Therefore, the total cost (PA) for this project will be \$86,484.80.

D#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1716306	\$ 71,987.50	1.24	\$89,264.50	\$( 2,779.70)	\$86,484.80

**V1 Work to be completed total: \$89,264.50**

**V1 A&E Deduction (Global A&E FAAsT 335168): -\$2,779.70**

**V1 Project Total: \$86,484.80**

**Change requested: \$86,484.80 (Version 1) - \$325,421.09 (Version 0) = -\$238,936.29**

Version summary of key changes

Version 0: \$325,421.09 (WTBC)

Version 1: -\$238,936.29 (WTBC)

Project Notes:

1. This is a 115kV Transmission-Vegetation clearance HMP Sub-FAAST project.
2. Vegetation clearance HMP Sub-FAAST projects will be written according to line type (Distribution: 13.2kV and down, and Transmission: 38 kV, 115kV, and 230 kV) because of the different ROWs and other characteristics. Multiple projects of each type will be submitted and reviewed for eligible PA 406 HM funding. Vegetation clearing work will only be submitted for those areas that vegetation represents strike potential (may cause future similar damage to the T&D system when subject to high winds). In the submittal of this project the Subrecipient's Authorized Representative attests that only the vegetation clearance submitted is to reduce strike potential and that the ROW for these lines have been, and will be, counted only once to avoid duplication within the vegetation clearance projects.
3. For more details of the requirements and conditions for the execution of a one-time, island-wide vegetation clearance and removal operation considered as an eligible Section 406 hazard mitigation proposal (HMP), please refer to document labeled: Attachment A - FEMA letter dated March 24 2023.pdf.

4. . For details on the SOW, refer to filename 956356 FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation) DSOW V1r ev. 1pdf
5. Vegetation clearance funds will not be allocated to SubFAASt projects.
6. A&E cost included in this project will be reduced from this project and obligated under the FAASt Project #335168, A&E, as shown in the table above. The A&E project was obligated to track and account for costs associated with individual FAASt projects.
7. This project is part of Donor FAASt 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAASt Project.

**406 HMP Scope**

**Project number:** 956356]FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)

**Damage #:** 716306; Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose

**Applicant:** PR Electric Power Authority (000-UA2QU-00)

**Start GPS Latitude/Longitude:** [REDACTED]

**End GPS Latitude/Longitude:** [REDACTED]

\*\*\*\*\*VERSION 1\*\*\*\*\*

**V1 to add additional miles and include HM for all the project. (original project w/o hazard mitigation) Cost per mile based on IEP, determination. See PN727572 IEP determination letter.**

**Introduction:**

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane Maria in September 2017. The hurricane caused widespread disruptions to transmission and distribution systems, largely due to vegetation impacts that collapsed distribution and transmission lines. Substantial infrastructure was damage when trees downed utility power lines and poles, causing most of the transmission/distribution system fail. Post-hurricane vegetation clearance to enable grid repair and restoration progressed slowly, considerably delaying overall electrical recovery. Remaining excess vegetation continues to cause operational outages, as ground faults occur when vegetation contacts power lines even during normal weather events. After the passage of Hurricane María, minimal cleaning work was carried out exclusively to clear the areas to carry out emergency repairs to the electrical system. These works were covered by Category B - Emergency Protective Measure, but excess vegetation on the electrical system remains an outstanding vulnerability.

The Puerto Rico's grid modernization and mitigation one time ROW clearance strategy will prioritize effective and proactive vegetation management protocols to prevent prolonged storm-related outages, thereby increasing the reliability of the electric system. These reliability and resiliency gaps are especially impactful to Puerto Rico which has been facing increasingly frequent natural hazards such as hurricanes. This project is part of the for Vegetation Reset Program which will impact the Transmission and Distribution systems for each of the 78 municipalities.

**Hazard Mitigation Narrative:**

In order to minimize damages in a future event, the Subrecipient's actual recovery solution seeks a one-time Islandwide vegetation remediation clearance for the above work included in the PREPA FAASt Project, as according to the Public Assistance Alternative Procedures (PAAP) (Section 428) Guide for Permanent Work FEMA-4339-DR-PR (hereinafter PR PAAP Guide) and FEMA's letter to COR3, document Signed Island-Wide Vegetation Clearance March 24, 2023. Section 406 hazard mitigation are funds that can be added to projects for the restoration of disaster damaged facilities and must prevent future damage to that caused by the declared event. Under DR-4339-PR, Section 406 hazard mitigation funds are based on eligible, technically feasible, and cost- effective mitigation activities proposed to reduce risk to the function of the disaster- damaged facilities. The portion of the recovery solution that reduces risk of future damages may be considered as eligible 406 mitigation.

The island-wide transmission and distribution grid was significantly damaged by the strong winds and heavy rainfall during the atmospheric event hurricane Maria. This resulted in many trees and other vegetation becoming a direct hazard to the electrical grid. A one-time 406 hazard mitigation island-wide vegetation clearance will benefit the reliability and resiliency of the Puerto Rico electrical grid, including the number and duration of customer outages during and after the work to complete the repairs to the electrical grid through other PREPA 428 FAASt Projects. The scope of the global 406 Hazard Mitigation (HM) projects includes vegetation clearing across the entire width of the easement, plus a radius of 12 to 25 feet from energized conductors to directly reduce the potential for future damage to the "transmission and/or distribution" (T&D) systems. Each 406 HM Vegetation Reset project is correlated with an eligible 428 T&D project, in association with PREPA's electrical grid. Different regional projects are developed to impact all lines of the electrical system, including distribution lines and high-voltage transmission lines. Also, projects are defined in terms

of line type (distribution or transmission) and population density of the area (high or low) to simplify the evaluation by the Environmental and Historical Preservation team (EHP).

The global project was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamon
- Region 4 – Caguas
- Region 5 – Mayagüez
- Region 6 – Ponce

For each Region of the island, there will be two types of projects to capture the Vegetation Clearing activities within scopes of work: (1) single transmission line projects based on LUMA's priority list, capturing the lines or segments of lines affected most by vegetation interference, and (2) Regional DSOWs divided into groups (Groups A – F), as follows:

- Region 1 – San Juan
- Region 2 – Arecibo
- Group A – High/Low Density Distribution Lines
- Group B – 38 kV Transmission.
- Group C – Overlapped Distribution and Transmission Lines
- Group D - 115 kV Facilities
- Group E - Substation and Telecommunication Facilities.
- Group F – 230 Kv Facilities (Non Region – Specific)

This 406 HM work is limited to what is necessary to directly reduce the potential of future damage to the T&D system assets, that exceeds what is necessary to clear vegetation for accessing facilities when carrying out repairs which are already established as eligible for FEMA funding utilizing the 428 FAAS Grant. Each 406 HM will correlate to an eligible 428 Transmission and/or Distribution (T&D) project in association with the PREPA power grid. There will be 7 Regional DSOW's developed capturing planned actions within scopes of work formulated with an established criteria detailed for Distribution and Transmission lines/facility locations. The first DSOW is Group A - High Density areas with a low reflection of infrared light; the second DSOW is Group A Low Density locations where more vegetation density is present, which is determined by a higher level of reflection of infrared associated with Vegetation for 13.2kV and below locations; the third DSOW is Group B locations at 38kV level; the fourth DSOW is Group C - with known local environmental sensitivities at 38kV and below levels locations; the fifth DSOW is 115kV Facilities; and the sixth DSOW is Substation and Telecommunication Facilities. There will also be a 230 kV Facilities (these installations have a separate Vegetation Clearance project that is not region- specific).

#### **Ponce Transmission Lines – 115kV**

This is a Group project for 115kV transmission lines within Region 6 Ponce. The DSOW captures the scope of work and cost estimate for Vegetation Clearing intended to mitigate the threat that the existing vegetation, along 115kV lines within Ponce (if left untended to), poses to Puerto Rico's electric grid.

This SOW is aligned with and leverages FEMA's Island-Wide Benefits Cost Analysis (IWBCA), which was used for this purpose and fully support the mitigation measures employed within this project scope of work.

The Subrecipient's authorized representative (LUMA) estimates that this 406 Hazard Mitigation proposal for island-wide vegetation clearance will have immediate and future widespread benefits, including:

- Mitigation of the hazards due to vegetation impacts and damages.
- 70% annual reduction of outages caused by vegetation.
- 35-45% annual reduction of customer interruptions.
- Faster restoration for impacted customers.
- Improved safety for utility workers and the public.
- Support the rebuilding of the grid and effective execution of large-scale construction projects.

The following terms, when used in this document, shall have the meaning described below.

Compatible Species – Compatible species are those that are congruent with the intended use of the site, and include small trees, shrubs and herbaceous vegetation that will never grow into conflict with overhead conductors.

Incompatible Species – Incompatible species are those that are not congruent with the intended use of the site and include tall growing trees and other plant forms (e.g., bamboo and palms) with the potential to conflict with overhead conductors.

Clearance - The minimum distance between two conductors, between conductors and their supports or other objects, or between conductors and the ground. The National Electrical Safety Code (NESC) and PREPA's Technical Communication (See 12-02 attached) determine the minimum requirements regarding distances (vertical and horizontal) between an energized conductor or device and a structure, building or surface. Vegetation

Clearing will be limited to clearing any vegetation affecting these clearances. This term is not synonymous with easement. Clearances can be met without being within an easement. Clearance requirements must be complied with either when the Authority builds its facilities, as well as when a third party builds a structure. Clearances, in both cases, must be complied with by regulation, regardless of whether an easement exists. regardless of whether an easement exists.

Easement - is a lien imposed on a property for the benefit of another belonging to a different owner. The property, in favor of which the easement is constituted, is called the dominant estate; the one who suffers it, servant property. An easement for electrical power lines provides PREPA and Luma as its agent various rights including: reasonable access to the electric infrastructure to provide maintenance, repair, expand, operate and is established on the strips or portions of land where facilities of the T & D system are located or will be located, such as: lines, poles, towers, equipment, and accessories. These acquired rights make it easier to carry out vegetation clearing work.

The PREPA distribution and transmission systems are populated with millions of plants but only some have the conditions, growth characteristics, and/or locations that make them compatible or incompatible with the safe and reliable energy delivery service. The Subrecipient's authorized representative recognizes the diversity of species in tropical ecosystems, and the general remediation strategy is to control incompatible species while encouraging the growth of compatible species. Compatible species may, on occasion, need control if their height or density impedes the necessary line of sight for inspections or access to perform resilience work. Within Appendix A and B are lists of protected flora species and incompatible flora species expected to be encountered during scope performance.

#### **(I) Proposed 428 Public Assistance Scope of Work (SOW):**

This project includes Public Assistance (PA) works; however, PA Scope of Work and Cost is limited to the incidental vegetation clearance. No permanent infrastructure repairs are included as part of this scope, \$243,885.69 / mile calculation represents the total cost (base costs + soft costs – PA Overlap)

PA incidental works will be deducted from the Section 406 Hazard Mitigation project costs to avoid duplication of works. To address the overlap between the incidental vegetation work needed to carry out the repairs and the mitigation work, the Vegetation clearance HMP Sub-FAAST projects.

FEMA performed an analysis to the PREPA FAAST documents and determined that vegetation clearing on each mile of 115 kV line requiring repair was on average 22.79% related to the repair (428 PA) and 77.21% related to a mitigation measure (406 HM). The fixed-cost estimate for the PA scope is \$71,987.50 per 26.35 mile, with a total project cost of \$1,896,870.63. For further details, refer to the document "FAASTVegetationHMPApproach\_115-230kV Transmission\_08.05.2025.pdf."

#### **(II) Hazard Mitigation Proposal (HMP) Scope of Work:**

##### **956356 FAAST [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**

As a result of DR-4339-PR, vegetation surrounding T&D assets are falling onto these facilities and interfering with the safe and reliable operation of the assets. The vegetation at present is currently causing outages when vegetation is in contact with the T&D assets. To mitigate the future damage across T&D assets and protect the 428 repairs and replacement along these facilities, clearing vegetation materials will be required. This 406 Hazard Mitigation Scope of Work is to directly reduce the potential of future, damages to the T&D system by clearing vegetative materials that pose an immediate threat to the power distribution lines, and identification for corrective actions related to clearing vegetation (consisting of shrubs, branches, limbs, stumps, bamboo, and trees that are directly impacting the resilience and productivity of the power grid) applicable to the existing PREPA electrical grid within Region 6 Ponce TL of Puerto Rico.

The extent and execution of this scope includes performing verification of facilities, assets and condition assessments for determining the most appropriate remediation, preparing work orders for executing the necessary vegetation remediation, by ways of tree felling, vegetation remediation, mechanical vegetation remediation, vegetative debris disposal via chipping, mulching, hauling, and recycling where applicable in easement of the PREPA power Distribution lines. LUMA is not planning to construct access roads. If the work to be done is not adjacent to an existing road, our contractor tree crews will minimize environmental disturbance by utilizing vegetation crews hiking by foot in and out of our existing easement.

#### **Parameters for Performing 406 Hazard Mitigation Vegetation Clearing**

Regulation 7282 requires that only shrubs and plants (no trees) be planted within the easement under power lines. Climbing plants and vines, as well as bamboo, are prohibited from being planted within an easement. The branches of trees planted outside the easement must not obstruct free passage of the power lines. The National Electrical Safety Code (NESC) and PREPA's Technical Communication establish the minimum required distances, both vertical and horizontal, between an energized conductor or device and any structure, building, or surface. Vegetation clearing will be restricted to removing any vegetation that interferes with these clearances. For power distribution lines, NESC and Regulation 7282 defines the vertical distance from vegetation as 12-15 feet. By law, any trees, shrubs, or plants planted in violation of Regulation 7282 may be uprooted, removed, or cut down in accordance with the provisions of Regulation 7282 – for both compatible and incompatible species.

Industry standard practices will determine how the work will be performed. A healthy tree is less likely to fall over in a storm and damage overhead lines; therefore, vegetation will be pruned according to ANSI A300 (Part 1) – 2017 Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Vegetation that is improperly pruned could become susceptible to disease and decay, resulting in a hazard to both the line and

public safety. ANSI A300 is the tree care industry standard of care in the USA. It was developed by Tree Care Industry Association and maintained by a consensus of various industry stakeholders through periodically reviewing and updating the guidelines. These standards provide guidance on how and where to prune vegetation to achieve clearances and maintain a healthy plant. In all cases, Subrecipient's authorized representative's vegetation clearing contractors will be required to perform clearing activities in a manner consistent with ANSI A300, NESC, and Regulation 7282 alignment with Resolution 4987, Organic Law 83 (amended version), Communication 12-02, and PREPA 's Comprehensive Vegetation Management Plan establishing standard Distribution easement widths. Easement Clearance widths for distribution lines are given in the table below.

Construction type	Area	Voltage (kV)		
		38	115	230
Single Circuit	urban	25 ft	30 ft	40 ft
	rural	50 ft	100 ft	100 ft
Double Circuitit/	urban	25 ft	40 ft	60 ft
Same Structure	rural	50 ft	100 ft	100 ft
Double circuit/Different Structures	rural	50 ft	100 ft	100 ft

**Scope of Work Inside Easement – Incompatible Species**

Incompatible species are those that are not congruent with the intended use of the site and include tall growing trees and other plant forms (e.g., bamboo and palms) with the potential to conflict with overhead conductors. For the power distribution lines, all Incompatible Species will be cleared from the full width of the easement. “Clearing” in this context includes the following activities: tree removal, severing of vines, cutting, vegetation mastication.

- Tree removal: Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place.
- Severing of vines: Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. Vines are severed and treated by a qualified working at ground level. The upper portion of the vine remains attached and is not removed.
- Cutting: Cutting typically involves the removal of small diameter Incompatible Species by hand.
- Vegetation mastication: also known as mulching, slash-busting, or brush-cutting, involves technique for reducing the size of vegetation and downed material in forests. It involves grinding, shredding, or chopping vegetation into smaller pieces, which are then left on the site as mulch.

**Scope of Work Inside Easement – Compatible Species:**

Compatible vegetation species will be cleared consistent with the distances identified in Regulation 7282, which means that any species with the potential to encroach within 20 feet of the conductors at full size will be removed using the same methods discussed above. Even though the distances identified in Regulation 7282 are vertical clearances, Compatible Species encroaching on the conductors from any direction can pose a hazard to the distribution system, with the maximum edge of the conductors to be 20 feet wide centered on the pole. Therefore, the 20-foot clearance is being applied to both vertical and horizontal clearances. For areas with overhead distribution systems located in the backyard or side yard, the certified easement width from LUMA Land Records office will use for clearing.

In rare cases where Subrecipient's authorized representative encounters significant resistance from landowners or stakeholders to remediate vegetation, Subrecipient's authorized representative will work with landowners or stakeholders to determine if Incompatible and Compatible Species can be pruned to mitigate the hazard to the lines instead of being completely removed

**Vegetation with the potential to encroach within 20 feet of conductor — Compatible or Incompatible.**

Any vegetation species—whether Compatible or Incompatible—that have the potential (when at full size) to encroach within 20 feet of the conductor will be cleared using one of the methods discussed below:

- **Tree Removal:** Removing above-ground portions of trees while leaving stumps in place.
- **Severing of Vines:** Cutting vines at the base to create an air gap between the root system and the structure.
- **Cutting:** Hand removal of small-diameter incompatible species.

- **Vegetation Mastication:** also known as mulching, slash-busting, or brush-cutting, involves technique for reducing the size of vegetation and downed material in forests. It involves grinding, shredding, or chopping vegetation into smaller pieces, which are then left on the site as mulch. Using heavy equipment to reduce standing trees to woody debris.

**All Other Incompatible Species within the Recommended Easement Width:**

- All other Incompatible Species will be cleared from the full width of the recommended easement width. The clearing methods described above (tree removal, severing of vines, cutting, and vegetation mastication) will be utilized.

**Scope of Work Outside Easement – Species Growing into the Easement**

There is the potential for vegetation outside or along the boundary of the easement to interfere with the operation of power distribution lines. Appropriate clearances around the conductors must be achieved to protect the lines from future damage. For distribution lines, Subrecipient's authorized representative has established a minimum clearance distance of 20 feet from all conductors, with the maximum edge of the conductors to be 20 feet wide centered on the pole. This distance is consistent with the vertical distance established in Regulation 7282. If there are species encroaching on the 20-foot clearance outside or along the boundary of the easement, these species will be pruned to obtain at least 20 feet of clearance from the conductors at the time clearance work occurs. In cases where following ANSI A300 best practices require clearance beyond 20 feet, the maximum distance cleared will not exceed an additional 3 feet from set clearing distance. Diagrams illustrating these clearing distances are provided as attachments within Grants Portal. The following clearing methods will be provided as Attachment B- "FAAStVegetationHMPApproach\_115-230kV Transmission\_08.05.2025.pdf"

- **Tree pruning:** Qualified personnel work from an aerial platform or while climbing within a crown of trees to prune the tree. All pruning work wounds the tree. Done poorly, pruning can result in an exaggerated regrowth response by adversely altering tree architecture and increasing exposure to decay organisms that can weaken the tree. These adverse consequences increase the likelihood of tree-initiated faults causing system interruptions and customer outages. Proper arboriculture techniques will be utilized.
- **Tree removal:** Qualified line clearance crews work at ground level or on aerial platforms to remove the portion of the tree that is above ground, leaving the stump in place.
- **Severing of vines:** Vines will be severed at the base with an airgap created between the root system and the portion of the vine climbing on the structure. Vines are severed and treated by a qualified worker at ground level. The upper portion of the vine remains attached and is not removed.

Cutting: Cutting typically involves the removal of small diameter species by hand.

Vegetation mastication: also known as mulching, slash-busting, or brush-cutting, involves technique for reducing the size of vegetation and downed material in forests. It involves grinding, shredding, or chopping vegetation into smaller pieces, which are then left on the site as mulch.

**FEMA 115kV Assessment & Methodology:**

LUMA documentation claims a 100% clearance for the entire project segment based on the total length of the feeder. This analysis would not be considered as the method for validation purposes.

Consequently, FEMA perform a 100% evaluation of each feeder to determine the quantity of miles of vegetation non-compatible. The tools used for this analysis are Google Earth, that allows a street view evaluation where the HM Specialist uses the imagery data for analyze the feeder lines adjacent to roads. Where the feeder is through mountains FEMA use top and 3D view maps that allows determine the elevations for mountains, forested areas (assess vegetation), and the topography of the land. When poles are at the top of mountains and lines run between mountains, only the vegetation around the poles will be considered. The total percentage of each line is the result of compiling all the sections analyzed. It is important to emphasis, that after work completed, the subrecipient can submit additional eligible vegetation clearance distance not included in this vegetation clearance percent analysis.

**FEMA Analysis:**

Assessment Description	Miles
PN956356-39000- Aguas Buenas SS - Original HM assessment:	0.824672353

PN956356-39000- LUMA - Additional Miles after LUMA review.	0.331094175
<b>Delta on FEMA vs LUMA Assesement</b>	
<b>PN956356-39000- Aguas Buenas SS</b>	0.82467
<b>10% Buffer</b>	0.90714
<b>PN956356-39000- LUMA</b>	0.33109
<b>Final Circuit Miles to include in the Project</b>	<b>1.23823</b>

**Cost Summary:**

**The Hazard Mitigation Proposal is divided in 1ea Sub-Project: DI#1716306; Ponce Region 6 Transmission Line 39000 – Aguas Buenas Substation to Hacienda San Jose. The total HMP Cost is the HM Net Cost (\$288,017.39) + Applicant A&E, Management & General Conditions (\$14,400.87) = \$302,418.26.**

**(III) Hazard Mitigation Proposal (HMP) Cost:**

Vegetation Clearance Cost per Mile (Base Cost) =	\$300,831.61 /
Risk Factor approved by the DR4339-PR leadership (5%) =	<u>\$15,041.58</u>
Vegetation Clearance Cost per Mile (w/Soft Cost) =	<u>\$315,873.19</u>
PA Vegetation Clearance Overlap per Mile (Deduction) =	<u>(\$71,987.50 /</u>
<b>Hazard Mitigation Total Cost per Mile =</b>	<b>\$243,885.69 /</b>
V0 Project Total Miles with Vegetation:	.82-
Buffer Acceptance	
V0 Vegetation Miles with Buffer	<u>.91-</u>
V1 Additional Miles (LUMA approach)	<u>0.33-</u>

**Total Project Miles with Vegetation:**

**1.24-r**

**Hazard Mitigation Total Cost =**

**\$302,41**

**Note:** The \$243,885.69 / mile calculation represents the total cost (base costs + soft costs – PA Overlap). For this project, breaking down that total cost further yields the approximate figures below. For additional information please see the attached document.<sup>3</sup>

Total Net Hazard Mitigation Cost (Base Cost) =	\$288,0
+ HM (Management & General Conditions Factors) =	\$14.
<b>Hazard Mitigation Total Cost =</b>	<b>\$302,</b>

**(IV) Hazard Mitigation Proposal (HMP) Cost Distribution:**

Architecture and Engineering (A&E) =	\$9,
Remaining Vegetation Clearance Cost =	\$293,
<b>Hazard Mitigation Total Cost =</b>	<b>\$302,</b>

**(V) HMP Cost-Effectiveness Calculations:**

FEMA's Benefit-Cost Analysis (BCA), methodology evaluates expected risk reduction benefits of a hazard mitigation project and compares those benefits to the cost of the mitigation project. FEMA Public Assistance Program and Policy Guide (PAPPG) Chapter 2. Section VII. C. defines cost effective mitigation as: The HM Measure is cost effective through an acceptable Benefit Cost Analysis (BCA) with a resulting Benefit Cost Ratio equal to or greater than (1).

The Island Wide Benefit Cost Analysis (IWBCA) created for the PREPA infrastructure defines a maximum potential benefit using the incurred costs of the PREPA FEMA Accelerated Award Strategy (FAAST) fixed cost estimate, the mission assignments utilized for the reconnection effort, and the costs associated with loss of service. This maximum benefit has been developed to fund all mitigation projects from both Public Assistance Hazard Mitigation and the Hazard Mitigation Grant program.

It is the Subrecipient responsibility to maintain a record of approved IWBCA related projects to avoid running out of funds for their Mitigation portion projects. Please see attached IWBCA Package

The cost of the Hazard Mitigation Proposal (HMP) described herein corresponding to version 1 is **\$302,418.26** (Hazard Mitigation Total Cost). The cost of this HMP combined will all other proposals (both PA and HMGP) does not exceed the maximum potential benefit and is therefore deemed cost effective per FEMA Public Assistance Program and Policy Guide (PAPPG) V3.1 April 2018, Chapter 2, VII., Section C, BCA Rule. This Hazard Mitigation Proposal meets eligible repair and restoration cost-effective requirements.

\*\*See Mitigation Profile Documents Tab in Grants Manager for complete version of this HMP and supporting documents (*HMP, HMP cost estimate, Supporting documents file*).

**(VI) Compliance and Assurance Requirements:**

## A) HMP GENERAL NOTES:

By agreeing to implement the hazard mitigation measures in this HMP, the Applicant/Sub-Applicant is bound by the specific guidelines listed within this document.

**COSTS AND GENERAL CONDITIONS:** The vegetation removal cost is established according to the average base cost of **\$300,831.61 / mile**. Additionally, the DR4339-PR leadership has approved the application of a 5% risk factor to the average cost per mile, resulting in **\$315,873.19 / mile**. After deducting Public Assistance (PA) \$71,987.50 amount (incidental work-refer to document FAAStVegetationHMPApproach\_115-230kV Transmission\_08.05.2025.pdf), the final total obligated amount through PA 406 is **\$243,885.69 / mile**.

**Note: These costs are aligned with the recommendation made by the Independent Expert Panel (IEP), which reviewed and validated the cost calculation methodology to ensure it reflects accepted and reasonable practices for this type of mitigation activity.**

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the original hazard mitigation assessment to calculate vegetation miles.

**DOCUMENTATION REQUIREMENTS:** The subrecipient shall document all vegetation removal work, including but not limited to the following:

- Before and after photographs of the total distance included in the HMP Scope of work that clearly show the condition of the area before and after the vegetation clearance.
- A digital map in ArcGIS format showing all areas where vegetation removal was performed. Location information must be provided, including the physical address, GPS coordinates from start to finish of clearance work, and contact information for private property (when applicable).
- Work orders must account for the entire feeder length distance and include a description of the sections both with and without vegetation. Material disposal documentation must specify whether the material was chipped and removed, left on-site, or transported to a landfill.

**Note:** All vegetation clearance projects must include the above documentation to define the work completed prior to project closeout.

**COST DISTRIBUTION:** Recognizing that the established cost is an average per mile, it is understood that actual expenses for each feeder or area may deviate (either underrun or overrun) from the estimated project amount. The 406 HMP scope and cost agreement sets an average cost per mile for vegetation clearance, allowing the subrecipient to manage funds across the various projects that comprise the vegetation asset. The *Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR, January 1, 2022 (PR PAAP Guide)*, states that if funds for 406 Mitigation are included in the fixed-cost subaward, the subrecipient must complete the approved Scope of Work (SOW) of the Hazard Mitigation Proposal (HMP) in order to retain the 406 Mitigation funding. Consequently, only completed distance in the HM Scope of work, supported by the necessary back-up documentation (e.g., verified mitigated clearance distance), will be eligible for fund retention. Any uncompleted work from the HM SOW (e.g., miles not documented with mitigated clearance distance) will be de-obligated during the closeout process.

**SCOPE OF WORK DEVELOPMENT OF HAZARD MITIGATION:** FEMA will evaluate each mitigation opportunity to first determine what measures or portions of solutions could be funded through Section 406 mitigation. FEMA analyzes the proposed mitigation measures for cost-effectiveness, technical feasibility, and compliance with EHP laws, regulations, and Eos. FEMA, the Applicant, Recipient, and Sub-recipients will develop and agree to scopes of work (SOW) and cost estimates to repair, restore, or replace eligible facilities including 406 Hazard Mitigation" (Page 6).

**COMPLETION OF HAZARD MITIGATION SCOPE OF WORK:** If this HMP is approved and the mitigation is not performed, the Applicant must apply for a change in the Scope of Work and a de-obligation of the HMP funding. Failure to complete the work of the HMP may limit future FEMA funding of repairs at the site in the event that a similar disaster event results in similar damage at the site.

**CHANGES TO THE HAZARD MITIGATION SCOPE OF WORK FOR LARGE PROJECTS:**

Per PAAP PA Process (Section 428), Guide for Permanent Work, February 10, 2020, "A Subrecipient may alter the 406-hazard mitigation SOW (HMP) after FEMA, the Recipient, and Subrecipient agree on the cost estimate for the initial proposal. After the project is obligated, the SOW for the HMP can be changed only once and the timeline for this change will be established based on a facility-by-facility basis. The proposed change will require evaluation by FEMA for eligibility and EHP. As part of the eligibility review, FEMA will evaluate the SOW, technical feasibility, the level of protection, the revised cost estimate, and cost effectiveness of the new hazard mitigation proposal, and, if approved, will adjust the scope and cost estimate accordingly." (Page 14)

**HAZARD MITIGATION DESIGN:** This HMP is for estimating purposes only and not to be construed as a project design. If the site's final placement and configuration are different than the preliminary estimate, the Applicant should submit a change in scope request. This HMP is subject to further review prior to award.

**HAZARD MITIGATION CONSTRUCTION:** The Applicant must provide & maintain competent & adequate engineering design & supervision during the construction phase to ensure that the completed work conforms to the approved plans & specifications & all applicable material & construction standards.

As a condition of the FEMA mitigation grant, the Applicant is responsible for the determination of and compliance with all applicable requirements, codes, standards and specifications in connection with the project, including but not limited to the Puerto Rico Building Code of 2018 (2018 PRBC), IBC, IRBC, NFIP Floodplain Management Regulations outlined in 44 C.F.R 60.3, ASCE 24, ASCE 7, and receiving all applicable permits & approvals prior to construction.

MAINTENANCE OF HAZARD MITIGATION: The Applicant shall ensure proper maintenance of the installed mitigation measures, per manufacturer and designer specifications. Any adaptations or installations not approved or that renders the hazard mitigation measure ineffective shall be removed by the Applicant. Examples include, but are not limited to, improper installation of roof-mounted equipment or installation of window-mounted air-conditioning units.

ENVIRONMENTAL AND HISTORIC PRESERVATION: Eligibility and funding for the mitigation at this site on this project will be subject to the compliance of all environmental laws, regulations, and executive orders applicable to the site. This project will undergo a EHP compliance review, after obligation any changes to the SOW will likely trigger an additional EHP compliance review of the revised SOW.

ATTACHMENTS:

Please refer the following documents.

1. *"Island-Wide Vegetation Clearance - FEMA letter dated March 24, 2023.pdf"*
2. *"FAASTVegetationHMPApproach\_115-230kV Transmission\_08.05.2025.pdf"*
3. *"Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"*
4. *"IWBCA HMP Package.pdf"*
5. *"956356-Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose.xlsx"*
6. *"956356 (115kV) – Aguas Buenas Substation to Hacienda San Jose.kmz"*
7. *"956356-DR4339PR-HMCE-20251218-REG.xlsx"*

## Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$335,485.66	Uncompleted
3510	1	Lump Sum	(\$10,064.57)	Uncompleted
9001	1	Lump Sum	\$89,264.50	Uncompleted
3510	1	Lump Sum	(\$2,779.70)	Uncompleted
9001	1	Lump Sum	(\$325,421.09)	Uncompleted

CRC Gross Cost	\$86,484.80
Total 406 HMP Cost	\$302,418.26
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$388,903.06
Federal Share (90.00%)	\$350,012.76
Non-Federal Share (10.00%)	\$38,890.30

## Subgrant Conditions

- As described in Title 2 Code of Federal Regulations (C.F.R.) § 200.333, financial records, supporting documents, statistical records and all other non-Federal entity records pertinent to a Federal award must be retained for a period of three (3) years from the date of submission of the final expenditure report or, for Federal awards that are renewed quarterly or annually, from the date of the submission of the quarterly or annual financial report, respectively, as reported to the Federal awarding agency or pass-through entity in the case of a subrecipient. Federal awarding agencies and pass-through entities must not impose any other record retention requirements upon non-Federal entities. Exceptions are stated in 2 C.F.R. §200.333(a) – (f)(1) and (2). All records relative to this project are subject to examination and audit by the State, FEMA and the Comptroller General of the United States and must reflect work related to disaster-specific costs.
- The terms of the FEMA-State Agreement are incorporated by reference into this project under the Public Assistance award and the applicant must comply with all applicable laws, regulations, policy, and guidance. This includes, among others, the Robert T. Stafford Disaster Relief and Emergency Assistance Act; Title 44 of the Code of Federal Regulations; FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide; and other applicable FEMA policy and guidance.
- The DHS Standard Terms and Conditions in effect as of the declaration date of this emergency declarations or major disaster, as applicable, are incorporated by reference into this project under the Public Assistance grant, which flow down from the Recipient to subrecipients unless a particular term or condition indicates otherwise.
- The Uniform Administrative Requirements, Cost Principles, and Audit Requirements set forth at Title 2 Code of Federal Regulations (C.F.R.) Part 200 apply to this project award under the Public Assistance grant, which flow down from the Recipient to all subrecipients unless a particular section of 2 C.F.R. Part 200, the FEMA-State Agreement, or the terms and conditions of this project award indicate otherwise. See 2 C.F.R. §§ 200.101 and 110.
- The subrecipient must submit a written request through the Recipient to FEMA before it makes a change to the approved scope of work in this project. If the subrecipient commences work associated with a change before FEMA approves the change, it will jeopardize financial assistance for this project. See FEMA Policy No. 104-009-2, Public Assistance Program and Policy Guide.
- When any individual item of equipment purchased with PA funding is no longer needed, or a residual inventory of unused supplies exceeding \$5,000 remains, the subrecipient must follow the disposition requirements in Title 2 Code of Federal Regulations (C.F.R.) § 200.313-314.
- Pursuant to section 312 of the Stafford Act, 42 U.S.C. 5155, FEMA is prohibited from providing financial assistance to any entity that receives assistance from another program, insurance, or any other source for the same work. The subrecipient agrees to repay all duplicated assistance to FEMA if they receive assistance for the same work from another Federal agency, insurance, or any other source. If an subrecipient receives funding from another federal program for the same purpose, it must notify FEMA through the Recipient and return any duplicated funding.
- In the seeking of proposals and letting of contracts for eligible work, the Applicant/Subrecipient must comply with its Local, State (provided that the procurements conform to applicable Federal law) and Federal procurement laws, regulations, and procedures as required by FEMA Policy 2 CFR Part 200, Procurement Standards, §§ 317-326.
- The Recipient must submit its certification of the subrecipient's completion of this project, the final claim for payment, and supporting documentation within 180 days from the date that the applicant completes the scope of work, or the project deadline, whichever occurs first. FEMA reimburses Large Projects (those with costs above the large project threshold) based on the actual eligible final project costs. Therefore, during the final project reconciliation (closeout), the project may be amended to reflect the reconciliation of actual eligible costs.
- The Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.

## Insurance

### Additional Information

12/23/2025

No adjustments to be made to the previous insurance coverage determination, no revisions to narrative needed, updated applicant tracker if

needed, providing administrative function and forwarding project for completion.

**Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo P.R.**

**8/11/2025**

Does the Applicant have a Commercial Policy: Yes.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: No.

Property insurance coverage for the electrical distribution facilities represented on this project are not insured or insurable. No insurance relief is anticipated. No Obtain and Maintain requirement will be made.

FEMA requires the applicant to take reasonable efforts to pursue claims to recover insurance proceeds that it is entitled to receive from its insurer(s). In the event that any insurance proceeds are received for these expenses those proceeds must be reduced from FEMA Public Assistance funding to ensure no duplication of benefits has occurred.

No duplication of benefits from insurance is anticipated for work described in this application. In the event any part or all costs are paid by an insurance policy, a duplication of benefits from insurance will occur. Applicant must notify grantee and FEMA of such recoveries and the Sub-Grant award amount must be reduced by actual insurance proceeds.

No insurance requirements will be required for this project. Insurance requirements are specific to permanent work to replace, restore, repair, reconstruct, or construct buildings, contents, equipment, or vehicles. (FEMA Recovery Policy FP 206-086-1).

No insurance narrative will be produced or uploaded into documents or attachments.

**Jean-Carlo Echevarria, PA Insurance Specialist, CRC Atlantic, Guaynabo, PR**

### O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

### 406 Mitigation

There is no additional mitigation information on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

### Environmental Historical Preservation

Is this project compliant with EHP laws, regulations, and executive orders?

**Yes**

### EHP Conditions

- Any change to the approved scope of work will require re-evaluation for compliance with NEPA and other Laws and Executive Orders.
- This review does not address all federal, state and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize funding.
- If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archaeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.
- Environmental Review Project Conditions: On May 16, 2025, the Secretary of the U.S. Department of Energy (DOE) issued Order

202-25-2 (Order), pursuant to the authority vested in him by section 202(c) of the Federal Power Act (FPA), 16 U.S.C. § 824a(c), and section 301(b) of the Department of Energy Organization Act, 42 U.S.C. § 7151(b). The Order sought to expedite repair and maintenance efforts to the electrical grid of Puerto Rico by directing the Puerto Rico Electric Power Authority (PREPA) to perform vegetation management, including vegetation clearing to re-establish a right-of-way, for particular transmission facilities in the Territory as specified in the Order. The Order required PREPA to identify certain parameters by which the directed work would be performed, and required that all work be performed, to the maximum extent practicable, in a manner consistent with all applicable Federal, State, or local environmental laws or regulations and minimize any adverse environmental impacts. However, pursuant to Section 202(c)(3) of the FPA, to the extent any omission or action taken by PREPA that was necessary to comply with the Order, including any omission or action taken to voluntarily comply with the Order, caused PREPA to not comply with any Federal, State, or local environmental law or regulation, including any environmental conditions in this REC's "Standard Conditions," such omission or action shall not be considered a violation of such environmental law or regulation, or subject PREPA to any requirement, civil or criminal liability, or citizen suit under such environmental law or regulation. On August 15, 2025, DOE reissued the Order to direct PREPA to also perform asset management, including component refurbishment and replacement. To renew/reissue the Order, DOE was required to consult with the primary Federal agency with expertise in the environmental interest protected by such law or regulation and include in the Order conditions necessary to minimize any adverse environmental impacts to the extent practicable. On November 12, 2025, DOE reissued the Order to direct PREPA to also perform asset management, including component refurbishment and replacement. DOE and FEMA have agreed that DOE is the lead agency for activities that fall under the prior and any future DOE 202(c) orders issued under the Federal Power Act to resolve the current and related emergencies in Puerto Rico. FEMA has requested that DOE provide FEMA with all documentation relating to their EHP compliance. FEMA will review and incorporate all available information and data for this project pertaining to applicable environmental laws and regulations into this REC when it is received from DOE.

## EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Ponce Region 6 Line 39000 (115kV) – Aguas Buenas Substation to Hacienda San Jose] (Vegetation)**.

## Final Reviews

### Final Review

**Reviewed By** LEFRANC-GARCIA, CARLOS L.

**Reviewed On** 12/31/2025 1:25 PM PST

### Review Comments

Hazard mitigation reconciliation and additional miles identified by the sub-recipient during the field assessment have been added in Version 1 of the project. The cost has also been updated based on a cost markup review. Project version has been reviewed, found eligible and cost reasonable. Subrecipient is responsible for complying with all grants and subgrant conditions. CLG  
12/31/25

### Recipient Review

**Reviewed By** Mulero, Noel

**Reviewed On** 01/09/2026 5:52 PM PST

### Review Comments

Recipient review completed. Applicant must ensure to compliance with all regulatory requirements, Record of Environmental Consideration (REC) Special Conditions and PA policy. Project is ready for applicant review.

## Project Signatures

**Reviewed By** Unsigned

**Reviewed On** Unsigned

## Award Information

### Version Information

Version #	Eligibility Status	Current Location	Bundle Number	Project Amount	Cost Share	Federal Share Obligated	Date Obligated
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### Drawdown History

EMMIE Drawdown Status As of Date	IFMIS Obligation #	Expenditure Number	Expended Date	Expended Amount
No Records				

### Obligation History

Version #	Date Obligated	Obligated Cost	Cost Share	IFMIS Status	IFMIS Obligation #
0	9/17/2025	\$292,878.99	90%	Accepted	4339DRPRP01081591
1	3/1/2026	\$57,133.77	90%	Accepted	4339DRPRP01081591