

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

NEPR
Received:
Mar 5, 2026
5:38 PM

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 Seventeen (17)
FEMA Approvals of Project, Request for
Confidential Treatment, and Supporting
Memorandum of Law**

**MOTION SUBMITTING SEVENTEEN (17) FEMA APPROVALS OF PROJECT,
REQUEST FOR CONFIDENTIAL TREATMENT 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 and, respectfully submits the following:

I. Submittal of One FEMA Approval 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 26th 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 August 30, 2021, LUMA filed a *Motion Requesting Clarification of a Portion of the Energy Bureau's Resolution and Order Entered on August 20, 2021, and Submitting Updated List of Transmission and Distribution Projects and Twenty-Nine Scopes of Work* ("August 30th Motion") whereby it submitted twenty-nine (29) SOWs for the Energy Bureau's review and approval prior to submitting them to COR3 and FEMA. The SOWs LUMA submitted included the "SCADA Remote Access and RTU Replacements", "38 kV Transmission Priority Poles and Structures Replacements", and the "Distribution Streetlighting" T&D Projects.

3. On September 22, 2021, the Energy Bureau issued a Resolution and Order that determined that most of the SOWs for T&D projects submitted by LUMA in the August 30th Motion were necessary to improve the system's reliability ("September 22nd Order"). Therefore, it approved most of the projects presented in the August 30th Motion, including the "SCADA Remote Access and RTU Replacements", "38 kV Transmission Priority Poles and Structures Replacements", and the "Distribution Streetlighting" T&D Projects. The Energy Bureau also ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the Project, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

4. Thereafter, on July 29, 2022, LUMA filed a *Motion Submitting Four Scopes of Work and Updated List of Projects and Request for Confidentiality and Supporting Memorandum* ("July 29th Motion") whereby it submitted four (4) SOWs for the Energy Bureau's review and approval prior to submitting them to COR3 and FEMA ("July 29th Motion"). The SOWs submitted by LUMA included the "Transmission and Distribution Automation Program Installation of Intelligent Reclosers, Single Phase Reclosers and Fault Current Indicators" T&D Project.

5. On August 25, 2022, the Energy Bureau issued a Resolution and Order that determined that the SOWs for T&D projects submitted by LUMA in the July 29th Motion were

necessary to improve the system's reliability ("August 25th Order"). Therefore, it approved all of the projects presented in the July 29th Motion, including the "Transmission and Distribution Automation Program Installation of Intelligent Reclosers, Single Phase Reclosers and Fault Current Indicators" T&D Project. The Energy Bureau also ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the Project, which shall contain the costs obligated for each project, within ten (10) days of receipt of such approval.

6. Afterward, on April 24, 2023, LUMA submitted a *Motion Submitting Scope of Work and Request for Confidentiality and Supporting Memorandum of Law* ("April 24th Motion"), whereby it submitted one (1) SOW for the Energy Bureau's review and approval prior to submitting it to COR3 and FEMA ("April 24th Motion"). The SOW submitted by LUMA was for the "Island-Wide Vegetation Clearing" T&D Project.

7. 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 5th 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.

8. Then, on November 7, 2023, LUMA filed the *Motion Submitting One Scope of Work, Request for Confidentiality and Supporting Memorandum of Law* ("November 7th Motion"), whereby LUMA submitted the "Transmission and Distribution Automation Program Installation of Three Phase Reclosers, Single Phase Reclosers and Fault Circuit Indicators and Feeder Headend Protection Devices" SOW for the Energy Bureau's approval.

9. On November 27, 2023, the Energy Bureau issued a Resolution and Order ("November 27th Order"), whereby it approved the "Transmission and Distribution Automation

Program Installation of Three Phase Reclosers, Single Phase Reclosers and Fault Circuit Indicators and Feeder Headend Protection Devices” SOW and ordered LUMA to submit a copy of the approval by COR3 and/or FEMA of the Project, which shall contain the costs obligated for each project within ten (10) days of receiving such approval.

10. As shown in Exhibit 5 of the Motion filed on July 31, 2024, *Motion Submitting Three Amended Scopes of Work, and One Scope of Work, an Updated Project List, and Request for Confidentiality and Supporting Memorandum of Law*, and most recently in Exhibit 1 of the Motion filed on October 27, 2025, *Motion Submitting LUMA’s Consolidated List with Costs Incurred for Obligated Projects*, the “SCADA Remote Access and RTU Replacements” SOW was divided into separate groups, which include the “FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)” T&D Project.

11. The “38 kV Transmission Priority Poles and Structures Replacements” SOW was also divided into separate groups, which include the “FAASt [TL 13400 TC-San German Sect-La Parguera Sect] (Transmission)” and the “FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC] (Transmission)” T&D Projects.

12. Similarly, the “Distribution Streetlighting” SOW was divided into separate phases, among them, the “FAASt [Rincón Streetlighting] (Distribution)” T&D Project.

13. The “Transmission and Distribution Automation Program Installation of Intelligent Reclosers, Single Phase Reclosers and Fault Current Indicators” and the “Transmission and Distribution Automation Program Installation of Three Phase Reclosers, Single Phase Reclosers and Fault Circuit Indicators and Feeder Headend Protection Devices” SOWs were divided into separate groups, which include the “FAASt [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution)” T&D Project.

14. Finally, the “Island-Wide Vegetation Clearing” SOW was divided into separate projects, by group, which include the “FAASt [Region 3 Bayamon TL - 115kV] (Vegetation)”, “FAASt [Region 6 Ponce TL - 115kV] (Vegetation)”, “FAASt [Region 3 -Bayamon Group A] High Density (Vegetation)”, “FAASt [Region 4 Caguas TL - 115kV] (Vegetation)”, “FAASt [Region 1 San Juan TL - 115kV] (Vegetation)”, “FAASt [Region 5 Mayaguez TL - 115kV] (Vegetation)”, “FAASt [Region 2 Arecibo TL - 115kV] (Vegetation)”, “FAASt [All Regions TL - 230kV] (Vegetation)”, “FAASt [Region 3 -Bayamon Group A] Low Density (Vegetation)”, “FAASt [Region 4 -Caguas Group A] Low Density (Vegetation)”, “FAASt [Region 2 -Arecibo Group A] Low Density (Vegetation)”, and the “FAASt [Region 5 -Mayaguez Group A] Low Density (Vegetation)” T&D Projects.

15. In compliance with the September 22nd, August 25th, May 5th, and November 27th Orders, LUMA hereby submits copies of the following FEMA approvals, which were obligated on March 1, 2026:¹ “FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)”, “FAASt [TL 13400 TC-San German Sect-La Parguera Sect] (Transmission)”, “FAASt [Rincón Streetlighting] (Distribution)”, “FAASt [Region 3 Bayamon TL - 115kV] (Vegetation)”, “FAASt [Region 6 Ponce TL - 115kV] (Vegetation)”, “FAASt [Region 3 -Bayamon Group A] High Density (Vegetation)”, “FAASt [Region 4 Caguas TL - 115kV] (Vegetation)”, “FAASt [Region 1 San Juan TL - 115kV] (Vegetation)”, “FAASt [Region 5 Mayaguez TL - 115kV] (Vegetation)”, “FAASt [Region 2 Arecibo TL - 115kV] (Vegetation)”, “FAASt [All Regions TL - 230kV] (Vegetation)”, “FAASt [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution)”, “FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC] (Transmission)”, “FAASt [Region 3 -Bayamon

¹ The FEMA approvals are listed in the order they appear in **Exhibit 1**.

Group A] Low Density (Vegetation)”, “FAASt [Region 4 -Caguas Group A] Low Density (Vegetation)”, “FAASt [Region 2 -Arecibo Group A] Low Density (Vegetation)”, and the “FAASt [Region 5 -Mayaguez Group A] Low Density (Vegetation)” T&D Projects. *See Exhibit 1*² to this Motion. The document contains FEMA’s approvals and includes the costs obligated for each Project.

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

17. 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 (2025). If the Energy Bureau determines, after appropriate

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

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).

18. 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 needs 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).

19. 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.

20. 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 confidential information and filing a memorandum of law explaining the legal basis and support for a request to file 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 that identifies the confidential information, a summary of the legal basis for the confidential

designation, and why each claim or designation conforms to the applicable legal basis of confidentiality. *Id.* at ¶ 3. The party that seeks confidential treatment of information filed with the Energy Bureau must also file both a “redacted” or “public version” and an “unredacted” or “confidential” version of the document that contains confidential information. *Id.* at ¶ 6.

21. 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).

22. 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

23. The FEMA approvals included in **Exhibit 1** contains portions of CEII that, under relevant federal law and regulations, are protected from public disclosure. LUMA stresses that the FEMA approvals with CEII warrant 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.³ In at least two Data Security and Physical Security proceedings,⁴ this Energy Bureau, *motu proprio*, has conducted proceedings confidentially, thereby recognizing the need to protect CEII from public disclosure.

24. 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

³ 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).

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

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.

25. 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.

26. 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:

- (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.

23. 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.*

24. 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”).⁵ 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).⁶

⁵ 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;
 - (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.

⁶ 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

25. Portions of the FEMA approvals in **Exhibit 1** qualify as CEII because each of these documents contains the express coordinates and physical addresses 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 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 FEMA approvals with CEII in **Exhibit 1** from disclosure, given the nature and scope of the details included in those portions of the Exhibit.

26. Based on the above, LUMA respectfully submits that portions of the FEMA approvals should be designated as CEII. This designation is a reasonable and necessary measure to protect the specific location of the energy facilities listed or discussed in the FEMA approvals 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

27. 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 FEMA approval for which we present this request for confidential treatment.

(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.

Document	Name	Pages in which Confidential Information is Found, if applicable	Summary of Legal Basis for Confidentiality Protection, if applicable	Date Filed
Exhibit 1	FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)	Pages 1, 4, 7, 12	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [TL 13400 TC-San German Sect-La Parguera Sect] (Transmission)	Pages 1-3, 8	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Rincón Streetlighting] (Distribution)	Pages 1, 5	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 3 Bayamon TL - 115kV] (Vegetation)	Pages 1, 3	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 6 Ponce TL - 115kV] (Vegetation)	Pages 1	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026

Document	Name	Pages in which Confidential Information is Found, if applicable	Summary of Legal Basis for Confidentiality Protection, if applicable	Date Filed
Exhibit 1	FAASt [Region 3 - Bayamon Group A] High Density (Vegetation)	Pages 1, 3, 13	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 4 Caguas TL - 115kV] (Vegetation)	Pages 1	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 1 San Juan TL - 115kV] (Vegetation)	Pages 1	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 5 Mayaguez TL - 115kV] (Vegetation)	Pages 1	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 2 Arecibo TL - 115kV] (Vegetation)	Pages 1, 3, 14	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026

Document	Name	Pages in which Confidential Information is Found, if applicable	Summary of Legal Basis for Confidentiality Protection, if applicable	Date Filed
Exhibit 1	FAASt [All Regions TL - 230kV] (Vegetation)	Pages 1, 3, 7-8, 15	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Automation Program Group 30-DAR – Bayamon 9203 - FY24] (TL/Distribution)	Pages 1, 3-11, 14, 20	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC] (Transmission)	Pages 1-3, 5, 10	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 3 - Bayamon Group A] Low Density (Vegetation)	Pages 1, 3	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 4 - Caguas Group A]	Pages 1, 3	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113;	March 5, 2026

Document	Name	Pages in which Confidential Information is Found, if applicable	Summary of Legal Basis for Confidentiality Protection, if applicable	Date Filed
	Low Density (Vegetation)		6 U.S.C. §§ 671-674.	
Exhibit 1	FAASt [Region 2 - Arecibo Group A] Low Density (Vegetation)	Pages 1, 3	Critical Energy Infrastructure Information, 18 C.F.R. § 388.113; 6 U.S.C. §§ 671-674.	March 5, 2026
Exhibit 1	FAASt [Region 5 - Mayaguez Group A] Low Density (Vegetation)	Pages 1, 3	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 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, and through its counsel of record, Natalia Zayas Godoy, nzayas@gmlex.net, Richard Cruz Franqui, rcruzfranqui@gmlex.net, and Mirelis Valle Cancel, mvalle@gmlex.net, to Genera PR LLC, through its counsel of record, Jorge Fernández-Reboredo,

jfr@sbgblaw.com, José J. Díaz Alonso, jdiaz@sbgblaw.com, Stephen Romero Valle, sromero@sbgblaw.com, and Francisco Santos, francisco-santos@genera-pr.com.

In Guaynabo, Puerto Rico, on this 5th day of March 2026.



DLA Piper (Puerto Rico) LLC

B-7 Tabonuco St.

Suite 1501

Guaynabo, PR 00968

Tel. 787-945-9132

Fax 939-697-6102

/s/ Yahaira De la Rosa Algarín

Yahaira De la Rosa Algarín

RUA NÚM. 18,061

yahaira.delarosa@us.dlapiper.com

/s/ Emmanuel Porro González

Emmanuel Porro González

RUA NÚM. 23,704

emmanuel.porrogonzalez@us.dlapiper.com

Exhibit 1

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

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	551926	P/W #	107735	Project Type	Specialized
Project Category	F - Utilities			Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)			Event	4339DR-PR (4339DR)
Project Size	Large			Declaration Date	9/20/2017
Activity Completion Date	9/20/2027			Incident Start Date	9/17/2017
Process Step	Obligated			Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #930584; FAASt [63 Remote Terminal Units - RTUs - Group 2]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** SCADA Remote Access and RTU Replacements Group 3
- **Facility Description:** PREPA has 349 Substations with Remote Terminal Units (RTU) that form the Transmission and Distribution Supervisory Control and Data Acquisition (SCADA) system, providing monitoring and operation of the devices within its substations. The RTUs collect data from site-level devices and provide subsets of that data to the Energy Management System (EMS). The EMS collects this data from the RTUs for monitoring, storing, and analyzing purposes. Additionally, the EMS sends controls to the RTUs which in turn sends controls to their respective site-level devices for operation. Damage necessitates replacement of 35 of the existing RTUs. Because of the interdependency between the RTUs and EMS, all of the remainder of the RTUs also need to be replaced. Interdependency includes interoperability issues from lack of Distributed Network Protocol (DNP3) support and Internet Protocol (IP) support and that the older legacy CDC protocols are no longer supported. None of the current RTUs support the latest industry cyber security standards and architectures. New RTUs are needed for the short-term projects for the SCADA system including EMS and communications systems. The RTUs with Cybersecurity and IP support limitations are included as part of this group 3 project. Based on project schedules and requirements an interim protocol conversion solution may be required for CDC protocol devices, while RTUs are replaced. The new RTUs will be equipped with current technology, protocols and support remote access requirements. All communications-capable protective relays, meters, network devices, and other intelligent electronic devices (IEDs) will receive remote access connectivity through a managed access platform at the substation. The access platform provides an integrated, comprehensive solution with a seamless configuration environment, ensuring IED connectivity. Activity logging is maintained at the substation level, even if the connection to the central server is temporarily disabled. In addition to capturing compliance record information (NERC CIP), the project will confirm connectivity to all appropriate devices identified at all the substation locations.
- **Approx. Year Built:** 1960
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

The purpose of this document is to submit for approval the detailed Scope of Work (SOW) to COR3 and FEMA for the Supervisory Control and Data Acquisition (SCADA) remote access and Remote Terminal Unit (RTU) Replacements Group 2 under DR-4339-PR Publi

Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation (EHP) requirements and proposed 406 hazard mitigation work. LUMA is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facilities.

LUMA submits this detailed SOW pursuant to the Transmission and Distribution Operations & Maintenance Agreement between Puerto Rico Electric Power Authority (PREPA), the Puerto Rico Public Private Partnerships Authority (P3A) and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix H which collectively provides the necessary consent for LUMA Energy, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the Transmission and Distribution System submitted to FEMA.

Hurricane Maria made landfall with the effects of Hurricane force wind, wind driven rain, flooding, and land saturation. The energy infrastructure suffered catastrophic damage to the Transmission, Distribution, Sub-station, and Telecommunication systems. In the effort to build a resilient energy grid, its infrastructure and essential services are being designed and built to codes and standards, to mitigate future damages when a natural disaster strikes.

930584 **FAASt [63 Remote Terminal Units - RTUs - Group 2]**

Introduction

This document contains the detailed Scope of Work (SOW) for the Supervisory Control and Data Acquisition (SCADA) remote access and Remote Terminal Unit (RTU) Replacements Group 2 under DR-4339-PR Public Assistance. The document provides a description of the project, including scope, schedule, and cost estimates, as well as Environmental & Historical Preservation (EHP) considerations and proposed 406 hazard mitigation work. LUMA is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facilities.

LUMA submits this detailed SOW pursuant to the Transmission and Distribution Operations & Maintenance Agreement between Puerto Rico Electric Power Authority (PREPA), the Puerto Rico Public-Private Partnerships Authority (P3A), and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix D which collectively provides the necessary consent for LUMA Energy, as an agent of PREPA, to undertake work in connection with any Federal Funding requests related to the Transmission and Distribution System submitted to FEMA.

Hurricane Maria made landfall with the effects of hurricane-force wind, wind-driven rain, flooding, and land saturation. The energy infrastructure suffered catastrophic damage to the Transmission, Distribution, Substation, and Telecommunication systems. In the effort to build a resilient energy grid, its infrastructure and essential services are being designed and built to codes and standards to mitigate future damages when a natural disaster strikes.

Facilities

Island-wide, there are 349 substations with RTUs that form the Transmission and Distribution SCADA system, allowing the operation and monitoring of the devices (listed in the Scope of Work section below) within its substations. The RTUs collect data from site-level devices and provide subsets of the data to the Energy Management System (EMS). The EMS collects the data from the RTUs for monitoring, storing, and analysis purposes. Additionally, the EMS sends signals/commands to the RTUs, which in turn sends controls to their respective site-level devices for operation.

Due to damage caused by Hurricane Maria and interdependencies between the RTUs and EMS, the system requires the replacement of 27 existing RTUs for Group 2. Interdependencies with the EMS control network include interoperability issues due to the absence of Distributed Network Protocol (DNP3) and Internet Protocol (IP) support, as older legacy Corporate Data Center (CDC) protocols are obsolete and not supported. Also, none of the current RTUs support the latest industry cyber security frameworks. New RTUs and automation controllers are needed for the SCADA system serving the EMS control network and newer substation communications systems.

Below is a map depicting the approximate location of 28 substations in which RTUs will be installed. A list of the substations where the RTUs will be replaced, with coordinates, can be found in Appendix A.

Project Description

The RTUs needed for this project are for the SCADA system, including EMS and communications systems. RTUs have been classified into three (3) sub-groups (small, medium, and large), as shown in the tables below, based on their application and their interface with the SCADA system. The first table describes the RTU to fully replace the existing or Legacy RTUs. The second table describes the RTUs to

partially replace the D20 model RTUs.

Group 2 -Scenario A – Legacy RTUs Replacements (Full Replacement)

Sub-Group Classification				
RTU Size	Sites	Digital Inputs	Analog Inputs	Digital Inputs
Small (S)	1	128	32	32

Group 2 -Scenario B – D20 RTUs Replacements (Partial Replacement)

Sub-Group Classification				
RTU Size	Sites	Digital Inputs	Analog Inputs	Digital Inputs
Small (S)	21	128	32	32
Medium (M)	3	192	32	64
Large (L)	2	384	128	128

Section 428 Scope of Work

- Replace RTU and re-labeling all wires and communication cables.
- New communication links (in/out building) with the EMS require the deployment and configuration of the RTU. Those RTUs will use the existing communication circuits. EMS uses DNP3 (Serial or TCP/IP) protocol communication.
- Create RTU schematics that support and document the new communication links supporting the DNP3 (Serial or TCP/IP) protocol.
- Install wiring interface in the existing panels/cabinets.
- Install a new swing rack (19-inch rack addition- Scenario A and B), mounted at the front of the existing cabinet.
- Install IO Modules (Scenario A – Legacy Replacement only), Gateway, global positioning system (GPS), power supply, and modem.
- Perform local site validation and point-to-point testing between the site and the SCADA Control Center.

To install and configure new communication links and to create new RTU schematics, LUMA will perform the following activities:

1. Review the telecom network to identify a new communication path.
2. Update telecom network schematics.
3. Site visit for new modem installation and configuration.
4. Communication path tests.

As detailed, both scenarios A and B will require all the equipment described above; the only exception will be Group 2 Scenario B for the D20 RTUs. The input-out (IO) modules will not be required because the existing equipment is installed at each brownfield site.

Scope Notes:

1. Preparation Area

Preparation areas will be located inside the premises of the existing Control Room Sites. Preparation includes the following steps:

- a. Inspect the location.
- b. Identify the existing equipment and current condition. Validate any conduit or cable tray requirements for communication cables.
- c. Document findings and current equipment details.
- d. Clean up any debris or small materials identified as trash.
- e. Ensure adequate conditions for replacement. F
- f. Labeling areas and equipment locations

2. Equipment to be used:

Laptops and small tools will be used to enable the replacement, configuration, and testing. List of tools:

- a. Laptops
- b. Multimeters
- c. General tools such as screwdrivers, pliers, crimping tools, etc.

3. Disposition of Equipment and Materials:

Discarded equipment and material will be removed and stored for decommissioning in a storage area located at Luma Headquarters 1250 Av. Juan Ponce de León, San Juan, 00907. (Coordinates [REDACTED], [REDACTED]). The discarded equipment will be handled in accordance with U.S. Environmental Protection Agency (EPA) and local government regulations.

Project Cost Estimate (PCE)

Cost Estimates to complete the work have been generated at a class 3 level, which is between (+/- 30%) of the final project cost. The estimate includes material, construction labor, and equipment, engineering, management, and contingencies. LUMA has identified risks and allowances for mitigating potential known risks. Please refer to Appendix C -- for cost estimate details.

COST ESTIMATE			
Cost Element	428	406	PROJECT TOTAL
PLANNING	\$447,530.11	\$75,180.04	\$522,710.15
Permitting and Assessments	\$44,408.95	\$7,459.00	\$51,867.95
Environmental Documentation & Management	\$125,984.04	\$21,154.01	\$147,138.05
Engineering Services & Design	\$277,137.13	\$46,567.02	\$323,704.15
MANAGEMENT	\$352,757.30	\$59,273.40	\$412,030.70
Project Management	\$154,944.69	\$26,035.18	\$180,979.87

Construction Management	\$103,296.51	\$17,356.79	\$120,653.30
Contracting, Procurement, & Contract Administration	\$42,867.95	\$7,203.05	\$50,071.00
Project Controls (Scheduling, Estimating, Support, Cost Control), Risk Management, Document Control & Reporting)	\$51,648.15	\$8,678.38	\$60,326.53
SCADA & RTU Rpl Group 2	\$5,375,699.13	\$890,813.72	\$6,266,512.85
SCADA & RTU Rpl Group 2 Small Site Microsolo (Scenario A)	\$176,310.44	\$30,868.60	\$207,179.04
SCADA & RTU Rpl Group 2 Small Site D20 (Scenario B)	\$3,150,071.98	\$464,091.44	\$3,614,163.42
SCADA & RTU Rpl Group 2 Medium Site D-20 (Scenario B)	\$639,803.59	\$128,159.78	\$767,963.37
SCADA & RTU Rpl Group 2 Large Site D-20 (Scenario B)	\$529,983.15	\$119,922.33	\$649,905.48
Start up/Commissioning	\$67,286.48	\$11,301.55	\$78,588.03
Transportation Expenses	\$22,428.74	\$3,767.17	\$23,195.91
Security (Field 24 hr)	\$40,371.82	\$6,780.92	\$47,152.74
Insurance	\$90,612.58	\$15,219.44	\$105,832.02
Contingency	\$503,885.66	\$84,667.31	\$588,552.97
Escalation	\$154,944.69	\$26,035.18	\$180,979.87
GENERAL CONDITIONS	\$288,487.42	\$48,195.45	\$336,682.87
Sales Tax	\$64,198.82	\$10,523.55	\$74,722.37
Municipal Construction Tax	\$224,288.60	\$37,671.90	\$261,960.50

COST TOTALS	\$6,464,473.96	\$1,073,462.61	\$7,537,936.57
DEDUCTIONS	TOTAL INSURANCE PROCEEDS RECEIVED		\$-
	DE-OBLIGATION TO FAASt IF APPLICABLE		\$-
FAASt ALLOCATIONS	FAASt PROHECT # 551926 - 428		\$5,267,467.99
	FAASt PROJECT # 551926- 406HM		\$1,073,462.61
	FAASt PROJECT #	TOTAL:	\$6,340,930.60
	FAASt A&E # 335168 - 428		\$800,287.41
	FAASt A&E # 335168 - 406 HM		\$134,453.44
	FAASt A&E # 335168 TOTAL		\$934,740.85
	FAASt E&M #673691 - 428		\$396,718.56
	FAASt E&M #673691 - 406 HM		\$-
	FAASt E&M #673691 TOTAL		\$396,718.56

Project Cost Summary, 428 Version 0:

Work to be Completed (WTBC): \$ 6,464,473.96

A&E Deduction (Global A&E FAASt 335168): -\$800,287.41

E&M Deduction (Global E&M FAASt 673691): -\$396,718.56

Project Total: \$5,267,467.99

Project Cost Estimate Notes:

1. Refer to detailed SOW provided in document labeled: "551926 - DR4339PR - DSOW SCADA Remote Access and RTU Replacement Group 2 Rev 6 signed.pdf"
2. Refer to detailed Cost Estimate provided in document labeled: "551926 - DR4339PR - Appendix C - LPCE SCADA and RTU Replacement Group 2 Cost Summary Rev 6-2-2025.xlsx"
3. 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.

4. Equipment and material costs included in this project will be reduced from this project and obligated under FAAS Project #673691, Equipment and Materials, as shown in the table above. Only the base cost of equipment and/or material will be reduced from this project (not labor). All costs associated with Planning, Management, General Conditions, and Contingencies will remain in this project.

5. This project is part of Donor FAAS 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAAS Project.697.

ATTACHMENTS

APPENDIX A – List of Facilities and Scenario Classification Group 2

APPENDIX B - Technical Reference Group 2

APPENDIX C – LPCE SCADA and RTU Replacement Group 2 Cost Summary Rev 6 6-4-2025

APPENDIX D - Consent to Federal Funding – FEMA COR3

APPENDIX E - Equipment Specification and Layout-Gateway for CDC RTU Group 2

APPENDIX F – Remote Access Specifications and Requirements

406 HMP Scope

Project number: 551926; FAAS [SCADA Remote Access and RTU Replacements Group 2]

Damage #930584: FAAS [63 Remote Terminal Units - RTUs - Group 2]

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

GPS Latitude/Longitude: XXXXXXXXXX

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage from Hurricane Maria. The incident caused damage to the electrical system, such as power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

Project Overview:

PREPA has 349 Substations with Remote Terminal Units (RTU) that form the Transmission and Distribution Supervisory Control and Data Acquisition (SCADA) system, providing monitoring and operation of the devices within its substations. The RTUs collect data from site-level devices and provide subsets of that data to the Energy Management System (EMS). The EMS collects this data from the RTUs for monitoring, storing, and analyzing purposes. Additionally, the EMS sends controls to the RTUs which in turn sends controls to their respective site-level devices for operation.

Due to the damage caused by hurricane Maria, the system requires the replacement of 27 of the existing RTUs. Because of the interdependency between the RTUs and EMS, the rest of the RTUs must also be replaced. This interdependency includes interoperability issues from lack of Distributed Network Protocol (DNP3) support and Internet Protocol (IP) support and the older legacy CDC protocols are no longer supported. None of the current RTUs support the latest industry cyber security standards and architectures.

New RTUs are needed for the short-term projects for the SCADA system including EMS and communications systems. Priority will be given to older models (44-550 & 8890) which has been identified as this Group 1 project and those still using CDC protocol as Group 2 Project. The remaining RTUs to be replaced are included as Group 3 project. Based on project schedules and requirements an interim protocol conversion solution may be required for CDC protocol devices, while RTUs are replaced. The new RTUs will be equipped with current technology, protocols and support remote access requirements. All communications-capable protective relays, meters, network devices, and other intelligent electronic devices (IEDs) will receive remote access connectivity through a managed access platform at the substation. The access platform provides an integrated, comprehensive solution with a seamless configuration environment, ensuring IED connectivity. Activity logging is maintained at the substation level, even if the connection to the central server is temporarily disabled. In addition to capturing compliance record information (NERC CIP), the project will confirm connectivity to all appropriate devices identified at all the substation locations.

Mitigation Approach:

The activities associated with the Hazard Mitigation initiative are intended to provide the means of a redundant (separate from the SCADA links) communication path that allows a faster and more reliable grid restoration after a major weather event to minimize loss of power service to the island population. Implementation of remote access connectivity to the Protective and Control (P&C) devices allows for the validation of existing relay settings and downloading emergency configurations and get access to failure records/events for real-time analysis. The remote access platform provides an integrated, comprehensive solution with a seamless configuration environment, ensuring relay connectivity and condition/configuration monitoring. This added functionality to the traditional SCADA system architecture will provide visibility to what is happening at the substation even if there is no possibility of accessing the site during a major disaster.

Floodplain Evaluation:

After Hurricane Maria, the Government of Puerto Rico adopted the Advisory Base Flood Elevation Maps (ABFE) to determine if a facility is within a Special Flood Hazard Area (SFHA). The Policy states that the most restrictive map (FIRM or ABFE) should be used to determine the flood zone for any site. For critical actions in the Special Flood Hazard Area, the sub-applicant must provide documentation to ensure compliance with elevation requirements governed by 44 CFR Section 9.11, which states there shall be no new construction or substantial improvement of structures involving a critical action unless the lowest floor of the structure is at or above the level 500-year flood. In addition, FEMA utilizes the American Society of Engineers (ASCE) 24-14, or latest edition, to establish minimum design (BFE + 2 ft or 500-year flood, whichever is higher) and construction requirements for structure elevation, dry floodproofing, and mitigation reconstruction. All attendant utilities and equipment must be designed, constructed, and installed to prevent floodwaters from entering or accumulating within components, in accordance with minimum elevations established per ASCE 24-14, or latest edition. The above applies to the SCADA and RTU equipment to be installed in the control room of the substations. [HIGHLIGHTS OF ASCE 24-14 Flood Resistant Design and Construction (fema.gov)]. <https://www.fema.gov/critical-facility>.

The sub-applicant must verify that all substations comply with the floodplain policy.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures (*Supplement*)

1. Substation Automation / Remote Terminal Unit (RTU) / Supervisory Control and Data Acquisition (SCADA) System:

The proposed mitigation consists of a communication gateway that will serve as the core for the local supervision and control of the substation acting as a substation controller for existing and new intelligent electronic devices (IEDs) under the new proposed substation automation architecture for control and resilience.

The proposed gateway will enable remote access capabilities and the implemented hardware will depend on the needs of the Brownfield substation infrastructure and topology as per Appendix J. Depending on the site's current capacity a Concentrator, a Security Gateway, or the combination of a Concentrator and Port Server will be implemented on the facilities as the leading equipment serving as core to manage, measure, and collect energy management data. The implemented solution will include an Ethernet Switch which will serve as a network connection device and provide communication between equipment with different protocols using protocol converters. This gateway system will use terminal servers to allow client applications over the network and to connect devices to a local area network.

To implement remote access (Hazard Mitigation) capabilities Luma will perform the following activities:

1. Implementation of a separate system based on a data concentrator to collect and gather data associated with fault reports, sequence of events, and also provide the means for changing relay settings remotely under emergency situations.
2. The system will be connected through a newly installed redundant communication path to the telecom network and will provide the collected data to a centralized system separate from the SCADA System.
3. This HM system will comply with all the cybersecurity standards for a secure remote connectivity through the OT network.
4. The HM system will be defined based on the substation criticality and the number of relays or IEDs available.
5. The HM system will also require communication configuration and testing to establish communication between digital devices and centralized systems.

Three solutions were developed to enable remote access capabilities depending on the specific infrastructure of the substation and the quantity of relays.

- Solution 1 will require a Remote Access Concentrator, Ethernet Switch, and Port Isolator. Remote Access concentrators provide 26 serial ports, the ethernet switch provided 16 serial ports, and the port server provided 16 serial ports for more expansion, allowing one IED per serial port.
- Solution 2 will include a security gateway and will be installed in substations with fewer digital relays. The security gateway will be providing 17 serial ports to accommodate intelligent electronic devices (IEDs).
- Solution 3 will consist of a Remote Access Concentrator, Port Server, Ethernet Switch(s), and Port Isolators. Additional Port Servers will be

installed if the ports provided by these components are insufficient. This solution will be implemented on substations with a higher number of digital relays.

For hazard mitigation LUMA is proposing the following substation automation architecture for Group 2 of identified substations that currently will not be able to communicate directly and with full functionality with the new EMS platform and are candidates for RTU and substation controller retrofitting.

The activities associated with the Hazard Mitigation initiative are intended to provide a second redundant (separate from the SCADA links) communication path that allows a faster and more reliable grid restoration after a significant weather event to minimize loss of power service to the island population. Implementation of remote access connectivity to the Protective and Control (P&C) devices allows for the validation of existing relay settings and downloading emergency configurations and get access to failure records/events for real-time analysis. The remote access platform provides an integrated, comprehensive solution with a seamless configuration environment, ensuring relay connectivity and condition/configuration monitoring. This added functionality to the traditional SCADA system architecture will provide visibility to what is happening at the substation even if there is no possibility of accessing the site during a major disaster.

Hazard Mitigation Proposal (HMP) Cost:

Total Net Hazard Mitigation Cost (Base Cost) =	\$743,042.15
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$330,420.46</u>
Hazard Mitigation Total Cost =	\$1,073,462.61

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 \$1,073,462.61 (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
9001	1	Lump Sum	\$6,464,473.96	Uncompleted
3510	1	Lump Sum	(\$800,287.41)	Uncompleted
9008	1	Lump Sum	(\$396,718.56)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$5,267,467.99
Total 406 HMP Cost	\$1,073,462.61
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$6,340,930.60
Federal Share (90.00%)	\$5,706,837.54
Non-Federal Share (10.00%)	\$634,093.06

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

7/10/2025

GENERAL INFORMATION

Event: DR4339-PR

Project: SP-551926

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

Does the Applicant's Commercial Policy extend coverage for the damage described in this project: Yes

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #930584:

FAASt [63 Remote Terminal Units - RTUs - Group 2]

Location Description: SCADA Remote Access and RTU Replacements Group 3

GPS Coordinates: XXXXXXXXXX

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: "Sub-Stations"

SOV / Schedule Amount: \$1,345,700,000.00

Applicable Deductible Amount: \$25,000,000.00

Damage Inventory Amount: \$6,340,930.60 (CRC Gross Cost \$5,267,467.99 + HMP Cost \$1,073,462.61)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters".

Obtain and Maintain Requirement:

An Obtain & Maintain Requirement is being required for Equipment, for the peril of Wind (all wind associated losses including "wind driven rain" for the FAAST [63 Remote Terminal Units - RTUs - Group 2] in the amount of \$6,340,930.60. Please see "SP-551926 - Cost Estimate - Insurance - Rev.xlsx" for O&M costs per facility distribution.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.
2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.
3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

...

5. If an applicant has an insurance requirement from a previous event:

- a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.
- b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

FEMA Policy 206-086-1

H. Subsequent Assistance. When a facility that received assistance is damaged by the same hazard in a subsequent disaster:

1. If the applicant failed to maintain the required insurance from the previous disaster, then the facility is not eligible for assistance in any subsequent disaster.
2. Upon proof that the applicant maintained its required insurance, FEMA will reduce assistance in the subsequent disaster by the amount of insurance required in the previous disaster regardless of:
 - a. The amount of any deductible or self-insured retention the applicant assumed (i.e., “retained risk”).

...

4. If the applicant’s anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster, FEMA will reduce assistance by that amount in accordance with Section VII, Part 2(A) of this policy.

Obtain and Maintain Requirements:

44 CFR § 206.253 Insurance requirements for facilities damaged by disasters other than flood.

(a) Prior to approval of a Federal grant for the restoration of a facility and its contents which were damaged by a disaster other than flood, the recipient shall notify the Regional Administrator of any entitlement to insurance settlement or recovery for such facility and its contents. The Regional Administrator shall reduce the eligible costs by the actual amount of insurance proceeds relating to the eligible costs.

(b)

(1) Assistance under section 406 of the Stafford Act will be approved only on the condition that the recipient obtain and maintain such types and amounts of insurance as are reasonable and necessary to protect against future loss to such property from the types of hazard which caused the major disaster. The extent of insurance to be required will be based on the eligible damage that was incurred to the damaged facility as a result of the major disaster. The Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(2) Due to the high cost of insurance, some applicants may request to insure the damaged facilities under a blanket insurance policy covering all their facilities, an insurance pool arrangement, or some combination of these options. Such an arrangement may be accepted for other than flood damages. However, if the same facility is damaged in a similar future disaster, eligible costs will be reduced by the amount of eligible damage sustained on the previous disaster.

(c) The Regional Administrator shall notify the recipient of the type and amount of insurance required. The recipient may request that the State Insurance Commissioner review the type and extent of insurance required to protect against future loss to a disaster-damaged facility, the Regional Administrator shall not require greater types and extent of insurance than are certified as reasonable by the State Insurance Commissioner.

(d) The requirements of section 311 of the Stafford Act are waived when eligible costs for an insurable facility do not exceed \$5,000. The Regional Administrator may establish a higher waiver amount based on hazard mitigation initiatives which reduce the risk of future damages by a disaster similar to the one which resulted in the major disaster declaration which is the basis for the application for disaster assistance.

(e) The recipient shall provide assurances that the required insurance coverage will be maintained for the anticipated life of the restorative work or the insured facility, whichever is the lesser.

(f) No assistance shall be provided under section 406 of the Stafford Act for any facility for which assistance was provided as a result of a previous major disaster unless all insurance required by FEMA as a condition of the previous assistance has been obtained and maintained.

Final Obtain and Maintain requirement amount will be determined during the closeout process after the final actual eligible costs to repair or replace the insurable facility have been determined.

FEMA Policy 206-086-1

F. Timeframes for Obtaining Insurance. FEMA will only approve assistance under the condition that an applicant obtains and maintains the required insurance.

The applicant must document its commitment to comply with the insurance requirement with proof of insurance.

If an applicant cannot insure a facility prior to grant approval (for example, if a building is being reconstructed), the applicant may provide a letter of commitment stating that they agree to the insurance requirement and will obtain the types and extent of insurance required, followed at a later date by proof of insurance once it is obtained. In these cases, the applicant should insure the property:

- a. When the applicant resumes use of or legal responsibility for the property (for example, per terms of construction contract or at beneficial use of the property); or
- b. When the scope of work is complete.

FEMA and the recipient will verify proof of insurance prior to grant closeout to ensure the applicant has complied with the insurance requirement.

An applicant should notify FEMA—in writing through the recipient—of changes to their insurance which impact their ability to satisfy the insurance requirement after it provides proof of insurance to FEMA. This includes changes related to self-insurance. If an applicant fails to do this, FEMA may de-obligate assistance and not provide assistance in a future disaster.

Ronald Santana Flores, PA Insurance Specialist

O&M Requirements

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	Aibonito	\$157,097.82
Wind	Equipment	Coto Laurel Prov. 13 kV	\$157,097.82
Wind	Equipment	Gurabo PDS 13 kV	\$157,097.82
Wind	Equipment	Manati Urbano 13kV	\$157,097.82
Wind	Equipment	"Juncos Area Interrupters"	\$365,147.05
Wind	Equipment	Barranquitas 8 kV	\$123,192.38
Wind	Equipment	Caguax 8 kV	\$123,192.38
Wind	Equipment	"Centro Médico Prov. 13 kV"	\$123,192.38
Wind	Equipment	Cerro las Mesas 4 kV	\$123,192.38
Wind	Equipment	Culebra 4 kV	\$123,192.38
Wind	Equipment	Divisoria 4 kV	\$123,192.38
Wind	Equipment	El Gato - Telecommunications	\$123,192.38
Wind	Equipment	Falu 4 kV	\$123,192.38
Wind	Equipment	Guanica - Telecommunications	\$123,192.38
Wind	Equipment	Hidroelectrica Garzas I 4 kV	\$123,192.38
Wind	Equipment	Indiera Alta 4 kV	\$123,192.38
Wind	Equipment	Isla Grande 4 kV	\$123,192.38
Wind	Equipment	La Santa - Telecommunications	\$123,192.38
Wind	Equipment	Lago Guajataca 4 kV	\$123,192.38
Wind	Equipment	Las Marias 4 kV	\$123,192.38
Wind	Equipment	Las Vegas 4 kV	\$123,192.38
Wind	Equipment	Moca Pueblo 4 kV	\$123,192.38
Wind	Equipment	Monte del Estado 4 kV	\$123,192.38
Wind	Equipment	Ojo de Agua 4 kV	\$123,192.38
Wind	Equipment	Parque Escorial 13 kV	\$123,192.38
Wind	Equipment	Puerto del Rey 13 kV	\$123,192.38
Wind	Equipment	Quebradillas 4 kV	\$123,192.38
Wind	Equipment	Santa - Ana Telecommunications	\$123,192.38
Wind	Equipment	Vieques 4 kV	\$123,192.38
Wind	Equipment	Vieques PLT	\$123,192.38
Wind	Equipment	Yauco Hidro 2 4 kV	\$123,192.38
Wind	Equipment	Yunque - Telecommunications	\$123,192.38
Wind	Equipment	Buen Pastor 13 kV	\$209,847.23
Wind	Equipment	Fajardo TC 8 kV	\$209,847.23
Wind	Equipment	Moca SECT	\$209,847.23
Wind	Equipment	Saint Just 4 kV	\$209,847.23
Wind	Equipment	Humacao 8 kV	\$298,465.10
Wind	Equipment	Mora 13 kV	\$298,465.10

Insured Peril	Item Type	Description	Required Coverage Amount
Wind	Equipment	Isla Grande GIS I 13 kV	\$298,465.10
Wind	Equipment	Plantas (Multiple Sites)	\$298,465.10

406 Mitigation

There is no additional mitigation information on **FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)**.

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.
- a. 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. b. 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. c. 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.
- 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 debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [SCADA Remote Access and RTU Replacements Group 2] (Telecommunication)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 09/16/2025 9:36 PM PST

Review Comments

Reviewed, found eligible and reasonable. CLG 09.16.2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 09/23/2025 7:41 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 \$6,340,930.60 for subaward number 107735 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$5,706,837.54	90%	Accepted	4339DRPRP01077351

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

v0

General Info

Project #	711819	P/W #	11840	Project Type	Specialized
Project Category	F - Utilities			Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [Priority Pole Replacement Program (Line 13400 Acacias TC- San German Sect - La Parguera Sect)] (Transmission)			Event	4339DR-PR (4339DR)
Project Size	Large			Declaration Date	9/20/2017
Activity Completion Date	9/20/2027			Incident Start Date	9/17/2017
Process Step	Obligated			Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #1312779; FAASt TL 13400 TC-San German Sect-La Parguera Sect

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** TL 13400 TC-San German Sect-La Parguera Sect
- **Facility Description:** The specific facilities included in this proposed project are structures (including their foundations), framing and insulators, load break switches (manual and automated), conductors, guy wires, anchoring, grounding assemblies, and any other associated components. Structures along the line 13400 Acacias TC - San German Sect. - La Parguera Sect. includes single wooden poles, single steel structures, wooden H-Frames with two poles, and single concrete structures. Structures are accessible through roads and/or situated on private properties. Some vegetation management is needed along certain portions of the line.
- **Approx. Year Built:** 1980
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

Final Scope

1312779 FAASt TL 13400 TC-San German Sect-La Parguera Sect

- **Introduction**

The purpose of this document is to submit for approval the detailed Scope of Work ("SOW") to COR3 and FEMA for the Transmission Priority Pole Replacement Line 13400 Acacias TC- San German Sect. - La Parguera Sect. Project under DR-4339-PR Public Assistance. The document provides a description of the project including scope, schedule, and cost estimates as well as Environmental & Historical Preservation ("EHP") requirements. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facilities.

LUMA submits this detailed SOW pursuant to the Transmission and Distribution Operations & Maintenance Agreement between Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix F which collectively provides the necessary consent for LUMA

Energy, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the Transmission and Distribution System submitted to FEMA

Facilities

The facilities listed below are part of the 20.79 circuit miles of overhead transmission for 38kV Line 13400 Acacias TC- San German Sect – La Parguera Sect segment, consisting of wood, steel, and concrete poles structures, having existing underbuilt distribution and/or third-party attachments. The distribution underbuilt feeder on this line is 6702-02. This line is a Near-Term rebuild priority identified by LUMA. However, these structures were identified as having System Remediation Plan (SRP) issues and were considered degraded during a High-Level Assessment (HLA). Due to the degraded condition of these structures, they will be replaced through the Transmission Priority Pole Replacement Program on an expedited basis. Later, the remainder of the line will be rebuilt, except for the structures that would already have been replaced through this project and in alignment with LUMA Codes & Standards.

Structure Replacements

LINE		FID	Coordinates	Voltage Level (kV)
L13400	Acacias TC- San German Sect - La Parguera Sect.	28950732	[REDACTED]	38 kV
		12176164		
		12177378		
		12177424		
		12177418		
		7493160		
		12176510		
		12176516		

Project Scope of Work

Below includes a breakdown of pole replacement by line for “Proposed 428 Public Assistance Scope of Work” and “Proposed 406 Hazard Mitigation Scope of Work”, followed by descriptions of each work type specific to the Scope of Work for this group.

Proposed 428 Public Assistance Scope of Work:

13400 Acacias TC- San German Sect. - La Parguera Sect. Structure Replacement Scope:

Remove	Quantity	Install	Quantity
Wood H-Frame - Dead End	1	Custom 3-Pole Structure (70' Galvanized Steel Round Poles)	1
Wood H-Frame - Dead End	1	Custom 3-Pole Structure (70' Galvanized Steel Round Poles)	1
Wood H-Frame - Suspension	1	70ft Galvanized Steel Round Pole Delta Suspension Assy	1
Wood H-Frame - Suspension	1	70ft Galvanized Steel Round Pole Delta Suspension Assy	1
Wood H-Frame - Dead End	1	Custom 3-Pole Structure (70' Galvanized Steel Round Poles)	1

Wood H-Frame – Suspension	1	Custom 3-Pole Structure (70' Galvanized Steel Round Poles)	1
Wood H-Frame - Dead End	1	Custom 3-Pole Structure (70' Galvanized Steel Round Poles)	1
Wood H-Frame - Dead End	1	70ft Galvanized Steel Round Pole Dead-End Vertical Assy 60-90	1

Detail Descriptions for Planned Field Work:

Structure Replacement

- Remove existing poles (including hardware) and install new poles (including hardware) in the same location. If unable to install the replacement in the same location, the pole will be installed within 10ft, within the right-of-way.
- All pole installations are to replace existing pole locations; no new locations are included in this scope of work. Refer to *Appendix G- Project Considerations*, column C (Soil area and depth impact) for the depths of the poles to be installed.
- Drill or auger a new hole or extend the existing hole approximately 10ft depth, 40in width to meet engineering requirements for each pole.
- When a pole base is required, remove the existing foundation as specified in *Appendix E- Detailed Cost Estimates* and replace it with a new concrete foundation base as per *Appendix C- Engineering Plans*. The maximum auger width used is 42in and the maximum depth drilled is 15ft.
- New guy wire/ anchors are to be installed in compliance with *Appendix C- Engineering Plans*. The maximum distance an anchor will be installed for a 70ft pole is 15ft from the base of the pole, within the right-of-way.
- Damaged structures/poles will be replaced with higher class (strength) structures/poles made of steel, concrete, or fiberglass composite.
- Damaged crossarms will be replaced with composite, galvanized, or stainless steel crossarms.
- Grounding assemblies will be replaced to fulfill system grounding integrity.
- Conductor spans will be replaced between poles and re-sagged per codes and standards.
- Structure guying elements will be repaired or replaced, such as slack guywires or pulled anchors. Brushing will be required in locations to gain access to the pole for replacement. Brushing refers to the removal and clearing of vegetation solely to the extent that it allows crews to conduct work. The brushing of vegetation will be limited to a 15ft radius surrounding the surface of the pole but not to exceed the width of the right-of-way for the exclusive purpose of gaining access to the pole to conduct repairs. Approximately 100 cubic yards. Please see *Appendix G – Project Considerations* column G (Site Accessible), Refer to *Appendix B - General Arrangement* for pictures of the vegetation and exact locations.
- All work for this program will be performed within the current electrical right-of-way.
- This scope of work will not affect water or sewer utility services.

Critical Repairs

- Identify the remediation of identified Critical Repairs to meet LUMA codes and standards.
- Critical repairs may include the replacement of wire, attachment hardware, grounding, anchoring, crossarms, or insulators, among others.

Material Disposal

- PCBs, oil from the transformer and breakers, sealants, and other chemical wastes typical of a construction site are considered hazardous waste and will be disposed of by the contractor in approved facilities, per applicable local regulations.
- The types of debris expected in the removal process are luminaires, pole arms, photocells, metal scrap, wiring, concrete, steel, and wood poles, etc. The debris will be separated and taken to an approved waste disposal facility in compliance with applicable local regulations.
- Transformers will be contained and returned to LUMA in compliance with applicable local regulations. The removal of the transformer will require testing of the existing oil for PCB levels, draining the oil, and delivery to the approved waste disposal site, per Environmental Regulations.

Access Roads

- There are 3 structures identified as needing an access road. Please refer to *Appendix G – Project Considerations* for additional details. Staging Area.
- All materials are stored and dispatched from the assigned LUMA's Regional Warehouse. The Regional Warehouse to be utilized for this project is the San German District Warehouse (A62), with coordinates [REDACTED], [REDACTED]. No additional or temporary staging areas are required to store materials or disposal.

Fill, gravel, sand, etc.:

- Fill, Gravel, and Sand materials will be obtained from an approved supplier as referenced in *Appendix A - Approved Supplier List*.

List of Equipment to be used:

- Skid Steer, Excavator, Dump trucks, Manlifts, 120-Ton Motor Crane, Boom Trucks 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine and Flatbed platform.
- Vegetation will be removed utilizing machete, chainsaw, electric pruner, telescopic pole pruner, bucket truck, and/or chipper.

Specific List of Permits Required:

- DTOP Endorsements & Municipality Notifications.
- Excavation and Demolition Notification in Department of Transportation and Public Works Agency - (DTOP).
- LUMA will provide proof of all permits as a Condition of FEMA Record of Environmental Considerations.

Type of Project

1. Restoration to Codes/Standards: Restores the facility(ies) to pre-disaster function and approved codes/standards
2. Improved Project: Restores the pre-disaster function of the facility(ies) and incorporates improvements including any:
 - a. Other improvements, not required by codes and standards
 - b. Changes in facility size, capacity, dimension, or footprint
3. Alternate Project: Does not restore the pre-disaster function of the damaged facility(ies)

Choose One (Restoration, Improved or Alternate) If improved, provide the changes in facility size, capacity, dimension, or footprint. If alternate, provide rationale for recommendation
Restores to Codes/Standards
This work will be in compliance with FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020)

Codes and Standards

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

1. Consensus-based codes, per FEMA (Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work FEMA-4339-DR-PR February 2020).
2. 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.
3. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.
4. LUMA's latest Design Criteria Document (DCD) which aggregates the design considerations for the majority of the consensus-based codes, specifications, and standards listed in FEMA Recovery Interim Policy 104-009-11 Version 2.1 (December 20, 2019).

Project Schedule

Milestone	Target Date
Permitting and Environmental	February 2024
FEMA Obligation of Funds	November 2025

Construction Start	December 2025
In-Service-Date	January 2025

Project Estimate

The estimated costs (Class 3 Accuracy +/-30%) to complete the project are captured in the table below. The cost

estimate was developed utilizing preliminary Architectural and Engineering design information and may be subject to change. LUMA has allocated 10% of

the project cost for the mitigation of potential known risks.

COST ESTIMATE			
Cost Element	428	406	PROJECT TOTAL
PLANNING	\$177,601.04	\$13,759.93	\$191,360.97
MANAGEMENT	\$128,135.96	\$9,927.55	\$138,063.51
Transmission Line Pole Replacement and Critical Repairs L13400 AC	\$2,128,300.58	\$164,893.66	\$2,293,194.24
GENERAL CONDITIONS	\$116,731.96	\$9,043.99	\$125,775.95
COST TOTALS	\$2,550,769.54	\$197,625.13	\$2,748,394.67

DEDUCTIONS	TOTAL INSURANCE PROCEEDS RECEIVED	\$-
	DE-OBLIGATION TO FAAS _t IF APPLICABLE	\$-
FAAS _t ALLOCATIONS	FAAS _t PROJECT # 711819 - 428	\$2,202,286.53
	FAAS _t PROJECT # 711819 - 406HM	\$197,625.13
	FAAS _t PROJECT #711819 TOTAL:	\$2,399,911.65
	FAAS _t A&E # 335168 - 428	711819
	FAAS _t A&E # 335168 - 406 HM	711819
	FAAS _t A&E # 335168 TOTAL	\$216,610.67
	FAAS _t E&M #673691 - 428	\$147,447.87
	FAAS _t E&M #673691 - 406 HM	\$21,069.57

	FAASt E&M #673691 TOTAL	\$168,517.44
--	------------------------------------	---------------------

Please refer to Appendix E for Detailed Cost Estimate.

Work To Be completed: 2,550,769.54

A&E Deduction (Global A&E FAASt # 335168): \$201,035.14

E & M Deduction (FAASt #673691): \$147,447.87

Project Total Cost: \$2,202,286.53

Project Notes:

1. For details on the Applicant's provided SOW and CE refer to documents labeled: *711819-DR4339PR-Detailed SOW - Line 13400 Acacias TC- San German Sect. Rev.9_signed.pdf and 711819-DR4339PR-Appendix E - Detailed Cost Estimate Rev.8.xlsx*
2. This is project is part of Donor FAASt 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAASt Project.
3. Architectural and Engineering (A&E) costs are deducted given previously obligated Global A&E Project for the subject FAASt PREPA work (see project: 335168 - FAASt A&E PREPA).
4. Equipment and Materials (E&M) costs are deducted given previously obligated Global E&M Project for the subject FAASt PREPA work (see project: V0 Contract E &M Deduction FAASt project #673691).

Attachments

- 711819-APPENDIX A - Approved Supplier List
- 711819-APPENDIX B - General Arrangement
- 711819-APPENDIX C - Engineering Plans
- 711819-APPENDIX D - Consent to Federal Funding Letter - FEMA COR3
- 711819 APPENDIX E - Detailed Cost Estimate Rev.5

- 711819-APPENDIX F - Cost Effective Hazard Mitigation Measures
- 711819-APPENDIX G – Project Considerations
- 711819-APPENDIX H – HM Narrative

406 HMP Scope

406 HMP Scope

Project number: 711819

Damage # 1312779; FAASt [38kV Line 13400 - TC-San German Sect-La Parguera Sect] (Transmission)

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

Location: San German, Puerto Rico

GPS Latitude/Longitude: (Start: [REDACTED]; End: [REDACTED]).

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage “loss of power” from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

Project #711819 FAASt [TL 13400 TC-San German Sect-La Parguera Sect] (Transmission)

The Method of Repair (MOR) included the replacement of the damaged critical distribution pole (wood), cross-arms, insulators, and all associated hardware needed for the new structure. The facilities listed below are part of the 20.79-circuit miles of overhead transmission for the 38kV Line 13400 Acacias TC - San German Sect. - La Parguera Sect. This line is a Near- Term rebuild priority identified by LUMA. However, in the System Remediation Plan (“SRP”) these structures were identified as having issues and were considered degraded during a High-Level Assessment (“HLA”). Due to the degraded condition of these structures, they will be replaced through the Transmission Priority Pole Replacement Program on an expedited basis. Later, the remainder of the line will be rebuilt, except for the structures that would already have been replaced through this project and in alignment with LUMA codes and standards.

In order to minimize the damages in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by adding concrete foundations and strength of the poles by replacing it with steel galvanized, 12-sided, tapered shaft distribution poles to mitigate future damage due to high wind (160mph). Note: The FEMA Accelerated Award Strategy (FAASt) MOR included the PREPA distribution standards and specifications that were based on a 145mph sustained winds. However, the new PREPA Standard 2021 updates the design-criteria to a 160mph sustained winds resistant. The 160mph wind tolerance mitigation measure, will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards.

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

In order to prevent or reduce future damages from similar events, the sub-recipient proposed the following mitigation measures:

Mitigation Measures (*Replacement*)

To avoid damage in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by replacing it with a 12-sided, tapered shaft distribution pole to mitigate future damage to the structure due to high wind (160mph). The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.1 of the PAPPG V5.

- Replace 18ea 70ft galvanized steel round poles of 145mph windspeed resistance ASCE/SEI 48-19 with 18ea new 70ft (12-

sided) tapered shaft galvanized steel pole to increase the strength of the pole by increasing the wind tolerance by design to 160 mph.

Mitigation Measures *(Supplement)*

To avoid damage in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by adding concrete foundations to mitigate future damage to the structures due to high wind (160mph) and flooding. The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.3 of the PAPPG V5.

- Install eighteen (18ea) concrete foundation for eighteen (18 ea) 70 ft Galvanized steel S8 pole.

$$o\{[(5.5'(L) \times 5.5'(W) \times 12'(D)) - (2.75'(L) \times 2.75'(W) \times 11'(D))] / 27\} = 10.5 = 10.5 \text{ CY.} \times 18 \text{ ea} = \mathbf{189 \text{ CY.}}$$

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) =	\$ 158,902.09
+ HM (Recipient A&E, Management & General Conditions) =	\$ 38,723.04
Hazard Mitigation Total Cost =	\$ 197,625.13

(IV) Hazard Mitigation Proposal (HMP) Cost Distribution

Equipment and Materials (E&M) =	\$ 21,
Architecture and Engineering (A&E) =	\$ 15,
Construction Cost =	\$ 160
Hazard Mitigation Total Cost =	\$ 197,

(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 sub-recipient '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 **\$197,625.13 (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
9001	1	Lump Sum	\$2,550,769.54	Uncompleted
9001	1	Lump Sum	(\$147,447.87)	Uncompleted
3510	1	Lump Sum	(\$201,035.14)	Uncompleted

CRC Gross Cost	\$2,202,286.53
Total 406 HMP Cost	\$197,625.13
Total Insurance Reductions	\$0.00

CRC Net Cost	\$2,399,911.66
Federal Share (90.00%)	\$2,159,920.50
Non-Federal Share (10.00%)	\$239,991.16

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

9/24/2025

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.

Jorge Parrilla, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Priority Pole Replacement Program (Line 13400 Acacias TC- San German Sect - La Parguera Sect)] (Transmission)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Priority Pole Replacement Program (Line 13400 Acacias TC- San German Sect - La Parguera Sect)] (Transmission)**.

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.
- a. The Subrecipient and/or Subrecipient s contractor must follow the Low Impact Debris Removal Stipulations (LIDRS) outlined in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022.
- b. 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.

- c. 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 hardened surfaces can be provided at closeout.
- 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 debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. The applicant is responsible to ensure damaged transformers are handled, managed, and disposed of in accordance with all federal and state laws and requirements. Downed electrical equipment may contain toxic and hazardous materials, such as polychlorinated biphenyls (PCBs), and may spill these materials if a rupture occurs. Applicant is responsible for screening transformers that do or may contain PCBs and the area where any related spill occurred. The applicant is then responsible to handle, manage, dispose of, or recycle damaged equipment and contaminated soil as appropriate. Where possible, temporary measures should be implemented to prevent, treat, or contain further releases or mitigate the migration of PCBs into the environment. If damaged equipment or material storage containers must be stored temporarily, containers should be placed on hardened surface areas, such as a concrete or an asphalt for no more than 90 days. Excavated contaminated material should be disposed of in accordance with federal and state laws and requirements. 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- d. 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 mater

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Priority Pole Replacement Program (Line 13400 Acacias TC- San German Sect - La Parguera Sect)] (Transmission)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 10/10/2025 5:22 PM PST

Review Comments

Reviewed, found eligible and reasonable - CLG 10.10.2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 10/16/2025 10:28 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
0	Pending	In Review		\$1,705,844.00	90%	\$0.00	

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	3/1/2026	\$2,159,920.50	90%	Accepted	4339DRPRP00118401

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

v0

General Info

Project #	714641	P/W #	11630	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)		
Project Title	FAASt [Rincón Streetlighting] (Distribution)				
Project Size	Large	Event	4339DR-PR (4339DR)		
Activity Completion Date	9/20/2027	Declaration Date	9/20/2017		
Process Step	Obligated	Incident Start Date	9/17/2017		
		Incident End Date	11/15/2017		

Damage Description and Dimensions

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

Damage #1317631; FAASt [Distribution Streetlighting - Rincón]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Distribution Streetlighting - Rincón
- **Facility Description:** The Rincón municipality has a total of 3236 luminaires of which damage was estimated for 70% of these luminaires. Additional descriptions of typical components of a streetlight system are described below:
 - Pole – This can be either a standalone structure intended to house a streetlight, or a utility pole shared with other overhead utilities.
 - Arm – A piece of hardware affixed to a pole to which a luminaire is mounted. The arm serves to position the streetlight over the street for optimal lighting.
 - Luminaire/Light Bulb – The light emitting part of a streetlight
 - Light controller (e.g., photocell) – A hardware device affixed to the luminaire which controls the operating mode
 - Communication network – A wired or wireless system that allows the smart streetlight to communicate with other devices and the control system
 - Technology control system – A software platform that allows a remote operator to set the operating parameters for the smart streetlight or manually override the parameter if needed.
- **Approx. Year Built:** 1970
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

1317631 FAASt [Distribution Streetlighting - Rincón]

Introduction

The purpose of this document is to submit the Detailed Scope of Work (DSOW), for project 714641 Rincón Streetlighting (Distribution), for approval by COR3 and FEMA. This project is submitted for approval under DR-4339-PR Public Assistance. The document provides a detailed description of the project, including scope, schedule, cost estimate, project considerations, and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facilities.

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

Facilities

Facilities Description

This description outlines the diverse infrastructure of the streetlight facilities, including existing components, materials, structures, disposal procedures, and hazard mitigation measures.

Existing Lighting Components

The existing lighting components include photo controls, luminaires, arms, and associated hardware. These components are installed on various poles throughout the municipality.

Existing Streetlight Poles

The streetlight poles are made of aluminum, wood, steel, or concrete. Concrete poles are octagonal, varying in height from 33ft to 35ft, and installed to a depth of 5ft to 6ft. Aluminum poles are typically 30ft high, with increased strength versions reaching 40ft in height. Secondary wood poles and 35ft steel poles are also present, designed to withstand specific wind forces.

Facilities List

A complete list of facilities by GPS location is provide at Appendix B.

Name	Damage Number	GPS Location
Rincón Municipality	1317631	See Appendix B.

Project Scope of Work

Scope Summary

The proposed scope of work addresses the impacts on the streetlight facilities caused by Hurricane María. The project's objectives are to repair, replace, and upgrade the existing streetlight components to consensus-based codes and/or standards and mitigate future similar damage.

The project's final deliverables will include fully functional and upgraded streetlight facilities. These deliverables include replacing existing lighting components, poles, and disposal of hazardous materials. The proposed 406 Hazard Mitigation Scope of Work (Section 4.5 below) will also enhance streetlight components to withstand extreme weather events. The completion of the project will ensure improved lighting infrastructure, enhanced safety measures, and increased resilience to future challenges.

Work Description	Number of Points
Components only, does not require pole replacement, installation, removal	1833
Secondary pole replacement, installation, removal, with third party attachments	876
Secondary pole replacement, installation, removal, without third party attachments	246
Secondary pole, removal, with third party attachments, Luminaire Location Change (LLC)	45
Streetlight pole replacement, installation, and/removal	8
Grand Total	3008

Proposed 428 Public Assistance Scope of Work

The proposed restoration includes the repair of eligible disaster damage up to required codes and standards and the request to upgrade undamaged infrastructure that must be addressed to fully effectuate the restoration of disaster-damaged components to restore the system's function to an approved industry standard. The Detailed Scope of Work consists of the repair, removal, replacement, and addition of the following infrastructure to restore this facility to codes and standards.

A. Lighting Components Replacement

1. Remove existing lighting components, including photo controls, luminaires, arms, and associated hardware, and replacing with new lighting components in the exact location. Quantities for these replacements are provided in the table in section 4.1 above.
2. Brush vegetation, as identified, to gain access to the pole and conduct repairs. (See Scope Note #5)
3. Perform site evaluation and disposal of hazardous bulbs and photocells in an authorized facility.

B. Pole Replacement

1. Remove and replace existing streetlight poles, including lighting components, at the exact location or within 3 feet. Quantities for these replacements are provided in the table in section 4.1 above. The locations of the poles and description of work on each pole is described in Appendix D -- Project Considerations Rincón Municipality.
2. Brush vegetation, as identified, to gain access to the pole and conduct repairs. (See Scope Note #5)
3. All work for this program will be performed within the municipality's current electrical right-of-way.

Scope Notes

1. The Project does not include removal and/or disposal of transformers because they are secondary voltage facilities, and transformers removal pertains to primary voltage facilities.
2. Equipment to be used includes Skid Steer, Excavator, Dump trucks, Man lifts, 120-ton Motor Crane, Boom Trucks, 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine and Flatbed platform. All equipment to be used will comply with Tier 4 EPA Emission Standards, if available.
3. All materials are stored and dispatched from the assigned LUMA Regional Warehouse. The location assigned for this project is the Mayagüez Warehouse, 18.24342, -67.15937.
4. All work for this program will be performed within the current electrical right-of-way of the municipality. Poles are near the roads and are site accessible. The construction of access roads is not required for this scope of work. (Refer to Appendix D in the "Site Accessible" column).
5. The brushing of vegetation will be limited to a 10ft radius that surrounds the surface of the pole without exceeding the width of the right-of-way. Refer to (Appendix D in the "Brushing/Clearing required" column) for locations where vegetation brushing has been identified. The vegetation clearing process will be managed according to federal and state regulations.
6. Fill, gravel, and sand materials will be obtained from a preferred vendor as referenced in the Approved Supplier List Directory PR (see Applicant Profile).
7. Appendix C and Appendix D contain coordinates for streetlight poles where ground disturbance is required. The replacement of poles has a standard diameter for ground disturbance of 18 inches. The depth, of the poles to be installed, is stated in Appendix D (see "soil area and depth impact" column).
8. The debris that will be produced during removal is luminaires, pole arms, photocells, metal scrap, wiring, concrete, steel, and wood poles. The debris will be separated and taken to an authorized waste disposal facility.
9. Luminaires and photocells are considered hazardous waste and will be disposed of by the contractor in authorized facilities.
10. Staging areas within work site have not yet been identified. The contractor must provide the information of the staging areas as soon as available. Staging areas are confined to previously disturbed or hardened surfaces.

Specific List of Permits Required

- I. Department of Transportation and Public Works (DTOP) Endorsement.
- II. Rincón Municipality Notifications.
- III. Excavation and Demolition Notification to the Department of Transportation and Public Works (DTOP).

Project Cost Estimate (PCE)

The estimated costs (compliant with Class 3 Accuracy +/-30%) to complete the project are captured in the table(s) below. The cost estimate was developed utilizing preliminary Architectural and Engineering design information and may be subject to change. LUMA has allocated 10% of the project cost to mitigate potential known risks.

COST ESTIMATE			
COST ELEMENT	428	406	PROJECT TOTAL
PLANNING (A&E)	\$93,514.10	\$5,113.47	\$98,627.57
ENVIRONMENTAL MANAGEMENT (A&E)	\$280,542.31	\$15,340.40	\$295,882.71
MANAGEMENT (A&E)	\$467,570.53	\$25,567.33	\$493,137.86
ENGINEERING (A&E)	\$1,104,599.03	\$60,400.83	\$1,165,000.86
CONSTRUCTION	\$9,348,905.39	\$46,232.29	\$9,395,137.68
CONSTRUCTION - CONTINGENCY	\$654,598.74	\$35,794.26	\$690,393.00
LODGING, PER DIEM & TRAVEL	\$838,835.13	\$0.00	\$838,835.13
EQUIPMENT & MATERIAL	\$750,618.00	\$506,022.00	\$1,256,640.00
COST TOTALS	\$13,539,183.23	\$694,470.58	\$14,233,653.81
FAASt ALLOCATIONS	FAASt Project # 714641 TOTAL		\$11,536,80
	FAASt 428 A&E # 335168 TOTAL		\$1,946,22
	FAASt 428 E&M # 673691 TOTAL		\$750,61

Project 714641 Cost Summary, 428 PAAP:

Work to be Completed (WTBC): \$13,539,183.23

A&E Deduction, Global A&E 335168: (\$1,946,225.97)

E&M Deduction, Global E&M 673961: (\$750,618.00)

Project Total: \$10,842,339.26

Project Notes

1. Reduction(s): No insurance reduction will be applied to this project. An anticipated insurance reduction was applied to FAASt project # 136271 for anticipated insurance proceeds for Hurricane Maria losses.
2. A&E cost included in this project will be reduced from this project and obligated under the FAASt Project #335168, A&E, as show in in the table above. The A&E project was obligated to track and account for costs associated with individual FAASt projects.
3. Equipment and material costs included in this project will be reduced from this project and obligated under FAASt Project #673691,

Equipment and Materials, as shown in the table above. Only the base cost of equipment and/or material will be reduced from this project (not labor). All costs associated with Planning, Management, General Conditions, and Contingencies will remain in this project.

4. This project is part of Donor FAASt 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAASt Project.

5. For details on the updated SOW and CE, refer to filenames:

- 714641-DR4339PR-Rincón Streetlight-Detailed Scope of Work Rev. 10.pdf
- 714641-DR4339PR- Rincón Streetlighting-Appendix C - Cost Estimate Rincón Municipality - Rev11.xlsx

Attachments

For reference documents Appendix A through E, see the files labeled:

- Appendix A – Rincón Work Zones Map
- Appendix B – Rincón Municipality Work Zones FIDs SIDs and Coordinates
- Appendix C – Cost Estimate Rincón Municipality
- Appendix D – Project Considerations Rincón Municipality
- Appendix E – FEMA 406 Justification: Streetlight Program

406 HMP Scope

Project number: 714641; FAASt [Distribution Streetlighting - Rincón] (Distribution)

Damage # 1317631; FAASt [Distribution Streetlighting - Rincón]

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

Location: Rincón, Puerto Rico

GPS Latitude/Longitude: [REDACTED]

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding and power outage from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

In the Rincón Municipality, PREPA has a total of 3,008 ea. streetlights luminaries. The Method of Repair (MOR) include the replacement of the damage lighting components including photocells, luminaires, arms, and associated hardware. Also include the replacement of the damage distribution and streetlight poles (wood, concrete, galvanized & aluminum), the replacement of the aerial secondary wiring connections, and the construction of new concrete base for the aluminum streetlight poles. According to the information provided by the Applicant, due to the high velocity hurricane winds, wind-blown debris, and prolonged heavy rain, were the main cause of the damages of the facilities.

In order to minimize the damages in a future event, the Applicant is proposing as a mitigation measure, increase the strength of the poles, aluminum poles breakaway bases, and foundations (concrete bases) by increasing the wind tolerance of all materials to 160mph. Note: The FEMA Accelerated Award Strategy (FAASt) MOR included the PREPA distribution standards and specifications that were based on a 90mph sustained winds for all materials. Although in PREPA Technical Communication #13-02 (August 22, 2013) a design-criteria of 145mph winds were published,

the specifications for streetlighting material were never revised, and in the specification documents, the 90mph winds stayed as the requirement for procurement purposes of all streetlighting materials. The 160mph wind tolerance mitigation measure, will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures (*Replacement*)

1. To avoid damage in a future event, the Applicant is proposing as a mitigation measure, increase the strength of aluminum and concrete poles, breakaway bases, and foundations (concrete bases) by increasing the wind tolerance of all materials to 160mph. The FAAS^t MOR used PREPA distribution standards and specifications that were based on a 90mph sustained winds for all materials. Although in PREPA Technical Communication #13-02 (August 22, 2013) a design-criteria of 145mph winds were published, the specifications for streetlighting material were never revised, and in the specification documents, the 90mph winds stayed as the requirement for procurement purposes of all streetlighting materials. The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.1 of the PAPPG V3.1.

406 Mitigation Scope of Work:

- Replace (8 ea.) 33ft octagonal concrete poles by (8 ea.) 39ft octagonal concrete poles.
- Replace (1,121 ea.) 35ft galvanized poles by (1,121 ea.) 35ft S3.5 galvanized poles.

Hazard Mitigation Proposal (HMP) Cost:

Total Net Hazard Mitigation Cost (Base Cost) = \$511,346.56
+ HM (Applicant A&E, Management & General Conditions) = \$183,124.02
Hazard Mitigation Total Cost = \$694,470.58

Hazard Mitigation Proposal (HMP) Cost Distribution:

Equipment and Materials (E&M) = \$506,022.00
Architecture and Engineering (A&E) = \$106,422.03
Construction Cost = -\$82,026.55
Hazard Mitigation Total Cost = \$694,470.58

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 (FAAS^t) 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 \$694,470.58 (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
3510	1	Lump Sum	(\$1,946,225.97)	Uncompleted
9001	1	Lump Sum	\$13,539,183.23	Uncompleted
9008	1	Lump Sum	(\$750,618.00)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost \$10,842,339.26

Total 406 HMP Cost \$694,470.58

Total Insurance Reductions \$0.00

CRC Net Cost \$11,536,809.84

Federal Share (90.00%) \$10,383,128.86

Non-Federal Share (10.00%) \$1,153,680.98

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

7/3/2025

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.

Olga Renta, PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Rincón Streetlighting] (Distribution)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Rincón Streetlighting] (Distribution)**.

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.
- a. 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. b. 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. c. 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 hardened surfaces can be provided at closeout. d. FEMA will require that an archaeologist, who meets the Secretary of the Interior (SOI) Qualification Standards (36 CFR Part 61) for archaeology, be present to monitor all trenching activities within the Traditional Urban Center of Rincon and for trenches within 200m of the coordinates of RN-1/RC0100001 Yacimientos Ensenada/Fussa I, RN-9-A Puentes o Atarjeas, and any trenching along Calle Parque in Rincon (See Appendix B for complete Archeological Monitoring Plan). e. In the event that historically or archaeologically significant materials (or evidence thereof) are discovered during the implementation of this project, the Sub-Recipient and the Recipient shall proceed as indicated in Stipulation III.B. of the Programmatic Agreement, and the project shall be halted until such time as FEMA, in consultation with the PRSHPO, determines that appropriate measures have been taken to ensure that the project is in compliance with the NHPA. f. Archaeological monitoring of the activities will be documented by the SOI-qualified archaeologist in a report that must be submitted to FEMA's EHP Section for review. The level of description and documentation in the report submitted to FEMA for review shall be consistent with The Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (http://www.nps.gov/history/local-law/arch_stnds_7.htm). After approval, FEMA EHP will submit the report to PRSHPO for comments and concurrence.

- *****DISREGARD PREVIOUS NHPAA CONDITIONS***** a. 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. b. 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. c. 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. d. 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 Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and execute orders prior to a subrecipient or their contractor commencing 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 closeout.
- 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 debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities.
- 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- For Rincon Streetlighting only: 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.
- The Applicant must provide documentation at close-out that proves completion of required Conservation Measures. For PR Boa (*Chilabothrus inornatus*) In 2023, the Service amended a Programmatic Biological Opinion (PBO) for the Puerto Rican boa and the Virgin Islands tree boa. The below measures are included as Terms and Conditions (T&Cs) in the amended PBO (USFWS 2023). 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 harms 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 harms 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 Services Point of Contact (POC) is Jose 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
- For Sea Turtles There is potential for sea turtle nesting activity on all ocean-facing sand beaches in Puerto Rico and the U.S. Virgin Islands, including mixed sand and gravel (shell, coral rubble) beaches. The following measures are applicable to green, loggerhead, leatherback, and hawksbill sea turtles. 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 Tortugeros del CEN: 787-635-4493 Tortugeros de Culebra: 787-685-7820 Tortugeros 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
- 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 projects footprint does not stay within previously permitted structures footprint, then the Service must be consulted. Relocation of sea turtle nests to accommodate construction is not authorized. 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. 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.

- 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. 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. 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 waters edge. Removal of vegetation, fence installation, construction activities, and light installation shall be limited within 50 meters from the high tide line.
- 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. 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.
- 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 Services (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. All sea turtle sightings and incidents involving nesting sea turtles or hatchlings shall be reported to PRDNER/DPNR-DFW and the Service. The Services point of contact is Jose Cruz-Burgos, Endangered Species Program Coordinator: Mobile: 305-304-1386 Office phone: 786-244-0081 Office Direct Line: 939-320-3120 caribbean_es@fws.gov or jose_cruz-burgos@fws.gov
- For *Buxus vahlii*: Before initiating any work within the range of listed plant species and in areas with suitable habitat, applicants must conduct plant surveys. In the event that listed species are discovered at the project site, the Service must be notified. The Applicant must develop conservation measures to minimize or avoid impacts on those species and share those measures with the Service for evaluation and approval. If no listed plants are found during surveys, no further action is required. However, if a listed plant species is found while the project is being conducted, project personnel shall stop work, and the Service should be contacted for further technical assistance. Services point of contacts: Jose Cruz-Burgos, Endangered Species Program Coordinator, Mobile: 305-304-1386, Office: 786-244-0081, jose_cruz-burgos@fws.gov. Omar Monsecur, Fish and Wildlife Biologist, Mobile: (305) 304-0292, omar_monsecur@fws.gov.
- 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 hardened surfaces can be provided at close-out.

EHP Additional Info

There is no additional environmental historical preservation on **FAAST [Rincón Streetlighting] (Distribution)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 09/16/2025 9:37 PM PST

Review Comments

Reviewed, found eligible and reasonable. CLG 09.16.2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 09/23/2025 7:43 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 \$11,536,809.84 for subaward number 11630 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	Pending	In Review		\$12,467,409.38	90%	\$0.00	

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	3/1/2026	\$10,383,128.86	90%	Accepted	4339DRPRP00116301

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	727522	P/W #	107892	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 3 Bayamon TL - 115kV] (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #921640; FAASt [Region 3 Bayamon Transmission - 115kV Island-Wide Vegetation Clearing]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 3 Bayamon Transmission - 115kV Island-Wide Vegetation Clearing
- **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

921640 FAASt [Region 3 Bayamon Transmission - 115kV Island-Wide Vegetation Clearing]

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 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-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 Region 3 Bayamon Transmission - 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. See document FAAsTVegetationHMPApproach_115-230kVTrans_20250805.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 \$778,850.12.

D#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC – PA Cost with Subrecipient Management & General Conditions	A&E – PA	Total - PA
921640	\$71,987.50	10.92	\$786,103.50	\$(7,253.38)	\$778,850.12

Work to be completed total: \$786,103.50

A&E Deduction (Global A&E FAAsT 335168): -\$7,253.38

Project Total: \$778,850.12

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 727522 FAAsT Region 3 Bayamon TL – 115kV (Vegetation) DSOW.V2.pdf
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: 727522; FAAsT [Region 3 - Bayamon TL - 115 kV] (Vegetation)

Damage #: 921640; FAAsT [Region 3 Bayamon Transmission - 115kV] (Vegetation)

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

Location: Bayamon, Puerto Rico

GPS Latitude/Longitude: [REDACTED]

Change History

HMP Change History	
Date	Change Description
11/21/2025	Cost per mile adjusted based on IEP, determination. See PN727572 IEP determination letter.
09/11/2025	Original HMP

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 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 (hereinaft 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).

Bayamon Transmission Lines – 115kV

This is a Group project for 115kV transmission lines within Region 3 Bayamon. 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 Bayamon (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 employ 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, \$71,987.50 / mile calculation represents the 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 10.92 mile, with a total project cost of \$786,103.5. For further details, refer to the document "FAAStVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf."

PN727522 FAASt [Region 3 Bayamon TL - 115kV] (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 3 Bayamon 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 Circuit/ Same Structure	urban	25 ft	40 ft	60 ft
	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 emphasize, that after work completed, the subrecipient can submit additional eligible vegetation clearance distance not included in this vegetation clearance percent analysis.

FEMA Analysis:

Feeder	Total Miles	Vegetation Miles	Per Cent of Vegetation
36100-BARRIO PIÑA SECT-CANA SECT-	6.61	0.95	14.34%
36100-CANA SECT-BAYAMON TC-			
37400-DORADO TC-HATO TEJAS TC-	8.75	2.45	28.02%
37400-HATO TEJAS TC-BAYAMON TC-			
37500-BAYAMON TC-RO BAYAMON SECT-	3.15	0.49	15.59%
37500-RO BAYAMON SECT-MONACILLOS TC-			
37600-BAYAMON TC-PALO SECO SP-	4.73	0.63	13.37%
37700-PALO SECO SP-BAYAMON TC-	4.61	0.51	11.10%
38200-PALO SECO SP-MONACILLOS TC-	4.95	0.85	17.08%
38600-BAYAMON TC-SAN JUAN SP-	4.02	0.71	17.70%
38700-PALO SECO SP-SAN JUAN SP-	0.06	0.00	0.00%
39000-MONACILLOS TC-AGUAS BUENAS TC-	8.73	1.82	20.84%
41500-BARRIO PIÑA SECT-DORADO TC-	7.31	1.50	20.55%
PN727659 - Vegetation Spans/Arecibo	52.926	9.92	18.74%
Completed Miles:	52.926		
Total Miles with vegetation:	9.92		
Percent of Vegetation:	18.74%		
Administrative Buffer Acceptance	10.00%		
Total miles with vegetation + Administrative buffer	10.92		
Percent of Vegetation with Buffer:	20.63%		

(III) Hazard Mitigation Proposal (HMP) Cost:

Vegetation Clearance Cost per Mile (Base Cost) =	\$300,831.61 / mile
Risk Factor approved by the DR4339-PR leadership (5%) =	\$15,041.58 / mile
Vegetation Clearance Cost per Mile (w/Soft Cost) =	\$315,873.19 / mile
PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$71,987.50 / mile)
Hazard Mitigation Total Cost per Mile =	\$243,885.69 / mile
Project Total Miles with Vegetation:	9.92-miles
Buffer Acceptance	10%
Vegetation Miles with Buffer	10.92-miles
Hazard Mitigation Total Cost =	\$2,663,231.73

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.³

Total Net Hazard Mitigation Cost (Base Cost) =	\$2,536
+ HM (Management & General Conditions Factors) =	\$126
Hazard Mitigation Total Cost =	\$2,663,;

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

Architecture and Engineering (A&E) =	\$24
Remaining Vegetation Clearance Cost =	\$2,638
Hazard Mitigation Total Cost =	\$6,663,;

(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 a 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 \$2,663,231.73 (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:

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.

Additionally, the DR4339-PR leadership has approved the application of a 10% Buffer Acceptance to mitigate appreciation error in the 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 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 Regulation 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. 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 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. *"SAR P727522 FAAST [Region 3 Bayamon TL - 115kV] (Vegetation).pdf "*
6. *"PN727522-Bayamon-Vegetation.kmz"*
7. *"727522-DR4339PR-HMCE-20251114-RGL.xlsx"*

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$786,103.50	Uncompleted
3510	1	Lump Sum	(\$7,253.38)	Uncompleted

CRC Gross Cost	\$778,850.12
Total 406 HMP Cost	\$2,663,231.73
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$3,442,081.85
Federal Share (90.00%)	\$3,097,873.67
Non-Federal Share (10.00%)	\$344,208.18

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 3 Bayamon TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 3 Bayamon TL - 115kV] (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 [Region 3 Bayamon TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/02/2025 4:52 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 12/02/2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/05/2025 5:44 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$3,097,873.67	90%	Accepted	4339DRPRP01078921

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	727529	P/W #	107893	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 6 Ponce TL - 115kV] (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #661267; FAASt [Region 6 Ponce Transmission - 115kV] (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 6 Ponce Transmission - 115kV
- **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
- **Location Description:** 115kV Ponce Guayama 36300 23.31 [REDACTED] 115kV Ponce Ponce 36900 3.22 [REDACTED] 115kV Ponce Yauco 36900 8.33 [REDACTED] 115kV Ponce Yauco 37000 11.09 [REDACTED] 115kV Ponce Yauco 37100 13.99 [REDACTED] 115kV Ponce Yauco 37100 10.74 [REDACTED] 115kV Ponce Guayama 37800 14.44 [REDACTED] 115kV Ponce Ponce 39000 20.46 [REDACTED] 115kV Ponce Ponce 39000 7.68 [REDACTED] 115kV Ponce Yauco 39600 1.77 [REDACTED] 115kV Ponce Yauco 39900 0.96 [REDACTED] N/A N/A 115kV Ponce Guayama 40100 10.96 [REDACTED] 115kV Ponce Guayama 40200 10.89 [REDACTED] 115kV Ponce Guayama 40300 13.04 [REDACTED] 115kV Ponce Ponce 40300 14.86 [REDACTED] 115kV Ponce Guayama 40300 2.73 [REDACTED] 115kV
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

Final Scope

661267 FAASt [Region 6 Ponce Transmission - 115kV] (Vegetation)

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 order in the PREPA FAAS 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, 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-FAAS projects) to provide flexibility and enable multiple programmatic reviews simultaneously. The Vegetation clearance HMP Sub-FAAS 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 Region 6 Ponce Transmission - 115kV] (see project note #1 and #2).

FEMA 406 Hazard Mitigation (HM) team will review this actual recovery solution and issue a FCE order 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-FAAS projects will be adjusted as describe in FEMA-4339-DR-PR Public Assistance PREPA FAAS Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: 115kV/230kV. See document FAASVegetationHMPApproach_115-230kVTrans_20250805.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 \$1,879,368.20.

DI #	PA Vegetation Clearance Overlap per mile	Total Mile	WTBC – PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
661267	\$71,987.50	26.35	\$1,896,870.63	\$17,502.43	\$1,879,368.20

Work to be Completed: \$1,896,870.63

A&E Deduction (Global A&E FAAS 335168): - \$17,502.43

Project Total: \$1,879,368.20

Project Notes:

1. Project Notes: 1. This is a 115kV Transmission-Vegetation clearance HMP Sub-FAAS project.
2. Vegetation clearance HMP Sub-FAAS 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 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 727529 FAAS [Region 6 Ponce TL - 115kV] (Vegetation) DSOW.v3.
5. Vegetation clearance funds will not be allocated to SubFAAS projects.
6. A&E cost 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.

406 HMP Scope

Change History

HMP Change History	
Date	Change Description
11/20/2025	Cost per mile adjusted based on IEP, determination. See PN727572 IEP determination letter.
09/10/2025	Original HMP

Introduction:

Puerto Rico's electrical grid infrastructure has been severely compromised by extreme weather events, particularly with Hurricane María 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 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 María. 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 DSOWs 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 FAAS 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:

PN727529 FAAS [Region 6 Ponce TL - 115kV] (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. Bylaw, 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:

Recommended Easement width for overhead Transmission & Sub-Transmission Lines (feet)				
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 Circuit, Same Structure	Urban	25 ft	40 ft	60 ft
	Rural	50 ft	100 ft	100 ft
Double Circuit, Different Structure	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 LUMALand 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 HMspecialist 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 emphasize, that after work completed, the subrecipient can submit additional eligible vegetation clearance distance not included in this vegetation clearance percent analysis.

FEMA Analysis:

Feeder	Total Miles	Vegetation Miles	Per Cent of Vegetation
36300-JUAN MARTIN TC-JOBOS TC-MAUNABO TC	23.31	5.32	22.82%
36900-CANAS TC-PONCE TC-	11.41	1.53	13.39%
36900-COSTA SUR SP-CANAS TC-			
37000-COSTA SUR SP-PONCE TC-	7.00	1.18	16.81%
37100-GUANICA TC-COSTA SUR SP-	10.74	1.14	10.57%
37100-SAN GERMAN TC-GUANICA TC-	13.31	0.94	7.07%
37800-CAYEY TC-JOBOS TC-	12.85	2.37	18.44%
39000-JUANA DIAZ TC-TORO NEGRO HP-BARRANQUITAS TC	20.13	5.60	27.80%
39000-PONCE TC-JUANA DIAZ TC-	5.43	1.28	23.51%
39600-COSTA SUR SP-PFG-	1.69	1.12	66.44%
39900-COSTA SUR SP-UNION CARBIDE-	0.89	0.00	0.00%
40100-AGUIRRE SP-JOBOS TC-	6.78	0.23	3.36%
40200-AGUIRRE SP-JOBOS TC-	10.23	0.47	4.60%
40300-PATTERN WIND FARM-SANTA ISABEL TC-	27.57	2.52	9.15%
40300-PONCE TC-PATTERN WIND FARM-		0.00	
40300-SANTA ISABEL TC-AGUIRRE SP-		0.00	

42100-PATTERN WIND FARM-SANTA ISABEL WIND FARM	4.17	0.19	4.48%
900-PAMPANOS SECT-CANAS TC	0.13	0.07	51.12%
PN727659 - Vegetation Spans/Arecibo	155.66	23.95	15.39%
Completed Miles:	155.66		
Total Miles with vegetation:	23.95		
Percent of Vegetation:	15.39%		
Buffer Acceptance	10.00%		
Completed Miles with Buffer:	26.35		
Percent of Vegetation with Buffer:	16.93%		

Cost Summary:

The Hazard Mitigation Proposal is divided in 1ea Sub-Project: DR#661267; FAAS [Region 6 Ponce Transmission - 115kV] (Vegetation). The total HMP Cost is the HM Net Cost (\$6,120,369.57) + Applicant A&E, Management & General Conditions (\$306,018.36) = \$6,426,387.93.

(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%) =	\$15,041.58
Vegetation Clearance Cost per Mile (w/Soft Cost) =	\$315,873.19
PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$71,987.50)
Hazard Mitigation Total Cost per Mile =	\$243,885.69
Project Total Miles with Vegetation:	23.95
Buffer Acceptance	
Vegetation Miles with Buffer	26.35
Hazard Mitigation Total Cost =	\$6,426,387.93

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.³

Total Net Hazard Mitigation Cost (Base Cost) =	\$6,120,369.57
--	----------------

+ HM (Management & General Conditions Factors) =	<u>\$30€</u>
Hazard Mitigation Total Cost =	\$6,426

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

Architecture and Engineering (A&E) =	\$59
Remaining Vegetation Clearance Cost =	<u>\$6,367</u>
Hazard Mitigation Total Cost =	\$6,42€

--	--

(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 VI, C, defines cost effective mitigation as: The HMM 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 (FAAS) 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 **\$6,426,387.93** (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, VI., Section C, BCARule. 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 FAASVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf), the final total obligated amount through PA 406 is **\$243,885.69 / mile**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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 HMSOW (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. "PN727529-Ponce Region 6-Assesment Report.pdf"
6. "PN727529- 115KV Ponce.kmz"
7. "727529-DR4339PR-HMCE-20251114-JIIR-REG-RGL.xlsx"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$1,896,870.63	Uncompleted
3510	1	Lump Sum	(\$17,502.43)	Uncompleted

CRC Gross Cost	\$1,879,368.20
Total 406 HMP Cost	\$6,426,387.93
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$8,305,756.13
Federal Share (90.00%)	\$7,475,180.52
Non-Federal Share (10.00%)	\$830,575.61

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

11/20/2025

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.

Olga Renta, PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 6 Ponce TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Region 6 Ponce TL - 115kV] (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.
- 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 [Region 6 Ponce TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/01/2025 5:21 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 6:59 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$7,475,180.52	90%	Accepted	4339DRPRP01078931

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	727572	P/W #	11720	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 3 -Bayamon Group A] High Density (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #921634; FAASt [Region 3 Bayamon Group A Distribution] High Density

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 3 Bayamon Group A Distribution High Density
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines. The facilities addressed in this project are all the overhead distribution lines at applicant identified within Region 3 (Bayamon) of PREPA electrical grid.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

921634 FAASt [Region 3 Bayamon Group A Distribution] High Density

The PR Electric Power Authority (PREPA) and its agent, LUMA Energy LLC., operate and maintain over 19,000 miles of transmission and distribution lines island wide. The PA Scope of Work was evaluated by U.S. Army Corps of Engineers, as the Independent Expert Panel, hereinafter IEP. In accordance with the Public Assistance Program Policy Guide version 3.1 (2018) at pages 107 and 108, when the estimated federal share of an alternative procedures project exceeds \$25 million a Third-party expert panel review is required prior to transmitting a Fixed-Cost Offer. The IEP issued its recommendations for cost adjustments based on its review of the work to be completed. The Public Assistance Alternative Procedures [Section 428] Guide for Permanent Work FEMA-4339-DR-PR (2022) at 19, states that, "FEMA will adjust cost estimates based on the third-party independent expert panel's recommendations; thus, Recipients and Subrecipients may not submit appeals for additional costs related to a fixed-cost subaward", the adjusted cost will be reflected on the scope of work to be completed.

The IEP completed a review of this project on 10/15/2025 and issued its determination on the project's cost based on its review of the FEMA provided and Applicant provided cost estimates "PN727572-DR4339PR-HMCE-20250325-RIBR_IEP Review_rev1.xlsx" (10/16/2025). This report includes 376.77 miles of vegetation clearance activities for the Region of Bayamon. The PA SOW included incidental vegetation and Hazard Mitigation activities to provide more clearance and reduce future storm related outages. According to the IEP's report named "Report of Findings for Peer Review of Cost Estimates " (*DR4339 PR #727572 Bayamon Vegetation Removal_Final Report_rev1.pdf*), the cost per mile validated for the Hazard Mitigation activities is \$83,122.00 noting that "although higher than the IEP's updated FEMA estimate...the Applicant's cost per mile being based on recent task orders and similar scope with

off-island contractors is allowable based on the CEF Instructional Guide". For further details regarding the IEP report and findings, please refer the document named Report of Cost Review for FEMA draft rev5. Project 136271 (hereinafter PREPA FAASSt 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 (FAASSt 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 where 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 Bayamon Region 3 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 document [FAASStVegetationHMPApproach_Distribution_03.24.2025.pdf](#). 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) = \$30,385.95 per mile. Therefore, the total cost (PA) for this project will be **\$11,268,772.70**.

D#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
921634	\$30,385.95	376.77	\$11,448,514.38	(\$179,741.68)	\$11,268,772.70

Work to be completed total: \$11,448,514.38

A&E Deduction (Global A&E FAASSt 335168): -\$179,741.68

Project Total: \$11,268,772.70

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 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 Region 3 Bayamon Group A - PW 727572 DSOW 10_21_2025.pdf.
5. Vegetation clearance funds will not be allocated to SubFAASt projects in high density locations.
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: 727572-FAASt [Region 3 - Bayamon Group A High Density] (Vegetation)

Damage number: 921634

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

Location: Region 3 - Bayamon, 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 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 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 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 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. 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 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 was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamón
- Region 4 – Caguas
- Region 5 – Mayagüez
- 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 – 38 kV Transmission.
- Group C – Overlapped Distribution and Transmission Lines
- 115 kV 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 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, which is associated with impervious locations within the Bayamon 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) = \$34,908.51 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 3 (Bayamon) 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 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 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:

HM Vegetation Clearance Cost per Mile (Base Cost) = \$108,102.81 / mile
 *Risk Factor approved by the DR4339-PR leadership (5%) = \$5,405.14 / mile
 HM Vegetation Clearance Cost per Mile (w/risk factor applied) = \$113,507.95 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$30,385.95 / mile)

Hazard Mitigation Total Cost per Mile = \$83,122.00 / mile

Project Total Miles (PN727572) = 376.77 miles

Hazard Mitigation Total Cost per Mile = \$83,122.00 / mile

Hazard Mitigation Total Cost = \$31,317,875.94

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) = \$29,813,871.33
 + HM (Applicant A&E, Management & General Conditions) = \$ 1,504,004.61
 Hazard Mitigation Total Cost = \$31,317,875.94

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

Architecture and Engineering (A&E) = \$ 491,691.00
 Remaining Vegetation Clearance Cost = \$30,826,184.94
 Hazard Mitigation Total Cost = \$31,317,875.94

(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 is \$31,317,875.94 (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).

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) \$28,972.65 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.

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"
- "IWBCA HMP Package.pdf"
- "Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters.pdf"
- "Region 3 Bayamon Group A - PW 727572 DSOW 10_16_2025.pdf"
- "PN727572-DR4339PR-HMCE-20250325-RIBR_IEP Review_rev1.xlsx"
- "PN727572-DR4339PR-HMP-20251023-RIBR.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$11,448,514.38	Uncompleted
9201	1	Lump Sum	\$0.00	Completed
3510	1	Lump Sum	(\$179,741.68)	Uncompleted

CRC Gross Cost	\$11,268,772.70
Total 406 HMP Cost	\$31,317,875.94
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$42,586,648.64
Federal Share (90.00%)	\$38,327,983.78
Non-Federal Share (10.00%)	\$4,258,664.86

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

10/24/2025

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 727572

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm

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

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #921634:

FAASt – [Region 3 Bayamon Group A Distribution] High Density

Location Description: Region 3, Bayamon, Puerto Rico

GPS Coordinates: XXXXXXXXXX

Cause of Loss: Wind / Wind Driven Rain

Damage Inventory Amount: \$42,586,648.64 (CRC Gross Cost \$11,268,772.70 + HMP Cost \$31,317,875.94)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility

Reduction(s):

No insurance reduction will be applied to this project as coverage is not anticipated. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project #136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: “PREPA Allocation Plan – All Disasters” file.

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAASt [Region 3 Bayamon Group A Distribution] High Density because the facility does not meet the definition of building, equipment, contents, or vehicle.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant’s insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA’s Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled to on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.
2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.
3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

...

5. If an applicant has an insurance requirement from a previous event:
 - a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.
 - b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant’s anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

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

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 3 -Bayamon Group A] High Density (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 3 -Bayamon Group A] High Density (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.
- 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 to 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.
- FEMA will require that an archaeologist, who meets the Secretary of the Interior (SOI) Qualification Standards (36 CFR Part 61) for archaeology, conduct a Level II Desktop Review and Background Research, as outlined in Stipulation II.D.3.b of the PSPA, for all projects that includes vegetation clearing activities not covered by Tier II Programmatic Allowances and require further Section 106 consultation, as described in the FEMA letter dated March 7, 2025. In this case, the areas of potential effects (APEs) that would be subject to this level of analysis are: ROW segments of unmaintained T&D lines in suburban and/or rural areas where work cannot be conducted from an existing shoulder and/or requires construction of new access roads through undisturbed land within or outside of existing ROWs. The Level II Desktop Review and Background Research results shall be documented in a Phase I Analysis Report, as described in Stipulation II.D.5 of the PSPA, to be submitted to FEMA for review prior to the initiation of any work in the areas defined above.
- Executive Order 11988 - Floodplains Conditions 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. 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.
- Endangered Species Act (ESA) Conditions for Chilabothrus inornatus (Puerto Rican Boa) To avoid any adverse effect on Chilabothrus inornatus (Puerto Rican Boa), the Applicant shall comply with the following conservation measures, in addition to the terms and conditions specified in the Amended Programmatic Opinion for the Puerto Rican Boa by USFWS (July 2023): 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.
- Continuation of Endangered Species Act (ESA) Conditions for *Chilabothrus inornatus* (Puerto Rican Boa) 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 reinitiate 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 reinitiate 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
 - Endangered Species Act (ESA) Conditions for *Buxus vahlii* (Vahl's Boxwood) and *Ottoschulzia rhodoxylon* (Rosewood) To avoid any adverse effect on *Buxus vahlii* (Vahl's Boxwood), *Daphnopsis helleriana* (Heller's Cieneguillo) and *Ottoschulzia rhodoxylon* (Rosewood), the Applicant shall comply with the following conservation measures: Before initiating any work within the range of listed plant species and in areas with suitable habitat, applicants must conduct plant surveys. In the event that listed species are discovered at the project site, the Service must be notified. The Applicant must develop conservation measures to minimize or avoid impacts on those species and share those measures with the Service for evaluation and approval. If no listed plants are found during surveys, no further action is required. However, if a listed plant species is found while the project is being conducted, project personnel shall stop work, and the Service should be contacted for further technical assistance. Service's point of contacts: Jose Cruz-Burgos, Endangered Species Program Coordinator, Mobile: 305-304-1386, Office: 786-244-0081, jose_cruz-burgos@fws.gov Omar Monsegur, Fish and Wildlife Biologist, Mobile: (305) 304-0292, omar_monsegur@fws.gov
 - 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. Add condition regarding Attachment(s): - 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).
 - 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 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds. 3. If TDS sites: This site is for temporary debris storage (TDS). Final disposal will take place at an authorized sanitary landfill. All coordination pertaining to final disposal activities should be documented and forwarded to FEMA as part of the permanent project file. Non-compliance with these requirements may jeopardize receipt of federal funds.
 - Executive Order 11990 - Wetlands Conditions 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. The Applicant shall ensure best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. To ensure that wetlands are not adversely impacted, per the Clean Water Act and Executive Order 11990, equipment storage and staging of construction materials and machinery must be in a location that would prevent erosion and sedimentation. Debris may not be staged, stored, or disposed of in wetlands without the required permits.

- NEPA Determination Conditions 1. 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. 2. 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.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Region 3 -Bayamon Group A] High Density (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 11/05/2025 9:31 PM PST

Review Comments

The IEP completed a review of this project on 10/15/2025 and issued its determination on the project's cost based on its review of the FEMA provided and Applicant provided cost estimates "PN727572-DR4339PR-HMCE-20250325-RIBR_IEP Review_rev1.xlsx" (10/16/2025). 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. Therefore, the total cost (PA) for this project will be \$11,268,772.70. 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 FAASt Grant. Hazard Mitigation Total Cost= \$31,317,875.94. Reviewed, found eligible and reasonable. CLG 11.05.2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 11/07/2025 3:10 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 \$42,586,648.64 for subaward number 11720 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	Pending	In Review		\$29,267,077.62	90%	\$0.00	

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	3/1/2026	\$38,327,983.78	90%	Accepted	4339DRPRP00117201

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

v0

General Info

Project #	727606	P/W #	107898	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 4 Caguas TL - 115kV] (Vegetation)		Declaration Date	9/20/2017	
Project Size	Large	Incident Start Date	9/17/2017	Incident End Date	11/15/2017
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #921639; FAASt [Region 4 Caguas Transmission - 115kV]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 3 Caguas Transmission - 115kV
- **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
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

Final Scope

921639 FAASt [Region 4 Caguas Transmission - 115kV]

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 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 Region 4 Caguas Transmission - 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. See document FAAsTVegetationHMPApproach_115-230kVTrans_20250805.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 \$900,812.92.

DI#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC – PA Cost with Subrecipient Management & General Conditions	A&E – PA	Total - PA
921639	\$71,987.50	12.63	\$909,202.13	\$(8,389.21)	\$ 900,812.92

Work to be completed total: \$ 909,202.13

A&E Deduction (Global A&E FAAsT 335168): -\$ 8,389.21

Project Total: \$ 900,812.92

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 727606 FAAsT Region 4 Caguas TL – 115kV (Vegetation) DSOW.V2.pdf
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

Change History

Date	Change Description
11/19/2025	Document was reviewed to incorporate the cost changes recommended by the IEP to 230kV transmission project

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 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 FAAsT 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).

Caguas Transmission Lines – 115kV

This is a Group project for 115kV transmission lines within Region 4 Caguas. 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 Caguas (if left unattended 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 12.63 mile, with a total project cost of \$909,202.13. For further details, refer to the document "[FAASTVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf](#)."

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

PN727529-FAAST [Region 4 Caguas TL - 115kV] (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 4 Caguas 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:

Recommended Easement width for overhead

Transmission & Sub-Transmission Lines (feet)

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 Circuit, Same Structure	Urban	25 ft	40 ft	60 ft
	Rural	50 ft	100 ft	100 ft
Double Circuit, Different Structure	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.

Feeder	Total Miles	Vegetation Miles	Per Cent of Vegetation
36200	13.80	0.83	6.04%
36300	14.67	0.45	3.04%
37800	18.84	3.87	20.55%
39000	20.38	3.70	18.15%

39400	3.56	0.85	23.99%
41000	2.43	0.52	21.21%
41400	9.88	0.86	8.73%
42000	3.25	0.36	11.03%
42500	0.33	0.04	10.89%

PN727606- Vegetation Spans/Caguas	87.136	11.48	13.17%
Completed Miles:	87.136		
Total Miles with vegetation:	11.48		
Percent of Vegetation:	13.17%		
Buffer Acceptance	10.00%		
Total Miles with Vegetation plus Buffer:	12.63		
Percent of Vegetation with Buffer:	14.49%		

Cost Summary:

The Hazard Mitigation Proposal is divided in 1ea Sub-Project: DI#921639; FAASt [Region 4 Caguas Transmission - 115kV (Vegetation)]. **The total HMP Cost is the HM Net Cost (\$2,933,596.50 + Applicant A&E, Management & General Conditions (\$146,679.76) = \$3,080,276.26.**

(III) Hazard Mitigation Proposal (HMP) Cost:

¹ Vegetation Clearance Cost per Mile (Base Cost) =	\$300,831.61
Risk Factor approved by the DR4339-PR leadership (5%) =	\$15,041.58
Vegetation Clearance Cost per Mile (w/Soft Cost) =	\$315,873.19
² PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$71,987.50 / i
Hazard Mitigation Total Cost per Mile =	\$243,885.69 /
Project Total Miles with Vegetation:	11.48
Buffer Acceptance	
Vegetation Miles with Buffer	12.63-r

Hazard Mitigation Total Cost =	\$3,080,2

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.³⁶

Total Net Hazard Mitigation Cost (Base Cost) =	\$2,933,
+ HM (Management & General Conditions Factors) =	\$146
Hazard Mitigation Total Cost =	\$3,080

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

Architecture and Engineering (A&E) =	\$28,
Remaining Vegetation Clearance Cost =	\$3,051
Hazard Mitigation Total Cost =	\$3,080

(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 2 is **\$3,080,276.26** (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:

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 FAASVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf), the final total obligated amount through PA 406 is **\$243,885.69 / mile**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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. Project Assessment Report: "PN727606-CaguasRegion4-MUG.pdf"
6. "PN7276606 - 115KV Caguas Region 4.kmz"
7. "PN727606-DR4339PR-HMCE-20251119-MUG.xlsx"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$909,202.13	Uncompleted
3510	1	Lump Sum	(\$8,389.21)	Uncompleted

CRC Gross Cost	\$900,812.92
Total 406 HMP Cost	\$3,080,276.26
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$3,981,089.18
Federal Share (90.00%)	\$3,582,980.27
Non-Federal Share (10.00%)	\$398,108.91

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.

Insurance

Additional Information

11/20/2025

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.

Olga Renta, PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAAST [Region 4 Caguas TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 4 Caguas TL - 115kV] (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 [Region 4 Caguas TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/01/2025 5:17 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 7:26 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$3,582,980.27	90%	Accepted	4339DRPRP01078981

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	727608	PW #	107899	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 1 San Juan TL - 115kV] (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #921641; FAASt [Region 1 San Juan Transmission - 115kV]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 1 San Juan Transmission - 115kV
- **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
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

Final Scope

921641 FAASt [Region 1 San Juan Transmission - 115kV]

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 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-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 Region 1 San Juan Transmission- 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. See document FAASTVegetationHMPApproach_115-230kVTrans_20250805.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 \$1,007,797.83.

DI#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
921641	\$71,987.50	14.13	\$1,017,183.38	\$(9,385.55)	\$1,007,797.83

Work to be Completed: \$1,017,183.38

A&E Deduction (Global A&E FAAST 335168): -\$9,385.55

V2 Project Total: \$1,007,797.83

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 727608 FAAST Region 1 San Juan TL – 115kV (Vegetation) DSOW.V2.pdf
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: 727608; FAAS [Region 1 - San Juan TL - 115 kV] (Vegetation)

Damage #: 921641; FAAS [Region 1 San Juan Transmission - 115kV] (Vegetation)

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

Location: San Juan, Puerto Rico

GPS Latitude/Longitude: PREPA San Juan Region Wide

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 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 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 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 FAAS 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 FAAS 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 – Bayamón
- 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:

- 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).

San Juan Transmission Lines – 115kV

This is a Group project for 115kV transmission lines within Region 1 San Juan. 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 San Juan (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, \$71,987.50/ mile calculation represents the 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 FAASSt 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 14.13 mile, with a total project cost of \$1,017,183.38 For further details, refer to the document "*FAASStVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf*"

(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 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 Circuit/ Same Structure	urban	25 ft	40 ft	60 ft
	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-“*FAASVegetationHMPApproach_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:

<u>Feeder</u>	<u>Total Miles</u>	<u>Vegetation Miles</u>	<u>Per Cent of Vegetation</u>
36200	0.02	0.01	70.91%
36200	10.16	1.06	10.41%

36200	15.57	3.73	23.94%
36200	6.39	0.50	7.86%
37800	4.28	0.81	19.01%
37900	10.7	2.64	24.72%
38100	3.44	0.40	11.54%
38300	4.74	0.97	20.49%
38400	0.23	0.05	19.70%
38500	2.67	1.07	39.87%
38800	1.25	0.12	9.81%
38900	2.46	0.00	0.00%
38900	1.31	0.26	20.18%
38900	4.32	0.31	7.19%
40400	0.78	0.05	6.78%
41200	6.17	0.85	13.72%

San Juan Spans 74.487 12.84 17.24%

Completed Miles: 74.487

Total Miles with vegetation: 12.84

Percent of Vegetation: 17.24%

Buffer Acceptance 10.00%

Total Miles with vegetation plus Buffer: 14.13

Percent of Vegetation with Buffer: 18.97%

(III) Hazard Mitigation Proposal (HMP) Cost:

Vegetation Clearance Cost per Mile (Base Cost) = \$300,831.61 / mile

HM Vegetation General Conditions per Mile (15% Soft Cost) = \$15,041.58 / mile

HM Vegetation Clearance Cost per Mile (w/Soft Cost) = \$315,873.19 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$71,987.50 / mile)

Hazard Mitigation Total Cost per Mile = \$243,885.69/ mile

Project Total Miles with vegetation = 12.84 miles

Buffer Acceptance 10%

Vegetation Miles with Buffer 14.13 miles

Hazard Mitigation Total Cost = \$3,446,104.80

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.

Total Net Hazard Mitigation Cost (Base Cost) = \$3,282,004.63
+ HM (Applicant A&E, Management & General Conditions) = \$164,100.17
Hazard Mitigation Total Cost = \$3,446,104.80

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

Architecture and Engineering (A&E) = \$31,797.21
Remaining Vegetation Clearance Cost = \$3,414,307.59
Hazard Mitigation Total Cost = \$3,446,104.80

(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 is **\$3,446,104.80** (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 **\$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**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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 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), IRC, 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.

- "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"
- "FAASVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf"
- "Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"
- "IWBCA HMP Package.pdf"
- "PN727608-San JuanRegion1-Assesment Report.pdf"
- "PN727608-115kV-San Juan.kmz"
- "*PN727608-DR4339PR-HMCE-20251114-RIBR.xlsx*"
- "PN727608-DR4339PR-HMP-20251121-RIBR.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$1,017,183.38	Uncompleted
3510	1	Lump Sum	(\$9,385.55)	Uncompleted

CRC Gross Cost	\$1,007,797.83
Total 406 HMP Cost	\$3,446,104.80
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$4,453,902.63
Federal Share (90.00%)	\$4,008,512.37
Non-Federal Share (10.00%)	\$445,390.26

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.

Olga Renta, PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 1 San Juan TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Region 1 San Juan TL - 115kV] (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 [Region 1 San Juan TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/16/2025 7:18 PM PST

Review Comments

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. Therefore, the total cost (PA) for this project will be \$1,007,797.83. 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 FAASt Grant. Hazard Mitigation Total Cost=\$ 3,446,104.80. Reviewed, found eligible and reasonable. Subrecipient is responsible for compliance with all grants and subgrant conditions. CLG 12/16/2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/18/2025 3:33 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 \$4,453,902.63 for subaward number 107899 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$4,008,512.37	90%	Accepted	4339DRPRP01078991

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

v0

General Info

Project #	727657	P/W #	107900	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 5 Mayaguez TL - 115kV] (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #661270; FAASt [Region 5 Mayaguez Transmission - 115kV] (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 5 Mayaguez Transmission - 115kV
- **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

661270 FAASt [Region 5 Mayaguez Transmission - 115kV] (Vegetation)

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 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 Region 5 Mayaguez Transmission - 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. See document FAASTVegetationHMPApproach_115-230kVTrans_20250805.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 \$577,718.50.

D#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
661270	\$71,987.50	8.10	\$583,098.75	\$(5,380.25)	\$577,718.50

Work to be Completed: \$583,098.75

A&E Deduction (Global A&E FAAST 335168): - 5,380.25

Project Total: \$577,718.50

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 727657 FAAST Region 5 Mayaguez TL – 115kV (Vegetation) DSOW.V2.pdf
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

Change History

Date	Change Description
11/21/2025	Cost per mile adjusted based on IEP, determination. See PN727572 IEP determination letter.
09/12/2025	Original HMP

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 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 FAAsT 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).

Mayagüez Transmission Lines – 115kV

This is a Group project for 115kV transmission lines within Region 5 Mayagüez. 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 Mayagüez (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 \$71,987.50/ mile calculation represents the 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 8.10 miles, with a total project cost of \$583,098.75. For further details, refer to the document "*FAASTVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf*."

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

PN727657 FAAST [Region 5 Mayagüez TL - 115kV] (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 5 Mayagüez 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 (NE SC) 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, NE SC 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:

Recommended Easement width for overhead

Transmission & Sub-Transmission Lines (feet)

Construction type	AREA	VOLTAGE		
		38	115	230
Single Circuit	UBAN	25 FT	30 FT	40 FT
	RURAL	50 FT	100 FT	100 FT
Double Circuit, Same Structure	URBAN	25 FT	40 FT	60 FT
	RURAL	50 FT	100 FT	100 FT
Double Circuit, Different Structure	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 emphasize, that after work completed, the subrecipient can submit additional eligible vegetation clearance distance not included in this vegetation clearance percent analysis.

FEMA Analysis:

Feeder	Total Miles	Vegetation Miles	Per Cent of Vegetation
36700-MAYAGUEZ TC-MAYAGUEZ GP-	0.82	0.20	24.60%
36700-SAN SEBASTIAN TC-MAYAGUEZ TC-	13.06	3.78	28.92%
37100-ACACIAS TC-SAN GERMAN TC-	12.16	0.27	2.23%
37200-AÑASCO TC-VICTORIA TC-	7.30	0.80	10.97%
37200-MAYAGUEZ GP-MAYAGUEZ TC-	1.64	0.73	44.79%
37200-MAYAGUEZ TC-AÑASCO TC-	4.80	0.80	16.76%
39100-VICTORIA TC-MORA TC-	8.69	0.00	0.00%
39800-MAYAGUEZ GP-ACACIAS TC-	13.90	0.76	5.50%
PN727657 - Vegetation Spans/Mayaguez	62.364	7.36	11.80%
Completed Miles:	62.364		
Total Miles with vegetation:	7.36		
Percent of Vegetation:	11.80%		
Buffer Acceptance	10.00%		
Total Miles with Vegetation plus Buffer:	8.10		
Percent of Vegetation with Buffer:	12.99%		

Cost Summary:

The Hazard Mitigation Proposal is divided in 1 each Sub-Project: DI#661270; FAASt [Region 5 Mayagüez Transmission - 115kV (Vegetation)]. **The total HMP Cost is the HM Net Cost (\$1,881,403.93) + Applicant A&E, Management & General Conditions (\$94,070.16) = \$1,975,474.09.**

(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>
Hazard Mitigation Total Cost per Mile =	\$243,885.69 /
Project Total Miles with Vegetation:	7.36-
Buffer Acceptance	
Vegetation Miles with Buffer	<u>8.10-r</u>
Hazard Mitigation Total Cost =	\$1,975,4

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.³

Total Net Hazard Mitigation Cost (Base Cost) =	\$1,881,
+ HM (Management & General Conditions Factors) =	<u>\$94</u>
Hazard Mitigation Total Cost =	\$1,975

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

Architecture and Engineering (A&E) =	\$18,
Remaining Vegetation Clearance Cost =	<u>\$1.957</u>

Hazard Mitigation Total Cost =	\$1,975
--------------------------------	---------

(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 2 is **\$1,975,474.09** (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:

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**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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. *“PN727657-MayaguezRegion2-202501102-COD.pdf”*
6. *“PN727657- 115KV Mayaguez.kmz”*
7. *“727657-DR4339PR-HMCE-20251114-RFP.xlsx”*

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$583,098.75	Uncompleted
3510	1	Lump Sum	(\$5,380.25)	Uncompleted

CRC Gross Cost	\$577,718.50
Total 406 HMP Cost	\$1,975,474.09
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$2,553,192.59
Federal Share (90.00%)	\$2,297,873.34
Non-Federal Share (10.00%)	\$255,319.25

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.

Insurance

Additional Information

11/24/2025

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 [Region 5 Mayaguez TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 5 Mayaguez TL - 115kV] (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.
- 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.

- PLEASE DISREGARD PREVIOUS CONDITIONS
- 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 [Region 5 Mayaguez TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/02/2025 4:54 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 12/02/2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/02/2025 10:23 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

Award Information

Version Information

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

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	3/1/2026	\$2,297,873.34	90%	Accepted	4339DRPRP01079001

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	727659	PW #	107901	Project Type	Specialized
Project Category	F - Utilities	Applicant		Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [Region 2 Arecibo TL - 115kV] (Vegetation)			Event	4339DR-PR (4339DR)
Project Size	Large	Declaration Date		Declaration Date	9/20/2017
Activity Completion Date	9/20/2027	Incident Start Date		Incident Start Date	9/17/2017
Process Step	Obligated	Incident End Date		Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #661272; FAASt [Region 2 Arecibo Transmission - 115kV] (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 2 Arecibo Transmission - 115kV
- **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

661272 FAASt [Region 2 Arecibo Transmission - 115kV] (Vegetation)

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 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-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 Region 2 Arcibo Transmission - 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. See document FAAStVegetationHMPApproach_115-230kVTrans_20250805.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 \$953,592.14.

DI #	PA Vegetation Clearance Overlap per mile	Total Mile	WTBC – PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
661272	\$71,987.50	13.37	\$962,472.88	\$(8,880.74)	\$953,592.14

Work to be Completed: \$962,472.88

A&E Deduction (Global A&E FAASt 335168): - \$8,880.74

Project Total: \$953,592.14

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 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 727659 FAASt Region 2 Arcibo TL - 115kV (Vegetation) DSOW.V2
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: 727659; FAASt [Region 2 - Arecibo TL - 115 kV] (Vegetation)

Damage #: 661272; FAASt [Region 2 Arecibo Transmission - 115kV] (Vegetation)

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

Location: Arecibo, Puerto Rico

GPS Latitude/Longitude: [REDACTED]

Change History

HMP Change History	
Date	Change Description
11/21/2025	Cost per mile adjusted based on IEP, determination. See PN727659 IEP determination letter.
09/11/2025	Original HMP

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 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 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. 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 – Bayamón
- 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:

- 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).

Arecibo Transmission Lines – 115kV

This is a Group project for 115kV transmission lines within Region 2 Arecibo. 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 Arecibo (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.

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, \$71,987.50 / mile calculation represents the 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 13.37 mile, with a total project cost of \$962,472.88. For further details, refer to the document "FAAStVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf."

(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 2 Arecibo 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 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 Circuit/	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:

Feeder	Total Miles	Vegetation Miles	Per Cent of Vegetation
36500	3.33	0.49	14.56%
37400	9.78	2.49	25.44%
37400	6.96	2.36	33.86%
37400	8.71	2.52	28.90%
37400	8.78	2.79	31.78%
37400	4.61	0.57	12.29%
39100	6.63	0.12	1.82%
40800	2.29	0.40	17.63%
41100	0.36	0.00	0.00%
41300	1.73	0.42	24.20%

Arecibo Spans 53.20 12.15 22.84%

Completed Miles: 53.20
 Total Miles with vegetation: 12.15
 Percent of Vegetation: 22.84%
 Buffer Acceptance 10.00%
 Total Miles with vegetation plus Buffer: 13.37
 Percent of Vegetation with Buffer: 25.13%

(III) Hazard Mitigation Proposal (HMP) Cost:

Vegetation Clearance Cost per Mile (Base Cost) = \$300,831.61 / mile
 Vegetation Risk Factor per Mile (5%) = \$15,041.58 / mile
 Vegetation Clearance Cost per Mile (w/5%) = \$315,873.19 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$71,987.50 / mile)

Hazard Mitigation Total Cost per Mile = \$243,885.69/ mile

Project Total Miles with vegetation = 12.15 miles
 Buffer Acceptance 10%
 Vegetation Miles with Buffer 13.37 miles

Hazard Mitigation Total Cost = \$3,260,751.68

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.

Total Net Hazard Mitigation Cost (Base Cost) =	\$3,105,477.84
+ HM (Applicant A&E, Management & General Conditions) =	<u>\$155,273.84</u>
Hazard Mitigation Total Cost =	\$3,260,751.68

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

Architecture and Engineering (A&E) =	\$30,086.96
Remaining Vegetation Clearance Cost =	<u>\$3,230,664.72</u>
Hazard Mitigation Total Cost =	\$3,260,751.68

(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 is **\$3,260,751.68** (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 **\$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 FAASVegetationHMPApproach_Distribution_08.05.2025.pdf), the final total is **\$243,885.69 / mile**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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 underun 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 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.

ATTACHMENTS:

Please refer the following documents.

- "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"
- "FAAStVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf"
- "Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"
- "IWBCA HMP Package.pdf"
- "PN727659-AreciboRegion2-20250902-JIIR.pdf"
- "PN727659-115kV-Arecibo.kmz"
- "PN727659-DR4339PR-HMCE-20251121-JIIR.xlsx"
- "PN727659-DR4339PR-HMP-20251121-JIIR.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$962,472.88	Uncompleted
3510	1	Lump Sum	(\$8,880.74)	Uncompleted

CRC Gross Cost	\$953,592.14
Total 406 HMP Cost	\$3,260,751.68
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$4,214,343.82
Federal Share (90.00%)	\$3,792,909.44
Non-Federal Share (10.00%)	\$421,434.38

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

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 727659

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

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

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated

The amount of Anticipated Insurance Reduction applied for Project: \$0.00

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #661272:

FAASt [Region 2 Arecibo Transmission - 115kV] (Vegetation)

Location Description: Region 2 Arecibo Transmission - 115kV

GPS Coordinates: XXXXXXXXXX

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: Uninsured

SOV / Schedule Amount: \$0.00

Applicable Deductible Amount: \$0.00

Damage Inventory Amount: \$4,214,343.82 (CRC Gross Cost \$953,592.14 + HMP Cost \$3,260,751.68)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$193,746,436.00 was applied to FFAST project #136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters" file.

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for FFAST [Region 2- Arecibo Transmission - 115kV] (Vegetation) because facility does not meet the definition of building, equipment, contents, or vehicle.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.
2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.
3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).
- ...
5. If an applicant has an insurance requirement from a previous event:
 - a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.
 - b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

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

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 2 Arcibo TL - 115kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Region 2 Arcibo TL - 115kV] (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 [Region 2 Arcibo TL - 115kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/02/2025 4:56 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
12/02/2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/05/2025 6:52 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$3,792,909.44	90%	Accepted	4339DRPRP01079011

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

v0

General Info

Project #	741105	P/W #	107946	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [All Regions TL - 230kV] (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #920413; FAASt [All Regions Transmission - 230kV] (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** All Regions Transmission - 230kV (Vegetation)
- **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

920413 FAASt [All Regions Transmission - 230kV] (Vegetation)

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 intended 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 intended 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 all-region TL – 230kV (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 Estima Obligation Vegetation HMP Approach:115kV/230kV. See document: FAASTVegetationHMPApproach_115-230kVTrans_20250805.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) = \$64,186.96 per mile. Therefore, the total cost (PA) for this project will be \$2,430,054.31.

D#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
920413	\$64,186.96	38.21	\$2,452,583.74	\$(22,529.43)	\$2,430,054.31

Work to be completed: \$2,452,583.74
A&E Deduction (Global A&E FAAST 335168): - \$22,529.43
Project Total Cost: \$2,430,054.31

Project Notes:

1. This is a 230kV Island wide 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 741105-DR4339PR-PA DSOW FAAST [All Regions TL - 230kV].V1
5. Vegetation clearance funds will not be allocated to SubFAAST projects.
6. This project is part of Donor FAAST 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAAST Project.
7. 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

Project number: 741105 FAAST [All Regions TL - 230kV] (Vegetation) 406 Hazard Mitigation Proposal

Damage #: #920413; FAAST [All Regions Transmission - 230kV] (Vegetation)

Change History

HMP Change History	
Date	Change Description
11/20/2025	Document was reviewed to incorporate the cost changes recommended by the IEP to 230KV transmission project
10/01/2025	Original HMP

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 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 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 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 – Bayamón
- 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:

- 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 FAAsT 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 DSOWs 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).

Transmission Lines – 230kV

This is a Group F project for all 230 kV transmission lines on the island. The DSOW reflects the scope of work and estimated cost of vegetation clearing, which aims to mitigate the threat that existing vegetation along the 230 kV lines poses to Puerto Rico's electrical 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, servient 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, \$273,639.13 / 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 FAAS documents and determined that vegetation clearing on each mile of 230 kV line requiring repair was on average 19% related to the repair (428 PA) and 81% related to a mitigation measure (406 HM). The fixed-cost estimate for the PA scope is **\$64,186.96** per **38.21** mile, with a total project cost of **\$2,335,793.73**. For further details, refer to the document "FAASVegetationHMPApproach_115-230kVTransmission_08.05.2025.pdf."

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

PN741105; FAAS [All Regions Transmission - 230kV] (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 all the 230 TL across the island 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:

Recommended Easement width for overhead Transmission & Sub-Transmission Lines (feet)				
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 Circuit, Same Structure	Urban	25 ft	40 ft	60 ft

	Rural	50 ft	100 ft	100 ft
Double Circuit, Different Structure	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-“FAASVegetationHMPApproach_115-230kV Trans_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 230V Assessment & Methodology:

LUMA documentation claims a 100% clearance for 402.54 circuit miles of vegetation along (13) – 230KV for the entire project segment, as showed below:

LineID	Line Number	Region/Group	Project Miles	Start_X_Coord	Start_Y_Coord	End_X_Coord	End_Y_Coord
50100-CAMBALACHE GP-MANATI TC-	50100	Arecibo F	20.08	██████████	██████████	██████████	██████████
50200-COSTA SUR SP-MANATI TC-	50200	Bayamon F	36.79	██████████	██████████	██████████	██████████
50200-MANATI TC-BAYAMON TC-	50200	Bayamon F	36.79	██████████	██████████	██████████	██████████
50300-AGUIRRE SP-COSTA SUR SP-	50300	Ponce F	40.3	██████████	██████████	██████████	██████████
50400-COSTA SUR SP-MAYAGUEZ TC-	50400	Ponce F	30.47	██████████	██████████	██████████	██████████
50500-MAYAGUEZ TC-MORA TC-CAMBALACHE GP	50500	Arecibo F	46.93	██████████	██████████	██████████	██████████
50600-PONCE	50600	Ponce F	27	██████████	██████████	██████████	██████████
50700-AES PUERTO RICO-YABUCA TC-	50700	Ponce F	27	██████████	██████████	██████████	██████████

50800-SABANA LLANA TC- YABUCOA TC-	50800	Caguas F	32.78	████████	████████	████████	████████
50900-AGUAS BUENAS TC- BAYAMON TC-	50900	Bayamon F	22.33	████████	████████	████████	████████
51000-AGUIRRE SP-AGUAS BUENAS TC-	51000	Caguas F	12.33	████████	████████	████████	████████
51100- ECOELECTRICA CC-COSTA SUR SP-	51100	Ponce F	2.28	████████	████████	████████	████████
51200-COSTA SUR SP- CAMBALACHE GP-	51200	Arecibo F	37.12	████████	████████	████████	████████
51300-COSTA SUR SP-PONCE TC-	51300	Ponce F	10.98	████████	████████	████████	████████

This analysis would not be considered as the method for validation purposes, 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 HMSpecialist 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. Additionally, the DR4339-PR leadership has approved the application of a 10% Buffer Acceptance to mitigate appreciation error in the hazard mitigation assessment to calculate vegetation miles. 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.

Feeder	Total Miles	Vegetation Miles	%Of Vegetation
Arecibo -140.91 Miles	140.91	9.32	6.61%
50100	20.08	5.66	28.20%
50200	36.79	2.51	6.81%
50500	46.93	0.41	0.88%
51200	37.12	0.73	1.98%
Bayamon - 41.30 Miles	41.30	4.28	10.36%
50200	30.47	1.90	6.24%
50900	10.83	2.38	21.97%
Caguas - 94.84 Miles	94.84	11.54	12.17%
50800	32.78	5.66	17.27%
50900	23.37	1.19	5.08%
51000	38.69	4.69	12.13%
Ponce - 125.49 Miles	125.49	9.60	7.65%
50300	40.30	2.22	5.51%
50400	33.80	1.14	3.37%
50600	0.14	0.00	0.00%
50700	37.98	5.18	13.63%
51100	2.28	0.00	0.00%
51300	10.98	1.06	9.64%
[741105] FAASt [All Regions TL - 230kV] (Vegetation)	402.54	34.74	8.63%
Completed Miles:	402.54		
Total Miles with vegetation:	34.74		
Percent of Vegetation:	8.63%		
Buffer Acceptance	10.00%		
Completed Miles with Buffer:	38.21		

FEMA Duplication Analysis

Every project is evaluated for convergence between Distribution and Transmission lines (Overlapped Distribution and Transmission Lines), which typically share poles among different voltages. In cases where overlapped T&D systems are allocated on the same pole, the highest voltage will determine the Vegetation

Clearance requirements for that facility. A full review of this analysis will be included in the cost estimation of the project. For **PN741105; FAASt [All Regions Transmission - 230kV] (Vegetation)** the sub-grantee claimed a total length of **402.54** circuit miles (CM). After analysis, we don't identify duplicity among same voltage transmission lines.

(III) Hazard Mitigation Proposal (HMP) Cost:

¹ Vegetation Clearance Cost per Mile (Base Cost) =	\$321,739.13
Risk Factor approved by the DR4339-PR leadership (5%) =	\$18,700.00
Vegetation Clearance Cost per Mile (w/Soft Cost) =	\$337,826.09
² PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$64,186.96 /
Hazard Mitigation Total Cost per Mile =	\$273,639.13
Project Total Miles with Vegetation:	34.74-
Buffer Acceptance	
Vegetation Miles with Buffer	38.21-
Hazard Mitigation Total Cost =	\$10,455,7

Note: The \$318,087.00 / 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.³

Total Net Hazard Mitigation Cost (Base Cost) =	\$9,95
+ HM (Management & General Conditions Factors) =	\$497
Hazard Mitigation Total Cost =	\$10,455

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

Architecture and Engineering (A&E) =	\$96
Remaining Vegetation Clearance Cost =	\$10,359

Hazard Mitigation Total Cost =

\$10,455,751.16

Cost Summary:

The Hazard Mitigation Proposal is divided in \$9,957,858.43 1ea Sub-Project: DI# 920413; FAASt [All Regions Transmission - 230kV] (Vegetation) The total HMP Cost is the HM Net Cost (\$10,568,786.27) + Applicant A&E, Management & General Conditions (\$497,892.73) = \$10,455,751.16.

(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 HMP 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 **\$10,455,751.16** (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:

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 **\$321,739.13 / mile**. Additionally, the DR4339-PR leadership has approved the application of a **5%** risk factor to the average cost per mile, resulting in **\$337,826.09 / mile**. After deducting Public Assistance (PA) \$64,186.96 amount (incidental work-refer to document FAAStVegetationHMPApproach_115-230kV Transmission_08.05.2025.pdf), the final total obligated amount through PA 406 is **\$273,639.13 / mile**.

Additionally, the DR4339-PR leadership has approved the application of a **10% Buffer Acceptance** to mitigate appreciation error in the 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) 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 HMSOW (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 if 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 Trans_20250805.pdf"*
3. *"Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"*
4. *"IWBCA HMP Package.pdf"*
5. *"PN741105-230KV-Report-20250924-REG.pdf"*
6. *"PN741105-230KV.kmz"*
7. *"PN741105-DR4339PR-HMCE-20251118-REG-JIIR.xlsx"*

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$2,452,583.74	Uncompleted
3510	1	Lump Sum	(\$22,529.43)	Uncompleted

CRC Gross Cost	\$2,430,054.31
Total 406 HMP Cost	\$10,455,751.16
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$12,885,805.47
Federal Share (90.00%)	\$11,597,224.93
Non-Federal Share (10.00%)	\$1,288,580.54

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.
- 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.
- 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 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

11/20/2025

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 741105

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Incident Name: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

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

The amount of the deductible being funded in this project is \$0.00

The amount of the deductible previously funded in other projects is \$25,000,000.00

Final Insurance Settlement Status: Insurance proceeds for this project are anticipated.

The amount of Anticipated Insurance Reduction applied for Project: \$0.00.

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #920413:

FAASt [All Regions Transmission - 230kV] (Vegetation)

Location Description: All Regions Transmission - 230kV

GPS Coordinates: XXXXXXXXXX

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: Not Insured

SOV / Schedule Amount: \$0.00

Applicable Deductible Amount: \$0.00

Damage Inventory Amount: \$12,885,805.47 (CRC Gross Cost \$2,430,054.31 + HMP Cost \$10,455,751.16)

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project. An anticipated insurance reduction of \$275,000,000.00 was applied to FFAST project #136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters.pdf" file.

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for "FAAST [All Regions Transmission - 230kV] (Vegetation)" because facility does not meet the definition of building, equipment, contents, or vehicle.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.
2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.
3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

...

5. If an applicant has an insurance requirement from a previous event:

- a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.
- b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

Gregory Berrios Torres, PA Insurance Specialist,

CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAAST [All Regions TL - 230kV] (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [All Regions TL - 230kV] (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 [All Regions TL - 230kV] (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 12/02/2025 4:59 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 12/02/2025

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/05/2025 5:12 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$11,597,224.93	90%	Accepted	4339DRPRP01079461

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

v0

General Info

Project #	746309	PW #	107959	Project Type	Specialized
Project Category	F - Utilities	Applicant		Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [Automation Program Group 30] (Distribution)			Event	4339DR-PR (4339DR)
Project Size	Large	Declaration Date		Declaration Date	9/20/2017
Activity Completion Date	9/20/2027	Incident Start Date		Incident Start Date	9/17/2017
Process Step	Obligated	Incident End Date		Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #1302760; FAASt [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Transmission and Distribution Automation Program Installation of Intelligent Reclosers, Single Phase Reclosers and Fault Current Indicators Group 30
- **Facility Description:** Transmission and Distribution Automation Bayamon Feeder 9203 - FY24
- **Approx. Year Built:** 1980
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

1302760 **FAASt [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution)**

5.0 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 SOW defines the activities that will be performed using Public Assistance (“PA”) funding and it may include § 406 hazard mitigation proposals (“HMPs”).

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 746309 Automation Program Group 30 (Distribution) 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. LUMA is seeking approval from COR3 and FEMA for PA funding for the scope described in this document.

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 provide the necessary consent for LUMA, as agent of PREPA, to undertake work in connection with any Federal Funding requests related to the 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.

6.0 PROJECT DESCRIPTION

As part of the electrical grid rebuild, LUMA developed a Transmission & Distribution Automation Program (“Program”) through which it will install advanced technology equipment (*i.e.*, reclosers and communicating fault current indicators (cFCIs)) to reduce both physical damage and service interruptions to the electrical grid caused by disasters. Although the intent is to deploy automation equipment throughout PREPA’s transmission and distribution (“T&D”) system, the Program will be implemented through multiple projects across the island on both T&D systems. The multiple projects within this Program are designed to fortify the electrical system’s resilience, safeguard its infrastructure, and enhance service reliability during a disaster. The individual projects are interconnected and enhance each other, but each confers benefits independently. Automation is necessary to add modern resiliency capabilities to the T&D system. The 3.2 million Residents throughout Puerto Rico are dependent upon the successful completion of the Program and its ability to sustain the power grid in future disasters.

Project 746309 is one of the Program’s distribution-level projects. It installs hardened poles and advanced technology equipment (specifically reclosers and cFCIs) to reduce physical damage and service interruptions to the distribution grid that could be caused by a disaster. Implementing reclosers, their communication kits, and cFCIs is critical for the Energy Management System (“EMS”) and related components to function at their full capabilities and mitigate loss of service and physical damage in the event of future hurricanes. This project is necessary for the EMS to maintain the continuity of the distribution power grid on Feeders 9203-03.

Key components of this project are: (1) pole replacement, (2) the three-phase reclosers and single-phase reclosers, and (3) the installation of cFCIs. Each of these components and their benefit to the grid are described further below:

(1) Pole Replacement to Accommodate the Installation of Reclosers

The addition of three-phase reclosers imposes additional load on poles due to the weight of the devices and their components. It also increases the area exposed to extreme weather conditions, such as hurricanes, thereby increasing the structural load requirements these poles must meet. Where an existing pole cannot accommodate a recloser, it will be substituted with a higher-class pole constructed from steel or concrete to ensure compatibility with the recloser and adherence to design criteria. This includes adjacent poles (*i.e.*, poles that are on either side of the recloser pole supporting the overhead line conductors). Any new structure and foundation will be designed to LUMA design criteria and industry standards to support the pole, recloser, and its attachments.

In addition, LUMA is using a per-location approach to pole replacement because of the intricate dynamics of deploying three-phase reclosers. Furthermore, the integration of more connections, switches, and related infrastructure often necessitates taller poles to meet phase spacing and circuit-to-circuit spacing requirements. The locations of three-phase reclosers are determined by an electrical analysis performed by the design engineers. In those instances where the recloser would be located on an existing wood pole, that pole will be replaced with a pole that meets the compounded structural demands presented by that recloser.

(2) Feeder Reclosers

Reclosers are sophisticated devices that remotely detect faults within distribution lines, enable the isolation of circuit breakers linked to those faults—whether due to independent failures or breakdowns—and facilitate the swift restoration of power, often within milliseconds. This project will install three-phase and single-phase reclosers.

Three-Phase Recloser: A three-phase recloser is a protection device that is used on three-phase distribution feeders with high fault currents at the location. It is a single device with three switches that can open to interrupt fault currents and automatically reclose to restore power. Three-phase reclosers are communication-ready to enable remote control and visualization. The recloser’s wireless communication capability will provide connectivity to LUMA’s EMS so the system operator knows their status and can remotely control them. Deployment of the wireless communication devices includes configuration, testing, and commissioning of the wireless communication device, all networking devices, data acquisition, and control systems that form the connectivity path of the recloser to the EMS.

The implementation of three-phase reclosers will preserve the continuity of electric services and avoid physical damage by preempting or minimizing disruptions. The three-phase reclosers can be triggered remotely and provide data back to the operations center, enabling LUMA to prioritize restoration activities, reduce customer outage time, and minimize the potential for cascading infrastructure damage. Installation of the three-phase reclosers and associated hardware is critical for the EMS and associated components to function with full capabilities, and to prevent loss of service and potential damage from future disasters. In this project we are installing three three-phase reclosers.

Single-Phase Reclosers: A single-phase recloser is a single protection device with one switch that can open to interrupt fault currents and automatically reclose to restore power. A single-phase recloser performs the same functions as a three-phase recloser, but it does not have the ability to communicate with the EMS. This project will install single-phase reclosers on single-phase or two-phase distribution feeder and distribution lines branching from the feeder. Single-phase reclosers will also be used on feeders with three phases if fault currents are low at the location. In this project we are installing a total of two single-phase reclosers.

(3) Communicating Fault Current Indicators

Installation of communicating fault current indicators (“cFCI”) at strategic locations improves the outage management, restoration, and recovery process, specifically by decreasing the time required to detect and locate faults. The cFCIs operate independently of the feeder reclosers and help identify permanent and incipient faults in the distribution system, as well as collect voltage and current data, which can be used to detect system imbalance, prevent future issues due to harmonics and help in building a predictive failure model.

Data sent to the EMS aids the grid operator in making decisions that avoid outages and speed restoration. The cFCI can be programmed to send automatic notification/alerts based on user-set parameters. This allows for quick dispatch of field crews to specific sections of the feeders and to reduce the total restoration time during an outage event and to prevent physical damages.

Installation of the three-phase reclosers and the communicating fault current indicators (communications ready) is critical for the EMS to efficiently mitigate the loss of service and potential damage in future disasters.

This project's scope does not contain fiber optics or communication capability that is included in other projects. This project is distinguishable from projects that include fiber optics as these feeders are using cellular technology for communications with the operations center. LUMA has developed this scope for cFCIs, reclosers, and their associated hardware only. The lack of fiber optics as a method of transmitting information in this scope of work does not prevent or limit the monitoring capabilities of the reclosers and cFCI or the automation capabilities of the reclosers on this feeder, nor does it prohibit the incorporation of fiber optics at a later date.

7.0 FACILITIES

7.1 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:

- None

7.2 FACILITIES LIST – OTHER FACILITIES

The following list includes the name and GPS coordinates identifying the areas of work for other types of facilities. For any access roads or other line work, the coordinates listed below are the beginning and end points.

A. Facilities for Automation Group 30 Feeder Lines

Name	Feeder Number	GPS Start	GPS End
Bayamon	9203-03	[REDACTED]	[REDACTED]
		[REDACTED]	[REDACTED]

Note: Please refer to APPENDIX B - Project Considerations for a list of all GPS locations that this project will impact.

B. Staging Area

All materials will be stored and dispatched from the existing LUMA Regional Warehouses. The warehouse assigned is the Toa Baja District Warehouse, whose address is 165 Street, 30.5 KM, Palo Seco Ward, Toa Baja, PR. Coordinates are [REDACTED]. Staging area will be in an existing Carolina Warehouse, whose coordinates are [REDACTED].

8.0 PROJECT AREA MAP WITH BOUNDARIES OF CONSTRUCTION

A map of the project area is not available at this time. The proposed type of work for this project:

9.0 SECTION 428 SCOPE OF WORK

The proposed type of work for this project:

X 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** ____.

9.1 DESCRIPTION OF PROPOSED WORK TO BE PERFORMED

Below is a list of the "Proposed 428 Public Assistance Scope of Work" proposed for feeders of this group.

FID	Coordinates Lat./ Long	Existing (Remove)	428 Replacement	Scope of Work
24581786	[REDACTED]	(CP-C1)	(CP-C1)	<ul style="list-style-type: none"> Remove, dispose, and replace side neutral, tangent, pole ground and overhead assembly. Install a double dead-end angle crossarm.
4927581	[REDACTED]	(40' CLASS 2 WOOD POLE) (CP-C6-XARM)	(50' GALVANIZED ROUND TAPERED POLE) (CP-C6-XARM)	<ul style="list-style-type: none"> Remove and dispose 40' Class 2 wood pole. Replace with 50' Galvanized Round Tapered Pole. Remove, dispose, and replace (2) downguys. Remove, dispose, and replace (1) angle crossarm. Remove, dispose, and Replace Street Light (LED type). Remove, dispose, and replace the triplex dead-end service drop. Remove, dispose, and replace triplex dead-end angle crossarm.
		(K-7-2 A)	(K-7-B)	
		(STL-10)	(STL-10)	
		(E-1-2-3 QTY=2)	(E1-2-3 (QTY=2))	
		(F-1-3(QTY=2))	(F-4-2(QTY=1))	
4928391	[REDACTED]	(40' CLASS 4 WOOD POLE)	(50' GALVANIZED ROUND TAPERED POLE)	<ul style="list-style-type: none"> Remove and dispose 40' Class 4 Wood Pole. Replace with 50' Galvanized Round Tapered Pole. Remove, dispose, and replace the insulator, neutral, tangent, pole ground and overhead assembly. Remove, dispose, and replace Street Light (LED type). Install a double dead-end angle crossarm.
		(CP-C1)	(CP-C1)	
		(STL-10)	(STL-10)	
		(K-7-B)	(K-7-B)	
		(K-5)		
4927453	[REDACTED]	(FUSES (QTY=3))	LABOR	<ul style="list-style-type: none"> Remove, dispose and replace (3) fuses.
4928119	[REDACTED]	(FUSES (QTY=3))	LABOR	<ul style="list-style-type: none"> Remove and dispose (3) fuse cutouts.
4928393	[REDACTED]	(FUSES (QTY=3))	LABOR	<ul style="list-style-type: none"> Remove, dispose and replace (3) fuses.

FID	Coordinates Lat./ Long	Existing (Remove)	428 Replacement	Scope of Work
4928621		(FUSES (QTY=3))	LABOR TO REMOVE	· Remove, dispose and replace (3) fu
4927203		40' CLASS 3 WOOD POLE	50' GALVANIZED ROUND TAPERED POLE	· Remove and dispose of 40' Class 3 \\ Replace with 50' Galvanized Round Ta · Remove, dispose and replace three Single dead-end angle crossarm.
		(CP-C5-XARM)	(CP-C5-XARM)	· Remove, dispose and replace two-p Single dead-end angle crossarm.
		(CP-B5-XARM)	(CP-B5-XARM)	· Remove, dispose and replace Stree type).
		(STL-10)	(STL-10)	· Remove, dispose and replace 37.5K (4.8/8.32KVA-120/240V) transformer.
		(E-1-2-3 (QTY=2))	(E-1-2-3 (QTY=2))	· Remove, dispose and replace (2) an
		(F-4-2(QTY=1))	(F-1-3(QTY=2))	· Remove, dispose and replace (2) fu cutouts.
		(37.5KVA,4.8/ 8.32KVA 120/240V)	(37.5KVA, 4.8/8.32KVA 120/240V)	
		(FUSES QTY=2)		
4927241		(FUSES (QTY=1))	LABOR TO REMOVE	· Remove and dispose (1) fuse cuto
			FUSES	
Segment FID 11943125		NONE	(LABOR, FCI=3)	· Install (3) Fault Current Indicators.
Segment FID 1001572035		NONE	(LABOR, FCI=3)	· Install (3) Fault Current Indicators.

Notes regarding Proposed Work

1. Remove and replace poles, including hardware in the same location. If unable to install the replacement in the same location, the pole will be installed within the right-of-way for overhead distribution lines. Right-of-ways are established with the purpose of providing LUMA reasonable access to its facilities, in order to maintain, repair, improve, operate, and expand facilities, among other things (LUMA's Overhead Electrical Distribution System Manual §3.1).
2. Three existing wood poles are to be replaced by galvanized tapered poles, at the locations identified in the table above. Refer to APPENDIX B - Project Considerations, column B (soil area and depth impact) for the depths of the galvanized tapered poles.
3. New guy wires and anchors are to be installed within the right of way for guys (LUMA's Overhead Electrical Distribution System Manual §3.1). The maximum distance an anchor will be installed for a 50ft pole is 25ft from the base of the pole, within the right-of-way for guys.
4. Existing overhead conductors, poles, assemblies, and attached components will be disconnected, removed, and replaced as outlined in the Scope of Work column in the table above. When existing overhead conductor, assemblies, and attached components are not being replaced, they will be re-attached to the pole to complete the scope of work.

9.2 CODES & STANDARDS

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

- A. LUMA Overhead Electrical Distribution System Manual 4301.001 version 4, available in Grants Portal - Applicant Event Profiles.
- B. Consensus-based codes, per FEMA's Public Assistance Alternative Procedures (Section 428) Guide for Permanent Work

C. 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.

D. FEMA Recovery Interim Policy FP-104-009-11 Version 2.1, Consensus-Based Codes, Specifications, and Standards for Public Assistance.

E. LUMA'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 (December 20, 2019).

10.0 SECTION 406 HAZARD MITIGATION PROPOSAL

10.1 § 406 HAZARD MITIGATION OPPORTUNITY

FEMA’s § 428 Alternative Procedures Guide for Permanent Work in Puerto Rico (v.3) states that FEMA will “encourage the concepts of regional infrastructure resiliency” and “provide mitigation opportunities that leverage innovative and renewable technologies.”¹ The § 428 Alternative Procedures are intended to allow subrecipients and FEMA “to prioritize the provision of funding for eligible permanent work in ways that best meet the recovery needs of impacted communities” and provide “flexibility in the use of funds.”² The Guide emphasizes the importance of mitigation measures “to improve resilience of disaster-damaged facilities from future, similar damage to the facilities.”³ FEMA defines hazard mitigation as “any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards and their effects.”⁴

LUMA proposes to add feeder reclosers (single and three-phase) and communication fault current indicators (“cFCI”) to this project to improve the resiliency of the T&D systems against future hurricane damage and its effects. The Distribution Automation program will add approximately a total of 4,000 three-phase reclosers, 15,000 single-phase reclosers, and 11,000 cFCIs across the island. Currently there are less than 50 reclosers on the system and not all of them are operational. The addition of feeder reclosers and cFCIs will reduce the potential for widespread loss of service during a disaster event and prevent physical damage, mitigating the negative effects of a future, similar disaster.

Feeder reclosers will improve system resiliency. LUMA requests 406 hazard mitigation funding for three (3) three-phase reclosers, three (3) radio communication kits for those reclosers, and two (2) single-phase reclosers, as described in the table below:

§ 406 Hazard Mitigation Measure	Quantity	FID	Coordinates
Three-phase recloser A	1	Pole FID 24581786	
Radio communication kit for three-phase recloser	1	Pole FID 24581786	
Three-phase recloser B	1	Pole FID 4927581	
Radio communication kit for three-phase recloser	1	Pole FID 4927581	
Three-phase recloser C	1	Pole FID 4928391	

Radio communication kit for three-phase recloser	1	Pole FID 4928391	
Single-phase recloser	2	Pole FID 4927203	

Feeder reclosers have microprocessors that monitor the voltage and current on a feeder line to determine whether the recloser should take action to protect the function of that feeder. They protect the feeder line by stopping temporary line faults from causing an extended outage. An example of a temporary line fault is vegetation touching a power line for a brief period of time. When a feeder recloser detects this type of fault it automatically opens the circuit (briefly stopping the flow of electricity to allow the disturbance to resolve) and then rapidly recloses to restore power. It has been observed that approximately 70% of faults are temporary. This action reduces the frequency, duration, and breadth of disaster-related outages, protecting the public safety. Feeder reclosers prevent temporary line faults from turning into an outage, which speeds restoration after a storm or disaster.

When used on a looped circuit, the reclosers can also contain a power outage to a localized area. The two reclosers nearest the fault will open the circuit (briefly stopping the flow of electricity between them) so the outage is contained to a segment of the customers between the two reclosers. Meanwhile, power continues to reach the remaining customers on the feeder line. See illustration below where the yellow lightning bolt is the fault, and the red squares are the reclosers that have opened to contain the outage to the customers in red.

In the same scenario without the reclosers, a larger portion - and potentially all - of the customers served by the feeder would lose power until the fault could be repaired. Thus, feeder reclosers mitigate outages similar to what was experienced during Hurricane Maria by localizing an outage area and preventing cascading outages that can extend the outage time. Power is a critical lifeline. Extended power outages caused by disaster damage like the one after Hurricane Maria have devastating effects on public health and safety. Mitigation measures that reduce the likelihood of extended, wide-ranging outages will also reduce the life-safety risk of disaster damage.

Feeder reclosers will be installed across the distribution feeder system, providing the operations center with outage and loading information across a wide area. The operations center can use this information to prioritize outage restoration across that area. This can reduce customer outage time and consequently decrease the risk of harm to the public and property. The operations center has the ability to remotely control the reclosers, opening and closing specific reclosers, so as to re-energize the greatest number of customers and localize the outage to the customers on a feeder segment between two reclosers. In contrast, under the current system a feeder that experiences a fault will lose power back to the circuit breaker, at the substation, until the cause of the fault is cleared. Until the fault is cleared all customers on the feeder have no power. The fault needs to be identified by visual inspection. Visual inspection takes much longer than clearing a fault remotely. During a disaster, when numerous feeders experience permanent faults, the ability to localize the outage and re-energize the non-damaged segments in minutes instead of hours or days is a significant reduction of risk to public health and safety.

Reclosers also prevent physical damage to the infrastructure by preventing short circuit currents on a fault getting to the main breaker of a feeder. Reclosers play a crucial role in reactively limiting physical damage by isolating electrical faults once they occur. Un isolated electrical faults lead to sustained arcing, causing extensive equipment and property damage. Prolonged faults create ?re and critical public safety risks.

These reclosers are part of a larger system of protection to be implemented through the Distribution Automation program. In addition to the critical facilities, Distribution Automation will protect the electrical grid as a whole, a critical facility that spans all of Puerto Rico. Electrical faults can cause outages that cascade across multiple facilities, regions, or even the entire island, disrupting service for customers and other critical facilities far from any specific distribution circuit. Additionally, faults and outages can cause frequency deviations and increased wear and tear on all components of the grid, including generation, transmission, and distribution facilities, without geographic limitation. Without reliable infrastructure at all stages of electrical generation, transmission, and distribution, Puerto Ricans will be at heightened and increasing risks of sustained outages with severe impacts on public health and safety. Ultimately, localized grid resilience investments benefit all customers, because the interconnected grid as a whole – not any specific distribution or transmission line – serves Puerto Rico. In other words, a recloser in the San Juan region could mitigate the cascading effects that would cause an outage at a hospital or ?re station in Arecibo, and vice versa. DHS recognizes the importance of incorporating resilience into critical infrastructure projects, including “identifying key dependencies and interdependencies and ways in which this critical infrastructure asset, system, or network could impact other components of critical infrastructure systems, whether within the same sector or across sectors” and “mapping potential cascading effects from potential infrastructure disruptions.” See DHS Supplemental Tool: Incorporating Resilience into Critical Infrastructure Projects, [https://www.cisa.gov/sites/default/files/publications/NIPP-2013-Supplement-Incorporating-](https://www.cisa.gov/sites/default/files/publications/NIPP-2013-Supplement-Incorporating-Resilience-into-CI-Projects-508.pdf)

[Resilience-into-CI-Projects-508.pdf](https://www.cisa.gov/sites/default/files/publications/NIPP-2013-Supplement-Incorporating-Resilience-into-CI-Projects-508.pdf). Puerto Rico’s generation, transmission, and distribution systems

must function as a single integrated system to deliver power.

Replacement poles provide the strength required to carry the reclosers and related hardware and withstand hurricane wind speeds. Three existing wood poles will be replaced by 12-sided galvanized steel poles, as identified in the tables in §§ 9.1 and 10.2. Photos of existing poles are presented in Appendix D. LUMA selected the three poles for replacement after performing an electrical analysis of the feeder line and applying best

design practices for reclosers.

A 12-sided galvanized steel pole is proposed as replacement for all three existing wood poles, as it is capable of supporting the load of the reclosers and withstanding the forces generated by 160 mph winds.

None of the three existing poles being replaced in this project were replaced in other projects using PA 428 funds. LUMA requests \$ 406 hazard mitigation funding for the increase in cost from a 50' galvanized round tapered pole to the cost of the 50' 12-sided pole that is to be installed.

Communicating fault circuit indicators (“cFCIs”) improve system resiliency. LUMA requests 406 hazard mitigation funding for the following six (6) cFCIs:

§ 406 Hazard Mitigation Measure	Quantity	FID	Coordinates Lat, L
cFCI	3	Segment FID 11943125	[REDACTED]
cFCI	3	Segment FID 1001572035	
Total cFCIs	6		

cFCI’s allow the operator to locate circuit faults (i.e., outages) faster than the current method, and provides the central monitoring system (“Energy Management System” or “EMS”) information it can use to prevent further damage and to prioritize restoration efforts. While reclosers play a crucial role in reactively limiting physical damage by isolating electrical faults once they occur, cFCIs offer a fundamentally proactive approach to damage prevention. By detecting incipient (i.e., emerging) faults in their early stages, and enabling timely intervention, cFCIs can prevent the fault from ever fully materializing, thereby directly eliminating the potential for physical damage to system assets.

In the event a feeder line experiences a fault, cFCIs can identify the location of the fault along a feeder line and communicate it to the operator. Multiple cFCIs are located along a feeder and its branches. Determining the placement location of cFCIs requires extensive engineering to ensure

LUMA will gain maximum benefit from each sensor.⁵

This feeder does not have FCI, therefore, repair crews would need to visually inspect the feeder line to locate the fault. In comparison, cFCIs will provide repair crews with information that narrows their search to an area between two cFCIs. Thus, the cFCI’s information dramatically reduces search time. A smaller search area reduces customer outage time, and consequently, decreases harm to the public and property after a disaster. This feature provides a more specific location of the fault than what is provided by reclosers.

cFCIs help reduce physical damage on the system by providing real-time monitoring and early detection of abnormal conditions. Essentially, cFCIs act as the eyes and ears of the system, reducing wear and tear by allowing quick, intelligent responses instead of waiting for catastrophic failure. Note that on this specific project, the cFCIs in the HM scope of work are new. They are not replacing existing FCI (FCIs are not present).

Benefits of cFCIs include:

- **Early Fault Detection:** cFCIs can detect issues like overcurrent, overvoltage, temperature rise, or partial discharge before they escalate into major faults. This allows for proactive repair or shutdowns, preventing physical damage to transformers, lines, and other components.
- **Fault Location:** cFCIs help quickly locate faults on the line (like short circuits or open conductors). This minimizes the time the system operates under stress, reducing the risk of cascading failures and associated mechanical damage.
- **Load Monitoring:** By constantly measuring the current and voltage, sensors help ensure that equipment is not overloaded. Overloads can cause overheating and physical wear on cables, breakers, and other components.
- **Lightning and Surge Detection** cFCIs detect transient surges caused by lightning or switching. By identifying these events, protective measures can be optimized to prevent insulation breakdown or physical burnout.

SCADA systems collect data from cFCIs and provide real-time visualization, control, and historical analysis. Integration helps in several ways:

- **Real-Time Monitoring:** Operators can see live data like voltage, current, temperature, and power flow. Any abnormal readings trigger alarms.

- **Automated Alerts:** If a cFCIs detects anomalies (e.g., a line sag or high current), SCADA immediately alerts operators for quick action—preventing physical stress or failure.
- **Remote Control:** In response to cFCI data, SCADA can remotely open/close breakers or switches, isolating the problem before it spreads.
- **Predictive Maintenance:** Historical data trends help predict insulation degradation, hotspot development, or corrosion—allowing scheduled repairs before damage occurs.

Protection systems (relays, breakers, reclosers, fuses) work closely with cFCIs to respond automatically to faults:

- **Fast Trip Commands:** cFCIs detect faults faster and more precisely. They send data to protection relays, which then trip the appropriate breakers/reclosers.
- **Adaptive Protection:** With real-time data from cFCIs, settings can be dynamically adjusted to match system conditions (e.g., load variations), preventing unnecessary trips or stress on components.
- **Fault Location and Isolation:** cFCIs help pinpoint the fault location, enabling automatic or operator-assisted sectionalizing—reducing the impact area and protecting healthy parts of the system.
- **Communication-Based Protection:** In modern smart grids, cFCIs can communicate DNP3 protocols with reclosers, creating a fast, coordinated protection scheme.

For more information on cFCIs and how they are integral to fortifying Puerto Rico’s electrical infrastructure, please see the T&D Resilience Plan submitted by LUMA to COR3 and the “Distribution Automation, Operation, and System Visibility Roadmap”.

Stainless Steel Transformer. LUMA requests \$406 hazard mitigation funding for three (3) stainless steel transformers at the pole and coordinates noted in the table:

§ 406 Hazard Mitigation Item	Quantity	FID	Coordi Lat, L
1 kVA stainless steel transformer (4.8/8.32kVA - 120/240v)	1	24581786	[REDACTED]
1 kVA stainless steel transformer (4.8/8.32kVA - 120/240v)	1	4927581	
37.5 kVA (4.8/8.32 kVA - 120/240V) Stainless steel transformer	1	4927203	

To enable the operation of three-phase reclosers, it is essential to connect a 120/240V AC voltage source. In areas where this voltage is accessible, the recloser will be linked to the existing secondary line, ensuring that these facilities possess the capability to handle the load produced by the recloser. In instances where the necessary infrastructure to supply voltage to the recloser is absent, 1 kVA distribution transformers will be installed. The Stainless-Steel transformer supplies low-voltage power to operate the control system of the three-phase reclosers, which includes protection, automation, and communication functionalities. This ensures that the intelligent features of the recloser operate reliably, even in the event of a medium-voltage power interruption.

LUMA galvanized steel transformers are being upgraded to high-strength stainless steel. Stainless steel transformers protect life and property and prevent physical damage to PREPA’s infrastructure from catastrophic failures caused when corroded transformers fail during a disaster. Stainless steel also prevent against debris impact better than galvanized steel. Transformer failure poses harm to the equipment and the public due to resulting loss of power. LUMA proposes that this measure be eligible for \$ 406 hazard mitigation funding. In FAAsT project no. 165226, stainless steel transformers more than 1 mile from the shoreline were granted 406 HM funding. In addition, the Fixed Cost Estimate was based on pole mounted transformers that are coated steel with a corrosion resistant cover band and not stainless-steel transformers.

Stainless steel transformer tanks offer several advantages over galvanized steel and other materials, including durability, overall strength, and corrosion resistance, therefore mitigating against damage in future disasters. Stainless steel is a high-strength material that can withstand a variety of harsh conditions that transformers are subjected to before, during, and after a hurricane, such as high temperatures, extreme pressures, and physical impact. They are made of non-combustible materials, so they resist fire more effectively than other materials often used in transformer construction, such as painted steel. This reduces the likelihood of fires which place the system at risk of further damage and neighborhoods at risk of life and property damage after a storm.

Additionally, existing transformers across the island suffer from corrosion, not just the ones close to the seashore. Stainless steel transformers offer superior resistance to corrosion. Corroded transformers have a higher likelihood of failure during a disaster due to debris impacts, fires, and significant water intrusion. Such failure can create unintended electrical paths outside the insulated circuits. This leads to short circuits, which can immediately disrupt transformer function and cause widespread power outages. Additionally, corrosion degrades insulation within the transformer, making it prone to electrical arcing, further increasing the risk of failure or potential for a fire. Oil leaking from a damaged transformer could lead to vegetation damage or groundwater contamination. A stainless-steel transformer is better able to withstand the corrosive effects of that exposure than a galvanized steel transformer. As a result, a stainless-steel transformer will be more resistant to the effects of a disaster like Hurricane Maria and help to protect life and property.

By upgrading to this material, LUMA will significantly reduce the chances of electrical malfunctions, insulation breakdowns, transformer failures during future hurricanes and the resulting risk to public and private property and life. This proactive mitigation measure not only ensures a more resilient power grid during and after the next hurricane but also decreases the need for frequent replacements and maintenance, which helps avoid future damage from similar storms and enhances the long-term reliability of Puerto Rico's electrical infrastructure. LUMA requests that stainless steel galvanized transformers that are more than one mile from the seashore be eligible for § 406 hazard mitigation funding equal to the difference in price between a stainless steel and galvanized steel transformer.

10.2 § 406 SCOPE OF WORK

428 Section			406 HM		
Pole FID	Coordinates Lat, Long	Scope of Work	FID	Coordinates Lat, Long	Scope of Work
24581786	[REDACTED]	<ul style="list-style-type: none"> Remove, dispose, and replace the side post insulator, neutral, tangent, pole ground and overhead assembly. Install a double dead-end angle crossarm. 	Pole FID 245817 86	[REDACTED]	<ul style="list-style-type: none"> Replace fuse cutouts on FID 4928393 with the installation of (1) three-phase recloser 9203-03A on a radial configuration on the existing pole. Install and commissioning of the radio communication kit for the three-phase recloser. Install (1) 1 KVA stainless steel 203 (4.8/8.32kva - 120/240v) for source side.
4928393		<ul style="list-style-type: none"> Remove, dispose and replace (3) fuse cutouts. 			
4927581		<ul style="list-style-type: none"> Remove and dispose 40' Class 2 wood pole. Replace with 50' Galvanized Round Tapered pole. Remove, dispose, and replace (2) downguys. Remove, dispose, and replace (1) anchor. Remove, dispose, and Replace streetlight (LED Type). Remove, dispose, and replace the secondary triplex dead-end service drop. Remove, dispose, and replace the double dead-end angle crossarm. 	Pole FID 4927581		<ul style="list-style-type: none"> Replace pole with 50' 58 12-sided galvanized steel pole. Install (1) 1 KVA stainless steel 203 (4.8/8.32kva - 120/240v) for source side. Replace fuses on FIDs 4927453 with the installation of (1) three-phase recloser 9203-03B on a radial configuration. Install and commissioning of the radio communication kit for three-phase recloser.
4927453		<ul style="list-style-type: none"> Remove, dispose, and replace (3) fuse cutouts. 			
4928119		<ul style="list-style-type: none"> Remove and dispose (3) fuse cutouts. 			N/A

428 Section			406 HM		
Pole FID	Coordinates Lat, Long	Scope of Work	FID	Coordinates Lat, Long	Scope of Work
4928391		<ul style="list-style-type: none"> Remove and dispose 40' Class 4 Wood pole. Replace with 50' Galvanized Round Tapered pole. Remove, dispose, and replace the side post insulator, neutral, tangent, pole ground and overhead assembly. Remove, dispose, and replace Streetlight (LED Type). Install a double dead-end angle crossarm. 	Pole FID 4928391		<ul style="list-style-type: none"> Replace pole with 50' S8 12- sided galvanized steel pole. Replace fuses on FIDs 4928621 with the installation (1) Three-Phase Recloser 9203-03C on a radial configuration. Install and commissioning of the radio communication kit for three- phase recloser. Use existing secondary to feed recloser from source side.
4928621		<ul style="list-style-type: none"> Remove, dispose and replace (3) fuse cutouts. 			
4927203		<ul style="list-style-type: none"> Remove and dispose 40' Class 3 Wood pole. Replace with 50' Galvanized Round Tapered pole. Remove, dispose and replace three-phase Single dead-end angle crossarm. Remove, dispose and replace two-phase Single dead-end angle crossarm. Remove, dispose and replace Streetlight (LED Type). Remove, dispose and replace 37.5KVA (4.8/8.32KVA-120/240V) transformer. Remove, dispose and replace (2) DownGuys. Remove, dispose and replace (2) anchors. Remove, dispose and replace (2) fuse cutouts. 	4927203		<ul style="list-style-type: none"> Replace the Pole with a 50' S8 12-sided galvanized steel pole. Replace (2) cutout fuses and Install (2) Single-Phase Cutout Recloser 9203-03 (CMR-A). Replace 37.5KVA (4.8/8.32KVA -120/240V) galvanized transformer with a Stainless- Steel transformer with a single-phase line.
4927241		<ul style="list-style-type: none"> Remove and dispose (1) fuse cutout. Closer Jumpers 			N/A
Segment FID 11943125		<ul style="list-style-type: none"> Install (3) Fault Current Indicators (FCIs) 	Segment FID 11943125		<ul style="list-style-type: none"> Replace (3) FCIs with the installation of (3) Communicating Fault Current Indicators (cFCIs).
Segment FID 1001572035		<ul style="list-style-type: none"> Install (3) Fault Current Indicators (FCIs) 	Segment FID 1001572035		<ul style="list-style-type: none"> Replace (3) FCIs with the installation of (3) Communicating Fault Current Indicators (cFCIs).

Text Box: 11.0 COMMON EHP REVIEW INFORMATION

Please check any items applicable to the proposed scope of work in this Project. If an item is checked, provide a description of the scope extent and location of the selected activity.

X **Ground disturbance outside of existing footprint.** If checked, provide a description of the ground disturbing activities including the extent, location, and depth of the disturbance.

- Poles - Refer to *APPENDIX B - Project Considerations*, column B (soil area and depth impact), for the depths of the poles to be installed.

Soil testing or boring to be performed as part of pre-construction activities. If checked, provide a description, location, and dimensions of the testing/boring activities.

Relocation of utilities. If checked, include a description of the relocation including the type of utility, relocation coordinates, and the extent and depth of associated ground disturbance.

X **Vegetative Removal.** If checked, describe the removal work to be performed, its location, and its extent.

- Vegetation clearance will be performed solely to the extent that it allows crews to conduct work and will be limited to a 10 ft radius surrounding the surface of the pole, but not to exceed the width of the right-of-way. This is for the exclusive purpose of gaining access to the pole to conduct repairs. The costs related to vegetation clearance procedures are covered in project 727527 FAAS (Region 3 - Bayamon Group A) High Density (Vegetation). The vegetation removal process will be managed in accordance with federal and state regulations.

X **Demolition.** If checked, include a description of what will be removed and the extent and depth of any ground disturbing activities. Additionally, include a description of (1) demolition debris type (construction debris, white goods, hazardous materials, etc.); (2) GPS location of temporary debris storage sites; (3) final debris disposal location; and (4) final debris disposal method.

- Debris will be separated and taken to an authorized waste disposal facility.

X **Staging areas, landing areas for air transport, and access roads.** If checked, provide GPS location of staging areas, and access roads. Include a description of the extent of any related vegetative removal, ground disturbance, or stabilization measures required (such as gabion walls, retaining walls, paving, etc.).

- **Staging Area:** All materials will be stored and dispatched from the existing LUMA Regional Warehouses. The warehouse locations are described in section 7.2 above.
- **Access Roads:** New access roads are not needed for this project. All poles to be installed, or removed and replaced, are adjacent to a road and work will be performed within the road right of way.

X **Fill material.** If the project includes the use of fill material, provide the source of the fill material including the provider's name and address (if known).

- Fill, gravel, and sand materials will be obtained from an approved supplier as referenced in the following document: LUMA Vendor Directory List.

Work in water including coffer dams, dredging, placement of equipment in water, or other work in wetlands. If checked, provide a description of the activities to be performed in water or wetlands.

The following items are generally intended for buildings:

Facility is over 45 years old. If checked, provide a thorough description of materials to be used and method of repair, including cleaning methods. If substitute materials will be used in the restoration, specify whether they match the original color, texture, and design of the damaged facility.

Known renovations to the facility. If checked, provide dates of any previous major renovations to the interior or exterior of the facility.

Photos of all sides of the facility are provided.

12.0 PROJECT COST ESTIMATE (PCE)?

The estimated costs (compliant with **Class 3 Accuracy +/-30%**) to complete the project are summarized in the table(s) below. The cost estimate(s) was developed utilizing preliminary Architectural and Engineering ("A&E") design information. For a more detailed cost estimate refer to *Appendix A-LUMA Project Cost Estimate*.

COST ESTIMATE			
Cost Element	428	406	PROJECT TOTAL
PLANNING	\$ 34,587.23	\$ 18,290.34	\$ 52,877.57
Permitting and Assessments	\$ 3,040.50	\$ 1,607.87	\$ 4,648.37
Environmental Documentation & Management	\$ 9,858.36	\$ 5,213.27	\$ 15,071.63
Engineering Services & Design	\$ 21,688.37	\$ 11,469.20	\$ 33,157.57
MANAGEMENT	\$ 19,107.96	\$ 10,104.61	\$ 29,212.57

Project Management	\$ 5,408.58	\$ 2,860.15	\$ 8,268.73
Construction Management	\$ 7,187.73	\$ 3,800.99	\$ 10,988.72
Contracting, Procurement & Contract Administration	\$ 2,953.37	\$ 1,561.79	\$ 4,515.16
Projects Controls (Scheduling, Estimating, Support, Cost Control, Risk, Document Control & Reporting)	\$ 3,558.28	\$ 1,881.68	\$ 5,439.96
Distribution Automation Group 30 Bayamón Feeder 9203-03	\$ 373,842.64	\$ 197,745.21	\$ 571,587.85
Distribution Automation Group 30 Bayamón Feeder 9203-03, material, labor and equipment	\$ 306,276.36	\$ 163,256.45	\$ 469,532.81
Start Up/Commissioning	\$ 4,606.82	\$ 2,436.17	\$ 7,042.99
Construction Trespass	\$ 2,347.66	\$ -	\$ 2,347.66
Transportation Expenses	\$ 1,535.61	\$ 812.05	\$ 2,347.66
Security (Field 24 hr)	\$ 2,764.09	\$ 1,461.70	\$ 4,225.79
Insurance	\$ 6,203.86	\$ 3,280.70	\$ 9,484.56
Contingency	\$ 39,433.40	\$ 20,853.10	\$ 60,286.50
Escalation	\$ 10,674.84	\$ 5,645.04	\$ 16,319.88
GENERAL CONDITIONS	\$ 19,161.60	\$ 10,132.98	\$ 29,294.58
Sales Tax	\$ 3,805.52	\$ 2,012.42	\$ 5,817.94
Municipal Construction Tax	\$ 15,356.08	\$ 8,120.56	\$ 23,476.64
COST TOTALS	\$ 446,699.43	\$ 236,273.14	\$ 682,972.57
DEDUCTIONS	TOTAL INSURANCE PROCEEDS RECEIVED		\$ -
	DE-OBLIGATION TO FAASt IF APPLICABLE?		\$ -
FAASt ALLOCATIONS	FAASt PROJECT #746309 - 428		\$ 327,791.49
	FAASt PROJECT #746309 - 406 HM		\$ 236,273.14
	FAASt PROJECT #746309 TOTAL:		\$ 564,064.63
	FAASt A&E # 335168 - 428		\$ 53,695.19
	FAASt A&E # 335168 - 406 HM		\$ 28,394.95
	FAASt A&E # 335168 TOTAL		\$ 82,090.14
	FAASt E&M #673691 - 428		\$ 65,212.75
	FAASt E&M #673691 - 406 HM		\$ 98,251.25
	FAASt E&M #673691 TOTAL		\$ 163,464.00

Project Cost Summary, 428 Version 0:

Work to be Completed (WTBC): \$ 446,699.43

A&E Deduction (Global A&E FAAS 335168): -\$ 53,695.19

E&M Deduction (Global E&M FAAS 673691): -\$ 65,212.75

Project Total: \$ 327,791.49

Project Cost Estimate Notes:

1. Refer to detailed SOW provided in document labeled: "746309-DR4339PR-DSOW- Group 30- Revision 015-. pdf."
2. Refer to detailed Cost Estimate provided in document labeled: "746309-DR4339PR-APPENDIX B - LUMA Project Cost Estimate Revision 014.xlsx"
3. 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 in the table above. The A&E project was obligated to track and account for costs associated with individual FAAS projects.
4. Equipment and material costs included in this project will be reduced from this project and obligated under FAAS Project #673691, Equipment and Materials. Only the base cost of equipment and/or material will be reduced from this project (not labor). All costs associated with Planning, Management, General Conditions, and Contingencies will remain in this project Group 36 Automation FAAS 800286.
5. This project is part of Donor FAAS 136271 – MEPA078 Puerto Rico Electrical Power Authority (PREPA) Island Wide FAAS Project 136271.

6. ATTACHMENTS

Item	Document Description or Filename
A	LUMA Project Cost Estimate
B	Project Considerations
C	LUMA's Active Projects
D	Pictures: Poles to be Replace

406 HMP Scope

Project number: 746309; FAAS [Automation Program Group 30] (Distribution)

Damage # 1302760; FAAS [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution).

Subrecipient: PR Electric Power Authority (000-UA2QU-00)

<p>Location: Toa Baja, Puerto Rico</p> <p>GPS Latitude/Longitude: ([REDACTED]).</p>
--

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage from Hurricane Maria. The incident caused damage to the electrical system, such as power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

As part of the electrical grid rebuild, the subrecipient developed a Transmission & Distribution Automation Program ("Program") through which it will install advanced technology equipment (i.e., reclosers and communicating fault current indicators (cFCIs)) to reduce both physical damage and service interruptions to the electrical grid caused by disasters. Although the intent is to deploy automation equipment throughout PREPA's Transmission and Distribution ("T&D") system, the Program will be implemented through multiple projects across the island on both T&D systems.

The multiple projects within this Program are designed to fortify the electrical system's resilience, safeguard its infrastructure, and enhance service reliability during a disaster. The individual projects are interconnected and enhance each other, but each confers benefits independently. Distribution Automation (DA) projects will be submitted regionally as components of the real time monitoring and automation network being installed on island. DA projects are physically incorporated into the distribution line network.

Project Overview:

DA Group 30 is one of the Program's distribution-level projects. It installs hardened poles and advanced technology equipment (specifically reclosers and cFCIs) to reduce physical damage and service interruptions to the distribution grid that could be caused by a disaster. Implementing reclosers, their communication kits, and cFCIs is critical for the Energy Management System ("EMS") and related components to function at their full capabilities and mitigate loss of service and physical damage in the event of future hurricanes. This project is necessary for the EMS to maintain the continuity of the distribution power grid on Feeder 9203-03.

The purpose of this project is to install real time monitoring to mitigate cascading effects and physical damage to critical components, protects federal investments, and reduces outage times to facilities. Key components of this project are: (1) pole replacement, (2) three-phase and single-phase reclosers, and (3) the installation of cFCIs.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent and/or reduce future damages from similar events, the subrecipient proposed the following mitigation measures:

Mitigation Measures (Replacement)

Pole Replacement to Accommodate the Installation of Reclosers:

The addition of three-phase reclosers imposes additional load on poles due to the weight of the devices and their components. It also increases the area exposed to extreme weather conditions, such as hurricanes, thereby increasing the structural load requirements these poles must meet. Where an existing pole cannot accommodate a recloser, it will be substituted with a higher-class pole constructed from steel or concrete to ensure compatibility with the recloser and adherence to design criteria. This includes adjacent poles (i.e., poles that are on either side of the recloser pole supporting the overhead line conductors). Any new structure and foundation will be designed to LUMA design criteria and industry standards to support the pole, recloser, and its attachments. In addition, LUMA is using a per-location approach to pole replacement because of the intricate dynamics of deploying three-phase reclosers. Furthermore, the integration of more connections, switches, and related infrastructure often necessitates taller poles to meet phase spacing and circuit-to-circuit spacing requirements. The locations of three-phase reclosers are determined by an electrical analysis performed by the design engineers. In those instances where the recloser would be located on an existing wood pole, that pole will be replaced with a pole that meets the compounded structural demands presented by that recloser.

As a mitigation strategy, 406 HM will fund the additional cost (delta) for pole strengthening (pole, concrete base, and additional guywire) for recovery work to the feeder or poles. In this project existing wood poles will be replaced by 3ea 50' round galvanized pole (PA recovery solution) and 406 HM will replace round poles with 3ea 50' 12-sided galvanized poles (S8.5).

Feeder Reclosers:

Reclosers are sophisticated devices that remotely detect faults within distribution lines, enable the isolation of circuit breakers linked to those faults—whether due to independent failures or breakdowns—and facilitate the swift restoration of power, often within milliseconds. This project will install three-phase and single-phase reclosers.

Three-Phase Recloser: A three-phase recloser is a protection device that is used on three-phase distribution feeders with high fault currents at the location. It is a single device with three switches that can open to interrupt fault currents and automatically reclose to restore power. Three-phase reclosers are communication-ready to enable remote control and visualization. The recloser's wireless communication capability will provide connectivity to LUMA's EMS so the system operator knows their status and can remotely control them.

The implementation of three-phase reclosers will preserve the continuity of electric services and avoid physical damage by pre-empting or minimizing disruptions. The three-phase reclosers can be triggered remotely and provide data back to the operations center, enabling LUMA to prioritize restoration activities, reduce customer outage time, and minimize the potential for cascading infrastructure damage. Installation of the three-phase reclosers and associated hardware is critical for the EMS and associated components to function with full capabilities, and to prevent loss of service and potential damage from future disasters. In this project we are installing three three-phase reclosers.

Single-Phase Reclosers: A single-phase recloser is a single protection device with one switch that can open to interrupt fault currents and automatically reclose to restore power. A single-phase recloser performs the same functions as a three-phase recloser, but it does not have the ability to communicate with the EMS. This project will install single-phase reclosers on single-phase or two-phase distribution feeder and distribution lines branching from the feeder. Single-phase reclosers will also be used on feeders with three phases if fault currents are low at the location. In this project we are installing a total of two single-phase reclosers.

As a mitigation strategy, 406 HM will fund the additional cost (delta) for the replacement of 2ea fuse cutouts by 2ea single-phase reclosers and 3ea manual disconnect switches by 3ea three-phase reclosers.

Communicating Fault Current Indicators:

Installation of communicating fault current indicators ("cFCI") at strategic locations improves the outage management, restoration, and recovery process, specifically by decreasing the time required to detect and locate faults. The cFCIs operate independently of the feeder reclosers and help identify permanent and incipient faults in the distribution system, as well as collect voltage and current data, which can be used to detect system imbalance, prevent future issues due to harmonics and help in building a predictive failure model.

cFCIs help reduce physical damage on the system by providing real-time monitoring and early detection of abnormal conditions. Essentially, cFCIs act as the eyes and ears of the system, reducing wear and tear by allowing quick, intelligent responses instead of waiting for catastrophic failure.

Benefits of cFCIs include:

Early Fault Detection: cFCIs can detect issues like overcurrent, overvoltage, temperature rise, or partial discharge before they escalate into major faults. This allows for proactive repair or shutdowns, preventing physical damage to transformers, lines, and other components.

Fault Location: cFCIs help quickly locate faults on the line (like short circuits or open conductors). This minimizes the time the system operates under stress, reducing the risk of cascading failures and associated mechanical damage.

Load Monitoring: By constantly measuring the current and voltage, sensors help ensure that equipment is not overloaded. Overloads can cause overheating and physical wear on cables, breakers, and other components.

Lightning and Surge Detection: cFCIs detect transient surges caused by lightning or switching. By identifying these events, protective measures can be optimized to prevent insulation breakdown or physical burnout.

SCADA systems collect data from cFCIs and provide real-time visualization, control, and historical analysis. Integration helps in several ways:

Real-Time Monitoring: Operators can see live data like voltage, current, temperature, and power flow. Any abnormal readings trigger alarms.

Automated Alerts: If a cFCIs detects anomalies (e.g., a line sag or high current), SCADA immediately alerts operators for quick action—preventing physical stress or failure.

Remote Control: In response to cFCI data, SCADA can remotely open/close breakers or switches, isolating the problem before it spreads.

Predictive Maintenance: Historical data trends help predict insulation degradation, hotspot development, or corrosion—allowing scheduled repairs before damage occurs.

Protection systems (relays, breakers, reclosers, fuses) work closely with cFCIs to respond automatically to faults:

Fast Trip Commands: cFCIs detect faults faster and more precisely. They send data to protection relays, which then trip the appropriate breakers/reclosers.

Adaptive Protection: With real-time data from cFCIs, settings can be dynamically adjusted to match system conditions (e.g., load variations), preventing unnecessary trips or stress on components. **Fault Location and Isolation:** cFCIs help pinpoint the fault location, enabling automatic or operator-assisted sectionalizing—reducing the impact area and protecting healthy parts of the system.

Communication-Based Protection: In modern smart grids, cFCIs can communicate DNP3 protocols with reclosers, creating a fast, coordinated protection scheme.

As a mitigation strategy, 406 HM will fund the additional cost (delta) for the replacement of 2ea fault current indicators (FCIs) by 2ea communicating fault current indicators (cFCIs).

Stainless Steel Transformer (37.5 kVA):

Galvanized steel transformers are being upgraded to high-strength stainless steel. Stainless steel transformers protect life and property and prevent physical damage to PREPA's infrastructure from catastrophic failures caused when corroded transformers fail during a disaster. Stainless steel also prevents against debris impact better than galvanized steel. Transformer failure poses harm to the equipment and the public due to resulting loss of power. Therefore, the subrecipient proposes replacing the galvanized transformers with stainless-steel transformers located more than one mile from the shoreline as the existing transformers across the island suffer from corrosion, not just the ones close to the seashore.

Stainless steel transformer tanks offer several advantages over galvanized steel and other materials, including durability, overall strength, and corrosion resistance, therefore mitigating against damage in future disasters. Stainless steel is a high-strength material that can withstand a variety of harsh conditions that transformers are subjected to before, during, and after a hurricane, such as high temperatures, extreme pressures, and physical impact. They are made of non-combustible materials, so they resist fire more effectively than other materials often used in transformer construction, such as painted steel. This reduces the likelihood of fires which place the system at risk of further damage and neighborhoods at risk of life and property damage after a storm.

By upgrading to this material, the subrecipient will significantly reduce the chances of electrical malfunctions, insulation breakdowns, transformer failures during future hurricanes and the resulting risk to public and private property and life. This proactive mitigation measure not only ensures a more resilient power grid during and after the next hurricane but also decreases the need for frequent replacements and maintenance, which helps avoid future damage from similar storms and enhances the long-term reliability of Puerto Rico's electrical infrastructure.

As a mitigation strategy, 406 HM will fund the additional cost (delta) for the replacement of 1ea galvanized transformer by 1ea stainless steel transformer.

Mitigation Measures (Supplementary)

Stainless Steel Transformer (1kVA):

To enable the operation of three-phase reclosers, it is essential to connect a 120/240V AC voltage source. In areas where this voltage is accessible, the recloser will be linked to the existing secondary line, ensuring that these facilities possess the capability to handle the load produced by the recloser. In instances where the necessary infrastructure to supply voltage to the recloser is absent, 1 kVA distribution transformers will be installed. The 1kVA Stainless-Steel transformer supplies low-voltage power to operate the control system of the three-phase reclosers, which includes protection, automation, and communication functionalities. This ensures that the intelligent features of the recloser operate reliably, even in the event of a medium-voltage power interruption.

As a mitigation strategy, 406 HM will fund the installation of 2ea 1kVA stainless steel transformers.

Radio communication kit for three phase reclosers:

The recloser's wireless communication capability will provide connectivity to LUMA's EMS in order to the system operator knows their status and can remotely control the 3-phase reclosers. Deployment of the wireless communication devices includes configuration, testing, and commissioning of the wireless communication device, all networking devices, data acquisition, and control systems that form the connectivity path of the recloser to the EMS. Therefore, as part of the installation of the 3ea 3-phase reclosers it will be necessary to install communication radios and commissioning for the operation of the reclosers (wireless connection).

As a mitigation strategy, 406 HM will fund the installation of 3ea Radio communication kit.

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) = \$ 188,201.19
+ HM (Subrecipient A&E, Management & General Conditions) = \$ 48,071.95

Hazard Mitigation Total Cost = \$ 236,273.14

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

Equipment and Materials (E&M) = \$ 98,251.25

Architecture and Engineering (A&E) = \$ 28,394.95

Construction Cost = \$ 109,626.94

Hazard Mitigation Total Cost = \$236,273.14

(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 is \$236,273.14 (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
9001	1	Lump Sum	(\$65,212.75)	Uncompleted
3510	1	Lump Sum	(\$53,695.19)	Uncompleted
9001	1	Lump Sum	\$446,699.43	Uncompleted

CRC Gross Cost	\$327,791.49
Total 406 HMP Cost	\$236,273.14
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$564,064.63
Federal Share (90.00%)	\$507,658.17
Non-Federal Share (10.00%)	\$56,406.46

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

7/24/2025

GENERAL INFORMATION

Event: DR4339-PR

Project SP 746309

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

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

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #1302760:

FAAST [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution)

Location: Transmission and Distribution Automation Bayamon Feeder 9203

GPS Coordinates: [REDACTED]

Cause of Loss: Wind / Wind Driven Rain

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

Reduction(s):

No insurance reduction will be applied to this project as coverage is not anticipated. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project #136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters" file.

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAAST [Automation Program Group 30- DAR – Bayamon 9203 - FY24] (TL/Distribution) because the facility does not meet the definition of building, equipment, contents, or vehicle.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover

insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled to on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

...

5. If an applicant has an insurance requirement from a previous event:

a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.

b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

Jorge Parrilla, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Automation Program Group 30] (Distribution)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Automation Program Group 30] (Distribution)**.

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 Subrecipient and/or Subrecipient's contractor must follow the Low Impact Debris Removal Stipulations (LIDRS) outlined in Appendix E of the Project-Specific Programmatic Agreement Among FEMA, the SHPO, ACHP, COR3, and PREPA (PSPA), executed on August 2, 2022.
- 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.

- Additional staging areas and/or work pads within work site area haven't been identified yet. The 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.
- 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 Recipient prior to extracting material. FEMA must review the source for compliance with all applicable federal environmental planning and historic preservation laws and execute orders prior to a subrecipient or their contractor commencing 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 closeout.
- -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 debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. -The applicant is responsible to ensure damaged transformers are handled, managed, and disposed of in accordance with all federal and state laws and requirements. Downed electrical equipment may contain toxic and hazardous materials, such as polychlorinated biphenyls (PCBs), and may spill these materials if a rupture occurs. Applicant is responsible for screening transformers that do or may contain PCBs and the area where any related spill occurred. The applicant is then responsible to handle, manage, dispose of, or recycle damaged equipment and contaminated soil as appropriate. Where possible, temporary measures should be implemented to prevent, treat, or contain further releases or mitigate the migration of PCBs into the environment. If damaged equipment or material storage containers must be stored temporarily, containers should be placed on hardened surface areas, such as a concrete or an asphalt for no more than 90 days. Excavated contaminated material should be disposed of in accordance with federal and state laws and requirements. -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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- Executive Order 11988 - Floodplain Conditions for Feeder 9203-03: 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.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Automation Program Group 30] (Distribution)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 09/03/2025 3:04 PM PST

Review Comments

Reviewed, found eligible and reasonable. Includes HM funding less than \$1M. - CLG 09.03.25

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 09/05/2025 7:08 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$507,658.17	90%	Accepted	4339DRPRP01079591

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

v0

General Info

Project #	749060	P/W #	11874	Project Type	Specialized
Project Category	F - Utilities	Applicant		Applicant	PR Electric Power Authority (000-UA2QU-00)
Project Title	FAASt [Priority Pole Replacement Program (Line 5600 Victoria TC – Añasco TC)] (Transmission)			Event	4339DR-PR (4339DR)
Project Size	Large	Declaration Date		Declaration Date	9/20/2017
Activity Completion Date	9/20/2027	Incident Start Date		Incident Start Date	9/17/2017
Process Step	Obligated	Incident End Date		Incident End Date	11/15/2017

Damage Description and Dimensions

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

Damage #454628; FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC]

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Transmission Line 5600 Victoria TC – Añasco TC
- **Facility Description:** The facilities listed below are part of the 11.89 circuit miles of overhead transmission for 38kV Line 5600 VICTORIA TC - AÑASCO TC segment. This line is a Near-Term rebuild priority identified by LUMA. However, these structures were identified as having System Remediation Plan ("SRP") issues and were considered degraded during a High-Level Assessment ("HLA"). Due to the degraded condition of these structures, they will be replaced through the Transmission Priority Pole Replacement Program on an expedited basis.
- **Approx. Year Built:** 1980
- **Start GPS Latitude/Longitude:** [REDACTED]
- **End GPS Latitude/Longitude:** [REDACTED]

Final Scope

454628

FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC]

2.0 INTRODUCTION

The purpose of this document is to submit for approval the Detailed Scope of Work ("SOW") to COR3 and FEMA for project 749060 Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC Project under DR-4339-PR Public Assistance. The document provides a detailed description of the project including scope, schedule, and cost estimates as well as Environmental and Historical Preservation ("EHP") requirements and proposed 406 hazard mitigation work. LUMA Energy is seeking approval from COR3 and FEMA for project funding to repair, restore, or replace the eligible facilities.

LUMA submits this Detailed SOW pursuant to the Transmission and Distribution Operations & Maintenance Agreement between Puerto Rico

Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, and in accordance with the Consent to Federal Funding Letter issued by PREPA and P3A and provided herein as Appendix D which collectively provides the necessary consent for LUMA Energy, as an agent of PREPA, to undertake work in connection with any Federal Funding requests related to the T&D System submitted to FEMA.

3.0 FACILITIES

3.1 Facilities Description

The facilities listed below are part of the 11.89 circuit miles of overhead transmission for 38kV Line 5600 VICTORIA TC - AÑASCO TC segment. This line is a Near-Term rebuild priority identified by LUMA. However, these structures were identified as having System Remediation Plan ("SRP") issues and were considered degraded during a High-Level Assessment ("HLA"). Due to the degraded condition of these structures, they will be replaced through the Transmission Priority Pole Replacement Program on an expedited basis.

3.2 Facilities List

The line segments are supported by 14 structures consisting of wood, steel, and concrete pole structures, having existing underbuilt distribution and/or third-party attachments. The following table identifies the GPS location of the line segments.

Line Segment	Line Number	GPS Start	GPS End	Voltage (kV)
VICTORIA TC - AÑASCO TC	5600	[REDACTED]	[REDACTED]	38

4.0 PROJECT SCOPE OF WORK

The scope of work for Line 5600 from VICTORIA TC - AÑASCO TC will consist of the replacement of hardware, the poles identified in Appendix B, guys anchoring and foundations for TL5600 "Proposed 428 Public Assistance Scope of Work" and "Proposed 406 Hazard Mitigation Program Scope of Work."

The proposed restoration includes the repair of eligible disaster damage up to required codes and standards and the request to upgrade undamaged infrastructure that must be addressed to fully effectuate the restoration of disaster-damaged components to restore the function of the system to an approved industry standard. The Detailed Scope of Work consists of the repair, removal and replacement of the following infrastructure to restore this facility to codes and standards:

Line Segment	Damage Number	# of Poles to Replace	# of Poles to Reinforce	# of Poles to Reuse	# of New Poles to be Added
VICTORIA TC - AÑASCO TC	454628	14	0	0	1

Of the poles identified in the tables above, fourteen poles will be 70' in length and one pole will be 50' in length. The 50' pole is a stub pole to support one of the other poles.

4.1 Proposed 428 Public Assistance Scope of Work

A. Transmission Line:

The specific tasks necessary for the completion of the scope of work for the LUMA Transmission Pole Replacement Program are detailed below:

- Perform the structure replacements specified in this scope document. All existing structures are to be replaced with new steel structures.
- All existing structures are to be replaced with new steel structures. o Remove 1 concrete structure.

- Remove 13 wood structures.
- Poles to be installed are:
 - 14 x 70' Galvanized Steel Round Poles.
 - 1 x 50' Galvanized Steel Round Poles.

4.2 Scope Notes

1) Equipment to be used includes Skid Steer, Excavator, Hydrovacs, Dump trucks, Man lifts, 120-ton Motor Crane, Boom Trucks, 45-ton Crane, Zoom Boom, Air compressor, Truck Digger, Water truck, Pump Truck, Concrete Vibrator, Oil Tanker, Filtering Machine and Flatbed platform. All equipment used will comply with Tier 4 EPA Emission Standards, if available.

2) Fill, gravel, and sand materials will be obtained from a preferred vendor as referenced in the *Approved Supplier List Directory PR* (see **Appendix A – Approved Supplier List**). LUMA will retain and make available for review the documentation provided by material suppliers as a Condition of FEMA Record of Environmental Considerations.

3) The construction of **access roads** is needed for some structures in this scope. All work for this program will be performed within the current electrical right-of-way for each of the municipalities. (Refer to **Appendix F – Project Considerations**).

4) All materials will be stored and dispatched from the assigned LUMA Regional Warehouse. Refer to *Warehouse Locations*. No additional or temporary staging areas are required to store materials or disposal. The Regional Warehouse to be utilized as the **staging area** for this project is the Mayaguez Region Warehouse (A61), whose coordinates are [REDACTED]

5) The types of debris that are to be removed during the demolition process are, but not limited to: insulated and bare aluminum and copper cables, PVC conduits, concrete, metal scrap, construction waste, wood, etc. The debris will be separated and taken to an authorized waste disposal facility.

6) PCBs, oil from the transformer and breakers, sealants, and other chemical wastes typical of a construction site and will be handled and disposed of.

7) Disposal of poles.

8) The **brushing of vegetation**, which is the clearing of light vegetation around the structure and its components to be able to remove it, will occur within a 10-ft radius of the surface of the pole, or less than 10 ft if the pole is within 10 ft of the edge of the right-of-way. The vegetation clearing process will be managed according to applicable federal and state regulations.

9) Specific List of Permits Required:

- (1) Department of Transportation and Public Works (“DTOP”) Endorsements & Municipality Notifications.
- (2) Excavation and Demolition Notification from DTOP.
- (3) LUMA will provide proof of all permits as a Condition of FEMA Record of Environmental Considerations.

8.0 PROJECT COST ESTIMATE (“PCE”)

The estimated costs (compliant with Class 3 Accuracy +/-30%) to complete the project are captured in the table(s) below. The cost estimate was developed utilizing preliminary Architectural and Engineering design information and may be subject to change. LUMA has allocated 10% of the project cost to mitigate potential known risks. For more details refer to **Appendix E – Detailed Cost Estimate**.

COST ESTIMATE			
Cost Element	428	406	PROJECT TOTAL
PLANNING	\$ 99,552.00	\$ 9,740.31	\$ 109,292.31
MANAGEMENT	\$ 79,735.29	\$ 7,799.31	\$ 87,534.60

Transmission Priority Pole Replacement L-5600 Victoria TC to Aiasco TC, FAAS#: 749060	\$1,194,691.55	\$116,930.94	\$1,311,622.49
GENERAL CONDITIONS	\$ 63,411.47	\$ 6,206.98	\$ 69,618.45
COST TOTALS	\$ 1,437,390.31	\$ 140,677.54	\$ 1,578,067.85
DEDUCTIONS	TOTAL INSURANCE PROCEEDS RECEIVED		\$
	DE-OBLIGATION TO FAAS# IF APPLICABLE?		\$
FAAS# ALLOCATIONS	FAAS# PROJECT # 749060 - 428		\$1,175,435.49
	FAAS# PROJECT # 749060 - 406 HM		\$ 140,677.54
	FAAS# PROJECT# 749060 TOTAL:		\$ 1,286,845.10
	FAAS# A&E # 335168- 428		\$ 120,608.99
	FAAS# A&E # 335168-406 HM		\$ 11,800.00
	FAAS# A&E# 335168 TOTAL		\$ 132,408.99
	FAAS# E&M #673691 - 428		\$ 141,345.83
	FAAS# E&M # 673691 - 406 HM		\$ 17,467.93
	FAAS# E&M #673691 TOTAL		\$ 158,813.76

Work To Be completed (WTBC): \$1,437,390.31
A&E Deduction (Global A&E FAAS# 335168): -\$120,608.99
E&M Deduction (Global E&M FAAS# 673691): -\$141,345.83
Project Total Cost (FAAS# Project #749060): \$1,175,435.49

9.0 ATTACHMENTS

- APPENDIX A** - Approved Supplier List
- APPENDIX B** - General Arrangement
- APPENDIX C** - Engineering Plans
- APPENDIX D** - Consent to Federal Funding Letter - FEMA COR3
- APPENDIX E** - Detailed Cost Estimate
- APPENDIX F** – Project Considerations
- APPENDIX G** - Cost Effective Hazard Mitigation Measures
- APPENDIX H** - Hazard Mitigation Narrative

Project Notes:

1. Refer to detailed SOW provided in document labeled: "749060-DR4339PR-Detailed SOW-T-Pole TL5600 Victoria TC - Aiasco TC Rev 8 - signed.pdf".
2. For reference documents Appendix A thru H.
3. This project is part of a FAAS# project, please reference project 136271.

4. For detailed cost estimate, please refer to document labeled: "749060-DR4339PR-Appendix E - Detailed Cost Estimate TL 5600 Victoria TC-Anasco TC Rev 5.xlsx".
5. Architectural and Engineering (A&E) costs are deducted given previously obligated Global A&E Project for the subject FAASt PREPA work (see project: 335168 - FAASt A&E PREPA).
6. Equipment and material costs included in this project will be reduced from this project and obligated under FAASt Project #673691, Equipment and Materials, as shown in the table above. Only the base cost of equipment and/or material will be reduced from this project (not labor). All costs associated with Planning, Management, General Conditions, and Contingencies will remain in this project.

406 HMP Scope

Project Number: 749060

Damage # 1312590; 454628; FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC]

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

Location: Aguadilla and Añasco, Puerto Rico

GPS Latitude/Longitude: (Start: [REDACTED]; End: [REDACTED]).

Hazard Mitigation Narrative

During the incident period from September 17, 2017, to November 15, 2017, the Commonwealth of Puerto Rico experienced hurricane-force winds, heavy rain, flooding, and power outage "loss of power" from Hurricane Maria. The incident caused damage to the electrical system, such as the power generation plants, transmission and distribution lines, substations, communication systems, buildings, among other damages to the infrastructures owned, operated, and maintained by the Puerto Rico Electric Power Authority (PREPA).

Project #749060 FAASt [T-Pole Program Line 5600 Victoria TC – Añasco TC]

The Method of Repair (MOR) included the replacement of the damaged critical distribution poles (wood, steel, and concrete), insulators, and all associated hardware needed for the new structure. The facilities listed below are part of the 11.89 circuit miles of overhead transmission for 38kV Line 5600 VICTORIA TC - AÑASCO TC segment. This line is a Near-Term rebuild priority identified by LUMA. However, these structures were identified as having System Remediation Plan ("SRP") issues and were considered degraded during a High-Level Assessment ("HLA"). Due to the degraded condition of these structures, they will be replaced through the Transmission Priority Pole Replacement Program on an expedited basis. Later, the remainder of the line will be rebuilt, except for the structures that would already have been replaced through this project and in alignment with LUMA codes and standards.

In order to minimize the damages in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by adding concrete foundations and strength of the poles by replacing it with steel galvanized, 12-sided, tapered shaft distribution poles to mitigate future damage due to high wind (160mph). Note: The FEMA Accelerated Award Strategy (FAASt) MOR included the PREPA distribution standards and specifications that were based on a 145mph sustained winds. However, the new PREPA Standard 2021 updates the design-criteria to a 160mph sustained winds resistant. The 160mph wind tolerance mitigation measure, will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards.

Hazard Mitigation Proposal (HMP) Scope of Work:

In order to prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

Mitigation Measures (Replacement)

To avoid damage in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by replacing it with a 12-sided, tapered shaft distribution pole to mitigate future damage to the structure due to high wind (160mph). The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.1 of the PAPPG V5.

- Replace **14ea** 70ft round galvanized steel pole of 145mph windspeed resistance ASCE/SEI 48-19 with **14ea** 70ft steel galvanized, 12-sided, tapered shaft distribution pole to increase the strength of the pole by increasing the wind tolerance by design to 160mph.

- Replace **1ea 50ft round galvanized steel pole** of 145mph windspeed resistance ASCE/SEI 48-19 with **1ea 50ft steel galvanized, 12-sided**, tapered shaft distribution pole to increase the strength of the pole by increasing the wind tolerance by design to 160mph.

Mitigation Measures (*Supplement*)

To avoid damage in a future event, the sub-recipient proposes as a mitigation measure to increase the strength of the poles by adding concrete foundations to mitigate future damage to the structures due to high wind (160mph) and flooding. The above mitigation measures will protect and make the affected infrastructure more resistant, stronger, and resilient to similar hazards. Refer to Appendix J: Section VI.D.3 of the PAPPG V5.

- Install ten (10ea) new concrete base foundation for ten (10ea) 70ft 12-sided galvanized steel pole = **85.35 CY**.

$$\circ \{[(5.25/2)^2 * 3.14 * 12.3] - [(2/2)^2 * 3.14 * 12.3]\} / 27 = \text{approx. } 85\text{CY}$$

- Included with the foundation:
 - Corrugated metal pipe as the form for the foundation.
 - Crushed stone base.

(III) Hazard Mitigation Proposal (HMP) Cost

Total Net Hazard Mitigation Cost (Base Cost) =	\$ 112,503.44
+ HM (Recipient A&E, Management & General Conditions) =	<u>\$ 28,174.10</u>
Hazard Mitigation Total Cost =	\$ 140,677.54

(IV) Hazard Mitigation Proposal (HMP) Cost Distribution

Equipment and Materials (E&M) =	\$ 17,467.93
Architecture and Engineering (A&E) =	\$ 11,800.00
Construction Cost =	<u>\$ 111,409.62</u>
Hazard Mitigation Total Cost =	\$ 140,677.54

(IV) 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 (FAAS) 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 **\$142,335.00 (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
3510	1	Lump Sum	(\$120,608.99)	Uncompleted
9001	1	Lump Sum	\$1,437,390.31	Uncompleted
9001	1	Lump Sum	(\$141,345.83)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost \$1,175,435.49

Total 406 HMP Cost \$140,677.54

Total Insurance Reductions \$0.00

CRC Net Cost \$1,316,113.03

Federal Share (90.00%) \$1,184,501.73

Non-Federal Share (10.00%) \$131,611.30

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

10/2/2025

GENERAL INFORMATION

Event: DR4339-PR

Project: SP 749060

Category of Work: Cat F - Utilities

Applicant: PR Electric Power Authority

Event Type: Hurricane / Hurricane Maria

Cause of Loss: Wind / Wind Driven Rain

Incident Period: 9/17/2017 to 11/15/2017

Total Public Assistance Amount: \$860,152.65 (CRC Gross Cost \$717,817.65 + Mitigation Amount \$142,335.00)

COMMERCIAL INSURANCE INFORMATION

Does the applicant have a Commercial Policy that extends coverage for this facility: Yes

Policies Issued by: Willis Towers Watson, Multinational Insurance Company and Mapfre

Policy Numbers: Willis Towers Watson (B0804Q1966F17, B0804Q14312F17, B0804Q19673F17, B0804Q19672F17, B0804Q18529F17, B0804Q14312F17, B0804Q19674F17, B0804Q18411F17, B0804Q14310F17, B0804Q11038F17, B0804Q14507F17, B0804Q14312F17)

Mapfre Praico Insurance Company (1398178000644)

Multinational Insurance Company (88-CP-000307831-2, 88-CP-000318673-0, 88-CP000318674-0, 88-CP-000318675-0, 88-CP-000318676-0, 88-CP-000318677-0)

Policy Period: From: 5/15/2017 To: 5/15/2018

Policy Limits: \$300,000,000.00

RCV or ACV: Replacement Cost Value

Deductible Amount \$25,000,000.00 each and every occurrence property damage and 30 days each and every occurrence business interruption in respect of Named Windstorm.

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

NUMBER OF DAMAGED LOCATIONS INCLUDED IN THIS PROJECT: (1)

Damaged Inventory (DI) #454628:

FAASt [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC]

Location: Rio Blanco Penstock

GPS Coordinates: [REDACTED]

Cause of Loss: Wind / Wind Driven Rain

SOV / Schedule #: Not insured

SOV / Schedule Amount: Not insured

Applicable Deductible Amount: N/A

Damage Inventory Amount: \$860,152.65 (CRC Gross Cost \$717,817.65 + Mitigation Amount \$142,335.00)

-

Prior Obtain and Maintain Requirement:

No prior insurance requirements were found for this facility.

-

Reduction(s):

No insurance reduction will be applied to this project as coverage is not anticipated. An anticipated insurance reduction of \$193,746,436.00 was applied to FAAST project # 136271 for anticipated insurance proceeds for Hurricane Maria losses. For ease of reference, please see table of insurance allocations: "PREPA Allocation Plan – All Disasters" file._

-

Obtain and Maintain Requirement:

No Obtain & Maintain Requirement is being mandated for the FAAST [Transmission Priority Pole Replacement Program Line 5600 Victoria TC – Añasco TC] because the facility does not meet the definition of building, equipment, contents, or vehicle.

Insurance Proceeds Statement:

FEMA acknowledges that the Applicant is in negotiations with their insurance carrier at the time of the FEMA insurance review and might have received partial settlements. In accordance with 44 CFR §206.250-253, in the absence of an actual settlement, anticipated insurance recoveries will be deducted from this project based on Applicant's insurance policy limits. FEMA subsequently adjusts the eligible costs based on the actual amount of insurance proceeds the Applicant receives after a final settlement.

FEMA's Recovery Policy FP 206-086-1, Public Assistance Policy on Insurance (June 29, 2015), requires applicants to take reasonable efforts to recover insurance proceeds that it is entitled to receive from its insurers. FEMA will consider final insurance settlements that may be less than the insurance policy limits when an applicant demonstrates that it has taken reasonable efforts to recover insurance proceeds that it is entitled to on a case-by-case basis.

Standard Insurance Comments

FEMA Policy 206-086-1

PART 2: Other Insurance-Related Provisions. (Sections 312 and 406(d) of the Stafford Act)

A. Duplication of Benefits. FEMA cannot provide assistance for disaster-related losses that duplicate benefits available to an applicant from another source, including insurance.

1. Before FEMA approves assistance for a property, an applicant must provide FEMA with information about any actual or anticipated insurance settlement or recovery it is entitled to for that property.

2. FEMA will reduce assistance to an applicant by the amount of its actual or anticipated insurance proceeds.

3. Applicants must take reasonable efforts to recover insurance proceeds that they are entitled to receive from their insurer(s).

...

5. If an applicant has an insurance requirement from a previous event:

a. FEMA will reduce assistance by the actual or anticipated insurance proceeds, or the amount of insurance required in the previous disaster, whichever is greater.

b. FEMA will only consider insolvent insurers, legal fees, or apportionment of proceeds as described in Section VII, Part 2(A)(3) and (4) when the applicant's anticipated or actual insurance proceeds are higher than the amount of insurance required in the previous disaster.

Jorge Parrilla, PA Insurance Specialist

CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Priority Pole Replacement Program (Line 5600 Victoria TC – Añasco TC)] (Transmission)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Priority Pole Replacement Program (Line 5600 Victoria TC – Añasco TC)] (Transmission)**.

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. 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 [Priority Pole Replacement Program (Line 5600 Victoria TC – Añasco TC)] (Transmission)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 11/24/2025 12:45 PM PST

Review Comments

Scope of work for Line 5600 from VICTORIA TC - AÑASCO TC will consist of the replacement of hardware, the poles identified in Appendix B, guys anchoring and foundations for TL5600 "Proposed 428 Public Assistance Scope of Work" and "Proposed 406 Hazard Mitigation Program Scope of Work. Reviewed, found eligible and reasonable. Subrecipient is responsible for complying with all grants and subgrant conditions. - CLG 11/24/25

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 12/01/2025 2:18 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 \$1,316,113.03 for subaward number 11874 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	Pending	In Review		\$860,152.65	90%	\$0.00	

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	3/1/2026	\$1,184,501.73	90%	Accepted	4339DRPRP00118741

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	750065	P/W #	107966	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 3 -Bayamon Group A] Low Density (Vegetation)			Declaration Date	9/20/2017
Project Size	Large	Incident Start Date	9/17/2017	Incident End Date	11/15/2017
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #1379715; FAASt [Region 3 Bayamon Group A Distribution] Low Density (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 3 Bayamon Group A Distribution Low Density
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines. The facilities addressed in this project are all the overhead distribution lines at applicant identified within Region 3 (Bayamon) of PREPA electrical grid.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

1379715 FAASt [Region 3 Bayamon Group A Distribution] Low Density (Vegetation)

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 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-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 Bayamon Region 3 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-PR Public Assistance PREPA FAASt Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See document FAAStVegetationHMPApproach_Distribution_03.24.2025.pdf. 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) = \$30,385.95 per mile. Therefore, the total cost (PA) for this project will be \$18,569,923.87

D#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1379715	\$ 30,385.95	620.82	\$18,864,205.48	(\$294,281.61)	\$ 18,569,923.87

Work to be completed total: \$21,671,901.18

A&E Deduction (Global A&E FAASt 335168): -\$338,981.66

Project Total : \$21,333,819.52

Work to be completed total (After IEP Review): \$18,864,205.48

A&E Deduction (Global A&E FAASt 335168 -After IEP Review): -\$294,281.61

Project Total (After IEP Review): \$18,569,923.87

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, 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 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 Region 3 Bayamon Group A Low Density - PW 750065 DSOW 12_22_2025.pdf.
5. Vegetation clearance funds will not be allocated to Sub FAASt projects in low density locations.
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.

8. Fixed Cost Offer Revised by Independent Expert Panel (IEP). See Expert Review tab for details.

406 HMP Scope

Project number: 750065- FAASt [Region 3 -Bayamon Group A] Low Density (Vegetation)

Damage number: 1379715; FAASt [Region 3 Bayamon Group A Distribution] Low Density (Vegetation)

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

Location: Region 3 - Bayamon, 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 utility 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 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 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 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 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*. 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 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 was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamón
- Region 4 – Caguas
- Region 5 – Mayagüez
- 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 – 38 kV Transmission
- Group C – Overlapped Distribution and Transmission Lines
- 115 kV 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 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, which is associated with impervious locations within the Bayamon 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) = \$34,908.51 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 3 (Bayamon) 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 Center
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 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 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.
- 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 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 /
*Risk Factor approved by the DR4339-PR leadership (5%) =	\$5,405.14 /
Vegetation Clearance Cost per Mile (w/ risk factor applied) =	\$113,507.95 /
PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$30,385.95 /
Hazard Mitigation Total Cost per Mile =	\$83,122.00 /
Project Total Miles (PN750065) =	620.82
Hazard Mitigation Total Cost per Mile =	\$83,122.00 /
Hazard Mitigation Total Cost =	\$51,603,80

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.³

Total Net Hazard Mitigation Cost (Base Cost) =	\$49,125,00
+ HM (Management & General Conditions Factors) =	\$2,478,00
Hazard Mitigation Total Cost =	\$51,603,00

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

Architecture and Engineering (A&E) =	\$805,0
Remaining Vegetation Clearance Cost =	\$50,798,
Hazard Mitigation Total Cost =	
	\$51,603,800.04

(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 is **\$59,366,309.82** (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*).

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**.

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.

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.

1. "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"
2. "LUMA Vegetation Management 10ft and 12ft clearance diagram (1).pdf"
3. "FAASTVegetationHMPApproach_Distribution_03.24.2025.pdf"
4. "Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"
5. "IWBCA HMP Package.pdf"
6. "Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters.pdf"

7. "Region 3 Bayamon Group A Low Density - PW 750065 DSOW 11_20_2024.pdf"
8. "PN750065-DR4339PR-HMCE-20251222-REG_IEP Review.xlsx"
9. "PN750065-DR4339PR-HMP-20251229-REG.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$18,864,205.48	Uncompleted
3510	1	Lump Sum	(\$294,281.61)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$18,569,923.87
Total 406 HMP Cost	\$51,603,800.04
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$70,173,723.91
Federal Share (90.00%)	\$63,156,351.52
Non-Federal Share (10.00%)	\$7,017,372.39

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

12/29/2025

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.

Olga Renta, PA Insurance Specialist
CRC Atlantic, Guaynabo, PR

O&M Requirements

There are no Obtain and Maintain Requirements on **FAASt [Region 3 -Bayamon Group A] Low Density (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Region 3 -Bayamon Group A] Low Density (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.
- FEMA will require that an archaeologist, who meets the Secretary of the Interior (SOI) Qualification Standards (36 CFR Part 61) for archaeology, conduct a Level II Desktop Review and Background Research, as outlined in Stipulation II.D.3.b of the PSPA, for all projects that includes vegetation clearing activities not covered by Tier II Programmatic Allowances and require further Section 106 consultation, as described in the FEMA letter dated March 7, 2025. In this case, the areas of potential effects (APEs) that would be subject to this level of analysis are: ROW segments of unmaintained T&D lines in suburban and/or rural areas where work cannot be conducted from an existing shoulder and/or requires construction of new access roads through undisturbed land within or outside of existing ROWs. The Level II Desktop Review and Background Research results shall be documented in a Phase I Analysis Report, as described in Stipulation II.D.5 of the PSPA, to be submitted to FEMA for review prior to the initiation of any work in the areas defined above.

- 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 to 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.
- 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. 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.
- 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. 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.
- 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. The Applicant shall ensure best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. To ensure that wetlands are not adversely impacted, per the Clean Water Act and Executive Order 11990, equipment storage and staging of construction materials and machinery must be in a location that would prevent erosion and sedimentation. Debris may not be staged, stored, or disposed of in wetlands without the required permits.
- 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 debris in authorized landfills providing the name, location, coordinates and permits of the facility to the corresponding authorities. 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds. If TDS sites: This site is for temporary debris storage (TDS). Final disposal will take place at an authorized sanitary landfill. All coordination pertaining to final disposal activities should be documented and forwarded to FEMA as part of the permanent project file. Non-compliance with these requirements may jeopardize receipt of federal funds.
- 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).
- The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- PR Boa Conditions Terms & Conditions (T&C) 1: The Service and the Federal Agency will ensure take levels do not exceed levels anticipated in the PBO. 1. Inform all project personnel about the potential presence of the PR and VI boa in areas where the proposed work will be conducted and provide training session 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. 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 movements, the boundaries of the project area and areas to be excluded and protected will be clearly marked in the project plan and in the field in order to avoid further habitat degradation outside of the AA.
- 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), a 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 AA. 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 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, the 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 AA and on harm's way, the action will stop at that area and information recorded (see #5). If a PR or VI boa is located within harm's way, all attempts will be made to immediately safely capture the animal (refer to T&C 2). PR boas will be safely captured and relocated at least 1km within suitable habitat (forested) 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 and designated personnel and will not harm or injure the captured boa. If any VI boa is found, do not relocate. Capture and temporary hold the individual accordingly (refer to T&C 2). Contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers immediately if in Puerto Rico (787-724-5700, 787-230-5550, 787-771-1124) or contact the USVI Department of Planning and Natural Resources (DPNR), Division of Wildlife, immediately if in St. Thomas (340-775-6762, 340-773-1082). The Action may continue at other work sites within the AA where no PR and VI boas have been found. If immediate relocation of PR boa by the project biologist or designated personnel is not an option, project related activities at this area will stop until the boa moves out of harm's way on its own or call the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (787-724-5700, 787-230-5550, 787-771-1124). The potential use of the PRDNER staff for these purposes should be coordinated with them at least 30 days before the project starts. If a PR boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the PR boa will be relocated. Measures will be taken to avoid and minimize PR boa and VI boa casualties by heavy machinery or motor vehicles being left in the AA. 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 (refer to T&C 2). If not possible, the animal will be left alone until it leaves the vehicle or machine by itself.
- 7. 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 farthest away 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. 8. In the event a PR boa and VI boa is found dead within the project footprint, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. 9. Should the forms of take reach the amount of exempted take (Table 6-1) during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours in order to reinstate consultation. The Service and the Federal Agency and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted.
- 10. 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 in order to reinstate consultation. The Service and the Federal Agency and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted 11. The contact information for the Service must be followed: Fish and Wildlife Biologist: Jan P. Zegarra at jan_zegarra@fws.gov, 786-933-1451; Endangered Species Program Coordinator: Jose Cruz at Jose_Cruz-Burgos@fws.gov, 305-304-1386. All reporting must be submitted at caribbean_es@fws.gov.
- Terms & Conditions (T&C) 2: The Service requires the Federal Agency to follow standard procedures while capturing, handling, transporting, temporary holding, relocating and tracking VI boas in order to minimize the risk of injury and mortality to the species.
 - A. The Federal Agency and the Recipient shall identify who will capture PR or VI boas and assess and determine if a boa has been injured as a result of project activities, and if it is in need of veterinary care or rehabilitation. If an injured PR boa or VI boa is in need of veterinary care or rehabilitation, the Federal Agency and the Recipient shall immediately seek veterinary care for the animal and inform the Service within 24 hours of the event.
 - B. The Federal Agency must ensure that any permitted individuals, contractor, recipients or cooperators follow proper procedures and methods for capturing, handling, temporary holding, relocating of the PR and VI boa. The following procedures will be followed:
 - i. All PR and VI boas shall be handled safely to avoid injury. The preferred method of capture is by hand, although a snake hook or stick may also be used if snake is uncatchable by hand, or in order to help move the snake into a safer position for capture.
 - ii. All PR and VI boas may be temporarily held during and/or relocation purposes. Boas will be handled as little as possible, and they shall not be kept for more than three days since the day of capture. Temporary holding of boas will be in burlap bags (1 boa per bag) and/or secured containers, which must be placed in cool dry areas that are not in direct sunlight or extreme temperatures. Burlap bags shall be placed inside a container with other boas each inside their own burlap bag and labeled properly. All containers shall be well-ventilated and with a secure lid to avoid boas from escaping.
 - iii. Only qualified, experienced personnel, with a required State and Federal applicable permits may place PIT tag injections. PIT tags may be subcutaneously injected mid-body using sterile syringes. When injecting tags, keep needle parallel to the boa's body and do not force the needle into the muscle tissue or between the ribs. Snakes greater than 400 mm (15.7 in) in length, but that weigh less than 100 grams (3.5 oz), may be PIT tagged with a 5 mm (0.19 in.) PIT tag. An 8 mm (0.31 in) PIT tag may be used for all snakes that weigh over 100 grams (3.5 oz).
 - iv. The Federal Agency and the Recipient and/or contractors shall obtain all necessary permit(s) from the corresponding State

agency for capturing, handling, transporting, temporary keeping, relocating and tracking PR and VI boas.

- Monitoring and Reporting (M&R) Requirements: In order to monitor the impacts of incidental take, the Federal Agency and the Recipient must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR 402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R), including procedures for handling and disposing of any PR and VI boas killed or injured. These M&R requirements are mandatory. As necessary and appropriate to fulfill this responsibility, the Action Agency must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that the Action Agencies include in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the Service if the amount or extent of incidental take specified in this incidental take statement (ITS) is exceeded during actions implementation.
- M&R 1. The Federal Agency and the Recipient will ensure that incidental take levels will be minimal. A. For all PR and VI boa sightings (dead or alive), the Action Agency shall ensure that an effective monitoring and reporting method is established. Reporting shall include the following and should injury or mortality occurred during the Action, the Federal Agency and the Recipient shall contact the Service within 24 hours of the event: i. Date, time and location (latitude/longitude) of the sightings and relocation sites. ii. Size, weight and sex (if possible) of the PR and VI boa. iii. A photograph of the snake as found or after capture. iv. Description of how and what caused the take in the case of injury or death. v. Description of any additional conservation measures that may be implemented to further avoid and minimize take.
- M&R 2. Disposition of Dead or Injured boas: A. Disposition of dead animals must be immediately coordinated with the Service for appropriate disposal of the animal. B. The Service may request some dead specimens of PR boa and all for VI boa. The Federal Agency and the Recipient shall coordinate the delivery of such specimen to the Service. C. In case of an injured boa, the Federal Agency and the Recipient must seek veterinary care for the animal and inform the Service within 24 hours of the event.
- 1. 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. 2. 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.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Region 3 -Bayamon Group A] Low Density (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 01/07/2026 12:52 PM PST

Review Comments

Project cost was updated as per IEP review, in accordance with the PAPPG v. 3.1 (2018) and the PAAP (2022). 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. Therefore, the total cost (PA) for this project will be \$18,569,923.87. 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. Hazard Mitigation Total Cost= \$51,603,800.04. Subrecipient is responsible for complying with all grants and subgrant conditions. - CLG 1/7/2026

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 01/12/2026 7:19 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 \$70,173,723.91 for subaward number 107966 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$63,156,351.52	90%	Accepted	4339DRPRP01079661

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

v0

General Info

Project #	750066	P/W #	107967	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 4 -Caguas Group A] Low Density (Vegetation)		Declaration Date	9/20/2017	
Project Size	Large	Incident Start Date	9/17/2017		
Activity Completion Date	9/20/2027	Incident End Date	11/15/2017		
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #1379716; FAASt [Region 4 - Caguas Group A Distribution] Low Density (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 4 - Caguas Group A Distribution Low Density
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines. The facilities addressed in this project are the overhead distribution lines within Region 4 (Caguas) of PREPA electrical grid.
- **Approx. Year Built:** 1950
- **GPS Latitude/Longitude:** [REDACTED]

Final Scope

1379716 FAASt [Region 4 - Caguas Group A Distribution] Low Density (Vegetation)

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 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-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 Caguas Region 4 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-PR Public Assistance PREPA FAASt Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See document FAAStVegetationHMPApproach_Distribution_03.24.2025.pdf. 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) = \$30,385.95 per mile. Therefore, the total cost (PA) for this project will be \$28,466,485.03.

DI#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1379716	\$30,385.95	951.58	\$28,914,662.30	(\$448,177.27)	\$28,466,485.03

Work to be completed total: ~~\$33,218,239.95~~

A&E Deduction (Global A&E FAASt 335168): ~~\$514,882.72~~

Project Total : ~~\$32,703,357.23~~

Work to be completed total (After IEP Review): \$28,914,662.30

A&E Deduction (Global A&E FAASt 335168 -After IEP Review): ~~\$448,177.27~~

Project Total (After IEP Review): \$28,466,485.03

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, 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 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 Region 4 caguas Group A Low Density - PW 750066 DSOW 12_22_2025.pdf.
5. Vegetation clearance funds will not be allocated to Sub FAASt projects in low density locations.
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.
8. Fixed Cost Offer Revised by Independent Expert Panel (IEP). See Expert Review tab for details.

406 HMP Scope

Project number: [750066] FAASt [Region 4 -Caguas Group A] Low Density (Vegetation)

Damage number: 1379716

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

Location: Region 4 - Caguas, 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 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 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*. 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 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 was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamón
- Region 4 – Caguas

- Region 5 – Mayagüez
- 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 – 38 kV Transmission.
- Group C – Overlapped Distribution and Transmission Lines
- 115 kV 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 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, which is associated with impervious locations within the Caguas 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:

Damage #1379716; FAAST [Region 4 - Caguas Group A Distribution] Low Density (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 4 (Caguas) 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

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, and vegetation mastication. 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. The following clearing methods 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 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 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- “FAASIVegetationHMPApproach_Distribution_01.29.2025.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 /
*Risk Factor approved by the DR4339-PR leadership (5%) =	<u>\$5,405.14 /</u>
Vegetation Clearance Cost per Mile (w/ risk factor applied) =	<u>\$113,507.95</u>
² PA Vegetation Clearance Overlap per Mile (Deduction) =	<u>(\$30,385.95 /</u>
Hazard Mitigation Total Cost per Mile =	\$83,122.00 /
Project Total Miles (PN750066) =	951.58
Hazard Mitigation Total Cost per Mile =	<u>\$83,122.00 /</u>
Hazard Mitigation Total Cost =	\$79,097,23

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) =	\$75,298,
+ HM (Management & General Conditions Factors) =	<u>\$3,798</u>
Hazard Mitigation Total Cost =	\$79,097.

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

Architecture and Engineering (A&E) =	\$1,226,
Remaining Vegetation Clearance Cost =	<u>\$77,871</u>
Hazard Mitigation Total Cost =	\$79,097

(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 is **\$79,097,232.76** (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*).

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**. An additional 15% amount was added to this base cost for General Conditions, resulting in a total cost of **\$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**.

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.

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.

1. "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"
2. "LUMA Vegetation Management 10ft and 12ft clearance diagram (1).pdf"
3. "FAAStVegetationHMPApproach_Distribution_01.29.2025.pdf"
4. "Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"
5. "IWBCA HMP Package.pdf"
6. "Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters".pdf
7. "Region 4 Caguas Group A Low Density- PW 750066 DSOW 11_20_2024.pdf"
8. "PN750066-DR4339PR-HMCE-20251222-REG_IEP Review.xlsx"

9. "PN750066-DR4339PR-HMP-20251223-REG.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$28,914,662.30	Uncompleted
3510	1	Lump Sum	(\$448,177.27)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$28,466,485.03
Total 406 HMP Cost	\$79,097,232.76
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$107,563,717.79
Federal Share (90.00%)	\$96,807,346.02
Non-Federal Share (10.00%)	\$10,756,371.77

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.
- 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.
- 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 Subrecipient provided the estimate for this PW. FEMA validated the estimate and found it to be reasonable for the work to be performed.
- The Expert Panel validated the estimate included on this PW. The project estimate and Expert Panel Report are attached to the PW.

Insurance

Additional Information

12/23/2025

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 [Region 4 -Caguas Group A] Low Density (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 4 -Caguas Group A] Low Density (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.
- 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. 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.
- FEMA will require that an archaeologist, who meets the Secretary of the Interior (SOI) Qualification Standards (36 CFR Part 61) for archaeology, conduct a Level II Desktop Review and Background Research, as outlined in Stipulation II.D.3.b of the PSPA, for all projects that includes vegetation clearing activities not covered by Tier II Programmatic Allowances and require further Section 106 consultation, as described in the FEMA letter dated March 7, 2025. In this case, the areas of potential effects (APEs) that would be

subject to this level of analysis are: ROW segments of unmaintained T&D lines in suburban and/or rural areas where work cannot be conducted from an existing shoulder and/or requires construction of new access roads through undisturbed land within or outside of existing ROWs. The Level II Desktop Review and Background Research results shall be documented in a Phase I Analysis Report, as described in Stipulation II.D.5 of the PSPA, to be submitted to FEMA for review prior to the initiation of any work in the areas defined above.

- 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 to 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.
- The Applicant must provide documentation at close-out that proves completion of required Conservation Measures. To avoid any adverse effect on the *Chilabothrus inornatus* (Puerto Rican Boa), the Applicant shall comply with the following conservation measures, in addition to the Terms and conditions specified in the Amended Programmatic Opinion for the Puerto Rican Boa by USFWS (July 2023): Terms & Conditions (T&C) 1: 1. Inform all project personnel about the potential presence of the PR and VI boa in areas where the proposed work will be conducted and provide training session on PR and VI boa identification. A preconstruction meeting will be conducted to inform all project personnel about the need to avoid harming these species. 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 movements, the boundaries of the project area and areas to be excluded and protected will be clearly marked in the project plan and in the field in order to avoid further habitat degradation outside of the AA. 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), a 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 AA. 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 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, the time and date of the relocation, and comments on how the animal was detected and its behavior.
- Continue Conservation Measures for Puerto Rican Boa: 6. If any PR or VI boa (dead or alive) is found within the AA and on harm's way, the action will stop at that area and information recorded (see #5). If a PR or VI boa is located within harm's way, all attempts will be made to immediately safely capture the animal (refer to T&C 2). PR boas will be safely captured and relocated at least 1km within suitable habitat (forested) 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 and designated personnel and will not harm or injure the captured boa. If any VI boa is found, do not relocate. Capture and temporary hold the individual accordingly (refer to T&C 2). Contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers immediately if in Puerto Rico (787-724-5700, 787-230-5550, 787-771-1124) or contact the USVI Department of Planning and Natural Resources (DPNR), Division of Wildlife, immediately if in St. Thomas (340-775-6762, 340-773-1082). The Action may continue at other work sites within the AA where no PR and VI boas have been found. If immediate relocation of PR boa by the project biologist or designated personnel is not an option, project related activities at this area will stop until the boa moves out of harm's way on its own or call the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (787-724- 5700, 787-230-5550, 787-771-1124). The potential use of the PRDNER staff for these purposes should be coordinated with them at least 30 days before the project starts. If a PR boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the PR boa will be relocated. 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 AA. 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 (refer to T&C 2). If not possible, the animal will be left alone until it leaves the vehicle or machine by itself. 8. 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 farthest away 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.
- Continue Conservation Measures for Puerto Rican Boa: 9. In the event a PR boa and VI boa is found dead within the project footprint, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. 10. Should the forms of take reach the amount of exempted take (Table 6-1) during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours in order to reinstate consultation. The Service and the Federal Agency

and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted. 11.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 in order to reinitiate consultation. The Service and the Federal Agency and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted. 12.The contact information for the Service must be followed: Fish and Wildlife Biologist: Jan P. Zegarra at jan_zegarra@fws.gov, 786-933-1451; Endangered Species Program Coordinator: Jose Cruz at Jose_Cruz-Burgos@fws.gov, 305-304-1386. All reporting must be submitted at caribbean_es@fws.gov.

- Continue Conservation Measures for Puerto Rican Boa: Terms & Conditions (T&C) 2: The Service requires the Federal Agency to follow standard procedures while capturing, handling, transporting, temporary holding, relocating and tracking PR and VI boas in order to minimize the risk of injury and mortality to the species. A. The Federal Agency and the Recipient shall identify who will capture PR or VI boas and assess and determine if a boa has been injured as a result of project activities, and if it is in need of veterinary care or rehabilitation. If an injured PR boa or VI boa is in need of veterinary care or rehabilitation, the Federal Agency and the Recipient shall immediately seek veterinary care for the animal and inform the Service within 24 hours of the event. B. The Federal Agency must ensure that any permitted individuals, contractor, recipients or cooperators follow proper procedures and methods for capturing, handling, temporary holding, relocating of the PR and VI boa. The following procedures will be followed: i. All PR and VI boas shall be handled safely to avoid injury. The preferred method of capture is by hand, although a snake hook or stick may also be used if snake is uncatchable by hand, or in order to help move the snake into a safer position for capture. ii. All PR and VI boas may be temporarily held during and/or relocation purposes. Boas will be handled as little as possible, and they shall not be kept for more than three days since the day of capture. Temporary holding of boas will be in burlap bags (1 boa per bag) and/or secured containers, which must be placed in cool dry areas that are not in direct sunlight or extreme temperatures. Burlap bags shall be placed inside a container with other boas each inside their own burlap bag and labeled properly. All containers shall be well-ventilated and with a secure lid to avoid boas from escaping. iii. Only qualified, experienced personnel, with a required State and Federal applicable permits may place PIT tag injections. PIT tags may be subcutaneously injected mid-body using sterile syringes. When injecting tags, keep needle parallel to the boa's body and do not force the needle into the muscle tissue or between the ribs. Snakes greater than 400 mm (15.7 in) in length, but that weigh less than 100 grams (3.5 oz), may be PIT tagged with a 5 mm (0.19 in.) PIT tag. An 8 mm (0.31 in) PIT tag may be used for all snakes that weigh over 100 grams (3.5 oz). iv. The Federal Agency and the Recipient and/or contractors shall obtain all necessary permit(s) from the corresponding State agency for capturing, handling, transporting, temporary keeping, relocating and tracking PR and VI boas.
- Continue Conservation Measures for Puerto Rican Boa: Monitoring and Reporting (M&R) Requirements: In order to monitor the impacts of incidental take, the Federal Agency and the Recipient must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR �402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R), including procedures for handling and disposing of any PR and VI boas killed or injured. These M&R requirements are mandatory. As necessary and appropriate to fulfill this responsibility, the Action Agency must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that the Action Agencies include in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the Service if the amount or extent of incidental take specified in this incidental take statement (ITS) is exceeded during Actions implementation. M&R 1. The Federal Agency and the Recipient 1. For all PR and VI boa sightings (dead or alive), the Action Agency shall ensure that an effective monitoring and reporting method is established. Reporting shall include the following and should injury or mortality occurred during the Action, the Federal Agency and the Recipient shall contact the Service within 24 hours of the event: i. Date, time and location (latitude/longitude) of the sightings and relocation sites. ii. Size, weight and sex (if possible) of the PR and VI boa. iii. A photograph of the snake as found or after capture. iv. Description of how and what caused the take in the case of injury or death. v. Description of any additional conservation measures that may be implemented to further avoid and minimize take. M&R 2. Disposition of Dead or Injured boas: A. Disposition of dead animals must be immediately coordinated with the Service for appropriate disposal of the animal. B. The Service may require some dead specimens of PR boa and VI boa. If requested, the Federal Agency and the Recipient shall coordinate the delivery of such specimen to the Service. C. In case of an injured boa, the Federal Agency and the Recipient must contact the Service immediately to coordinate for veterinary care, if needed.
- To avoid any adverse effect on the *Accipiter striatus venator* (Puerto Rican sharp-shinned hawk), *Buteo platypterus brunnescens* (Puerto Rican broad-winged hawk) and *Patagioenas Inornata Wetmorei* (Puerto Rican Plain Pigeon) the Applicant shall comply with the following conservation measures: 1. 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. During breeding seasons (see below), nest surveys shall be conducted if a project occurs within the range of any of the species listed above and if habitat for those species will be impacted by the proposed actions. Nest searches must be conducted by qualified personnel with the appropriate permits from the Puerto Rico Department of Natural and Environmental Resources (PRDNER) prior to start of work. If nesting activity is detected, all construction activities or human disturbance must be avoided within a 50-meter buffer around any nest(s) found within the project area. This avoidance strategy must be kept until fledglings successfully leave the nest(s) permanently. Outside the breeding season no nest surveys are required, but if a nest is encountered, all construction activities or human disturbance must be avoided within a 50-meter buffer around that nest(s). This avoidance strategy must be kept until fledglings successfully leave the nest(s) permanently. Furthermore, if any of the species indicated above is observed (e.g., foraging, resting) within the project area, avoid any disturbance to the individual(s) and do not flush the bird until it leaves on its own. Nesting seasons: - Puerto Rican parrot: February-June. - Puerto Rican plain pigeon: April-September. - Puerto Rican broad-winged hawk: December-June. - Puerto Rican sharp-shinned hawk: December-June. - Puerto Rican nightjar: February-August. - Effin-woods warbler: March-June. - Yellow-shouldered blackbird: February-November. For all nest sightings, the Applicant must

record the time and date of the sighting and the specific location where it was found. All sightings and incidental lethal take reports should be sent to the USFWS Caribbean Ecological Services Field Office at Caribbean_es@fws.gov. For questions, the Point of Contact (POC) is Jos#65533; Cruz-Burgos, Endangered Species Program Coordinator, and can be contacted at: o Mobile: 305-304-1386 o Office phone: 786-244-0081 o Office Direct Line: 939-320-3120 o Email: jose_cruz-burgos@fws.gov

- To avoid any adverse effect on the Dermochelys coriacea (Leatherback Sea Turtle) and Eretmochelys imbricata (Hawksbill Sea Turtle) the Applicant shall comply with the following conservation measures: 1. 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
- Continue Conservation Measures for Leatherback Sea Turtle and Hawksbill Sea Turtle: 2. 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. 3. Relocation of sea turtle nests to accommodate construction is not authorized. 4. 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. 5. 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. 6. 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. 7. 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.
- Continue Conservation Measures for Leatherback Sea Turtle and Hawksbill Sea Turtle: 8. 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. 9. Removal of vegetation, fence installation, construction activities, and light installation shall be limited within 50 meters from the high tide line. 10. 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. 11. 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. 12. 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.nmfs@noaa.gov and SAJ-RD-Enforcement@usace.army.mil.
13. 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 or jose_cruz-burgos@fws.gov
14. 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 or jose_cruz-burgos@fws.gov

- To avoid any adverse effect on the *Banara vanderbiltii* (Palo de Ramon), *Ottoschulzia rhodoxylon* (Palo de Rosa), and *Solanum drymophilum* (Bahama nightshade) the Applicant shall comply with the following conservation measures: 1. Before initiating any work within the range of listed plant species and in areas with suitable habitat, applicants must conduct plant surveys. In the event that listed species are discovered at the project site, the Service must be notified. The Applicant must develop conservation measures to minimize or avoid impacts on those species and share those measures with the Service for evaluation and approval. If no listed plants are found during surveys, no further action is required. However, if a listed plant species is found while the project is being conducted, project personnel shall stop work, and the Service should be contacted for further technical assistance. Service's point of contacts: - José Cruz-Burgos, Endangered Species Program Coordinator, Mobile: 305-304-1386, Office: 786-244-0081, jose_cruz-burgos@fws.gov. - Omar Monsegur, Fish and Wildlife Biologist, Mobile: (305) 304-0292, omar_monsegur@fws.gov.
- To avoid any adverse effect on the *Eleutherodactylus cooki* (Coqui Guajon), the Applicant shall comply with the following conservation measures: 1. Inform all project personnel about the potential presence of the coqui guajon in areas where the proposed work will be conducted. A pre-construction meeting must be conducted to inform all project personnel about the requirement of avoiding harm to the 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, as amended. An educational poster or sign with photos or illustrations of the species should be displayed at the project site. 2. Project boundaries, buffer zones and areas to be excluded or protected must be clearly marked in the project plans and in the field, prior to any construction activity, including removal of vegetation and earth movement. 3. Erosion and Sedimentation Control Best Management Practices (BMP's) must be included in the project scope of work when working within or adjacent to the coqui guajon habitat (e.g., rivers, streams, drainages, ravines, big boulder areas) to avoid or minimize erosion and sedimentation. Sediment runoff from the project can adversely affect the species and its habitat by filling the caves and crevices where the species occurs and uses to lay its eggs. As water is a very important component of the species' habitat, any stream, creek, or similar body of water with the habitat characteristics indicated above may harbor the species, hence it shall be protected to the maximum extent possible. 4. All project associated with streams, rivers, bridges, culverts, etc., must follow the Post-Disaster Guidance for Repair, Replacement, and Clean-up Projects in Streams and Waterways of Puerto Rico from Hurricane Maria. The guide is available at: <https://www.fws.gov/media/guidance-repair-replacement-and-clean-structures-streams-and-waterways-puerto-rico-and-us>.
- 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. Add condition regarding Attachment(s): - 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).
- 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 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds. 3. If TDS sites: This site is for temporary debris storage (TDS). Final disposal will take place at an authorized sanitary landfill. All coordination pertaining to final disposal activities should be documented and forwarded to FEMA as part of the permanent project file. Non-compliance with these requirements may jeopardize receipt of federal funds.
- 1.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. 2.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.
- 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. The Applicant shall ensure best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. To ensure that wetlands are not adversely impacted, per the Clean Water Act and Executive Order 11990, equipment storage and staging of construction materials and machinery must be in a location that would prevent erosion and sedimentation. 3. Debris may not be staged, stored, or disposed of in wetlands without the required permits.

- 1. 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. 2. 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.

EHP Additional Info

There is no additional environmental historical preservation on **FAAST [Region 4 -Caguas Group A] Low Density (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 01/07/2026 12:51 PM PST

Review Comments

Project cost was updated as per IEP review, in accordance with the PAPPG v. 3.1 (2018) and PAAP (2022). 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. Therefore, the total cost (PA) for this project will be \$28,466,485.03. 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. Hazard Mitigation Total Cost= \$79,097,232.76. Subrecipient is responsible for complying with all grants and subgrant conditions. - CLG 1/7/26

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 01/09/2026 7:12 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 \$107,563,717.79 for subaward number 107967 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$96,807,346.02	90%	Accepted	4339DRPRP01079671

Department of Homeland Security Federal Emergency Management Agency

v0

General Info

Project #	750067	P/W #	107968	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 2 -Arecibo Group A] Low Density (Vegetation)		Declaration Date	9/20/2017	
Project Size	Large	Incident Start Date	9/17/2017	Incident End Date	11/15/2017
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #1379710; FAASt [Region 2 Arecibo Group A Distribution] Low Density (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 2 - Arecibo Group A Distribution Low Density
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines. The facilities addressed in this project are all the overhead distribution lines. 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

1379710 FAASt [Region 2 Arecibo Group A Distribution] Low Density (Vegetation)

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 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 Arcibo Region 2 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-PR Public Assistance PREPA FAASt Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See document FAAStVegetationHMPApproach_Distribution_03.24.2025.pdf. 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) = \$30,385.95 per mile. Therefore, the total cost (PA) for this project will be \$15,030,146.18

D#	PA Vegetation Clearance Overlap per mile	Total Miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1379710	\$ 30,385.95	502.48	\$15,268,332.16	(\$238,185.98)	\$ 15,030,146.18

Work to be completed total: ~~\$17,540,828.10~~

A&E Deduction (Global A&E FAASt 335168): ~~-\$273,636.92~~

Project Total : ~~\$17,267,191.18~~

Work to be completed total (After IEP Review): \$15,268,332.16

A&E Deduction (Global A&E FAASt 335168 -After IEP Review): -\$238,185.98

Project Total (After IEP Review): \$15,030,146.18

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, 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 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 Region 2 Arcibo Group A Low Density - PW 750067 DSOW 12_22_2025.pdf.
5. Vegetation clearance funds will not be allocated to Sub FAASt projects in low density locations.
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.

8. Fixed Cost Offer Revised by Independent Expert Panel (IEP). See Expert Review tab for details.

406 HMP Scope

Project number: 720067; FAASt [Region 2 -Arecibo Group A] Low Density (Vegetation)

Damage number: 1379710

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

Location: Region 2 - Arecibo, 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 utility 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 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 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. 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 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 was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamón
- Region 4 – Caguas
- Region 5 – Mayagüez
- 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 – 38 kV Transmission.

- Group C – Overlapped Distribution and Transmission Lines
- 115 kV 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 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, which is associated with impervious locations within the Arecibo 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 2 (Arecibo) 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 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 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.
- 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 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-“FAASVegetationHMPApproach_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
*Risk Factor approved by the DR4339-PR leadership (5%) =	\$5,405.14

Vegetation Clearance Cost per Mile (w/ risk factor applied)	\$143,507.95
PA Vegetation Clearance Overlap per Mile (Deduction) =	(\$30,385.95)
Hazard Mitigation Total Cost per Mile =	\$83,122.00
Project Total Miles (PN780067) =	502.48
Hazard Mitigation Total Cost per Mile =	\$83,122.00
Hazard Mitigation Total Cost =	\$41,767,1

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) =	\$39,761,324.05
+ HM (Management & General Conditions Factors) =	\$2,005
Hazard Mitigation Total Cost =	\$41,767

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

Architecture and Engineering (A&E) =	\$651
Remaining Vegetation Clearance Cost =	\$41,115
Hazard Mitigation Total Cost =	\$41,767

--	--

(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 is \$41,767,142.56 (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).

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 FAASVegetationHMPApproach_Distribution_03.24.2025.pdf), the final total is \$83,122.00 / 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.

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, NFP 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.

1. "Island-Wide Vegetation Clearance - FEMA letter dated March 24 2023.pdf"
2. "LUMA Vegetation Management 10ft and 12ft clearance diagram (1).pdf"
3. "FAASTVegetationHMPApproach_Distribution_03.24.2025.pdf"
4. "Appendix A and B - Protected Flora and Incompatible Flora Species.pdf"
5. "IWBCA HMP Package.pdf"
6. "Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters.pdf"
7. "Region 2 Arecibo Group A Low Density - PW750067 DSOW12_22_2025.pdf"
8. "PN750067-DR4339PR-HMCE-20251222-REG_IEP Review.xlsx"
9. "PN750067-DR4339PR-HMP-20251223-REG.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$15,268,332.16	Uncompleted
3510	1	Lump Sum	(\$238,185.98)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$15,030,146.18
Total 406 HMP Cost	\$41,767,142.56
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$56,797,288.74
Federal Share (90.00%)	\$51,117,559.87
Non-Federal Share (10.00%)	\$5,679,728.87

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

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 2 -Arecibo Group A] Low Density (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAAST [Region 2 -Arecibo Group A] Low Density (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.

EHP Additional Info

There is no additional environmental historical preservation on **FAAST [Region 2 -Arecibo Group A] Low Density (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 01/07/2026 12:56 PM PST

Review Comments

Project cost was updated as per IEP review in accordance with the PAPPG v. 3.1 (2018) and PAAP (2022). 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. Therefore, the total cost (PA) for this project will be \$15,030,146.18. 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. Hazard Mitigation Total Cost= \$41,767,142.56. Subrecipient is responsible for complying with all grants and subgrant conditions. - CLG 1/7/26

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 01/12/2026 1:42 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 \$56,797,288.74 for subaward number 107968 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$51,117,559.87	90%	Accepted	4339DRPRP01079681

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

v0

General Info

Project #	750068	P/W #	107969	Project Type	Specialized
Project Category	F - Utilities	Applicant	PR Electric Power Authority (000-UA2QU-00)	Event	4339DR-PR (4339DR)
Project Title	FAASt [Region 5 -Mayaguez Group A] Low Density (Vegetation)	Declaration Date	9/20/2017	Incident Start Date	9/17/2017
Project Size	Large	Incident End Date	11/15/2017		
Activity Completion Date	9/20/2027				
Process Step	Obligated				

Damage Description and Dimensions

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

Damage #1379717; FAASt [Region 5 Mayaguez Group A Distribution] Low Density (Vegetation)

General Facility Information:

- **Facility Type:** Power generation, transmission, and distribution facilities
- **Facility:** Region 5 Mayaguez Group A Distribution Low Density
- **Facility Description:** The Puerto Rico Electric Power Authority (PREPA) owns more than 19,000 miles of transmission and distribution lines. The facilities addressed in this project are all the overhead distribution lines. 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

1379717 FAASt [Region 5 Mayaguez Group A Distribution] Low Density (Vegetation)

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 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 Mayaguez Region 5 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-PR Public Assistance PREPA FAASt Post-Fixed Cost Estimate Obligation Vegetation HMP Approach: Distribution. See document [FAAStVegetationHMPApproach_Distribution_03.24.2025.pdf](#). 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) = \$30,385.95 per mile. Therefore, the total cost (PA) for this project will be **\$13,840,548.75**.

DI#	PA Vegetation Clearance Overlap per mile	Total miles	WTBC - PA Cost with Subrecipient Management & General Conditions	A&E - PA	Total - PA
1379717	\$30,385.95	462.71	\$14,059,882.92	\$(219,334.17)	\$13,840,548.75

Work to be completed Total: \$14,059,882.92

A&E Deduction (Global A&E FAASt 335168): -\$219,334.17

Project Total: \$13,840,548.75

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, 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 5 Mayaguez Group A Low Density - PW 750068 DSOW 12.19.2025.pdf.
5. Vegetation clearance funds will not be allocated to SubFAASt projects in low density 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.
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: 750068; FAASt [Region 5 -Mayaguez Group A] Low Density (Vegetation)

Damage #: 1379717; FAASSt [Region 5 -Mayaguez Group A] Low Density (Vegetation)

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

Location: Mayaguez, 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 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 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 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 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. 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 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 was divided into the following regions:

- Region 1 – San Juan
- Region 2 – Arecibo
- Region 3 – Bayamón
- Region 4 – Caguas
- Region 5 – Mayagüez
- 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 – 38 kV Transmission.
- Group C – Overlapped Distribution and Transmission Lines

- 115 kV 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 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, which is associated with impervious locations within the Mayaguez 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 5 (Mayaguez) 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 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 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 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:

HM Vegetation Clearance Cost per Mile (Base Cost) = \$108,102.81 / mile
 *Risk Factor approved by the DR4339-PR leadership (5%) = \$5,405.14 / mile

PA Vegetation Clearance Overlap per Mile (Deduction) = (\$30,385.95 / mile)

Hazard Mitigation Total Cost per Mile = \$83,122.00 / mile

Project Total Miles (PN750068) = 462.71 miles

Hazard Mitigation Total Cost per Mile = \$95,625.64 / mile

Hazard Mitigation Total Cost = \$38,461,380.62

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) = \$36,614,316.33

+ HM (Applicant A&E, Management & General Conditions) = \$1,847,064.29

Hazard Mitigation Total Cost = \$38,461,380.62

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

Architecture and Engineering (A&E) = \$599,997.54

Remaining Vegetation Clearance Cost = \$37,861,383.08

Hazard Mitigation Total Cost = \$38,461,380.62

(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 is **\$38,461,380.62** (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 FAASVegetationHMPApproach_Distribution_03.24.2025.pdf), the final total is **\$83,122.00 / 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.

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 debilitated 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"
- "IWBCA HMP Package.pdf"
- "Expansion of Cost-Effective Hazard Mitigation Measures and Applicability to Current Disasters.pdf"
- "Region 5 Mayaguez Group A Low Density - PW 750068 DSOW 11_20_2024.pdf"
- "PN750068-DR4339PR-HMCE-20251222-JIIR_IEP Review.xlsx"
- "PN750068-DR4339PR-HMP-20251222-JIIR.pdf"

Cost

Code	Quantity	Unit	Total Cost	Section
9001	1	Lump Sum	\$14,059,882.92	Uncompleted
3510	1	Lump Sum	(\$219,334.17)	Uncompleted
9201	1	Lump Sum	\$0.00	Completed

CRC Gross Cost	\$13,840,548.75
Total 406 HMP Cost	\$38,461,380.62
Total Insurance Reductions	\$0.00
<hr/>	
CRC Net Cost	\$52,301,929.37
Federal Share (90.00%)	\$47,071,736.44
Non-Federal Share (10.00%)	\$5,230,192.93

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

12/22/2025

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 [Region 5 -Mayaguez Group A] Low Density (Vegetation)**.

406 Mitigation

There is no additional mitigation information on **FAASt [Region 5 -Mayaguez Group A] Low Density (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.
- FEMA will require that an archaeologist, who meets the Secretary of the Interior (SOI) Qualification Standards (36 CFR Part 61) for archaeology, conduct a Level II Desktop Review and Background Research, as outlined in Stipulation II.D.3.b of the PSPA, for all projects that includes vegetation clearing activities not covered by Tier II Programmatic Allowances and require further Section 106 consultation, as described in the FEMA letter dated March 7, 2025. In this case, the areas of potential effects (APEs) that would be subject to this level of analysis are: ROW segments of unmaintained T&D lines in suburban and/or rural areas where work cannot be conducted from an existing shoulder and/or requires construction of new access roads through undisturbed land within or outside of existing ROWs. The Level II Desktop Review and Background Research results shall be documented in a Phase I Analysis Report, as described in Stipulation II.D.5 of the PSPA, to be submitted to FEMA for review prior to the initiation of any work in the areas defined above.
- 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 to 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.

- 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. 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.
- Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): Terms & Conditions (T&C) 1. 1. Inform all project personnel about the potential presence of the PR and VI boa in areas where the proposed work will be conducted and provide training session on PR and VI boa identification. A preconstruction meeting will be conducted to inform all project personnel about the need to avoid harming these species. 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 movements, the boundaries of the project area and areas to be excluded and protected will be clearly marked in the project plan and in the field in order to avoid further habitat degradation outside of the AA. 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), a 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 AA. 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 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).
- Continuation of Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): 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, the 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 AA and on harm's way, the action will stop at that area and information recorded (see #5). If a PR or VI boa is located within harm's way, all attempts will be made to immediately safely capture the animal (refer to T&C 2). PR boas will be safely captured and relocated at least 1km within suitable habitat (forested) 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 and designated personnel and will not harm or injure the captured boa. If any VI boa is found, do not relocate. Capture and temporarily hold the individual accordingly (refer to T&C 2). Contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers immediately if in Puerto Rico (787-724-5700, 787-230-5550, 787-771-1124) or contact the USVI Department of Planning and Natural Resources (DPNR), Division of Wildlife, immediately if in St. Thomas (340-775-6762, 340-773-1082). The Action may continue at other work sites within the AA where no PR and VI boas have been found. If immediate relocation of PR boa by the project biologist or designated personnel is not an option, project related activities at this area will stop until the boa moves out of harm's way on its own or call the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (787-724- 5700, 787-230-5550, 787-771-1124). The potential use of the PRDNER staff for these purposes should be coordinated with them at least 30 days before the project starts. If a PR boa is captured by the PRDNER, record the name of the PRDNER staff and information on where the PR boa will be relocated. 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 AA. 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 (refer to T&C 2). If not possible, the animal will be left alone until it leaves the vehicle or machine by itself.
- Continuation of Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): 8. 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 farthest away 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. 9. In the event a PR boa and VI boa is found dead within the project footprint, the Federal Agency and the Recipient must contact the Service to appropriately dispose the animal. 10. Should the forms of take reach the amount of exempted take (Table 6-1) during the Action, the Federal Agency and the Recipient shall terminate the authorized activities and contact the Service within 24 hours in order to reinstate consultation. The Service and the Federal Agency and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted. 11. 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 in order to reinitiate consultation. The Service and the Federal Agency and the Recipient will re-consult to determine whether authorized activities should continue as proposed and whether modifications or stipulations are warranted. 12. The contact information for the Service must be followed: Fish and Wildlife Biologist: Jan P. Zegarra at jan_zegarra@fws.gov, 786-933-1451; Endangered Species Program Coordinator: Jose Cruz at Jose_Cruz-Burgos@fws.gov, 305-304-1386. All reporting must be submitted at caribbean_es@fws.gov.

- Continuation of Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): Terms & Conditions (T&C) 2: The Service requires the Federal Agency to follow standard procedures while capturing, handling, transporting, temporary holding, relocating and tracking PR and VI boas in order to minimize the risk of injury and mortality to the species. A. The Federal Agency and the Recipient shall identify who will capture PR or VI boas and assess and determine if a boa has been injured as a result of project activities, and if it is in need of veterinary care or rehabilitation. If an injured PR boa or VI boa is in need of veterinary care or rehabilitation, the Federal Agency and the Recipient shall immediately seek veterinary care for the animal and inform the Service within 24 hours of the event. B. The Federal Agency must ensure that any permitted individuals, contractor, recipients or cooperators follow proper procedures and methods for capturing, handling, temporary holding, relocating of the PR and VI boa. The following procedures will be followed: i. All PR and VI boas shall be handled safely to avoid injury. The preferred method of capture is by hand, although a snake hook or stick may also be used if snake is uncatchable by hand, or in order to help move the snake into a safer position for capture. ii. All PR and VI boas may be temporarily held during and/or relocation purposes. Boas will be handled as little as possible, and they shall not be kept for more than three days since the day of capture. Temporary holding of boas will be in burlap bags (1 boa per bag) and/or secured containers, which must be placed in cool dry areas that are not in direct sunlight or extreme temperatures. Burlap bags shall be placed inside a container with other boas each inside their own burlap bag and labeled properly. All containers shall be well-ventilated and with a secure lid to avoid boas from escaping. iii. Only qualified, experienced personnel, with a required State and Federal applicable permits may place PIT tag injections. PIT tags may be subcutaneously injected mid-body using sterile syringes. When injecting tags, keep needle parallel to the boa's body and do not force the needle into the muscle tissue or between the ribs. Snakes greater than 400 mm (15.7 in) in length, but that weigh less than 100 grams (3.5 oz), may be PIT tagged with a 5 mm (0.19 in.) PIT tag. An 8 mm (0.31 in) PIT tag may be used for all snakes that weigh over 100 grams (3.5 oz). iv. The Federal Agency and the Recipient and/or contractors shall obtain all necessary permit(s) from the corresponding State agency for capturing, handling, transporting, temporary keeping, relocating and tracking PR and VI boas.
- Continuation of Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): Monitoring and Reporting (M&R) Requirements In order to monitor the impacts of incidental take, the Federal Agency and the Recipient must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR �402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R), including procedures for handling and disposing of any PR and VI boas killed or injured. These M&R requirements are mandatory. As necessary and appropriate to fulfill this responsibility, the Action Agency must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that the Action Agencies include in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately notify the Service if the amount or extent of incidental take specified in this incidental take statement (ITS) is exceeded during Actions implementation. M&R 1. The Federal Agency and the Recipient A. For all PR and VI boa sightings (dead or alive), the Action Agency shall ensure that an effective monitoring and reporting method is established. Reporting shall include the following and should injury or mortality occurred during the Action, the Federal Agency and the Recipient shall contact the Service within 24 hours of the event: i. Date, time and location (latitude/longitude) of the sightings and relocation sites. ii. Size, weight and sex (if possible) of the PR and VI boa. iii. A photograph of the snake as found or after capture. iv. Description of how and what caused the take in the case of injury or death. v. Description of any additional conservation measures that may be implemented to further avoid and minimize take.
- Continuation of Conservation Measures for *Chilabothrus inornatus* (Puerto Rican Boa): M&R 2. Disposition of Dead or Injured boas A. Disposition of dead animals must be immediately coordinated with the Service for appropriate disposal of the animal. B. The Service may require some dead specimens of PR boa and VI boa. If requested, the Federal Agency and the Recipient shall coordinate the delivery of such specimen to the Service. C. In case of an injured boa, the Federal Agency and the Recipient must seek veterinary care for the animal and inform the Service within 24 hours of the event.
- Conservation Measures for *Buteo platypterus brunescens* (Puerto Rican broad-winged hawk), *Amazona vittata* (Puerto Rican parrot), *Accipiter striatus venator* (Puerto Rican sharp-shinned hawk), *Agelaius xanthomus* (Yellow-shouldered blackbird), *Caprimulgus noctitherus* (Puerto Rican Nightjar): 1. 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. During breeding seasons (see below), nest surveys shall be conducted if a project occurs within the range of any of the species listed above and if habitat for those species will be impacted by the proposed actions. Nest searches must be conducted by qualified personnel with the appropriate permits from the Puerto Rico Department of Natural and Environmental Resources (PRDNER) prior to start of work. If nesting activity is detected, all construction activities or human disturbance must be avoided within a 50-meter buffer around any nest(s) found within the project area. This avoidance strategy must be kept until fledglings successfully leave the nest(s) permanently. Outside the breeding season no nest surveys are required, but if a nest is encountered, all construction activities or human disturbance must be avoided within a 50-meter buffer around that nest(s). This avoidance strategy must be kept until fledglings successfully leave the nest(s) permanently. Furthermore, if any of the species indicated above is observed (e.g., foraging, resting) within the project area, avoid any disturbance to the individual(s) and do not flush the bird until it leaves on its own. Nesting seasons: - Puerto Rican parrot: February-June. - Puerto Rican broad-winged hawk: December-June. - Puerto Rican sharp-shinned hawk: December-June. - Puerto Rican nightjar: February-August. - Yellow-shouldered blackbird: February-

November. For all nest sightings, the Applicant must record the time and date of the sighting and the specific location where it was found. All sightings and incidental lethal take reports should be sent to the USFWS Caribbean Ecological Services Field Office at Caribbean_es@fws.gov. For questions, the Point of Contact (POC) is Jose Cruz-Burgos, Endangered Species Program Coordinator, and can be contacted at: -Mobile: 305-304-1386 -Office phone: 786-244-0081 -Office Direct Line: 939-320-3120 - Email: jose_cruz-burgos@fws.gov 2. Work conducted within the Yellow-shouldered blackbird Critical Habitat that includes vegetation removal or habitat modification requires consultation with the Service. Road repairs or other actions within the existing footprint do not require consultation.

- Conservation Measures for *Atlantea tulita* (Puerto Rican Harlequin Butterfly): 1. The contractor must inform all personnel about the potential presence of the Puerto Rican harlequin butterfly and its host plant, prickly bush (*Oplonia spinosa*), in the project areas. A pre-work meeting should inform all project personnel about the need to avoid harming this butterfly and its occupied host plant. 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. Educational material (e.g., posters, flyers, or signs with photos or illustrations of all the life stages of the Puerto Rican harlequin butterfly (i.e., eggs, caterpillar, chrysalids, and adult, and its host plant) should be prepared and available to all personnel for reference. 2. Before starting any project activity, including removal of vegetation and earth movement, the contractor must clearly delineate the boundaries of the working area in the field to avoid unnecessary habitat impacts. Once the project areas are clearly marked, and before any work activity, including site preparation, personnel with knowledge and ability to identify the Puerto Rican harlequin butterfly (all life stages) and the prickly bush must survey the areas where the work will be performed for the presence of the species and its host plant. It is important to note that the Puerto Rican harlequin butterfly can be observed year-round in all life stages; thus, oviposition (egg-laying) may occur at any time during the year. 3. If the prickly bush is present on the project site, try to avoid cutting the plant, even if no eggs, caterpillars, or chrysalids are present. 4. If there is no prickly bush within the project area, but the butterfly is observed flying within the project area, do not harass, harm, pursue, wound, kill, trap, capture, collect, or attempt to engage in any such conduct, the species.
- Continuation of Conservation Measures for *Atlantea tulita* (Puerto Rican Harlequin Butterfly): 5. Adult butterflies are often observed flying near the host plant as part of their mating behavior and for laying eggs. Project-related activities must stop if the prickly bush is found in the project area and the Puerto Rican harlequin butterfly is observed flying in that same area. A temporary 50-meter (164 feet) buffer zone of no activity or human disturbance should be established and clearly marked around that prickly bush until the butterfly moves out on its own. 6. Once the Puerto Rican harlequin butterfly has moved away, within a period of 24 to 36 hours, a search of the prickly bush that has been buffered should be conducted to determine the presence of any eggs, caterpillars, or chrysalids of the butterfly on the plant. The contractor or the Applicant should send a report of the observation and its findings to caribbean_es@fws.gov after the 36-hour search is concluded. 7. If, after the initial search or after the 24 to 36-hour search, any life stage of the Puerto Rican harlequin butterfly is found in the prickly bush, take the following actions: - Clearly mark the host plant with flagging tape. - Establish a 10-meter (32-foot) buffer zone around the bush for its protection. - Eggs are typically found on the prickly bush's newly grown, tender branches. Once the egg hatch, the caterpillar moves and feeds throughout the bush. Therefore, avoid cutting off the prickly bush within the project site even if no eggs, caterpillars, or chrysalids are present. - Work within the 10-meter buffered area may resume when no signs of any live life stage of the butterfly are detected, which usually takes approximately 60 to 120 days. 8. For all Puerto Rican harlequin butterfly sightings (all life stages), the time and date of the sighting and the specific location where the butterfly was found must be recorded. Data should also include a photo of the butterfly (if possible) and the habitat where it was observed, site GPS coordinates, and comments on how the butterfly was detected and its behavior. All Puerto Rican harlequin butterfly sighting reports should be sent to the Service's Caribbean Ecological Service Field Office at caribbean_es@fws.gov. 9. For questions regarding the Puerto Rican harlequin butterfly, the Point of Contacts are: -Jose; Cruz-Burgos, Endangered Species Coordinator: - Mobile: 305-304-1386 - Office phone: 786-244-0081 - Office Direct Line: 939-320-3120 - Email: jose_cruz-burgos@fws.gov -Carlos Pacheco, Fish and Wildlife Biologist - Mobile: 786-847-5951 - Office Direct Line: 939-320-3113 - Email: carlos_pacheco@fws.gov
- Conservation Measures for *Auerodendron pauciflorum* (No common name), *Calyptronoma rivalis* (Puerto Rico manac), *Daphnopsis hellerana* (Heller's cieneguillo), *Goetzea elegans* (Goetzea, beautiful), *Myrcia paganii* (Ausu), *Ottoschulzia rhodoxylon* (Pincho Palo de rosa), *Schoepfia arenaria* (Arana), *Zanthoxylum thomasianum* (Pricklyash, St. Thomas), *Cordia bellonis* (Serpentine manjack), *Thelypteris verecunda* (Barrio Charcas maiden fern): 1. Before initiating any work within the range of listed plant species and in areas with suitable habitat, applicants must conduct plant surveys. In the event that listed species are discovered at the project site, the Service must be notified. The Applicant must develop conservation measures to minimize or avoid impacts on those species and share those measures with the Service for evaluation and approval. If no listed plants are found during surveys, no further action is required. However, if a listed plant species is found while the project is being conducted, project personnel shall stop work, and the Service should be contacted for further technical assistance. Service's point of contacts: -Jose Cruz-Burgos, Endangered Species Program Coordinator, Mobile: 305-304-1386, Office: 786-244-0081, jose_cruz-burgos@fws.gov. -Omar Monsegur, Fish and Wildlife Biologist, Mobile: (305) 304-0292, omar_monsegur@fws.gov.
- Conservation Measures for *Peltophryne lemur* (Puerto Rican Crested Toad): 1. Outside breeding events, the PRCT is difficult to detect. The species seems to be more active at night, from 7:30 pm to 1:00 am, and have been observed using small holes and crevices to access underground chambers as daytime retreats. The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PRCT and its habitat. a. Inform all project personnel about the potential presence of the PRCT in areas where the proposed work will be conducted. A pre-construction meeting must be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PRCTs. 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 the species should be displayed at the project site. b. Prior to any construction activity, including removal of vegetation and earth

movements, the boundaries of the project and areas to be excluded and protected must be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas. c. Strict measures must be established to minimize toad casualties by motor vehicles or other equipment in areas where the species is known to occur. Once the access routes are determined, maintain the traffic (human and vehicle) within designated access to minimize affecting toads and habitat. Personnel shall pay attention in those access routes particularly at night, and after heavy rains to avoid mortality of toads. d. Before earth movement, vegetation clearing, or debris removal activities commence each workday, biologist or personnel with experience identifying and searching for toads shall survey the work area to ensure that no toads are present or can be affected by the work activities for that day. If a crested toad is observed any time within the operational area of the project, cease or delay activities in this area until the toads move out of the area on their own. Activities at other work sites, where no toads have been found after surveying, may continue. e. We recommend the use of sound recorders and monitoring of ponds, if present, within or near the project area to detect toad activities and breeding events, particularly during the rainy season. f. Avoid impacts to drainages and avoid interrupting water flow and potential movement pathways for toads. g. If a PRCT is in an imminent risk of being affected by the project, contact PRDNER Rangers and the Service. h. For all PRCT sightings (dead or alive), record the time and date of the sighting and the specific location and send the information to the caribbean_es@fws.gov. i. For questions regarding the Puerto Rican Crested toad the Point of Contacts are: -Jose Cruz-Burgos, Endangered Species Program Coordinator: Mobile: 305-304-1386 Office phone: 786-244-0081 Office Direct Line: 939-320-3120 Email: jose_cruz-burgos@fws.gov-Carlos Pacheco, Fish and Wildlife Biologist Mobile: 786-847-5951 Direct Line: 939-320-3113 Email: carlos_pacheco@fws.gov

- The Applicant must provide documentation at close-out that proves completion of required Conservation Measures.
- 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).
- - 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. - If TDS sites: This site is for temporary debris storage (TDS). Final disposal will take place at an authorized sanitary landfill. All coordination pertaining to final disposal activities should be documented and forwarded to FEMA as part of the permanent project file. Non-compliance with these requirements may jeopardize receipt of federal funds. - 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 with the requirements of the local and federal agencies. Noncompliance with these requirements may jeopardize receipt of federal funds.
- 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. 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.
- Debris may not be staged, stored, or disposed of in wetlands without the required permits. 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. The Applicant shall ensure best management practices are implemented to prevent erosion and sedimentation to surrounding, nearby or adjacent wetlands. To ensure that wetlands are not adversely impacted, per the Clean Water Act and Executive Order 11990, equipment storage and staging of construction materials and machinery must be in a location that would prevent erosion and sedimentation.
- 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. 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.

EHP Additional Info

There is no additional environmental historical preservation on **FAASt [Region 5 -Mayaguez Group A] Low Density (Vegetation)**.

Final Reviews

Final Review

Reviewed By LEFRANC-GARCIA, CARLOS L.

Reviewed On 01/07/2026 1:00 PM PST

Review Comments

Project cost was updated as per IEP review, in accordance with the PAPPG v. 3.1 (2018) and the PAAP (2022). 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. Therefore, the total cost (PA) for this project will be \$13,840,548.75. 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 FAASt Grant. Hazard Mitigation Total Cost= \$38,461,380.62. Subrecipient is responsible for complying with all grants and subgrant conditions. - CLG 1/7/26

Recipient Review

Reviewed By Mulero, Noel

Reviewed On 01/09/2026 8:24 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 \$52,301,929.37 for subaward number 107969 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
-----------	--------------------	------------------	---------------	----------------	------------	-------------------------	----------------

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	3/1/2026	\$47,071,736.44	90%	Accepted	4339DRPRP01079691