ENVIRONMENTAL ASSESSMENT – Amanecer Puerto Rico Photovoltaic and Battery Energy Storage System Portfolio

Department of Energy Loan Program Office
Energy Dominance Financing Program

DOE/EA-2300

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AC	alternating-current
Act 17	Puerto Rico Energy Public Policy Act of 2019
BESS	Battery Energy Storage System
BMPs	best management practices
CEQ	Council on Environmental Quality
CES Plan	Construction Environmental and Safety Plan
CFR	Code of Federal Regulations
dB	decibels
dBA	A-weighted decibels
DOE's	U.S. Department of Energy's
DRNA	Department of Natural and Environmental Resources
EDF	Energy Dominance Financing
EMFs	electromagnetic fields
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
ESA	Endangered Species Act
ESSAs	energy storage service agreements
FEMA	Federal Emergency Management Agency

Acronym	Definition
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
GHG	greenhouse gas
HDD	horizontal direction drill
HUC	Hydrologic Unit Code
ICPR	Institute of Puerto Rican Culture
IPaC	Information for Planning and Consultation
kV	kilovolt
LPO	Loan Programs Office
MOT	Maintenance of Traffic
MW	megawatt
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
O&M	operations and maintenance
Pattern or Applicant	Amanecer Puerto Rico, LLC
PBO	Programmatic Biological Opinion
PPOA	power purchase and operations agreement
PR Hwy	Puerto Rico Highway
PR100	Puerto Rico Grid Resilience and Transition to 100% Renewable Energy Study
PR-DTOP	Puerto Rico Department of Transportation and Public Works
PREB	Puerto Rico Energy Bureau
PREPA	Puerto Rico Electric Power Authority
Project	Amanecer Puerto Rico Portfolio
PRPB	Puerto Rico Planning Board
PV	photovoltaic
RFPs	Request for Proposals
ROW	right-of-way
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasures
TC	Transmission Center
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1. PURPOSE AND NEED

1.1 Introduction

Amanecer Puerto Rico, LLC (Pattern or Applicant), is proposing the construction of three individual energy facilities at two locations (Amanecer Puerto Rico Portfolio [Project]), consisting of Barceloneta Photovoltaic Solar (Barceloneta Solar) and Barceloneta Battery Energy Storage System (Barceloneta Storage) near Arecibo and Santa Isabel Battery Energy Storage System (Santa Isabel Storage) near Santa Isabel (see Figure 1). The Applicant is proposing this portfolio of energy projects to supply power to the Puerto Rico Electric Power Authority (PREPA) network, thereby improving grid reliability and enabling PREPA to avoid or reduce greenhouse gas (GHG) emissions at its power generating plants.

Barceloneta Solar would be a 70-megawatt (MW), alternating-current (AC) solar photovoltaic (PV) generation facility near Arecibo; the facility would include a dedicated 32 MW Battery Energy Storage System (BESS) for compliance with Puerto Rico's minimum technical requirements for utility-scale solar generation projects (see Figures 2-4). In addition, the 120 MW Barceloneta Storage would be co-located on the same approximately 290-acre (298.6-cuerdas) parcel, allowing the two facilities to share a substation but with separate metering (one for Barceloneta Solar and one for Barceloneta Storage). A shared, 115-kilovolt (kV) underground transmission line would connect the facilities to the existing Luma Barceloneta Transmission Center (TC) substation, which is 1.5 miles (2.4 kilometers) to the east.

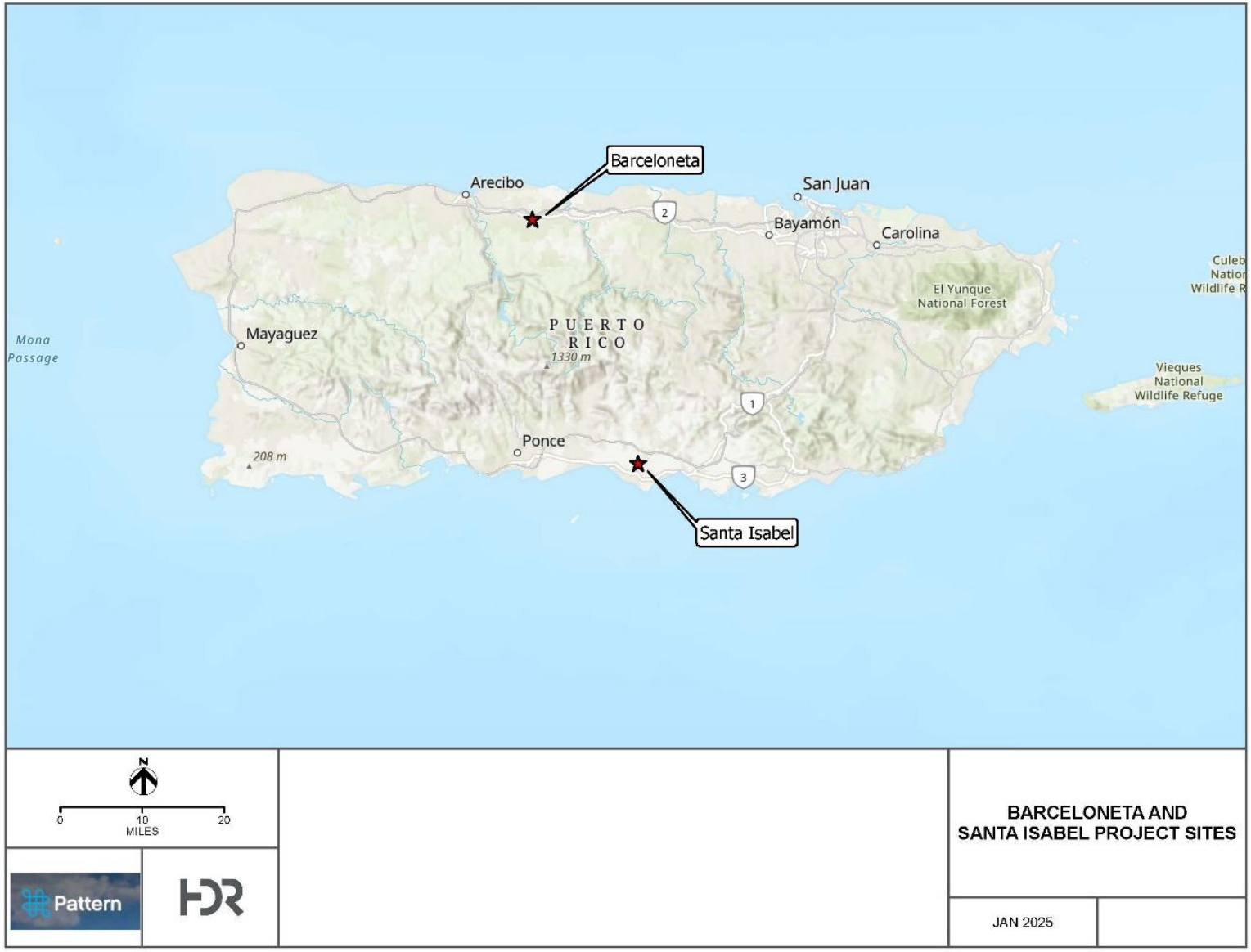
The 100 MW Santa Isabel Storage facility would be located on two adjacent parcels, approximately 6.4 and 10.1 acres (6.6 and 10.4 cuerdas), in Santa Isabel (see Figure 5). The facility's BESS would be connected to an existing substation within the operations and maintenance (O&M) facility for the Santa Isabel Wind Farm. The connection right-of-way (ROW) would cover approximately 2.6 acres (2.7 cuerdas), requiring a roughly 0.29-acre (0.298-cuerda) expansion to the existing O&M facility.

The Applicant has applied for a loan guarantee pursuant to Section 1706 of Title XVII of the Energy Policy Act of 2005, as amended by the Inflation Reduction Act of 2022 (42 U.S.C. 16517) and the One Big Beautiful Bill Act (Pub. L. No. 119-21, 139 Stat. 72 (July 4, 2025)) (the Energy Dominance Financing or EDF Program). The purpose of the EDF Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations, enable operating energy infrastructure to increase capacity or output, or supports or enables the provision of known or forecastable electric supply at time intervals necessary to maintain or enhance grid reliability or other system adequacy needs (42 U.S.C. 16517(a)(2) and Pub. L. No. 119-21, 139 Stat. 72 (July 4, 2025)). Under Title XVII, the Secretary of Energy is authorized to provide loan guarantees for projects that support energy deployment and energy infrastructure reinvestment in the United States, including the Commonwealth of Puerto Rico.

The Title XVII program is administered by DOE's Loan Programs Office (LPO). LPO originates, underwrites, and services loans and loan guarantees to eligible applicants for projects that accelerate commercial deployment of innovative energy technology. LPO has reviewed the Applicant's application and determined that it is eligible for a potential loan guarantee (10 Code of Federal Regulations [CFR] Parts 609.3 and 609.5).

The decision as to whether to provide a loan guarantee (federal financial assistance) constitutes a major federal action, which requires DOE to conduct an environmental review under the National Environmental Policy Act (NEPA), as amended (42 U.S.C. 4321 et seq.). DOE LPO is aware that the Council on Environmental Quality (CEQ) has issued an interim final rule that removed the council's NEPA implementing regulations, and that DOE has issued an interim final rule that revises its regulations implementing NEPA as well as has issued new NEPA implementation guidance. In accordance with the CEQ Memorandum to the Heads of Federal Departments and Agencies, issued on February 19, 2025, and with Executive Order (E.O.) 14154 issued on January 20, 2025, DOE LPO has prepared this EA in accordance with DOE's interim final rule and implementation guidance consistent with NEPA, E.O. 14154, and the CEQ memorandum. LPO is using the NEPA process to inform its decision whether to issue a loan guarantee to the Applicant in support of the Project.

Figure 1: Portfolio Project Locations



1.2 Purpose and Need for Agency Action

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was amended by the Inflation Reduction Act of 2022 (42 U.S.C. 16517) and the One Big Beautiful Bill Act (Pub. L. No. 119-21, 139 Stat. 72 (July 4, 2025)) to create the EDF Program (section 1706). The purpose of the EDF Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations; enable operating energy infrastructure to increase capacity or output; or support or enable the provision of known or forecastable electric supply at time intervals necessary to maintain or enhance grid reliability or other system adequacy needs.

1.3 Background

The Applicant is a wholly owned subsidiary of Pattern Energy, which has operated the Santa Isabel Wind Farm in Santa Isabel, Puerto Rico, since 2012. The Puerto Rico Energy Bureau (PREB) approved, through resolutions, the three facilities discussed above in Section 1.1 as part of the Tranche 1 Clean Energy Request for Proposals (RFPs). For Barceloneta Solar, the Applicant has a 25-year power purchase and operations agreement (PPOA) with PREPA to develop, construct, and operate the solar facility. For Barceloneta Storage and Santa Isabel Storage, the Applicant has separate 20-year energy storage service agreements (ESSAs), allowing the facilities to develop, construct, and operate the proposed BESS. Through these agreements, the Project will contribute to the Puerto Rico Energy Public Policy Act of 2019 (Act 17), which calls for meeting 100 percent of Puerto Rico's electricity needs with renewable energy by 2050. On Monday April 1, 2024, DOE and the Federal Emergency Management Agency (FEMA) released the Puerto Rico Grid Resilience and Transition to 100% Renewable Energy Study (PR100), which concluded that the Act 17 goal can be achieved through utility-scale renewable power generation, distributed energy sources, and grid stabilization measures (Baggu and Burton 2024).

The Project is aligned with the policy objectives specified in the Unleashing American Energy E.O. 14154, issued January 20, 2025. Section 2(c) orders that it "is the policy of the United States... to protect the United States's economic and national security and military preparedness by ensuring that an abundant supply of reliable energy is readily accessible in every state and territory of the nation."

1.4 Scope of Environmental Assessment

LPO is preparing this EA to address potential environmental impacts from construction and operation of the Project's three portfolio facilities at two separate locations, consisting of one PV energy generation facility (Barceloneta Solar), one co-located BESS (Barceloneta Storage), and one stand-alone BESS (Santa Isabel Storage). The two Barceloneta facilities will share a substation, O&M structure, and transmission line that will connect to the PREPA network at Barceloneta, Puerto Rico. Santa Isabel Storage, along with the expanded O&M facility, would connect to the PREPA network at Santa Isabel, Puerto Rico. If no significant impacts are identified during preparation of this EA, DOE will issue a Finding of No Significant Impact. If potentially significant impacts are identified, DOE will prepare an environmental impact statement. All three projects need to comply with the Puerto Rico Environmental Policy Act, as amended, to proceed with construction and operation.

In determining the scope of the environmental review and the resources that may be subject to potentially significant impacts, LPO reviewed regulatory agency consultation (see Appendix A)

and the permits, authorizations, and approvals associated with each Project site (see Appendix B). This EA describes the Project and its potential impacts on multiple resource areas due to construction and operations at the two sites. The resource areas assessed in this EA consist of:

- Cultural resources
- Water resources, including groundwater and surface water
- Transportation
- Aesthetic and visual resources
- Biological resources and threatened and endangered species
- Socioeconomics
- Health and safety
- Noise
- Soils and prime farmlands

These resource areas were identified as potentially being impacted by the Project, and each was assessed to determine the nature, extent, and the significance of those impacts (see Section 3). The assessment combined desktop research and analysis of existing available information with select field studies, including site assessments related to the presence/absence of wetlands, water bodies, wildlife and vegetation, contaminants, and cultural resources.

Resources not included in this EA consist of air quality, wetlands, Native American interests, land use and recreation, and waste.

The primary sources of air emissions during construction are electrical generators, heavy machinery for earthmoving, and construction-related vehicles and equipment. Emissions from these sources would be temporary and regulated as mobile sources (e.g., vehicles). Emissions from emergency generators and other equipment would be considered insignificant (i.e., de minimis) under current regulations. Their emissions would be minimized with the use of best management practices (BMPs). Therefore, impacts on air quality are not anticipated to be significant.

A desktop review of the National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) failed to identify stream or wetland resources within either site (U.S. Geological Survey [USGS] 2024; U.S. Fish and Wildlife Service [USFWS] 2024a); therefore, impacts on wetlands are not anticipated to be significant.

Native American interests would not be affected by the Project because federally recognized Native American tribes are no associated with the Project sites.

The Project sites are currently agricultural land or vacant land adjacent to agricultural and industrial sites; there are no known recreational uses on the sites. Because the proposed uses would be consistent with existing land uses, and because the Project has received, or is in the process of receiving, local land use permits, as required, impacts on land use or recreation are not anticipated to be significant.

Finally, the development and operation of the Project is not expected to result in notable waste streams and impacts associated with waste are not anticipated to be significant.

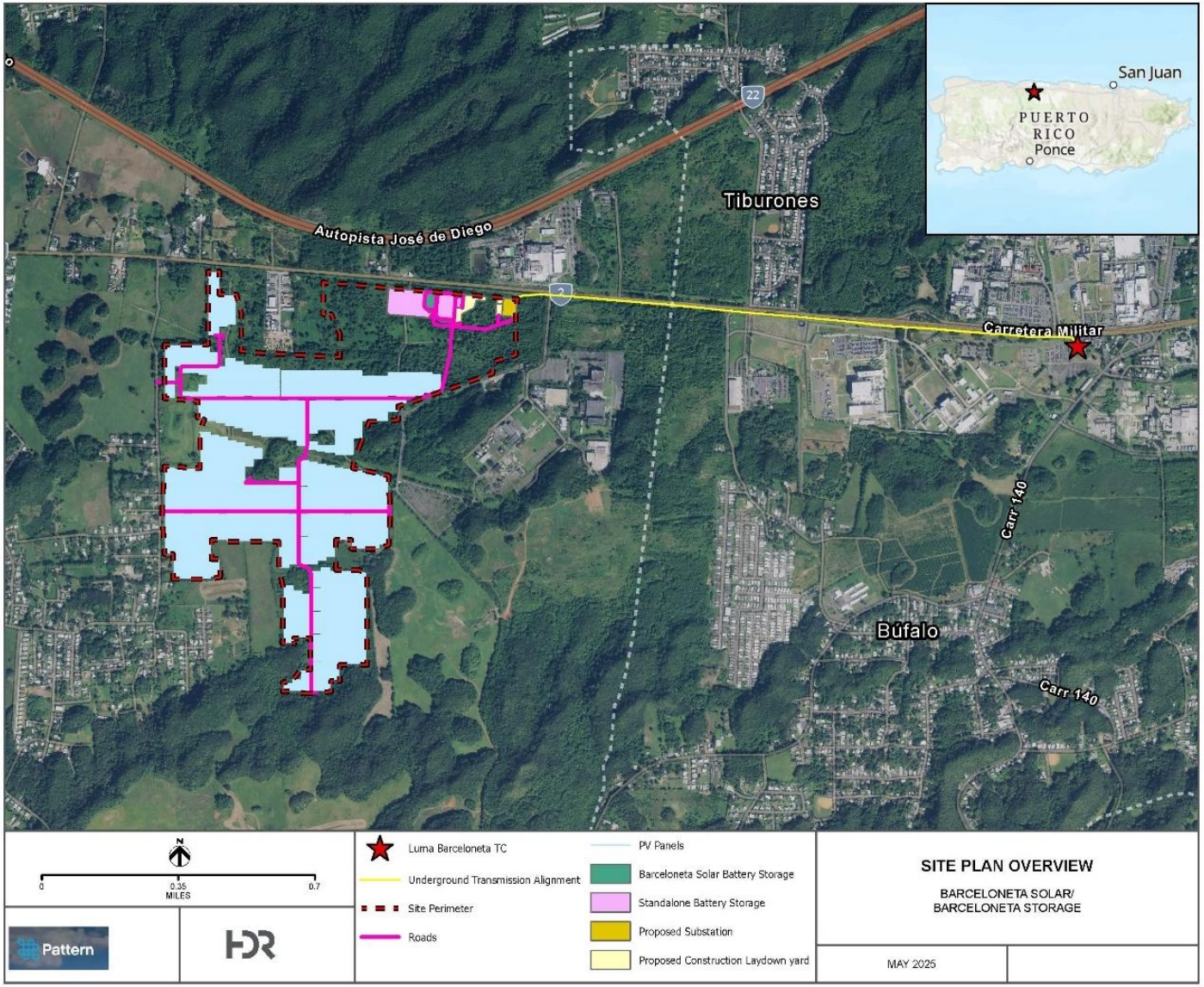
2. DESCRIPTION OF THE PROPOSED ACTION

The DOE LPO Proposed Action is the issuance of a loan guarantee to Pattern to develop the Project, consisting of a solar PV facility and stand-alone BESS in Arecibo (Barceloneta site) and one stand-alone BESS in Santa Isabel (Santa Isabel site), Puerto Rico.

2.1 Barceloneta Project Site

Pattern is proposing to construct and operate Barceloneta Solar, a 70 MW PV facility, along with a dedicated 32 MW BESS to comply with Puerto Rico's minimum technical requirements for utility-scale solar generation projects. Pattern is also proposing to construct and operate Barceloneta Storage as a separate 120 MW BESS facility. Both will be co-located on a single 290-acre (298.6-cuerda) site in Arecibo, Puerto Rico (see Figure 1). Land uses in the vicinity of the site are industrial, agricultural, and residential (Google Earth 2024a). A boundary fence will be constructed around the perimeter of the site. The total disturbed area will total approximately 286 acres (294.5 cuerdas) (Figure 2).

Figure 2: Barceloneta Projects Site Plan Overview



The batteries in both the solar BESS and the stand-alone BESS will be lithium-ion batteries. The battery systems will be housed within a container configured as a climate-controlled enclosure. Separate 7- to 8-foot-high (approximately 2-meter) security fences will be installed around the perimeter of both the 32 MW solar BESS and the separate 120 MW stand-alone BESS. Each container will have an individual fire suppression system that uses clean agent fire suppression. Backup generators, most likely diesel or gas, will be installed to provide the auxiliary power necessary to cool the battery cells in the event of a power outage.

An O&M facility, to support the operational phase of the Project, will be placed on a roughly 7,200-square-foot (670-square-meter) gravel pad. This facility, measuring roughly 20 feet by 60 feet (6 meters by 18 meters), will be a trailer or some other prefabricated structure. Several stand-alone containers for storing spare parts will be included, and a parking area will be provided. The O&M facility will be removed at the end of the Project's lifespan.

Although considered separate facilities from an interconnection perspective, Barceloneta Solar and Barceloneta Storage will share a substation but with separate metering. A shared 115 kV underground transmission line will connect the facilities to the existing Luma Barceloneta TC substation, which is 1.5 miles (2.4 kilometers) east of the Project site (see Figure 2). Pattern is developing the underground transmission line under an agreement with the Puerto Rico Department of Transportation and Public Works (PR-DTOP). The line will be in the southern portion of the PR-DTOP ROW for Puerto Rico Highway (PR Hwy) 2.

2.2 Santa Isabel Project Site

Pattern is also proposing construction and operation of Santa Isabel Storage, a stand-alone, 100 MW BESS facility that will be able to store and reliably dispatch power from the grid (see Figure 1). The site is north of Santa Isabel, Puerto Rico, in a rural area adjacent to PR Hwy 153 and approximately 0.75-mile (1.2 kilometers) north of the Santa Isabel town center. Land uses in the vicinity of the site are commercial/industrial, agricultural, and residential (Google Earth 2024b). Pattern will lease two parcels for the stand-alone BESS. These parcels are previously disturbed agricultural land and currently vacant and covered with tall grasses, with only a few shrubs and young trees. The total site is 18 acres (18.5 cuerdas). However, the total construction area will be 12.3 acres (12.7 cuerdas). Santa Isabel Storage will be connected to the existing O&M facility for the Santa Isabel Wind Farm. The O&M facility will be expanded by approximately 0.29 acre (0.298 cuerda). A proposed collection line will be installed in a trench that will measure approximately 7 feet (2 meters) wide and 4 feet (1 meter) deep within an approximately 2.6-acre (2.7-cuerda) corridor that will extend from the BESS to the existing O&M facility (see Figure 5 [page 14]).

The battery systems will use lithium iron phosphate chemistry, given its safe track record compared to other chemistries. The battery systems will be housed within containers configured as climate-controlled enclosures. Pattern will install a 7- to 8-foot-high (approximately 2-meter) security fence around the perimeter of the container area. Each container will have an individual fire suppression system that uses clean agent fire suppression. The climate-control and fire-suppression systems will be powered by the proposed collector line to the existing substation. During periods when wind power is not being generated, power for fire suppression systems will be obtained from the grid. In addition, a backup generator (gas or diesel) will be installed, providing the BESS with an auxiliary power source for battery cooling during grid outages.

Table 1 provides a summary of the Project components at each site.

Table 1: Project Components

Project Component	Barceloneta Solar	Barceloneta Storage	Santa Isabel Storage
Total fenced area	**290 ac (298.6 cda)**	**3.4 ac (3.5 cda)[a]**	**6.4 ac (6.6 cda)**
Construction area	**286 ac (294.5 cda)**	**3.4 ac (3.5 cda)[b]**	**12.3 ac (12.7 cda)[c]**
■ PV and/or BESS	PV 106 ac (109.2 cda); dedicated BESS 1.7 ac (1.8 cda)	6.9 ac (7.1 cda)	5.1 ac (5.3 cda)
■ New substation	2.2 ac (2.3 cda)	Shared with PV	N/A
■ New O&M facility	7,200-square-foot gravel pad (0.17 ac [0.175 cda])	Shared with PV	N/A
■ Expansion of existing O&M facility	N/A	N/A	0.29 ac (0.3 cda) expansion
Transmission gen-tie	1.5 mi (2.4 km)	Shared with PV	N/A
Collection line	3.4 mi (5.5 km)	0.2 mi (0.3 km)	0.8 mi (1.3 km)
Facility capacity	70 MW AC/100 MW DC with 32 MW/10.5 MWh storage integrated	120 MW AC/480 MWh	100MW AC/400 MWh
Connection line voltage	34.5 kV	34.5 kV	34.5 kV
Interconnection voltage	115 kV	115 kV	115 kV

[a] *Within Barceloneta Solar's 290-acre fenced area.*
[b] *Within Barceloneta Solar's 286-acre construction area.*
[c] *Some construction will occur outside of the fenced area for the BESS.*
ac = acre; AC = alternating current; BESS = battery energy storage system; cda = cuerdas; DC = direct current; ft = feet; gen-tie = generation tie line; km = kilometers; kV = kilovolt; m = meters; mi = miles; MW = megawatt; MWh = megawatt-hour; N/A = not applicable; O&M = operation and maintenance; PV = photovoltaic

2.3 Construction

This section details what is proposed to be constructed and the sequence of construction activities. It is organized by site: Barceloneta and Santa Isabel.

2.3.1 Barceloneta Project Site

Overall construction is expected to last approximately 18 months. Pattern expects to initiate site clearing and preparation as early as September 2025, with full construction mobilization starting in the first quarter of 2026. Facility operation is expected to begin in the second quarter of 2027. Construction will take place up to 6 days a week (Monday through Saturday), generally during daylight hours (between 5:00 a.m. and 7:00 p.m.). It is expected that up to 300 construction workers will be on-site at one time. The workers will most likely stay in the local area and commute to the site daily.

A Maintenance of Traffic (MOT) Plan will be implemented during the construction phase. This will be used to establish work zones for the Project site, provide transportation management measures, and temporarily control traffic on streets and highways. Specifically, the MOT Plan will be prepared for the access point to the site where equipment and supply deliveries are expected to interrupt normal traffic for short periods. As required by local PR-DTOP regulations,

the MOT Plan will include recommendations regarding traffic signs and speed limits to ensure the safety of drivers and construction crews. The recommendations will be incorporated into the Project, as will measures that call for posting a flag person during heavy commute periods to manage the traffic flow, prioritizing access for local residents, and implementing staggered work shifts during daylight hours. The possibility exists for nighttime work related to installation of the 1.5-mile-long (2.4-kilometer), 115 kV underground transmission line along PR Hwy 2 in order to avoid lane closures. Nighttime work will be subject to approval by PR-DOT.

Access roads will be constructed first; as construction progresses, traffic in unpaved areas will decrease. The roads will be capped with aggregate material (typically gravel). Signs will be installed to identify areas of construction activity.

The site will be prepared by surveying and staking the area, then installing a security fence around the perimeter. The security fence will be approximately 7 to 8 feet (approximately 2 meters) high and may include barbed wire. Vegetative screening will be planted along the site's western boundary adjacent to local residential areas. Similar fences will be constructed around the Barceloneta Solar BESS, the Barceloneta Storage BESS, and the shared substation. Access to the overall Project site from Calle Manantiales will be restricted by use of a locked gate along the site's western border (see Figure 3). Within the Project site, access to the two BESS areas and the substation will be further restricted by providing their own locked gates. The site will be accessible only to Pattern employees and their agents and contractors. All Project components will be set back from the security fences a minimum of 20 feet (6 meters). PV inverters will be set back a minimum of 400 feet (120 meters) from all residences.

Laydown areas will be established for worker assembly, safety briefings, vehicle parking, and material storage during construction. The primary laydown area, covering up to 2 acres (2.06 cuerdas), will be graveled and located so as to avoid sensitive resources (e.g., mogotes and sinkholes). Construction trailers for material storage and office space will be parked on-site and co-located with laydown areas. Gravel used in laydown areas will be redistributed over access roads at the completion of construction. Temporary laydown areas that are not permanently developed (i.e., used for PV inverters, BESS, substation, roads) will be restored to pre-construction conditions. Several small laydown areas will be used throughout construction; these will also be restored after use, as appropriate. Precise locations for laydown areas will be identified during construction, but all will be within the fenced perimeter and located away from sensitive resources.

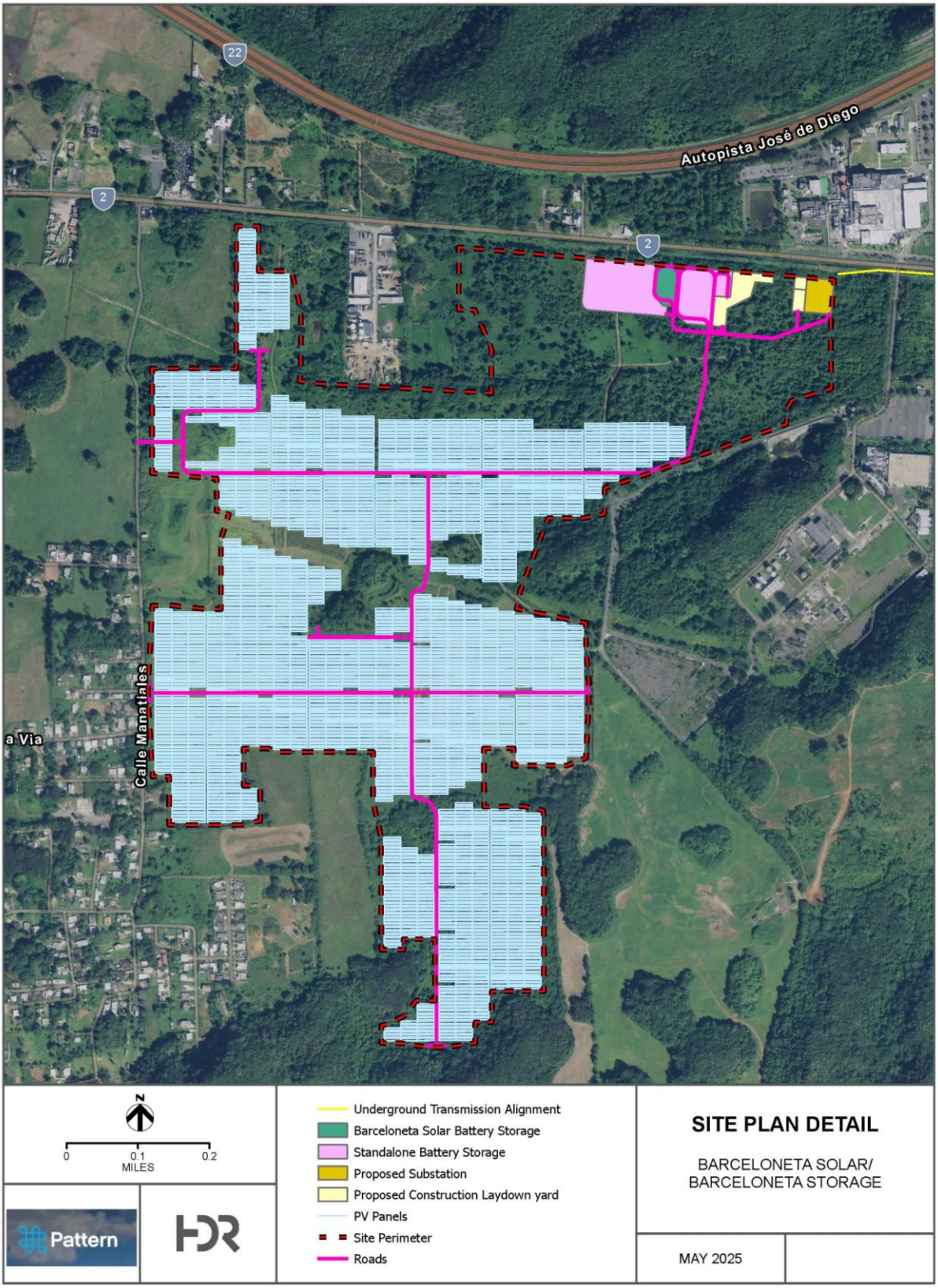
Construction activities will be sequenced to minimize the amount of time when bare soil is exposed within the site. Areas will be cleared of debris and tall vegetation, mowed, and graded, as needed, for construction of the gravel access roads and installation of the solar modules, switchgear, accompanying electrical components, and other components. A tree removal schedule will be finalized along with the construction plan; only those trees identified for removal will be harvested. Any disturbed vegetation or cleared areas not used during installation of the components will be reseeded. Any cleared vegetation will be mulched and redistributed on-site. No burning of debris will occur. Other construction debris will be recycled or hauled to a nearby disposal site in accordance with federal and local laws and regulations. Mowing will be used as needed to contain plant growth during construction.

Pattern will work with the existing landscape (e.g., slope, drainage features, roads) to minimize grading to the extent feasible. The current design indicates that approximately 188,050 cubic yards of cut (157,233 cubic meters) and 356,550 cubic yards of fill (298,121 cubic meters) will be necessary to protect infrastructure from heavy storm-related inundation. Fill will be acquired from existing quarries located between Arecibo and the San Juan metropolitan area and delivered to the site by dump truck. Grading will be performed with earthmoving equipment

(e.g., bulldozers, excavators, graders) to develop a consistent slope. Prior to any major grading, efforts will be made to preserve native topsoil as much as feasible. Native topsoil will be removed from the area to be graded, stockpiled on-site, and redistributed over the disturbed area after grading is complete. Temporary cover, vegetative or artificial, will be used as needed to minimize the exposure of soil to wind and precipitation and prevent soil from leaving the site.

Depending on site conditions, up to 350 gallons per day of water may be required for soil compaction and dust control during construction. A sufficient quantity of water will be provided by the existing municipal water-supply infrastructure at the site. It is expected that the frequent rains at this location will assist with dust control efforts.

Figure 3: Detailed Barceloneta Projects Site Plan



2.3.1.1 Barceloneta Solar

The PV modules will be manufactured off-site and then shipped to the site ready for installation. The driven steel pile foundations for the PV array will support a fixed-tilt tracking system upon which the modules will be mounted. The pile foundations will be designed and installed in accordance with the recommendations set forth in the geotechnical investigation and pile load testing program. The embedded H-piles will be set approximately 8 to 12 feet (2 to 4 meters) deep. Given the varying soil conditions across the site, piles in weaker profiles may be supported by concrete backfill; piles in stiffer profiles may require pre-drilling before installation.

Panels will be mounted on systems with a maximum height of approximately 10 feet (3 meters) above the finished grade. The AC collection cables will be installed approximately 3 to 4 feet (approximately 1 meter) underground through trenching. At two locations, the AC collection cables will be installed on poles to accommodate requirements for an aqueduct that crosses the site. Approximately 20 inverters will be sited throughout the PV area; these may be elevated approximately 3 feet (1 meter). This elevation reflects the stormwater management conditions in the *Barceloneta Solar Preliminary Hydrology Study*, revision 2, dated January 24, 2025, prepared by Ulteig.

Construction of the 1.7-acre (1.8-cuerda) BESS that will be dedicated to Barceloneta Solar will involve transporting fully constructed containers to the Barceloneta site, offloading the containers, and installing the containers onto foundations. The battery units, which will stand approximately 10 feet (3 meters) tall, and associated equipment will be connected to the adjacent shared substation, which will be separately fenced, by a trenched collection line (3 to 4 feet deep [approximately 1 meter]).

The BESS foundations will use reinforced concrete; helical or driven steel piles will be set directly beneath each 8-foot by 20-foot (2-meter by 6-meter) BESS container. When reinforced concrete is used, an additional 6-inch (15-centimeter) to 1-foot (0.3-meter) skirt will be included around the container. If the ground is not suitable for the foundations, the soil will be excavated and fill material, such as gravel, will be imported, placed, and compacted. If needed, fill material and aggregate will be imported from a commercial source. Excess cut material generated from construction activities will be spread locally and compacted. If driven steel piles are determined appropriate, they may be further supported by concrete backfill, depending on the soil profiles in specific areas.

2.3.1.2 Barceloneta Storage

Barceloneta Storage will use the same methodology described above for the PV-designated BESS; however, it will be twice the size (6.9 acres [7.1 cuerdas]). It will also include a trenched collector line to the shared substation.

2.3.1.3 Shared Substation and Underground Transmission Line Connection

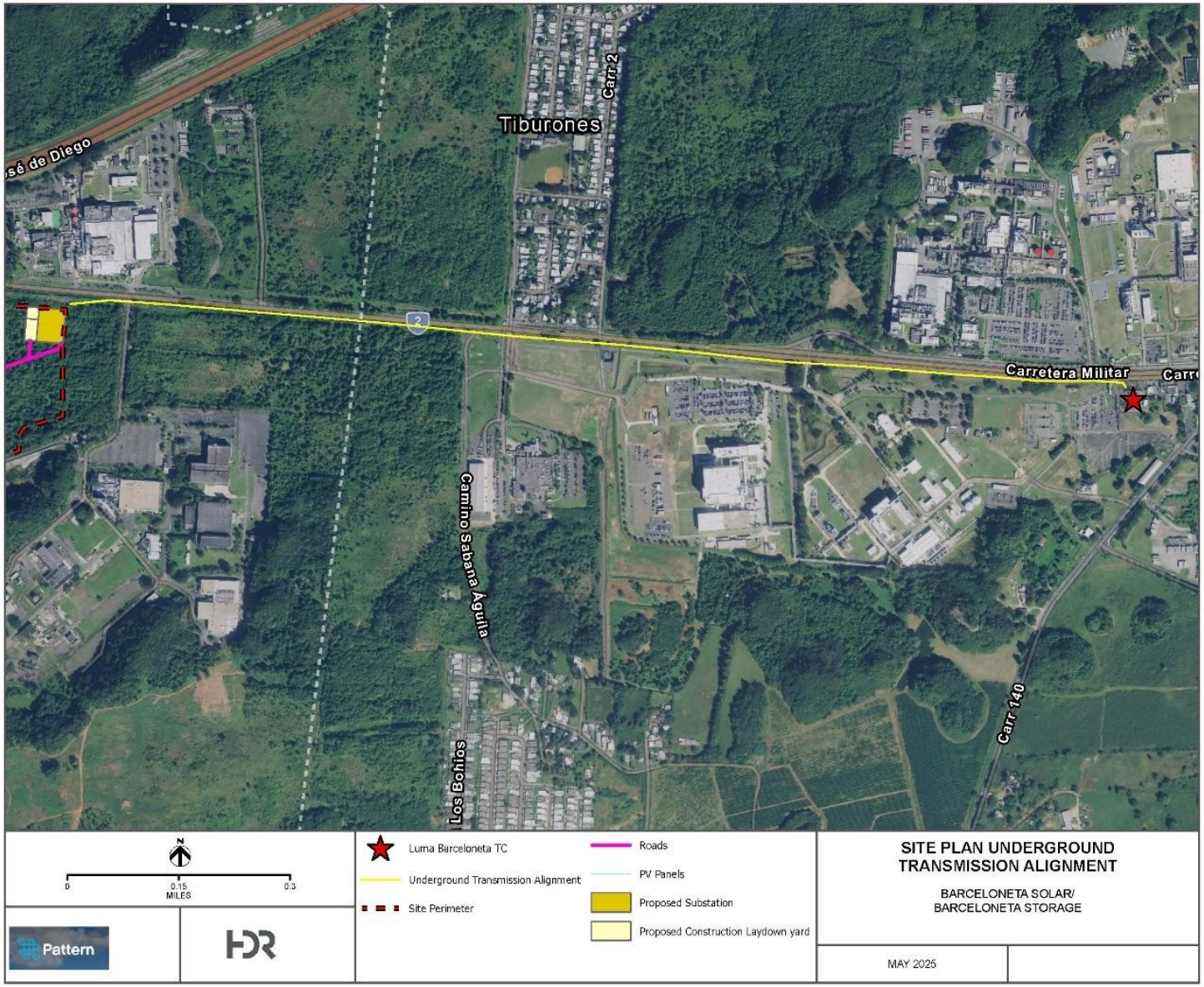
The shared substation will sit on an approximately 2.2-acre (2.27-cuerda) gravel pad, with individual pieces of equipment mounted on small concrete foundations. As described above, a 115 kV underground transmission line will extend from the shared substation and connect to the existing Luma Barceloneta TC substation, which is 1.5 miles (2.4 kilometers) east of the site (see Figure 4).

The underground transmission line will originate at the shared substation and connect to the existing Luma Barceloneta TC substation. Pattern will use a duct bank design for the transmission line's trench; the bottom will be 3 to 9 feet (1 to 3 meters) deep. The duct bank will be approximately 2 feet (0.6 meter) wide. A horizontal direction drill (HDD) will be used to avoid existing utilities where a short cross section will be up to 9 feet (3 meters) deep. The trench will be located in the ROW associated with the south side of PR Hwy 2.

Discussions with PR-DTOP indicate that portions of the underground transmission line will need to be trenched under the southernmost lane and shoulder of the 1.5-mile-long (2.4-kilometer) transmission line. The remaining portion of the underground line will still be within the PR-DTOP ROW but south of the shoulder. However, it is assumed, for worker safety, that the entire southern eastbound lane will be closed to traffic during construction. Traffic controls will be implemented to maximize use of the three remaining travel lanes.

Pattern will develop and implement a traffic control plan in coordination with PR-DTOP for installation of the transmission line.

Figure 4: Barceloneta Projects Site Transmission Line



2.3.1.4 Stormwater Management

Chapter 7 of Regulation #40 details stormwater management requirements in karst areas within Puerto Rico. The Puerto Rico Planning Board (PRPB) regulations for stormwater management systems (i.e., Department of Natural and Environmental Resources [DRNA] Stormwater Management Program) require development projects to be designed so as not to generate additional stormwater discharges beyond pre-development conditions. Any measures for stormwater management required to meet PRPB regulations will be incorporated into the final design, as discussed below.

To manage stormwater during construction, temporary on-site measures will be implemented. Erosion and sediment control for the site consists of temporary vegetation, a perimeter silt fence, fiber rolls in the array area, check dams, and a vehicle tracking pad. Temporary vegetative cover is meant to stabilize soil quickly in all disturbed areas of the site to prevent erosion. A silt fence will be placed at the downgrade perimeter of the site as well as along the downgrade edge of more heavily disturbed/graded areas in order to prevent sediment from flowing off-site while still allowing clean water to flow. A silt fence will also be placed upstream of all sinkholes on the site. Fiber rolls will be used in the array area of the site. These will be placed about 2 feet (0.6 meter) apart in graded areas to disrupt the flow of water through the array and prevent erosive flows and resulting rilling. Sediment will be trapped behind the rolls. Check dams will be placed in the swale between the BESS and substation pads where an existing low spot conveys water from an off-site culvert through the site. The check dams will interrupt and slow down erosive flows as well as trap sediment. Lastly, a vehicle tracking pad will be installed at the entrance to limit the amount of dirt tracked into the public ROW by construction vehicles while exiting the site.

Pattern will prepare a Construction Environmental and Safety Plan (CES Plan), which will be evaluated by the Environmental Quality Board, and a Stormwater Pollution Prevention Plan (SWPPP), in compliance with Section 402 of the Clean Water Act, as part of the Construction General Permit.

Adjustments to sediment control measures will be based on site conditions and constructed prior to any grading or disturbance. All temporary erosion and sediment control devices will be removed after the site is fully stabilized.

The site will be designed so that stormwater basins will not be required for the Project site. Depending on the final civil design elements, this may result in up to three drywells being installed in low areas, away from karst areas and sinkholes, to manage stormwater during operation. The proposed drywells will be 18 to 24 inches (45 to 60 centimeters) in diameter and 160 to 175 feet (49 to 53 meters) deep.

2.3.2 Santa Isabel Project Site

Overall construction is expected to last approximately 12 months. Pattern expects full construction mobilization starting in the second quarter of 2026. Facility operation is expected to begin in the second quarter of 2027. Construction will take place 6 days a week (Monday through Saturday), generally during daylight hours (between 5:00 a.m. and 7:00 p.m.). It is expected that up to 150 workers may be present on-site at one time. Construction workers will most likely stay in the local area and commute to the site daily. As required by PR-DTOP regulations, a MOT Plan will be developed to manage construction-related traffic while accessing the Project site.

The Santa Isabel Storage site will be prepared for construction by first improving the current access road. This will involve grading and adding aggregate, as needed, to ensure safe travel

and access for construction equipment. The site will be surveyed and staked, followed by the installation of a security fence, approximately 7 to 8 feet (approximately 2 meters) high, around the perimeter of the BESS area; internal access roads will be constructed. Locked gates will restrict access to the BESS area, which will be accessible only to Pattern employees and their agents and contractors.

The site will be cleared of vegetation and graded. Cleared vegetation will either be taken to an approved landfill or left on unused areas of the Project site as mulch. The ground under the new foundations for equipment will be further compacted in place or covered with gravel.

As described for the Barceloneta site, Pattern will prepare a CES Plan and SWPPP as part of the Construction General Permit. These plans will outline the specific measures that will be implemented. To manage stormwater during construction, temporary on-site measures, such as silt fences and fiber rolls, will be implemented, as described for the Barceloneta site. Appropriate sediment control measures will be constructed prior to any grading or disturbance, and additional control measures will be implemented as necessary to address any dynamic site conditions. Perimeter sediment barriers will be constructed to prevent sediment or trash from being transported to adjacent properties. All temporary erosion and sediment control devices will be removed after the site is fully stabilized.

As described above for the Barceloneta site, reinforced concrete foundations and helical or driven steel pile foundations will be installed directly under each BESS container. When reinforced concrete foundations are used, an additional 6-inch (15-centimeter) to 1-foot (0.3-meter) skirt foundation will be included around each container. If the ground is not suitable for the foundations, the soil will be excavated and fill material, such as gravel, will be imported, placed, and compacted. Fill material and aggregate, if needed, will be imported from a commercial source. Excess cut material generated from construction activities will be spread locally and compacted. If driven steel piles are determined appropriate, they may be further supported by concrete backfill, depending on the soil profiles in specific areas.

The BESS equipment containers will be transported to the site and installed on foundations, as described for the Barceloneta site in Section 2.3.1. The battery units and associated equipment will be connected to the collector line, which will feed into the new switchyard at the existing substation (see Figure 5). Following construction and installation of the BESS and collector line, the system will be tested and then placed into operation.

The BESS will have a 34.5 kV underground collection line running to the existing O&M facility (see Figure 5). Trenching will be used for installation of the line, which will be 3 to 4 feet (approximately 1 meter) underground. The trench will be filled once the line is installed and the site (e.g., existing access roads) will be restored.

To facilitate installation of a step-up transformer for Santa Isabel Storage, reconfiguration of the existing O&M facility for the Santa Isabel Wind Farm will be required, along with a small expansion. The 0.29-acre (0.297-cuerda) expansion will extend northwest and southwest of the O&M facility to accommodate the necessary components (e.g., transformers, bus system) for connecting the BESS (see Figure 5). In addition, a very small expansion will be needed on the east side. On the northwest side, the current screening vegetation and fence will be removed; a new fence of a similar nature will be located approximately 40 feet (12 meters) to the northwest. Screening vegetation will also be reestablished outside of the new fence. This expansion will cover roughly 0.25 acre (0.257 cuerda) and be constructed in a manner similar to construction at the existing substation. In addition, the southwest side of the facility will be extended 15 feet (4.5 meters) to the south, affecting roughly 0.04 acre (0.04 cuerda). Cleared areas within the expansion area will be graded and graveled.

Within the expanded O&M facility, existing infrastructure will be reconfigured to accommodate the Santa Isabel Storage connection.

Following construction and installation of the BESS and collection line, the facility will be tested and then placed into operation.

2.4 Operation

2.4.1 Staffing

2.4.1.1 Barceloneta Project Site

Under normal operating conditions, permanent staff members will be on-site weekly. Personnel are expected to be on-site during annual or semiannual visits for inspections and preventative maintenance. Maintenance activities will include vegetation management, fence repairs, and equipment maintenance. No PV module washing is anticipated.

In addition to periodic inspections, the site will be monitored remotely 24/7 to identify any security or operational issues. If a problem is identified, a local repair crew or law enforcement personnel will be contacted if an immediate response is warranted.

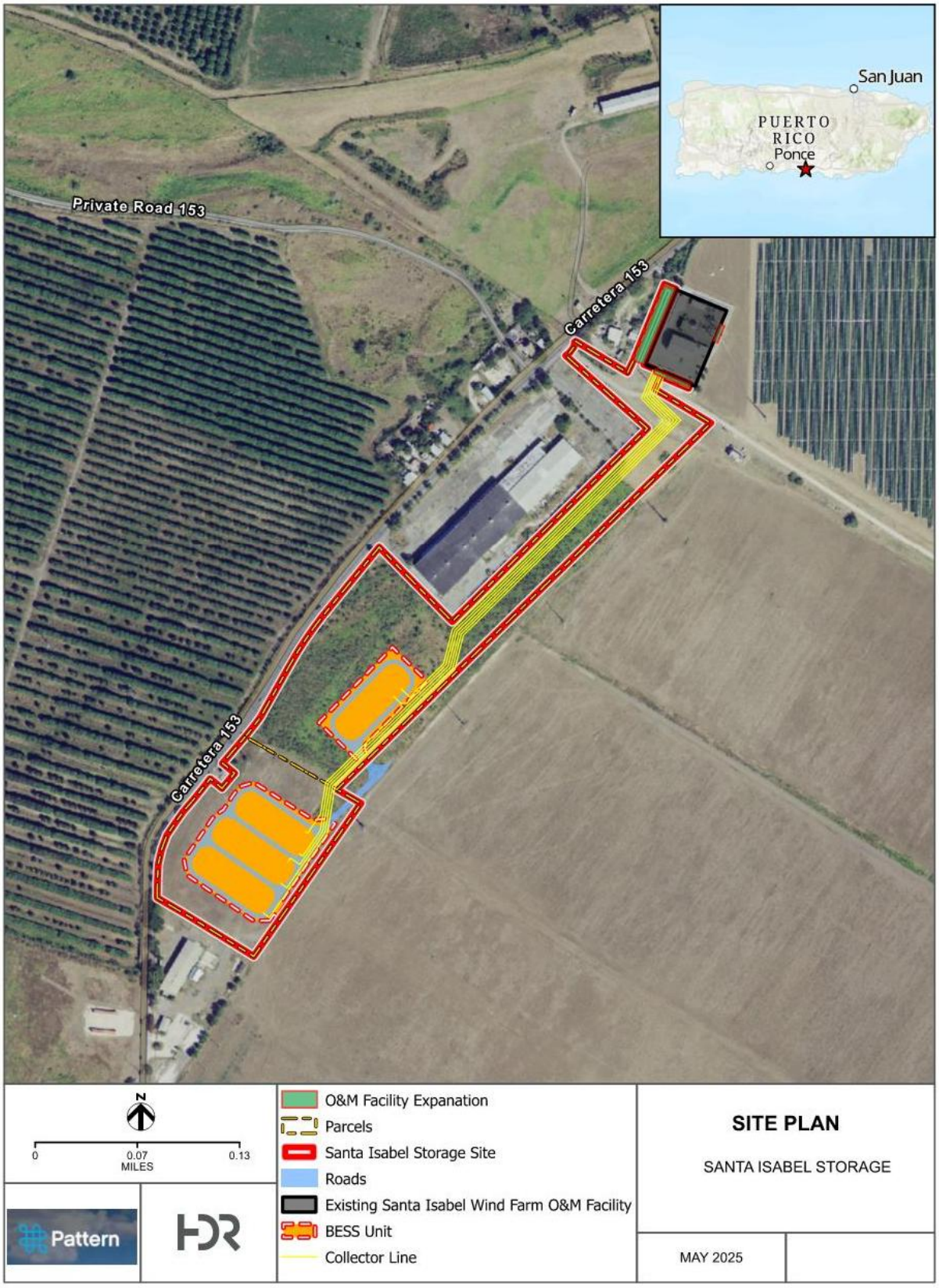
2.4.1.2 Santa Isabel Project Site

Except for periodic inspections, repairs, and maintenance, the BESS will not be staffed by on-site personnel during operation. The BESS will be monitored remotely to identify security or operational issues. If a problem is discovered during non-working hours, a local repair crew or law enforcement personnel will be contacted if an immediate response is warranted.

2.4.2 Waste Management

Any hazardous or solid waste generated during operation of the Project (e.g., waste from emergency generator use) will be containerized and disposed of in accordance with all applicable local and federal regulations (e.g., oil and absorbent materials will be containerized in a drum, labeled correctly, and transported under a chain of custody to an approved disposal facility). For the collection and hauling of waste, either the collection services of the local municipality or a private company authorized by the DRNA will be used. Waste materials will be disposed of at a sanitary landfill that has been authorized to receive such materials.

Figure 5: Detailed Santa Isabel Project Site Plan



3. ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

As discussed in Section 1.4, this EA evaluates the impacts of the Project in relation to cultural resources, water resources, transportation, aesthetic and visual resources, biological resources, socioeconomics, health and safety, noise, and soils and prime farmlands.

In each of the following sections, potential impacts on the specific resource areas are assessed with both qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that may be affected by the Project as well as the potential direct and indirect impacts on that resource from the Project given Project controls. A conclusion regarding the significance of impacts is provided for each resource area.

Section 3.11, provides a review of the reasonably foreseeable federal and non-federal actions in the region that may contribute to adverse impacts when added to the impacts of the Proposed Action. The impacts of past actions were reviewed and included as part of the affected environment to establish the current condition of the resource (the baseline condition) that may be affected by the Project.

3.2 Cultural Resources

3.2.1 Barceloneta Project Site

Historically, the Barceloneta site has supported agricultural activities, some of which date back decades and possibly centuries. The site is located within an archeologically sensitive area. Previously, the Barceloneta site was approved for two separate solar projects: the Arecibo Photovoltaic Power Plant on the northern half of the property and Blue Beetle Solar on the southern half.

A Phase IA – Phase IB Archeological Evaluation was conducted in May 2013 in conjunction the Arecibo Photovoltaic Power Plant Project. Specifically, a Phase IA – Phase IB archaeological evaluation was conducted on the northern portion of the property, which is also the northern portion of the Barceloneta site; the evaluation covered approximately 196 acres (201.8 cuerdas) (Arqueologia, Inc. 2013).

The Phase IA evaluation consisted of a literature search to analyze readily available data, including aerial photography and studies conducted for nearby properties; a site assessment; and a field survey. The literature review indicated that no studies near the property reported findings and/or the presence of cultural resources. The aerial photography indicated that the northern portion of the Barceloneta site supported the cultivation of, first, sugarcane and, later, pineapple. In 2013, there was remaining evidence of furrows and rows of pineapple plants on the northern portion of the site. The site appears to have been used exclusively for agricultural purposes; it did not support habitation. The 2013 report did not identify the results of the field survey.

As noted above, the site is in an area with known archeological sensitivity. Despite years of ground disturbance associated with agricultural activities, a Phase IB evaluation was conducted that included site reconnaissance and test pits. Subsoil prospecting within the northern half of the site was negative for the presence of cultural resources.

On June 6, 2013, the Institute of Puerto Rican Culture (ICPR) provided an authorization letter, stating ICPR had "…determined that at present no significant evidence has been detected that suggests that the development of the project in question could cause any type of adverse

impact on archaeological resources." This letter, regarding cultural resources, authorized development of the Arecibo Photovoltaic Power Plant to proceed. The Arecibo Photovoltaic Power Plant (developed by RESUN Barceloneta, LLC) received an Environmental Compliance Approval (2013-122200-DEA-18320) from the Puerto Rico General Permits Office (OGPe [Spanish acronym]) on October 1, 2013.

In the southern half of the Barceloneta site, Blue Beetle Solar (developed by Blue Beetle III, LLC) received an acknowledgement of compliance with Article 4(3)(b) (EA 12-0559) from OGPe on October 24, 2012. As part of the Article 4(3)(b) approval process, ICPR provided an evaluation letter (August 27, 2012), stating that there was minimal likelihood of impacts on archaeological resources and that ICPR had no objection to the Project. As part of the process for a new consolidated Environmental Compliance Approval for the full Barceloneta Solar and Barceloneta Storage site, Pattern provided ICPR with archaeological reviews that the agency had considered for the two original projects. After discussion, ICPR provided an authorization letter on November 22, 2023, confirming no further studies would be required.

Given the prior archaeological evaluation, the lack of documented cultural resources on or near the site, and the ICPR approvals, the Project would not result in significant impacts on cultural resources at the Barceloneta site. Consultation with SHPO for Section 106 of the National Historic Preservation Act was initiated on July 21, 2025.

3.2.2 Santa Isabel Project Site

Historically, the Santa Isabel site has supported agricultural land uses; it is currently vacant land adjacent to industrial sites. During the permitting and approval process for the Santa Isabel Wind Farm, extensive cultural resource investigations were conducted in the area (Pattern 2010). The cultural resources record search included the site that is currently proposed for the Santa Isabel Storage. Subsurface investigations were also conducted in areas directly adjacent to the site, including the location for the existing O&M facility. None of these subsurface borings were positive with regard to archeological resources.

The site is near one historic element—Estacion Santa Isabel—and crossed by a historic irrigation canal (Pattern 2010). Neither of these historic features was determined to be affected by the Santa Isabel Wind Farm. The BESS would also avoid these features.

Given the lack of documented cultural resources in or near the site, effects from the existing wind farm, and past and current land uses, it is unlikely there would be significant impacts on cultural resources at the Santa Isabel site. Consultation with SHPO for Section 106 of the National Historic Preservation Act was initiated on July 21, 2025.

3.3 Water Resources

3.3.1 Barceloneta Project Site

The site is within the Cibuco-Guajataca sub-basin and the Cano Tiburones Coastal watershed (Hydrologic Unit Code [HUC] 10 – 2101000203) (USGS 2024). The water table aquifer is influenced by coastal wetlands, constructed drainage canals, and two major rivers (Rio Grande de Arecibo and Rio Grande de Manati), which are carved deep into the limestone. Rainfall and storm events contribute significantly to the region's hydrology. Average annual rainfall in Arecibo amounts to approximately 51 inches (130 centimeters) (U.S. Climate Data 2024a).

According to a desktop review of the National Wetland Inventory and field investigations conducted in January 2024, no water bodies or jurisdictional wetlands have been identified on the site. In addition, the site is within FEMA Zone X, an "area of minimal flood hazard" (Flood

Insurance Rate Map [FIRM] panel 72000C0265H, dated 04-19-2005) (FEMA 2024). Zone X is outside the 500-year flood level and protected by a levee that has been designed for a 100-year flood (see Appendix C). Therefore, this section focuses on stormwater management and groundwater.

3.3.1.1 Stormwater

The discussion below is based in part on information contained within a preliminary hydrology study completed for the Barceloneta site (Ulteig 2025). The study describes hydrology conditions on the site and recommends stormwater management approaches.

The Barceloneta site generally slopes downward from south to north. Stormwater runoff from the south, east, and west contributes to ponding in the northern portion of the site during significant rainfall events. In addition, karst areas throughout the site frequently have ponded water.

According to modeling from the hydrology report, the Barceloneta site would be approximately 30 percent inundated under the 500-year storm event. Although the Project, which includes grading, would introduce infrastructure to areas that are prone to flooding, development in the inundation areas would be minimized to the extent feasible. Typical inundation depths would range from approximately 1.6 to 9.8 feet (0.5 to 3.0 meters); small portions of the site could experience depths of 19.7 feet (6.0 meters). In accordance with the Puerto Rico stormwater management requirements found in Chapter 7 of Regulation #40, discharges to sinkhole areas of the Barceloneta site would not increase due to the development.

Overall, modeling of proposed conditions shows an overall decrease in off-site runoff compared with existing conditions due largely to the conversion of land cover from primarily cultivated crops to grassland/herbaceous cover. However, the model also shows that there would be localized areas with increased inundation and runoff.

As described in Section 2.3.1, Pattern would implement numerous stormwater management measures to reduce erosion and sedimentation associated with construction. A CES Plan and SWPPP would be prepared and implemented as part of the General Construction Permit. These measures would minimize the amount of stormwater draining to sinkholes as well as the amount of sediment transferred off-site during precipitation events.

Research has demonstrated that PV arrays do not increase on-site runoff if soil compaction around the arrays is minimized. Non-compacted soils allow precipitation to infiltrate under the elevated PV arrays (Great Plains Institute 2023). However, the fixed-tilt nature of the solar panels could result in the formation of a dripline during precipitation events that could direct runoff and infiltration. Though once considered a potential issue in stormwater management, research has indicated that the open spaces between panel rows, revegetation, and existing infiltration can effectively manage this directed runoff (Bajehbaj et al. 2024). The solar area of the site would be revegetated, which would decrease the possibility of increased erosion.

The BESS areas of the site would be partially impervious, resulting in some increase in runoff rates from what currently occurs within the proposed BESS footprint. However, this increased runoff from the BESS areas would be managed as part of management of the overall Barceloneta site. Sufficient natural vegetation and planned stormwater management features would result in no increase in overall runoff from the Barceloneta site.

Pattern evaluated the use of stormwater management basins during the preliminary design phases. However, there is no existing outlet location where Project runoff could leave the site. The lack of topographic relief in the low-elevation areas presents design challenges. These low areas also contain clayey soils, which have low infiltration rates, making an infiltration basin an

unsuitable option. In addition, the site contains mogotes. With limited background information about subsurface conditions, significant excavation for a stormwater basin is not recommended. Instead of a stormwater basin, drywells may be used within the site's low-elevation areas. Adding drywells into existing depressions, but away from mogotes and sinkholes, would reduce the volume of runoff within the low-elevation areas without requiring significant grading alterations. Future design iterations would continue to explore solutions other than drywells to ensure peak runoff rates and maintain existing inundation levels.

According to the analysis, runoff rates to the sinkhole locations would not increase under proposed site conditions. Therefore, no additional stormwater management systems are proposed for the sinkholes. Regulation #40 requires a 33-foot (10-meter) buffer zone (minimum) around the drainage depression to provide protection from runoff discharges and sediment. As such, buffer zones would be implemented and maintained around the sinkhole areas in accordance with local regulatory requirements. Overall, impacts from the Project on stormwater would not be significant at the Barceloneta site. Stormwater management during the construction and operation of the Project would include consistent monitoring by construction and operation staff members, ensuring that residual or long-term erosion concerns are promptly addressed, and stormwater management in accordance with the CES Plan and SWPPP would be maintained at the Barceloneta site.

3.3.1.2 Groundwater

The site is located in the Arecibo-Manati region, within the North Coast limestone aquifer system (USGS 1987). The groundwater flow in this region is generally from south to north, toward the north coast of Puerto Rico (USGS 1996). There are no sole-source aquifers in Puerto Rico (U.S. Environmental Protection Agency [EPA] 2024).

While conducting site investigations, no groundwater was discovered within 50 feet (15 meters) of the surface. The deepest site excavations would extend to 50 feet (15 meters) within the substation area and 20 feet (6 meters) within the rest of the site. Therefore, none of the features proposed would be constructed to depths that would affect groundwater. Pattern would perform civil work so as stormwater basins would not be required for the Project site. Depending on the final design elements, this may result in up to three drywells being installed in low areas, away from karst areas and sinkholes, to manage stormwater during operation. These wells would increase groundwater levels as result of stormwater infiltration; however, outside of rare precipitation events, the Project would not result in significant impacts on groundwater at the Barceloneta site.

3.3.2 Santa Isabel

The Santa Isabel site is within the Southern Puerto Rico sub-basin and the Rio Coamo to Rio Seco watersheds (HUC 10 – 2101000404) (USGS 2024). Rainfall, storm events, rivers, and constructed irrigation canals provide significant contributions to the region's hydrology. Average annual rainfall in the south coast totals approximately 36 inches (91 centimeters) (U.S. Climate Data 2024b).

According to a desktop review of the National Wetland Inventory and field investigations conducted in January 2024, no water bodies or jurisdictional wetlands have been identified on the Santa Isabel site. In addition, the Santa Isabel site is located within FEMA Zone X, an "area of minimal flood hazard" (FIRM panel 72000C2060J, dated 11-18-2009) (FEMA 2024). Zone X is outside of the 500-year flood level and protected by a levee that has been designed for a 100-year flood. A FEMA FIRM map is included in Appendix C. Therefore, this section focuses on stormwater management and groundwater.

3.3.2.1 Stormwater

The Project would involve grading approximately 80 cubic meters of land. To manage stormwater during construction, temporary on-site measures, such as silt fences and fiber rolls, would be implemented. These measures are described in Section 2.3.2. A CES Plan and SWPPP would be prepared and implemented as part of the General Construction Permit. All sediment control measures would be adjusted according to site conditions and constructed prior to any grading or disturbance. Perimeter sediment barriers would be constructed to prevent sediment or trash from being transported to adjacent properties. All temporary erosion and sediment control devices would be removed after the site is fully stabilized. Overall, impacts from the Project on stormwater would not be significant at the Santa Isabel site. Stormwater management during operation of the Project would include consistent monitoring by operations staff members, ensuring that residual or long-term erosion concerns are promptly addressed.

3.3.2.2 Groundwater

The Santa Isabel site is located in the Santa Isabel-Patillas region, within the South Coast aquifer (USGS 1987). Groundwater flow in this region is generally from north to south, toward the Caribbean Sea (USGS 1996). In addition, there are no sole-source aquifers in Puerto Rico (EPA 2024).

Construction would not occur below the water table and, therefore, would not directly affect groundwater or aquifers. With the change in landscape features, impacts on groundwater recharge due to rainwater infiltration would be minor. During operations, increases in runoff from the property, due to the added impervious area of the BESS pad, would be attenuated by incorporating stormwater basins and ditches to infiltrate runoff. The goal of these stormwater management practices would be to reduce post-construction runoff rates to a level at or below the existing condition. Therefore, the Project would not significantly affect groundwater at the Santa Isabel site.

3.4 Transportation

3.4.1 Barceloneta Project Site

The site is bounded by PR Hwy 2 to the north and Calle Manatiales to the west. On the site's northern boundary, PR Hwy 2, a four-lane highway, extends east–west, connecting the cities of Arecibo and Manatí. Calle Manatiales is a two-lane, paved public road that extends north–south along the site's western boundary, providing access to the site via a connection with PR Hwy 2. In addition, several private-access, unincorporated dirt roads cross the site. However, these are not publicly accessible and therefore not considered in the assessment of transportation impacts.

Development of Barceloneta Solar and Barceloneta Storage would result in a temporary increase in traffic in the vicinity of the site, primarily along PR Hwy 2 and Calle Manatiales. Subject to weather, construction activities would take up to 18 months to complete, using a crew of up to 400 workers. Work would generally occur Monday through Saturday during daylight hours. Construction workers would most likely stay in nearby accommodations in the region and commute to the site. Construction equipment and material deliveries, as well as waste removal, would require, on average, five to 10 flatbed trucks, or other large vehicles, to visit the site each day during the construction period. These vehicles should be easily accommodated by existing roadways.

A MOT Plan would be implemented during the construction phase. This would be used to establish work zones for the Project site, provide transportation management measures, and

temporarily control traffic on streets and highways. Specifically, an MOT Plan would be prepared for the access point to the site where equipment and supply deliveries would interrupt normal traffic for short periods. As required by local PR-DTOP regulations, a MOT Plan would be developed to reduce potential impacts on traffic and transportation; therefore, impacts from the Project on transportation as a result of site access and construction would not be significant at the Barceloneta site.

Traffic control along PR Hwy 2 would be required while installing the 115 kV underground transmission line, which would extend from the shared substation to the existing Luma Barceloneta TC substation, which is approximately 1.5 miles (2.4 kilometers) to the east. The right (southernmost) lane on eastbound PR Hwy 2 between Avenida Universidad and PR Hwy 140 could be closed during installation; however, the other three lanes (one eastbound and two westbound) would remain open.

Installation of the transmission line would take up to 12 months to complete. If necessary, PR Hwy 22, a four-lane divided highway that runs parallel to PR Hwy 2, could be used as an alternate route for travelers. In addition, construction activities associated with the transmission line could occur at night to mitigate adverse impacts on traffic. Because three lanes on PR Hwy 2 would remain open and an efficient bypass route (PR Hwy 22) is available around the construction area. As a result, the Project would not result in significant impacts on transportation resources at the Barceloneta site.

3.4.2 Santa Isabel Project Site

The site is bounded to the west by PR Hwy 153, a two-lane highway that extends north–south along the site's northwestern boundary, connecting the towns of Santa Isabel and Coamo.

Development of Santa Isabel Storage and expansion of the existing O&M facility would result in a temporary increase in traffic in the vicinity of the site, primarily along PR Hwy 153. Subject to weather, construction activities would take up to 14 months to complete, using a crew of up to 150 workers on any given day. Work would generally occur Monday through Saturday during daylight hours. Construction workers would most likely stay in nearby accommodations in the region and commute to the site.

An MOT Plan would be implemented during the construction phase. This would be used to establish work zones for the Project, provide transportation management measures, and temporarily control traffic on streets and highways. Specifically, an MOT Plan would be prepared for the site access point where equipment and supply deliveries would interrupt normal traffic for short periods. Implementation of the MOT Plan would reduce potential impacts on traffic and transportation.

Construction equipment and material deliveries, as well as waste removal, would require, on average, five to 10 flatbed trucks, or other large vehicles, to visit the site each day during the construction period. These vehicles should be easily accommodated by existing roadways. As a result, the Project would not result in significant impacts on transportation resources at the Santa Isabel site.

3.5 Aesthetic and Visual Resources

3.5.1 Barceloneta Project Site

The Barceloneta site is east of Sabana Hoyos, a barrio (neighborhood/district) in the municipality of Arecibo, which is in the northwestern quadrant of Puerto Rico. The site consists of agricultural fields and drainage features designed for agricultural use in a rural setting.

Adjacent land uses are industrial, agricultural, and residential. The area to the north includes PR Hwy 2, with forested areas beyond. The area to the east includes agricultural land and structures associated with industry, with forested land interceding between the structures and the site. The area to the south includes forested land, to the southwest, and residences associated with Sabana Hoyos, to the southeast. The area to the west includes Calle Manatiales, interceding between agricultural land, residential structures, and the Barceloneta site.

Portions of the Barceloneta site are visible from accessible areas in the neighborhoods located along Calle Manatiales, Calle Adzucena, Calle Ceiba, and Calle Roble to the west and southwest and from the northeast. Views into and across the site from land uses to the south and east are screened by a mature forest.

Visual impacts would result from the conversion of farmland to a 290-acre (298.6-cuerda) renewable energy facility with solar panels, BESSs, and a shared substation. This would create new features on the landscape, though less intrusive than other features associated with existing industrial development (e.g., Omega Steel Recycling and Petro West Arecibo) and in line with current land uses in the area. PR Hwy 2, a four-lane highway, borders the site to the north. A large part of this frontage is already screened by tall-growing vegetation, which would remain in place during and after construction. Even with the screening, passersby may catch glimpses of the facility. However, these views would be fleeting for motorists traveling along the highway.

Some site features would be visible from neighborhoods on the west side. However, existing and proposed vegetative screening would reduce the visual impact at these adjacent land uses during the temporary construction phase as well as final development. The full benefit of vegetative screening would not occur until after construction, at which point the vegetation would have grown enough to more effectively block views of the site. Although there would be short-term adverse impacts from the change in the viewshed, once the vegetative screening has matured, overall impacts on aesthetics and visual resources would be reduced. As such, the Project would not result in significant impacts on aesthetics and visual resources at the Barceloneta site.

3.5.2 Santa Isabel Project Site

The Santa Isabel site consists of vacant agricultural land adjacent to PR Hwy 153. The adjacent land uses are industrial and agricultural, with some commercial and residential uses as well. An energy production facility (i.e., Santa Isabel Wind Farm) is also present.

The Santa Isabel site is a small area. Development of BESS infrastructure and expansion of the existing O&M facility would be compatible with surrounding land uses (e.g., warehouses) as well as existing wind energy facilities. The trees and shrubs currently growing along the west side of PR Hwy 153 screen the site from residences to the north. Although passersby on PR Hwy 153 would see the BESS, a new feature on the landscape, it would be located between an existing warehouse and a warehouse/vehicle yard and would blend into the surroundings over time. Given the similarity of Project features to the current land uses in the area, the Project would not result in significant impacts on aesthetics and visual resources at the Santa Isabel site.

3.6 Biological Resources

3.6.1 Barceloneta Project Site

3.6.1.1 Vegetation

Vegetation surveys for the site were conducted in August 2022 as well as July and August 2023 (Burns & McDonnell 2022b; Green Projects Environmental Consultants 2024). The proposed site plan would result in 161 acres (165.8 cuerdas) of non-agricultural vegetation being cleared from the site, approximately 84 acres (86.5 cuerdas) of thick vegetation (dense trees and shrubs, creating forested land) and 77 acres (79.3 cuerdas) of light vegetation (sparse shrubs and herbaceous vegetation cover). In addition, 125 acres (128.7 cuerdas) of agricultural vegetation would be cleared. Of that acreage, herbaceous grassland species, which are used for silage, make up a large part of the flat areas. Forested mogotes make up the remaining 39 acres (40.2 cuerdas) of the vegetation on the site. No mogotes would be cleared.

Surveys identified 15 tree species, five shrub species, seven creeping/climbing species (bejucos), and three herbaceous plant species. Plant surveys for the site were conducted in August 2022 (Burns & McDonnell 2022b) and July and August 2023 (Green Projects Environmental Consultants 2024). Additional plant surveys were conducted during a site visit in January 2024. Vegetation observed during the site visits included mango (*Mangifera indica)*, matchwood (*Schefflera morototani*), coconut palm (*Cocos nucifera*), Macarthur palm (*Ptychosperma macarthurii*), Puerto Rico royal palm (*Roystonea borinquena*), African tulip tree (*Spathodea campunulata*), tropical almond (*Terminalia catappa*), flame tree (*Delonix regia*), rubber plant (*Ficus elastica*), Panama berry (*Muntingia calabura*), bamboo (*Bambusa vulgaris*), guara (*Cupania americana*), trumpet tree (*Cecropia peltate*), fiddlewood (*Citharexylum spinosum*), castorbean (*Ricinus communis*), tamarind (*Leucaena leucocephaia*), lollipop mimosa (*Mimosa pigra*), higuillo (*Piper aduncum*), turkey berry (*Solanum torvum*), pothos (*Epipremnum aureum*), dayflower (*Commelina diffusa*), wild morning glory (*Ipomoea setifera*), wild balsam apple (*Momordica charantia*), butterfly pea (*Centrosema pubescens*), sensitive plant (*Mimosa pudica*), kudzu (*Pueraria phaseoloides*), margarita (*Bidens pilosa*), elephant grass (*Pennisetum purpureum*), and guinea grass (*Urochloa maxima*).

Two isolated mogotes are found in the center of the site. The isolated mogotes are small, measuring together approximately 607 feet by 197 feet (185 meters by 60 meters) (see Figure 3). Because of their size, the vegetation covering the mogotes provides very limited habitat for mogote-dependent species that may be found on the site. The remaining mogotes within the site are on the southern boundary, forming a long chain outside of the site boundary that runs from east to west (see Figure 3). Developmental setbacks of at least 33 feet (10 meters) would create a buffer and protect all mogote-dependent vegetation.

No Endangered Species Act– (ESA-) listed species were identified in any of the surveys, and no critical habitat was identified. However, a USFWS Information for Planning and Consultation (IPaC) resource list identified three ESA-listed flowering plant species with potential to occur on the site (see Appendix D):

- Palo De Ramon (*Banara vanderbiltii*) – Endangered
- Palo De Rosa (*Ottoschulzia rhodoxylon*) – Threatened
- *Schoepfia arenaria* – Threatened

Palo De Ramon

Palo De Ramon is a small, endemic endangered evergreen tree that reaches a height of 30 feet (9 meters) and has a stem diameter of 5 inches (12 centimeters). It was listed as endangered in 1987, and a recovery plan was created in 1991 (USFWS 2020). Palo De Ramon is found in the semi-evergreen forests of the subtropical moist forests. Populations in Puerto Rico are found on limestone hills or mogotes from elevations of 328 to 492 feet (100 to 150 meters) as well as mountains of volcanic origin with elevations above 2,624.5 feet (800 meters). The primary threats to the species include deforestation and the destruction of limestone hills. Although the subtropical moist forest, as well as associated forest types, is the most extensive life zone on the island, most of the land has been deforested; therefore, areas where forests exist most likely contain second-growth forests (USFWS 1991). The species may also be threatened by lobate lac scale (*Paratachardina pseudolobata*), an insect that infests the woody portion of twigs and small branches. It is found mostly on Fabaceae, Myrtacea, and Moraceae plant families (USFWS 2020). Vegetation management and power-line maintenance have been identified as threats to the species (USFWS 2020). However, the magnitude of this threat is low and non-imminent because most known individuals occur on lands that are managed for conservation (USFWS 2020).

At present, there are eight adult trees in Cambalache State Forest in Arecibo. The forest is approximately 900 feet (274 meters) from the site, north of PR Hwy 2. This population was established in the 1990s to serve as a seed source. It has also been reintroduced in Guajataca State Forest (24.3 miles [39.1 kilometers] west of the site), Rio Abajo State Forest (9.7 miles [15.6 kilometers] southwest of the site), Toa Vaca Lake (23.5 miles [37.8 kilometers] south of the site) and Gabia Farm, a private parcel in the municipality of Coamo (31 miles [49.9 kilometers] south of the site). Past surveys of forested hedges did not identify the species on the site (Burns and McDonnel 2022b; Green Projects Environmental Consultants 2024). Little information is available on how wild populations of the species reproduce; however, efforts to propagate the species through cuttings and seeds have been successful (USFWS 2020). If planted, it could occur in the forest mogotes; however, the mogotes would be buffered from construction activities and left unaffected. Therefore, the Project would have no effect on the species.

Palo De Rosa

Palo De Rosa is a threatened tree species with pink-colored wood that reaches approximately 49 feet (15 meters) in height and can reach 16 inches (41 centimeters) in diameter. The existing populations of Palo De Rosa occur within the subtropical dry forest and subtropical moist forest life zones, both of which are prevalent in Puerto Rico, occupying areas that were extensively deforested for agriculture. Populations have been reported from sea level to 2,000 feet (610 meters) in elevation. Those reported in the subtropical dry forest life zone occur in southern Puerto Rico, at the bottom of moist canyons or drainages, while populations reported in the subtropical moist forest life zone occur in northern Puerto Rico, on north-facing slopes or close to the top of hills, suggesting the species requires intermediate mesic conditions for seedling establishment (USFWS 2017). The majority of the populations recorded are restricted to the remnants of natural vegetation or areas that are inaccessible, with little to no agricultural value (USFWS 2017).

Threats to the species include deforestation for the expansion of residential and industrial areas, causing habitat fragmentation across the island. Nonetheless, the status of the species is improving, with 42 percent of known individuals showing evidence of recruitment. The species was downlisted from endangered to threatened in November of 2022 (USFWS 2022a). The majority of the known populations of the species are located along the northern karst belt of

Puerto Rico. The known population closest to the site is centered in Cambalache State Forest (USFWS 2017). However, past surveys of forested hedges failed to identify the species. Although it could occur in forest mogotes, the mogotes would be buffered from construction activities and left unaffected. Therefore, the Project would have no impact on the species.

Schoepfia Arenaria

Schoepfia arenaria is a threatened endemic evergreen shrub or small tree. Information about the species is limited due to its scattered and isolated occurrences. The species occurs within the subtropical moist forest and subtropical wet forest life zones of the northern karst region of Puerto Rico. Little is known of *Schoepfia arenaria's* habitat requirements, but research suggests it is a plant that must establish connections with a host plant to absorb nutrients and water for survival (USFWS 2021).

Threats to the species include habitat destruction and modification. Specifically, deforestation for construction, including urban, industrial, and tourist developments, and highway expansion are listed as the primary threats. Development projects on privately owned land are recognized threats because the species is often cut down. The only known populations are found in Isabela, on a private parcel with 100 individuals. The largest population is 27.5 miles (44.3 kilometers) west of the Project site, followed by smaller populations in Fajardo (61.7 miles [99.3 kilometers] east of the site), Pinones (40.9 miles [65.8 kilometers] east of the site), and Rio Abajo (9.7 miles [15.6 kilometers] southwest of the site) (USFWS 2021). Past surveys of forested hedges failed to identify the species. Although it could occur in forest mogotes, the mogotes would be buffered from construction activities and left unaffected. Therefore, the Project would have no impact on the species.

The Barceloneta site is disturbed by agricultural use; cleared parcels consist mainly of improved and maintained pastures. Due to the lack of protected plant resources on the site, impacts on ESA-listed plant species are not anticipated. In addition, the development setbacks surrounding the mogotes on the site would preserve mogote-dependent species. Therefore, the Project would have no impact on ESA-listed plant species and would not result in significant impacts on vegetation in general.

3.6.1.2 Wildlife

Wildlife species in the region include amphibians and reptiles (e.g., frog, lizards, snakes, iguanas), migratory and native bird species, common mammalian species (e.g., bats, shrews), and introduced species, such as cats, goats, sheep, and the Indian mongoose (*Herpestes javanicus*).

Wildlife surveys at the site were conducted in August 2022 (Burns & McDonnell 2022b) and July and August 2023 (Green Projects Environmental Consultants 2024). Birds identified during the 2022 and 2023 site visits included red-tailed hawk (*Buteo jamaicensis*), bananaquit (*Coereba flaveolal*), common ground dove (*Columbina passerinal*), pájaro bobo mayor (*Coccyzus vieilloti*), greater Antillean grackle (*Quiscalus niger*), northern mockingbird (*Mimus polyglottus*), red-legged thrush (*Turdus plumbeus*), cattle egret (*Bubulcus ibis*), smooth-billed ani (*Crotophaga ani*), pearly-eyed thrasher (*Margarops fuscatus*), and gray kingbird (*Tyrannus dominicensis*). All bird species identified are residents of Puerto Rico; bird nesting was not observed. Reptiles included Puerto Rican racer (*Borikenophis portoricensis*), green iguana (*Iguana iguana*), Puerto Rican blue tailed iguana (*Ameiva azul*), Puerto Rican ground lizard (*Ameiva exsul*), common grass anole (*Anolis pulchellus*), and Puerto Rico crested anole (*Anolis cristaltellus*). Amphibians included white lipped frog (*Leptodactylus albilabris*), common coquí (*Eleutherodactylus coqui*), and cane toad (*Bufo Marinus*). Species listed as threatened or endangered were not observed.

A USFWS IPaC resource list was generated for the site (see Appendix D). Four ESA-listed wildlife species were identified as potentially occurring within 1 mile (1.6 kilometer):

- Puerto Rican boa (*Chilabothrus inornatus*) – Endangered
- Puerto Rican crested toad (*Peltophryne lemur*) – Threatened
- Puerto Rican parrot (*Amazona vittata*) – Endangered
- Puerto Rican broad-winged hawk (*Buteo platypterus brunescens*) – Endangered

No designated critical habitat was identified, and Migratory Birds of Conservation Concern are not expected to occur on the site. A description of the listed species potentially present on the Barceloneta site is provided below.

Puerto Rican Boa

The Puerto Rican boa is an large, endangered snake with variable coloration that ranges from reddish brown to dark brown, with several dark bars or spots along the body (USFWS n.d.). The species is a habitat generalist that tolerates a range of terrestrial and arboreal habitats, including rocky areas and haystack hills; trees and branches; rotting stumps; caves, both entrances and inside; plantations; various types of forested areas, such as mogotes and mangrove forests; urban and rural forested areas; and stream and road edges at elevations of 1,476 to 3,445 feet (450 to 1,050 meters) above sea level (USFWS n.d.; Wiley 2003). Although the boa is known to occur within both urban and rural landscapes, it is particularly associated with forested areas. Therefore, encounters with this species would be more likely to occur in urban and rural areas within or adjacent to forested areas (USFWS 1995). The species would be unlikely to occur in developed areas that are not within or adjacent to forested habitats (USFWS 1995). Prey items include small mammals, lizards, birds, and frogs, with black rats (*Rattus rattus*) being the most common prey item.

The Puerto Rican boa is endangered because of illegal hunting, habitat destruction or modification, and predation by the small Indian mongoose (USFWS 1995; Wiley 2003). In July 2022, USFWS proposed removing the Puerto Rican boa from the list of endangered and threatened wildlife (USFWS 2022b). Delisting of this species has not yet been finalized.

During the 2022 and 2024 site surveys (Burns & McDonnell 2022a; Green Project Environmental Consultants 2024), no suitable habitat in non-forested areas was observed for the ESA-listed species in areas proposed for development. Since that assessment, the site plan shifted development to the south of the surveyed parcel and into forested areas. Forested areas and mogotes within the Barceloneta site could provide potential habitat for the Puerto Rican boa. None of the mogotes within and adjacent to the site would be affected, given the established setbacks, as described previously. In the southern part of the site, some forested areas, which could provide suitable boa habitat, would be cleared. However, in these areas, Pattern would implement necessary conservation measures, as defined by the USFWS Programmatic Biological Opinion, such as ensuring the Project is carried out as planned and documented, training personnel in species identification, surveying the work area where boas may be present prior to construction, clearing vegetation prior to the use of heavy machinery, implementing a relocation protocol where required, or taking other mitigative measures, depending on the observed presence of listed species (USFWS 2022b). Implementation of these measures would minimize any impacts on Puerto Rican boas that may be present in the area.

Puerto Rican Crested Toad

The Puerto Rican crested toad is a small threatened species, measuring 3.5 to 4.7 inches (8.9 to 11.9 centimeters) from snout to vent. The species has a yellowish-olive to blackish-brown color, along with prominent supraorbital crests and a long, distinctive upturned snout (USFWS 1987). Males are smaller than females and the crests are less prominent (USFWS 1992). The toad is endemic to the main island of Puerto Rico. Presently, the species is found only in three natural populations in the southern karst region, along with six reintroduced sites (three in the southern karst region and three in the northern karst region) (Green Project Environmental Consultants, 2024). The toad occurs in confined areas throughout its range at "low elevations (below 656 feet [200 meters]) where exposed limestone or porous, well-drained soil offers an abundance of fissures and cavities" (USFWS 1987). Adults live partly underground throughout their life cycle. Breeding for this species is sporadic and heavily dependent on occasional heavy rains, which are normally concentrated in a very short period. Toads may breed more than once in a season if conditions are ideal (Moreno 1985).

The main factors contributing to the decline of this species are habitat loss, inundation at breeding ponds during storms, and impacts from invasive species (Beauclerc et al. 2008). Because of the limited distribution of this species, it is highly vulnerable to habitat destruction; the destruction of one breeding pond could eliminate an entire population (USFWS 1992). Presently, there is constant monitoring of the Guanica Commonwealth Forest population, and known breeding areas are blocked off during reproduction.

The site lacks the wetlands or water bodies necessary for the Puerto Rican crested toad; therefore, the species is unlikely to be present. As such, the Project would have no effect on the species.

Puerto Rican Parrot

The Puerto Rican parrot (*Amazona vittata*) is an endangered green parrot with a red forehead and blue feathers (USFWS 2009). The species is currently present in the wild in both the El Yunque National Forest and Río Abajo Forest. Its food items include a wide variety of fruits, seeds, and leaves.

Adult birds breed from January to July or August (USFWS 2009; Snyder et al. 1987; Wilson et al. 1995). During the breeding season, birds typically select nest sites in tree cavities in mature forests with large-diameter trees but have been known to nest in artificial nest structures, holes, cliffs, and other diverse habitat settings (USFWS 2009). Birds are sensitive to the presence of humans around nests, and human disturbance may cause females to enter nests more frequently or take longer recesses between chick feedings (Snyder et al. 1987; Wilson et al. 1995).

Major threats to this species include widespread deforestation and associated habitat loss; nest competition; predation of eggs and chicks by pearly eyed thrashers; predation of fledglings and adults by red-tailed hawks, broad-winged hawks, and rats (*Rattus rattus* and *R. norvegicus*); parasitism by warble flies (*Philornis pici*); hurricanes; and competition for cavities with European and Africanized honeybees (*Apis mellif*era) (USFWS 2009; Wilson et al. 1995).

Suitable habitat for the Puerto Rican parrot (e.g., mature forests with large-diameter trees) was not observed during the 2022 and 2024 site surveys (Burns & McDonnell 2022a; Green Project Environmental Consultants 2024) in areas proposed for development. Therefore, the Project would have no impact on the species.

Puerto Rican Broad-winged Hawk

The Puerto Rican broad-winged hawk is a dark-brown, endangered subspecies of broad-winged hawk (USFWS 1997). The subspecies is non-migratory and found in the interior mountain forests of Puerto Rico, with breeding populations restricted to the Rio Abajo Commonwealth Forest, Carite Commonwealth Forest, and Caribbean National Forest. Prey types include centipedes, frogs, lizards, mice, rats, and birds (USFWS 2024b).

Nests are constructed from February to early March and placed in the upper reaches of emergent tree species with high stem densities (Delannoy et al. 2002; USFWS 1997). Hawks consistently choose tall large-diameter trees. Human disturbance is known to negatively affect nest success, and harassment by humans can result in potential nest failure (USFWS 1997).

The hawk is threatened by the destruction and modification of forested habitat; timber harvesting and management practices in public forests; road construction; increases in the number of recreational facilities, along with the disturbance associated with public use; mortality and habitat destruction from hurricanes; a lack of comprehensive management plans for public forests; the possible loss of genetic variation due to low population levels; and the potential for illegal shooting (USFWS 1997).

During the 2022 and 2024 site surveys (Burns & McDonnell 2022a; Green Project Environmental Consultants 2024), suitable habitat (e.g., interior mountain forests) was not observed in areas proposed for development. Therefore, the Project would have no effect on the species.

Impacts on wildlife could result from habitat loss and exclusion as well as construction-related disturbances. Installation of a 7- to 8-foot-high (2- to 2.4-meter) perimeter security fence could create barriers to wildlife movement across the landscape. However, some animals, such as birds, iguanas, and snakes, could go over or pass through the fencing, and any habitat in the site would remain accessible.

Construction activities would temporarily affect species present in and near the site. The impacts would be related to temporary disturbances from the presence of workers and equipment as well as construction-associated noise and vibration. Required tree clearing would occur in the fall after the nesting season has ended. Species that are wary of disturbance and use or traverse the area would avoid it, especially during construction hours. These impacts would be short term in nature and end once construction is complete. Minor impacts during maintenance related to vegetation management would continue to occur during operations.

Although there would be minor impacts (e.g., construction noise and human presence) on native wildlife, including the Puerto Rican boa, if present, these impacts would be temporary. Much of the site would remain as grassland and pasture habitat and continue to provide habitat for associated species. Forest species would be displaced from areas that have been cleared of trees; however, there is sufficient forest habitat adjacent to the site as well as protected forests north of the site.

Consultation was initiated with USFWS (see Appendix A, Agency Consultation). USFWS concurred that there is a finding of no effect in relation to the Puerto Rican Crested Toad, Puerto Rican Parrot, and the Puerto Rican Broad-winged Hawk. In relation to the Puerto Rican Boa, USFWS concurred that the project may affect, likely to adversely affect the Puerto Rican Boa, indicating the reasonable and prudent measures and terms and conditions included in the Service's Amended Programmatic Biological Opinion (PBO) issued in July 2023, would be implemented. Based on the commitment to implement all Terms and Conditions, and Monitoring Requirements described in Sections 6.4 and 6.5 of the PBO, USFWS determined that the proposed actions will not jeopardize the continued existence of Puerto Rican boa.

3.6.2 Santa Isabel Project Site

3.6.2.1 Vegetation

The Santa Isabel site is located on vacant, grass-covered parcels that contain a few shrubs and young trees. Vegetation observed during site visits included green amaranthus (*Amaranthus hybridus*), scarlet spiderling (*Boerhavia coccinea*), giant milkweed (*Calotropis procera*), buffelgrass (*Cenchrus ciliaris*), Kleberg bluestem (*Dichanthium annulatum*), Indian goosegrass (*Eleusine indica*), bellyache bush (*Jatropha gossypiifolia*), leadtree (*Leucaena leucocephala*), guinea grass (*Panicum maximum*), and phasey bean (*Macroptilium lathyroides*). The proposed construction area for the collection line is heavily disturbed, with only sparse areas of grass. A USFWS IPaC resource list was generated for the site. No ESA-listed plants with the potential to occur on the site were identified.

Site clearing would remove existing vegetation. However, given the size of the site and the common vegetation documented on it, the Project would not result in significant impacts on vegetation.

3.6.2.2 Wildlife

Typical wildlife species in the region would be the same as those listed for the Barceloneta site. Resident bird species observed on the site were similar to those seen at the Barceloneta site. A USFWS IPaC resource list was generated for the Project site (see Appendix D). One reptile species with the potential to occur was identified:

- Puerto Rican boa – Endangered

No Puerto Rican boas were observed during site visits. USFWS reports that boas are more abundant in the karst region of northern Puerto Rico and less abundant in the drier southern region of the island. Although the boa is known to occur within both urban and rural landscapes, it is particularly associated with forested areas. Therefore, only urban and rural areas within or adjacent to forested areas would be likely to encounter this species (USFWS 1995). Developed areas that are not within or adjacent to forested habitat would be unlikely to encounter this species (USFWS 1995).

The Project site is bounded by intensive agriculture, industrial operations, and a road. It lacks suitable habitat because it is not adjacent to any suitable forested areas. Given this habitat limitation, the species would be unlikely to occur (USFWS 1995). Therefore, the Project would have no effect on the species.

No designated critical habitat was identified, and no Migratory Birds of Conservation Concern are expected to occur on the site.

Construction activities would affect species on the site. These impacts would be related to temporary disturbances from the presence of workers and equipment as well as construction-associated noise and vibration. Species that use or traverse the area would avoid it while activity is ongoing. These impacts would be short term in nature and end once construction is complete. Minor impacts during vegetation-related maintenance would continue to occur during operation. Overall, the Project would not result in significant impacts on other wildlife species.

Consultation was initiated with USFWS, and USFWS concurred that the project may affect, likely to adversely affect the Puerto Rican Boa, indicating the reasonable and prudent measures and terms and conditions included in the Service's Amended Programmatic Biological Opinion (PBO) issued in July 2023, would be implemented (see Appendix A, Agency Correspondence). Based on the commitment to implement all Terms and Conditions, and Monitoring

Requirements described in Sections 6.4 and 6.5 of the PBO, USFWS determined that the proposed actions will not jeopardize the continued existence of Puerto Rican boa.

3.7 Socioeconomics

3.7.1 Barceloneta Project Site

The site is located on PR Hwy 2 at kilometer 61.2 in Sabana Hoyos Ward, within the municipality of Arecibo. It lies within a zoned agricultural area that is currently used for pastureland. The nearest hospital (Atlantic Medical Center) is approximately 1.7 miles (2.7 kilometers) east of the site, and the nearest school (Vigotsky Bilingual Academy) is approximately 0.7 mile (1.1 kilometers) to the northeast. Data regarding employment status and industries in the municipality of Arecibo are presented in Table 2.

Table 2: Employment Status and Industry in Arecibo

	Estimate (people/jobs)	Percent of Total
Employment Status		
Population 16 years and over	74,680 ± 254	N/A
Civilian employed population 16 years and over	26,422 ± 1,058	N/A
Industry		
Agriculture, forestry, fishing and hunting, and mining	516 ± 247	2.0%
Construction	1,666 ±318	6.3%
Manufacturing	3,739 ± 533	14.2%
Wholesale trade	419 ± 179	1.6%
Retail trade	3,942 ± 634	14.9%
Transportation and warehousing; utilities	1,023 ±297	3.9%
Information	222 ± 151	0.8%
Finance and insurance; real estate and rentals/leasing	1,237 ± 259	4.7%
Professional, scientific, and management; administrative and waste management services	2,286 ± 496	8.7%
Educational services, health care, and social assistance	5,450	20.6%
Arts, entertainment, recreation, accommodation, and food services	2,417	9.1%
Other services, except public administration	1,023	3.9%
Public administration	2,482	9.4%
Income		
Mean household income (dollars)	$33,845 ± 2,005	N/A

Source: U.S. *Census* Bureau. 2023. *American Community Survey.*

The primary occupations in Arecibo involve sales and office work; management, business, science, and arts; and production, transportation, and material moving. Beneficial socioeconomic impacts would result from increases in construction-related employment, tax revenue generation, and direct and indirect spending in the local economy, especially during

construction. During operation, a minimal number of jobs would be generated, except those required for regular site maintenance.

A need for new housing or supporting infrastructure is not anticipated. Arecibo and the surrounding commuter areas have ample housing and associated infrastructure that would be able to support an influx of construction workers.

Given the jobs that would be created during construction and operation and the availability of housing and public services in the greater Arecibo area, the Project would not result in significant adverse socioeconomic impacts in the Arecibo area. Beneficial impacts would very likely occur as a result of the influx of construction workers and their local spending and the corporate contributions to education and energy infrastructure efforts in the community. Local partnerships would provide residents with educational opportunities and additional energy reliability by having Barceloneta Solar and Barceloneta Storage located in their area.

3.7.2 Santa Isabel Project Site

The site lies within a zoned agricultural area that is currently unused. The nearest hospital (CDT de Santa Isabel) is approximately 0.5 mile (0.8 kilometer) south of the site, and the nearest school (Martin G. Brumbaugh Elementary School) is approximately 0.8 mile (1.3 kilometers) to the south. Data regarding employment status and industries for the municipality of Santa Isabel are presented in Table 3.

Table 3: Employment Status and Industry in Santa Isabel

	Estimate (people/jobs)	Percent of Total
Employment Status		
Population 16 years and over	16,959 ± 83	N/A
Civilian employed population 16 years and over	7,599 ± 416	N/A
Industry		
Agriculture, forestry, fishing and hunting, and mining	623 ± 243	8.2%
Construction	586 ± 173	7.7%
Manufacturing	1,406 ± 394	18.5%
Wholesale trade	183 ± 170	2.4%
Retail trade	725 ± 276	9.5%
Transportation and warehousing; utilities	183 ± 147	2.4%
Information	145 ± 104	1.9%
Finance and insurance; real estate and rentals/leasing	250 ± 131	3.3%
Professional, scientific, and management; administrative and waste management services	799 ± 238	10.5%
Educational services, health care, and social assistance	1,570 ± 320	20.7%
Arts, entertainment, recreation, accommodation, and food services	288 ± 131	3.8%
Other services, except public administration	239 ± 122	3.1%
Public administration	602 ± 187	7.9%
Income		

Table 3: Employment Status and Industry in Santa Isabel

	Estimate (people/jobs)	Percent of Total
Mean household income (dollars)	$38,182 ± 4,829	N/A

Source: U.S. Census Bureau. 2023. *American Community Survey.*

The primary occupations in Santa Isabel involve management, business, science, and arts; service occupations; and sales and office occupations. Beneficial socioeconomic impacts would be the same as or similar to those described for the Barceloneta site. Santa Isabel Storage would generate a minimal number of jobs during operation, except those required for regular site maintenance.

A need for new housing or supporting infrastructure is not anticipated. Santa Isabel and surrounding commuter areas have ample housing and associated infrastructure that would be able to support an influx of construction workers.

Given the jobs that would be created during construction and operation and the availability of housing and public services in the Santa Isabel area, the Project would not result in significant adverse socioeconomic impacts in the Santa Isabel area. Beneficial impacts would very likely occur as a result of the influx of construction workers and their local spending and Pattern's local partnerships that support workforce development and energy reliability.

3.8 Health and Safety

3.8.1 Barceloneta Project Site

The Barceloneta site is currently private property; uses are limited to agricultural uses. The Project would transition the site to energy uses, which could introduce public health and safety impacts related to traffic; the transport, use, disposal, or accidental release of hazardous materials or waste; or fire during construction. Once operational, although the Project would be passive, routine maintenance or fire risks associated with the BESS could pose public health and safety risks if not properly addressed. Public emergency services in the area include hospitals, law enforcement services, and fire protection services, which are adequate and able to serve the Project.

For safety purposes, the perimeter of the site, the BESS facilities, and the shared substation would be securely fenced during construction and operation; access gates would be locked and accessible only to Pattern employees and their agents and contractors. During construction, staff members would be trained according to a safety plan, and site management procedures would comply with federal and Puerto Rico Occupational Safety and Health Administration standards. Once operational, a minimal staff would be needed to perform on-site O&M; the staff would follow safety protocols and requirements.

Potential public health and safety hazards could result from increased traffic on roadways during construction. Residential, commercial, and other human-use areas along roadways would experience increased employee, commercial, and industrial traffic. Awareness of the residences and the establishment of traffic procedures, as discussed in Section 3.4, would minimize potential safety concerns, which would be addressed in the health and safety plans followed by the construction contractor(s).

Fuel used in emergency generators would be delivered to the facilities by truck. The emergency generators would have dual-wall, sub-base fuel tanks to reduce impacts on surface water or

soils. A Spill Prevention, Control, and Countermeasures (SPCC) Plan would be implemented to minimize the potential for a spill and teach on-site workers how to contain and clean up spills. The general public's health and safety would not be at risk in the event of an accidental on-site spill. Emergency response would be provided by local, regional, and state law enforcement, fire, and emergency responders.

Public health and safety hazards could result from a fire during construction and operation of the BESS. If a fire were to occur, flammable and toxic gases would be released. The BESS structures would be equipped with a fire suppression system. Furthermore, the BESS would be designed to minimize the potential for thermal runaway (i.e., overheating of the batteries). Proper storage, handling, and ventilation would reduce the risk of hazards.

During construction, particular caution would be taken when handling the solar panels due to the potential for electric shock. During operation, PV systems generate electromagnetic fields (EMFs). However, according to a study published by North Carolina State University (2017), solar PV technologies and solar inverters do not pose significant human health risks. An EMF produced by electricity has enough energy to produce heat but not enough to remove electrons from a molecule or damage DNA. The distance from the EMF source, such as that provided by the solar panel setbacks and security fencing proposed to surround separate portions of the site, renders EMF exposure insignificant and, therefore, not harmful to human health. In addition, the strength of an EMF at the perimeter of a PV facility is substantially lower than the strength of an EMF from household sources, such as microwave ovens, computers, and cell phones (National Institute of Environmental Health Sciences 2024).

Most of the increased safety risks would occur during construction, which should be completed within approximately 18 months. Risks would be reduced through required adherence to regulations and the construction plans that would be approved prior to the grading permits. Similarly, the Project would adhere to proper industry protocols and regulations, which would reduce operational impacts. Therefore, overall impacts from the Project on worker and public health and safety would not be significant.

3.8.2 Santa Isabel Project Site

The Santa Isabel site is currently vacant and separated from the road by a fence. Adjacent agricultural and industrial uses require limited numbers of employees. Public emergency services in the area include hospitals, law enforcement services, and fire protection services.

The potential public health and safety hazards associated with the Santa Isabel Storage facility are generally the same as described above for the Barceloneta site.

For safety purposes, the perimeter of the BESS facility and the expansion area at the existing Santa Isabel Wind Farm O&M facility would be securely fenced during construction and operation. Access gates would normally be locked and accessible only to Pattern employees and their agents and contractors. During construction, staff members would be trained according to a safety plan. Site management procedures would comply with federal and Puerto Rico Occupational Safety and Health Administration standards. Once operational, a minimal staff would be needed to perform on-site O&M; the staff would follow safety protocols and requirements.

Potential public health and safety hazards could result from expansion of the existing Santa Isabel Wind Farm O&M facility. Expansion would be necessary to accommodate the components (e.g., transformers, bus system) for connecting the BESS. During construction, particular caution would be taken when installing the interconnection components due to the potential for electric shock.

Most of the increased safety risks would occur during construction, which should be completed within approximately 14 months. Risks would be reduced through required adherence to regulations and the construction plans that would be approved prior to grading permits. Similarly, proper industry protocols and required adherence to regulations would reduce operational impacts. Overall, impacts from the Project on worker and public health and safety would not be significant.

3.9 Noise

3.9.1 Barceloneta Project Site

In January 2024, ambient noise level measurements of approximately 58.0 decibels (dB) were recorded at the Barceloneta site, representing the average background noise level. For comparison, 60 dB represents the noise level experienced 100 feet (30 meters) from an air-conditioning unit (U.S. Navy 2006). Sensitive noise receptors occur within 0.25 mile (0.40 kilometer) of the site, with residential communities to the west and southwest. No other sensitive noise receptors are expected to be adjacent to the other sides of the site, given the land uses consist of agricultural fields and industrial sites with limited occupied built infrastructure.

Noise regulations in Puerto Rico establish allowable limits for residential areas (i.e., 65 dB during the day and 50 dB at night). During construction, noise would be concentrated within the interior areas of the properties (e.g., along interior roads) and at entrances. During some construction near residences, daytime noise levels may temporarily exceed the established limits and require a waiver from DRNA. Any exceedances in noise would be temporary and most likely would not be continuous in nature.

To minimize noise during the construction phase, heavy equipment would be required to have up-to-date noise control systems, operating as directed by the manufacturer. The noise control systems would minimize the increase in noise both where the work is carried out and at nearby locations. Construction activities would occur mainly during daylight hours (between 5:00 a.m. and 7:00 p.m.). However, some night work, associated with construction of the underground transmission line, if approved by PR-DTOP, could occur.

During O&M phases, the site would produce limited to very low levels of noise from the solar facility and BESSs, similar to the current ambient noise levels. The PV inverters would provide the main source of noise; they would operate only during the day. These would be set back a minimum of 400 feet (120 meters) from all residences to minimize impacts. Because of the limits on noise in local laws and regulations, the temporary nature of construction activities, and the lack of operational noise impacts, impacts related to noise would not be significant.

3.9.2 Santa Isabel Project Site

In January 2024, ambient noise level measurements of approximately 64.5 dB were recorded at the Santa Isabel site, representing the average background noise level. For comparison, 70 dBs represents noise levels experienced 50 feet (15 meters) from a freeway in the morning (U.S. Navy 2006). A noise-sensitive residential community is located south of the site (more than 0.25 mile [0.40 kilometer] away). However, light industrial and agricultural activities occur adjacent to the site.

As described for the Barceloneta site, temporary impacts on localized noise levels would occur during the construction phase. Given the distance between the site and sensitive receptors, construction is unlikely to exceed the regulatory limits for the surrounding area, ranging from 65 to 75 A-weighted decibels (dBA) during the daytime for the land uses immediately surrounding the site. Up-to-date noise control systems for construction equipment, operating as directed by

the manufacturer, would be required to reduce local noise impacts. Construction activities would occur mainly during daylight hours (between 5:00 a.m. and 7:00 p.m.). During some construction activities, daytime noise levels may temporarily exceed the established limits and require a waiver from DRNA. Any exceedances in noise would be temporary and not likely to be continuous in nature.

During O&M, the site would very likely experience noise levels similar to those currently produced by the adjacent O&M facility and the surrounding light industrial operations. Any noise-generating equipment would be set back from the Project boundary to minimize impacts on adjacent residents. Because of the limits on noise levels in local laws and regulations, the temporary nature of construction activities, and the lack of operational noise impacts, impacts related to noise would not be significant.

3.10 Soils and Farmland

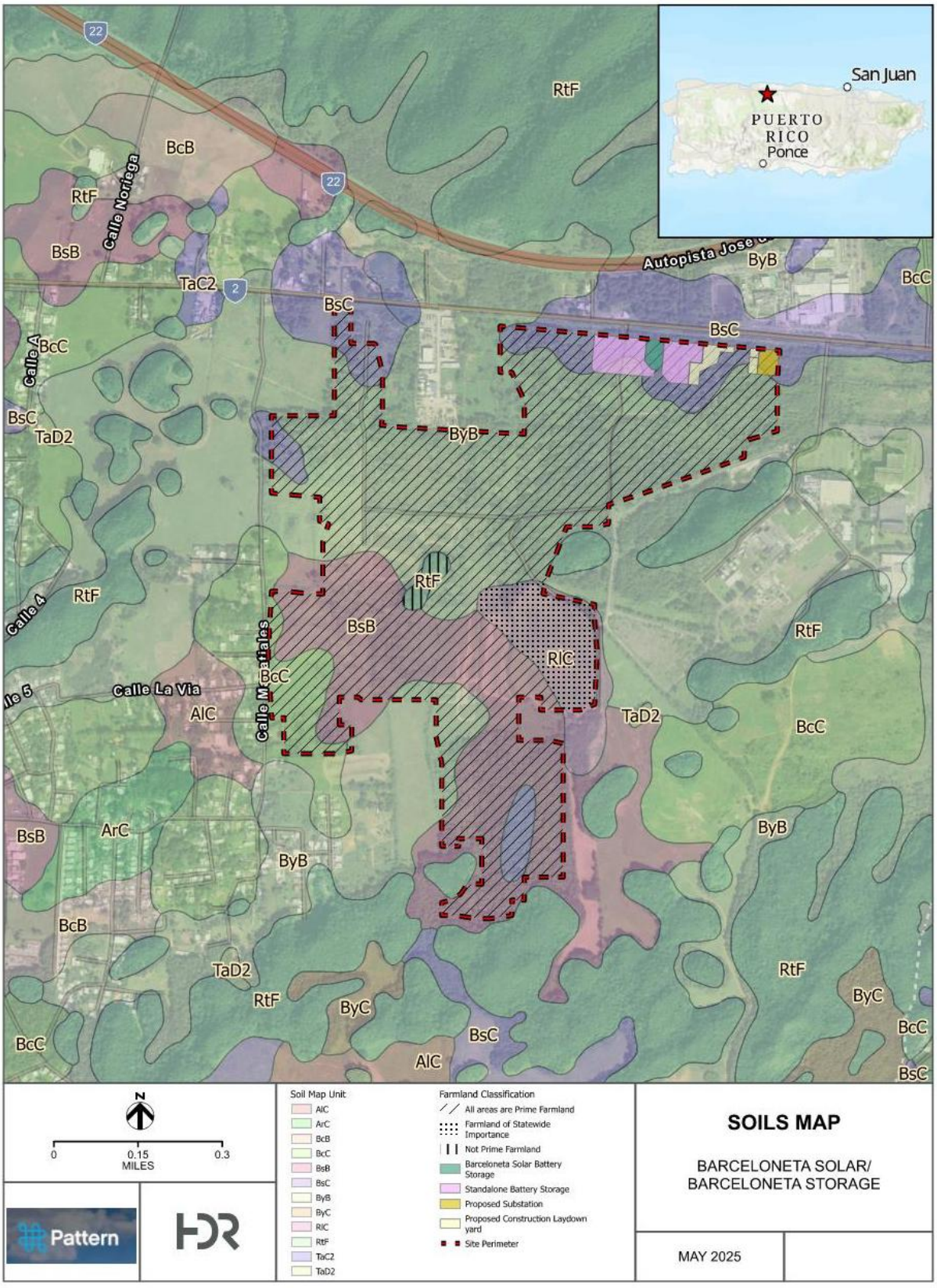
3.10.1 Barceloneta Project Site

The site contains six soil types. Most of the soils on the site are composed of Bayamon clay, 2 to 5 percent slopes (50.0 percent); Bayamon sandy clay loam, 2 to 5 percent slopes (27.6percent); and Bayamon sandy clay loam, 5 to 12 percent slopes (11.0 percent), with the other soil types being 6.4 percent or less each (Table 4; Figure 6) (U.S. Department of Agriculture [USDA] 2024a). All soils and minor components are rated as non-hydric (USDA 2024b) and cover the entirety of the site.

Table 4: Soils on the Barceloneta Project Site

Soil Type	Acres	Cuerdas	Percent of Total Area	Farmland Classification	Hydric Rating	Drainage Class
Bayamon sandy loam, 5 to 12 percent slopes (BcC)	11.9	12.3	4.1%	All areas are prime farmland	0	Well drained
Bayamon sandy clay loam, 2 to 5 percent slopes (BsB)	80.1	82.5	27.6%	All areas are prime farmland	0	Well drained
Bayamon sandy clay loam, 5 to 12 percent slopes (BsC)	31.8	32.7	11.0%	All areas are prime farmland	0	Well drained
Bayamon clay, 2 to 5 percent slopes (ByB)	145.1	149.4	50.0%	All areas are prime farmland	0	Well drained
Rio Lajas sand, 2 to 12 percent slopes (RIC)	18.5	19.0	6.4%	Farmland of statewide importance	0	Somewhat excessively drained
Rock outcrop – Tanama complex, 12 to 60 percent slopes (RtF)	2.6	2.7	0.9%	Not prime farmland	0	Well drained
Total	**290**	**298.6**	**100%**			

Figure 6: Soils on the Barceloneta Site



As discussed in Section 2.3.1, grading activities would result in site clearing, as necessary, across the site, with the potential for approximately 188,050 cubic yards of cut (157,233 cubic meters) and 356,550 cubic yards of fill (298,121 cubic meters). Any stockpiled soil from the area where vegetation clearing and grading occurs, including topsoil, would be replaced following cut-and-fill activities to the extent feasible.

Small impervious surfaces would be created from the installation of foundations, which could result in a minor increase in stormwater runoff and associated soil erosion. However, stormwater management measures (see Section 2.3.1) would be implemented, reducing the potential for soil erosion. Revegetation with non-invasive grasses and forbs would also minimize the potential for soil erosion. Following construction, soil stabilization and vegetation management measures would reduce the potential for soil erosion impacts during operations.

Minor disturbances to soils could occur during O&M of the PV facility, BESSs, and substation. Routine maintenance would include vegetation management, using lawnmowers and trimmers. Trimming and mowing would most likely be performed several times per year, depending on growth rate, to maintain an appropriate groundcover height of approximately 12 to 18 inches (31 to 46 centimeters). Selective spot applications of herbicides may be employed around facilities and structures to control weeds. Herbicides would be applied by a professional contractor or a qualified technician. These maintenance activities would not result in any adverse impacts on soils during operations.

The solar panels would be mounted on tracking systems at a fixed tilt. Consequently, this could result in a uniform dripline during precipitation events and localized erosion near the panels. Pattern would implement BMPs and vegetation management practices to reduce this impact. Overall, the Project would not result in significant impacts on soils.

3.10.1.1 Farmland

For purposes of the Farmland Protection Policy Act (FPPA), farmland can be categorized as prime farmland, farmland, unique farmland, or farmland of statewide or local importance.

Prime farmland is land that is the most suitable for economically producing sustained high yields of food, feed, fiber, forage, and oilseed crops. Prime farmlands have the best combination of soil type, growing season, and moisture supply and are available for agricultural use. Unique farmland is farmland other than prime farmland that is used for the production of specific high-value food or fiber crops. Farmland of statewide or local importance is land that a state (or territory) determines to be important for producing food, feed, fiber, forage, and oilseed crops. Farmlands of statewide or local importance include those that are nearly prime farmland and capable of economically producing high yields of crops when treated and managed according to acceptable farming methods. The FPPA (7 U.S.C. Section 4201 et seq.) requires federal agencies to consider the adverse effects of their actions on prime or unique farmlands. The purpose of the FPPA is “to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses.”

In accordance with FPPA evaluation procedures, potential impacts on prime farmland were evaluated with use of the USDA Farmland Conversion Impact Rating Form (Form AD-1006) based on the 290-acre (298.6 cuerdas) site. Form AD-1006 quantifies the potential impacts on prime farmland. The impact rating considers the acreage of prime farmland to be converted, the relative abundance of prime farmland in the surrounding local government jurisdiction, and other criteria, such as distance from urban environments, percentage of area currently being farmed, and compatibility with existing agricultural use. This form assigns a numerical rating between 0 and 260, based on the area of prime farmland to be disturbed, the total area of farmland in the affected local government jurisdiction, and other criteria. The USDA Natural Resource

Conservation Service (NRCS) was contacted to evaluate the project and provide a numerical rating for the site based on the above criteria. After an evaluation of the project, the site received a land evaluation score of 94 and a site assessment of 0, for a total impact rating score of 94 (Appendix A, Agency Correspondence).

Of the 290 acres (298.6 cuerdas) that comprise the site, 268.9 acres (276.9 cuerdas) or 92.7 percent are designated as prime farmland and 18.5 acres (19 cuerdas) or 6.4 percent are designated as farmland of statewide importance. However, the expected construction area would be roughly 286 acres (294.5 cuerdas). Historically, the site produced crops like sugar cane and pineapple, though it has not been used for those purposes for roughly 19 years. Once pineapple production ended, the site transitioned to pastureland and hay production uses. In addition, the approximately 286 acres (294.5 cuerdas) of farmland removed during the lifetime of the Project represents 0.34 percent of the 84,318 acres (86,816 cuerdas) of farmland in Region 2 – Arecibo (USDA 2024c). Further, NRCS reviewed the project plans and gave the site a total impact rating score of 94, under the benchmark rating of 160 that would indicate a potential significant effect. Therefore, the conversion of this prime farmland and farmland of statewide importance to nonagricultural uses during the construction and operation of the PV facility and BESS would result in minor permanent impacts (i.e., during the life of the Project). Overall, impacts on prime farmland from the Project would not be significant at the Barceloneta site.

3.10.2 Santa Isabel Project Site

3.10.2.1 Soils

The Santa Isabel site contains one soil type: Jacaguas silty clay loam (Jg) (Table 5; Figure 7) (USDA 2024a). The Jacaguas silty clay loam has a hydric rating of 5 percent.

Table 5: Soils on the Santa Isabel Project Site

Soil Type	Acres	Cuerdas	Percent of Total Area	Farmland Classification	Hydric Rating	Drainage Class
Jacaguas silty clay loam (Jg)	18.0	18.5	100%	Farmland of statewide importance	5	Somewhat excessively drained
Total	**18.0**[a]	**18.5**	**100%**			

Acreage reflects the parcel boundary, larger than the expected 12.3-acre (18.3-cuerda) construction area

Construction activities would be sequenced to minimize the time when bare soil is exposed within the site. Construction areas would be cleared of debris and tall vegetation, mowed, and lightly graded, as needed, for construction and placement of the BESS containers. Any stockpiled soils from the area where vegetation clearing and grading occurs, including topsoil, would be replaced following cut-and-fill activities to the extent feasible and, therefore, would not be likely to require off-site disposal. However, some minimal off-site disposal may be necessary. Should borrow material, such as sand, gravel, riprap, or other aggregate, such as large rocks, be required for site activities, these resources may be obtained either from on-site sources, if available, or from nearby permitted off-site sources.

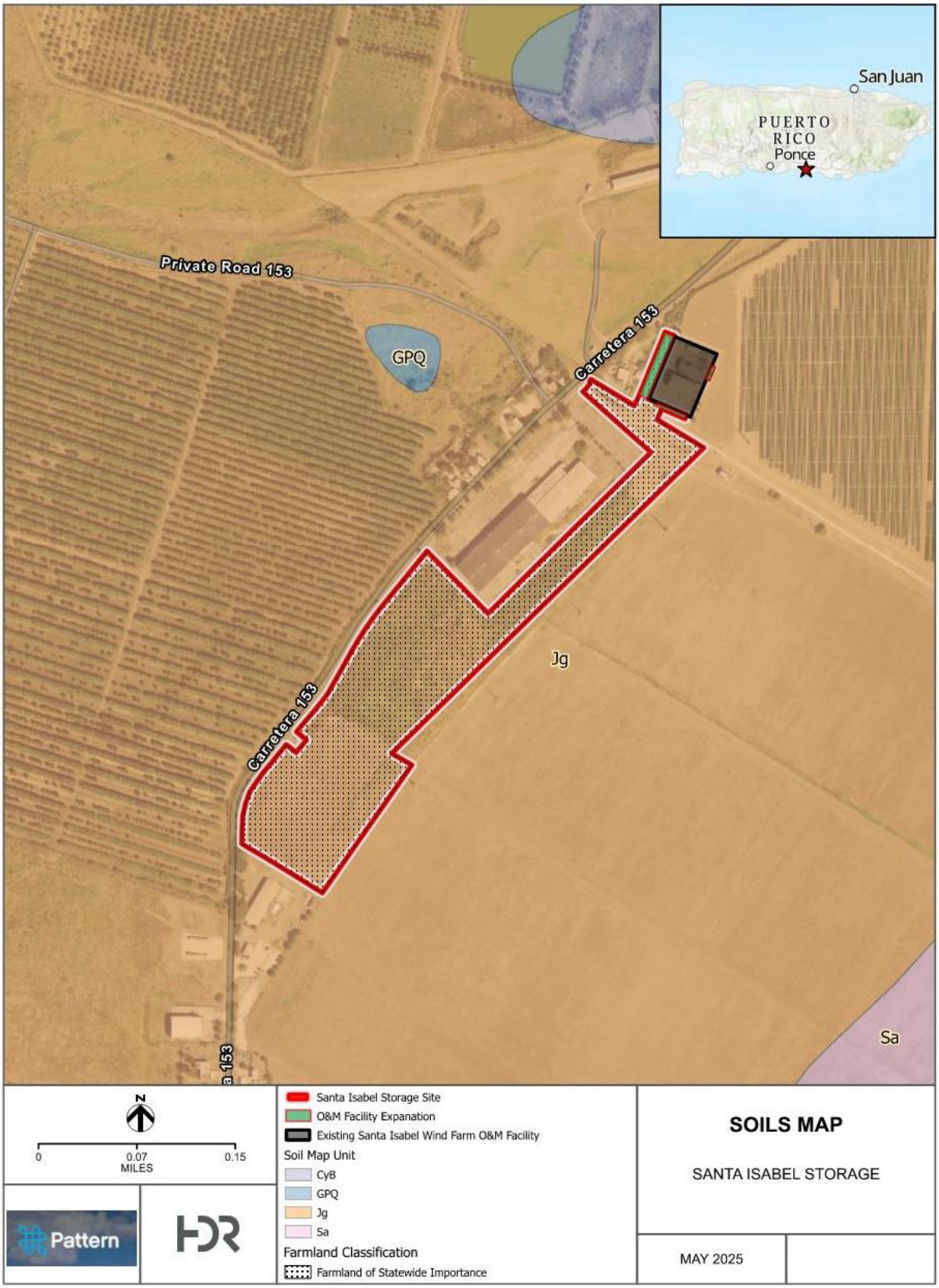
The BESS would have a 34.5 kV underground collection line running to the existing substation. Trenching would be used for installation of the line, which would be at least 4 feet (1.2 meters)

underground. The trench would be filled after installation and the sites (e.g., existing access roads) would be restored.

The foundations for the BESS containers would create small impervious surface areas and result in a minor increase in stormwater runoff and potentially increase soil erosion, similar to the condition described above for the Barceloneta site.

Minor disturbance to soils could occur during O&M of the BESS facility, similar to the condition described above for the Barceloneta site. Overall, the Project would not result in significant impacts on soils at the Santa Isabel site.

Figure 7: Soils on the Santa Isabel Site



3.10.2.2 Prime Farmland

In accordance with FPPA evaluation procedures, potential impacts on prime farmland were evaluated with use of the USDA Farmland Conversion Impact Rating Form (Form AD-1006) based on the 18-acre (18.5 cuerdas) site. The USDA Natural Resource Conservation Service (NRCS) was contacted to evaluate the project and provide a numerical rating for the site based on the above criteria. After an evaluation of the project, the site received a land evaluation score of 83 and a site assessment of 0, for a total impact rating score of 83 (see Appendix A, Agency Correspondence). All of the approximate 18 acres (18.5 cuerdas) of the site are designated as farmland of statewide importance. However, the expected construction areas would be roughly 9.4 acres (9.7 cuerdas) for Santa Isabel Storage and 0.29 acre (0.298 cuerda) for the O&M expansion. Historically, the site has been used for agricultural activities, though it is currently fallow and adjacent to industrial sites. The approximate 18 acres (18.5 cuerdas) of the site if completely cleared would represent 0.03 percent of the of the 55,150 acres (56,784 cuerdas) of farmland in Region 4 – Ponce (USDA 2024d). Whereas the expected 9.69 acres (9.98 cuerdas) of farmland removed during the lifetime of the Project would represent 0.02 percent of the farmland in Region 4 – Ponce (USDA 2024d). Further, NRCS reviewed the project plans and gave the site a total impact rating score of 83, under the benchmark rating of 160 that would indicate a potential significant effect. Therefore, the conversion of this farmland of statewide importance to nonagricultural uses during construction and operation of the BESS facility would result in negligible impacts. Overall, impacts from the Project on prime farmland would not be significant at the Santa Isabel site.

3.11 Reasonably Foreseeable Environmental Effects

In accordance with 42 USC 4332 (C) (i) and (ii), LPO reviewed the reasonably foreseeable environmental effects that have a reasonably close causal relationship to the Proposed Action, and any reasonably foreseeable adverse environmental effects which cannot be avoided should the Project be implemented.

This assessment of reasonably foreseeable environmental effects considers the potential impacts of other federal and non-federal projects in the region that could affect the same resources affected by the Project. The identification of other federal and non-federal projects that could contribute to reasonably foreseeable environmental effects included identification of projects or actions where there is an existing decision (e.g., decision record or issued permit), a commitment of resources or funding, or a publicly available formal proposal or planning document (e.g., a permit application). It is assumed that all reasonably foreseeable future actions would be conducted in accordance with local, state, and federal laws and regulations, as well as best management practices and standards associated with such regulations. Speculative future developments (such as those that are not formally proposed or do not have enough project details to inform the analysis) are not included in this analysis. The reasonably foreseeable future actions were identified through review of publicly available data on relevant websites, including:

- Federal entities, such as the Department of Energy, Department of Interior (Bureau of Land Management, U.S. Fish and Wildlife Service, Bureau of Reclamation), Department of Defense, and the U.S. Army Corps of Engineers;
- Puerto Rico agencies; and
- County and local planning commissions;

This review identified the following projects that may result in reasonably foreseeable environmental effects:

- Two developments by AES Corporation: A 120 MW solar PV facility and 100 MW BESS on 318 acres (327.84 cuerdas) of property owned by the Puerto Rican Industrial Development Company on PR Hwy 7707 and PR Hwy 3 (Barrio Jobos, Guayama, Puerto Rico 00784) and a 240 MW solar PV facility between PR Hwy 53 (to the north), PR Hwy 3 (to the south), PR Hwy 713 (to the east), and PR Hwy 706 (to the west) in the municipalities of Salinas and Guayama
- A 32.1 MW solar PV facility and 17 MW BESS in Yabucoa to be developed by Infinigen Yabucoa on 183 acres (188.66 cuerdas) located east of PR Hwy 53 on both sides of PR Hwy 9914 and adjacent to an existing petrochemical storage facility in the municipality of Yabucoa
- A 65 MW solar PV and 25 MW BESS on 177 acres in the Lapa Ward of Salinas and 65 MW solar PV and 25 MW BESS on 132 acres in the Machete Ward of Guayama, to be developed by the Ciro Energy Group (not including the existing Ciro One facility)
- Programa Acceso de Solar: This program opened on February 22, 2024, to support the installation of residential rooftop solar and battery energy storage on 30,000 households throughout Puerto Rico for zero upfront costs
- Project Hestia – LPO portfolio loan guarantee to Sunnova Corporation to build residential rooftop solar with a focus on Puerto Rico Programa Access de Solar; Project Hestia residential rooftop sites are located throughout Puerto Rico
- Proposed Convergent Ashford Development, LLC, project, which consists of the Coamo PV BESS, the Peñuelas BESS, the Ponce BESS, and the Caguas BESS

LPO reviewed the identified projects in the region to determine if the projects would result in reasonably foreseeable environmental effects that have a reasonably close causal relationship to the Proposed Action and would affect the same resources affected by the Project. Based on this review, the following resources were evaluated.

- Socioeconomics
- Soils and prime farmland

3.11.1 Socioeconomics

As described in Section 3.7, the Project would result in a short-term increase in employment for construction. The Project would also result in some minimal long-term employment during operation. The increase in short-term and long-term jobs from the Project, combined with other LPO-approved projects, would result in a beneficial socioeconomic impact with respect to employment, income, and tax revenue.

Other positive socioeconomic effects of the Project, as well as similar projects, include reducing the dependence on fossil fuels for energy generation, which would contribute to a reduction in the uncertainty associated with importing fossil fuels from other countries, avoid fluctuations in the cost of electricity, increase system reliability, and improve the island's sustainability and self-sufficiency. The production of energy from renewable sources would replace the existing production of fossil-fuel energy.

3.11.2 Soils and Prime Farmland

As described in Section 3.9, the Project sites have historically been used for agricultural activities. Including the two Project sites, the projects under DOE LPO evaluation represent the conversion of approximately 2,041 acres (2,101 cuerdas) of prime farmland, unique farmland, or farmland of statewide importance, or 0.35 percent of the total acreage of such soils in Puerto Rico. The area of farmland soil conversion from the projects under review is listed by municipality in Table 6.

Table 6: Farmland Soil Conversion from DOE LPO Projects by Municipality

Municipality	Acres of Conversion	Cuerdas of Conversion	Percent of Total Acres of Farmland by Municipality
Arecibo	287	296	0.34%
Caguas	6	6	0.05%
Coamo	541	557	4.42%
Guayama	726	747	5.84%
Ponce	12	12	0.08%
Salinas	245	252	0.95%
Santa Isabel	22	23	0.15%
Yabucoa	181	187	1.40%
TOTAL	**2,020**	**2,080**	**13.23%**

Note: Includes soils classified as prime farmland and farmland of statewide importance, based on USDA-NRCS Web Soil Survey data (USDA-NRCS 2022). Acres of conversion based on current Project designs under DOE LPO NEPA review (Jobos, Salinas, Convergent Energy, Ciro Energy, Infinigen Yabucoa, Amanecer Puerto Rico) as of January 2025 and subject to change.

Because the Project would be constructed and operated consistent with the applicable laws and regulations of Puerto Rico and in full compliance with its environmental review processes, with the change from agricultural zoning to PV generation and energy storage, the Project would not result in significant reasonably foreseeable environmental effects on soils and prime farmland.

4. DRAFT FINDING

Based on this EA, DOE has determined that providing a federal loan guarantee to Amanecer Puerto Rico, LLC, to construct and operate the Amanecer Puerto Rico Portfolio (Project), consisting of the Barceloneta PV solar facility, Barceloneta BESS, and Santa Isabel BESS, will not have a significant effect on the human environment. Preparation of an environmental impact statement is therefore not required, and DOE is issuing this Finding of No Significant Impact.

This Finding of No Significant Impact should not be construed as a final decision about issuance of a loan guarantee.

Todd Stribley

NEPA Compliance Officer
DOE Loan Programs Office

Date

5. LIST OF AGENCIES CONTACTED

- U.S. Fish and Wildlife Service
- USDA Natural Resources Conservation Service
- U.S. Environmental Protection Agency
- Puerto Rico Office of the Governor
- Puerto Rico State Historic Preservation Office
- Puerto Rico Departmento de Recursos Naturales y Ambientales
- Puerto Rico Electric Power Authority
- Puerto Rico Office of Public and Private Partnerships
- Puerto Rico Planning Board
- Puerto Rico Oficina de Gerencia de Permisos

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- Kirsten Granstrom-Arndt, BS, MS, 2 years
- Elizabeth Arnold, BS, 1 year
- Aaron Butterer, BS, MBA, 22 years
- Clarissa Trevino, BS, 4 years
- Matt Hodgson, BA, MA, 18 years

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APPENDIX A AGENCY CORRESPONDENCE

Table A-1: Summary of Agency Coordination

Organization	Contact Date(s)	Summary of Contact/Correspondence*
Puerto Rico Office of the Governor	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
Puerto Rico State Historic Preservation Office (SHPO)	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
	07/21/2025	**Request for concurrence of findings and consultation under Section 106 of the National Historic Preservation Act**
Puerto Rico Departamento de Recursos Naturales y Ambientales	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
EPA Region 2, Environmental Review Section	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
Puerto Rico Electric Power Authority (PREPA)	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
Public-Private Partnerships Authority (P3)	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
U.S. Fish and Wildlife Service (USFWS), Caribbean Ecological Services Field Office	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
	12/11/22024	**Comments Received from USFWS**
	2/28/2025	**Formal Consultation under Endangered Species Act**
	04/14/2025	**USFWS Concurrence Received**
USDA Natural Resource Conservation Service	11/21/2024	**Notice of Intent to Prepare an Environmental Assessment**
	03/27/2025	Initial FPPA AD1006 Submission
	04/14/2025	AD 1106 Comments Received
	04/15/2025	Updated AD 1006 Submission
	05/29/2005	Coordination Meeting
	05/30/2025	**AD1006 Forms Returned**

Correspondence in **bold text is included in Appendix A.*

United States Department of Agriculture

Natural Resources Conservation Service

Caribbean Area State Office

654 Muñoz Rivera Ave. Suite 604
San Juan, PR 00918

787-766-5206

www.pr.nrcs.usda.gov

May 27, 2025

Kara Palm
Environmental Compliance (Contractor)
Loan Programs Office - LPO
U.S. Department of Energy
1000 Independence Ave SW
Washington, D.C. 20585

SUBJECT: Farmland Protection Policy Act Evaluation for Santa Isabel– Solar Photovoltaic Power Generation Project **(Updated Submission).**

Dear Ms. Palm,

This letter is in response to your updated submission requesting an evaluation of the above-mentioned project. The project submitted by Amanecer Puerto Rico LLC, is located adjacent to PR-153 Road, approximately 0.75 miles north of the Santa Isabel town center, within the municipality of Santa Isabel, Puerto Rico. The proposed project may be entitled to federal support from the United States Department of Energy (DOE) under the Energy Infrastructure Reinvestment (EIR) Program, authorized by Title XVII of the Energy Policy Act of 2005. This program supports the deployment of clean energy and energy infrastructure projects. The Loan Programs Office (LPO) evaluates and manages loan guarantees for projects that align with the DOE's goals of promoting clean energy technologies and reducing greenhouse gas emissions.

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. The USDA Natural Resources Conservation Service (NRCS) is responsible for evaluating the site and conducting a Farmland Conversion Impact Rating.

Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the FPPA or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary of Agriculture to be farmland of statewide local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land, but not water or urban built upland.

Farmland does not include land already in or committed to urban development or water storage. Farmland, already in urban development or water storage, includes all land with a density of 30 structures per 40-acre area, and includes lands identified as urbanized area.

Based on the information provided and supporting documents, the proposed project (attached documents show the areas of interest) would include:

- The construction of two standalone four-hour Battery Energy Storage Systems (BESS) with capacities of 50 megawatts (MW) and 70 MW, respectively.
- Both BESS units are designed to store power generated from the nearby Santa Isabel Wind Farm.
- Each BESS will be separately interconnected to the existing operations and maintenance (O&M) facility and substation of the wind farm.
- To support the integration of the new systems, the project will include a reconfiguration and small expansion of the existing O&M facility and substation.
- The development also involves installing two separate underground 34.5-kV collection lines, each running approximately 0.4 miles, to connect the BESS units to the substation.

NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on the proposed site of Federally funded and assisted projects. This score is used as an indicator for the project sponsor, in this case DOE (federal funds provider), to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use, and compatibility with existing agricultural use. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

According to the Web Soil Survey (WSS), the project area corresponds to the Ponce Area, Puerto Rico (PR688). A WSS soil interpretation report was generated for farmland classification to evaluate map units subject to the Farmland Protection Policy Act (FPPA).

Based on the report, the area of interest (AOI) covers a total of 18.0 acres. The entire area of the project footprint (map unit: Jacaguas silty clay loam) is classified as statewide importance farmland.

After evaluating the project footprint (refer to the attached maps), including the WSS Farmland Classification map, the 2020 US Census Bureau Urban area map and the Geographic Information System of the Puerto Rico Planning Board ("Sistema de Información Geográfica de la Junta de Planificación de Puerto Rico") (MIPR), it was determined that the AOI includes land classified as statewide importance farmland. According to MIPR, portions of the AOI fall within areas designated as "Agricultural Production" and there is no area within the 2020 Census map. Therefore, the proposed project area **is subject** to the Farmland Protection Policy Act (FPPA).

Another environmental consideration is the areas classified as Highly erodible land (HEL). Although no areas within the project footprint are clarified as HEL, it is important to note that during the construction phase, proper erosion and sediment control measures should be incorporated into your construction plan to ensure minimal environmental degradation.

This data used to make the evaluation is not designed for use as a primary regulatory tool in permitting or siting decisions but may be used as a reference source and for planning purposes. This is public information and may be interpreted by organizations, units of government or others based on needs; however, these entities are responsible for the appropriate use and application of these data. Digital and tabular data files are updated yearly, and users are responsible for obtaining the latest version of the data.

This evaluation and report were conducted by Jacqueline Vega, Resource Soil Scientist for the Caribbean Area, in support of the Farmland Protection Policy Act (FPPA) review for the proposed project area.

If you have any questions, please contact us at 787-766-5064 or by email: manuel.matos@usda.gov.

If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

MANUEL MATOS RODRIGUEZ

Digitally signed by MANUEL MATOS RODRIGUEZ
Date: 2025.05.30 11:05:14 -04'00'

Manuel Matos Rodríguez
State Soil Scientist for the Caribbean Area

Enclosures

pc: Luis Cruz Arroyo, State Conservationist, USDA-NRCS Caribbean Area; Manuel Matos Rodríguez, State Soil Scientist for the Caribbean Area.

Attachment 1: NRCS-AD-1006 – Farmland Conversion Impact Rating (Updated)

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request May 12, 2025
Name of Project Santa Isabel	Federal Agency Involved U.S. Department of Energy
Proposed Land Use Solar Photovoltaic Power Generation	County and State Santa Isabel, Puerto Rico
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 3/26/2025 — Person Completing Form: Jacqueline Vega NRCS

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES	NO	Acres Irrigated	Average Farm Size
	☑	☐	7,098	73.9

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA
Plantain, Coffee, Vegetable	Acres: 166,01[illegible]% 40.7	Acres: 96,44[illegible]% 23.7

Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
LESA Ponce (SSA PR688)	N/A	4/14/2025

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	18			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	18			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0			
B. Total Acres Statewide Important or Local Important Farmland	18			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0245			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	18			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	83			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	83	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	83	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Farmland Classification—Ponce Area, Puerto Rico Southern Part
(SantaIsabelProjectArea_04042025)

Map Scale: 1:4,390 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

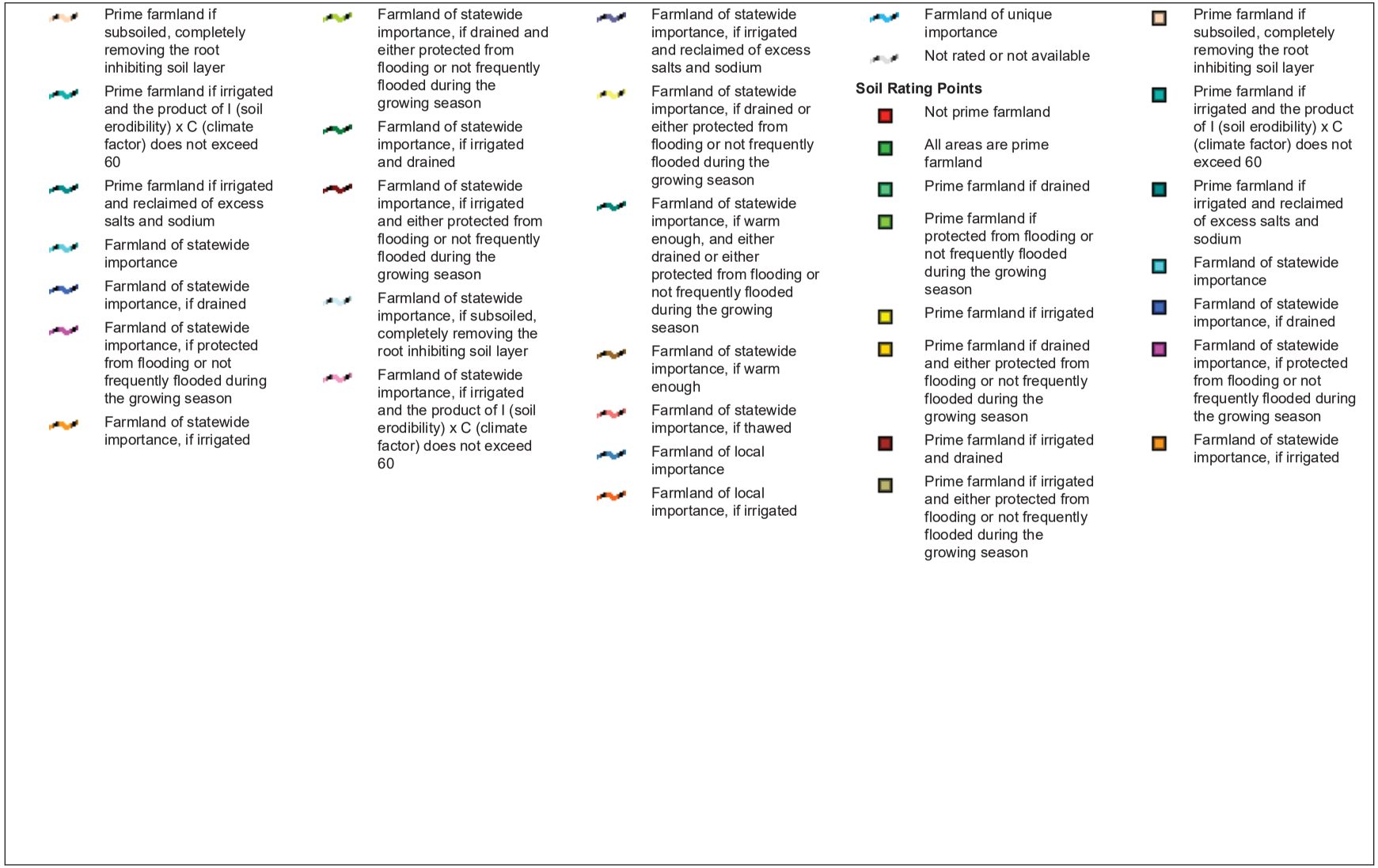
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ponce Area, Puerto Rico Southern Part
Survey Area Data: Version 19, Sep 10, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Jg	Jacaguas silty clay loam	Farmland of statewide importance	18.0	100.0%
Totals for Area of Interest			**18.0**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

USDA
United States Department of Agriculture

Natural Resources Conservation Service

Caribbean Area State Office

654 Muñoz Rivera Ave.
Suite 604
San Juan, PR
00918

787-766-5206

www.pr.nrcs.usda.gov

May 27, 2025

Kara Palm
Environmental Compliance (Contractor)
Loan Programs Office - LPO
U.S. Department of Energy
1000 Independence Ave SW
Washington, D.C. 20585

SUBJECT: Farmland Protection Policy Act Evaluation for Barceloneta – Solar Photovoltaic Power Generation Project. **(Updated Submission)**

Dear Ms. Palm,

This letter is in response to your updated submission requesting an evaluation of the above-mentioned project. The project is located south of PR Highway 2, approximately 8.35 miles southeast of the Arecibo town center, within the municipality of Barceloneta, Puerto Rico. The proposed project may be entitled to federal support from the United States Department of Energy (DOE) under the Energy Infrastructure Reinvestment (EIR) Program, authorized by Title XVII of the Energy Policy Act of 2005. This program supports the deployment of clean energy and energy infrastructure projects. The Loan Programs Office (LPO) evaluates and manages loan guarantees for projects that align with the DOE's goals of promoting clean energy technologies and reducing greenhouse gas emissions.

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. The USDA Natural Resources Conservation Service (NRCS) is responsible for evaluating the site and conducting a Farmland Conversion Impact Rating.

Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the FPPA or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary of Agriculture to be farmland of statewide local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land, but not water or urban built upland.

Farmland does not include land already in or committed to urban development or water storage. Farmland, already in urban development or water storage, includes all land with a density of 30 structures per 40-acre area, and includes lands identified as urbanized area.

Based on the information provided and supporting documents, the proposed project (attached documents show the areas of interest) would include:

- The construction of a 70-megawatt (MW) solar photovoltaic (PV) generation facility (Barceloneta Solar).
- The installation of a 32 MW battery energy storage system (BESS) dedicated to supporting the solar generation facility, in compliance with Puerto Rico's Minimum Technical Requirements for utility-scale solar projects.
- A separate, co-located 50 MW, four-hour BESS facility (Barceloneta Storage) provides additional grid support and energy resilience.
- Development of a combined substation and a 1.5-mile underground 115-kV transmission line that will connect both the Barceloneta Solar and Storage components to the existing LUMA Barceloneta TC substation.
- The underground transmission line will be constructed within the PR-2 Department of Transportation and Public Works (DTOP) Right of Way, under agreement with PR-DTOP.

NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on the proposed site of Federally funded and assisted projects. This score is used as an indicator for the project sponsor, in this case DOE (federal funds provider), to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use, and compatibility with existing agricultural use. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

According to the Web Soil Survey (WSS), the project area corresponds to the Arecibo Area, Puerto Rico (PR682). A WSS soil interpretation report was generated for farmland classification to evaluate map units subject to the Farmland Protection Policy Act (FPPA).

Based on the report, the area of interest (AOI) covers a total of 290.0 acres. Of this, approximately 92.7 percent (268.9 acres) of the project footprint area (comprising the following map units: Bayamon sandy loam, 5 to 12 percent slopes, Bayamon sandy clay loam, 2 to 5 percent slopes and 5 to 12 percent slopes, and Bayamon clay, 2 to 5 percent slopes) is classified as prime farmland, 6.4 percent (18.5 acres) (Map Unit: Rio Lajas sand, 2 to 12 percent slopes) is classified as statewide importance farmland and 0.9 percent (2.6 acres)(Map Unit: Rock outcrop-Tanama complex, 12 to 60 percent slopes) is classified as Not importance farmland.

After evaluating the project footprint (refer to the attached maps), including the WSS Farmland Classification map, the 2020 US Census Bureau Urban area map and the Geographic Information System of the Puerto Rico Planning Board ("Sistema de Información Geográfica de la Junta de Planificación de Puerto Rico") (MIPR), it was determined that the AOI includes land classified as prime farmland (specifically, prime farmland if drained and

statewide importance farmland). According to MIPR, portions of the AOI fall within areas designated as "Agricultural Production". Furthermore, the 2020 Census map indicates that parts of the AOI, but not entirely, are located within a designated urban area. Therefore, the proposed project area **is subject** to the Farmland Protection Policy Act (FPPA).

Other environmental considerations include the presence of areas classified as Highly erodible land (HEL). During the construction phase, proper erosion and sediment control measures should be incorporated into your construction plan to ensure minimal environmental degradation.

This data used to make the evaluation is not designed for use as a primary regulatory tool in permitting or siting decisions but may be used as a reference source and for planning purposes. This is public information and may be interpreted by organizations, units of government or others based on needs; however, these entities are responsible for the appropriate use and application of these data. Digital and tabular data files are updated yearly, and users are responsible for obtaining the latest version of the data.

This evaluation and report were conducted by Jacqueline Vega, Resource Soil Scientist for the Caribbean Area, in support of the Farmland Protection Policy Act (FPPA) review for the proposed project area.

If you have any questions, please contact us at 787-766-5064 or by email: manuel.matos@usda.gov.

If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

MANUEL MATOS RODRIGUEZ

Digitally signed by MANUEL MATOS RODRIGUEZ
Date: 2025.05.30 11:03:59 -04'00'

Manuel Matos Rodríguez
State Soil Scientist for the Caribbean Area

Enclosures

pc: Luis Cruz Arroyo, State Conservationist, USDA-NRCS Caribbean Area; Manuel Matos Rodríguez, State Soil Scientist for the Caribbean Area.

Attachment 1: NRCS-AD-1006 – Farmland Conversion Impact Rating **(Updated)**

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request May 12, 2025
Name of Project Barceloneta	Federal Agency Involved U.S. Department of Energy
Proposed Land Use Solar Photovoltaic Power Generation	County and State Arecibo, Puerto Rico
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 3/26/2025 / Person Completing Form: Jacqueline Vega NRCS

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES	NO	Acres Irrigated	Average Farm Size
	☑	☐	5,560	79.5

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA
Nursery, Plantains, Vegetables	Acres: 166,01[illegible]% 41	Acres: 96,44[illegible]% 24

Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
LESA Arecibo (SSA PR682)	N/A	4/14/2025

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	290			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	290			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	268.90			
B. Total Acres Statewide Important or Local Important Farmland	18.50			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.2980			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	4			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	94			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	94	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	94	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

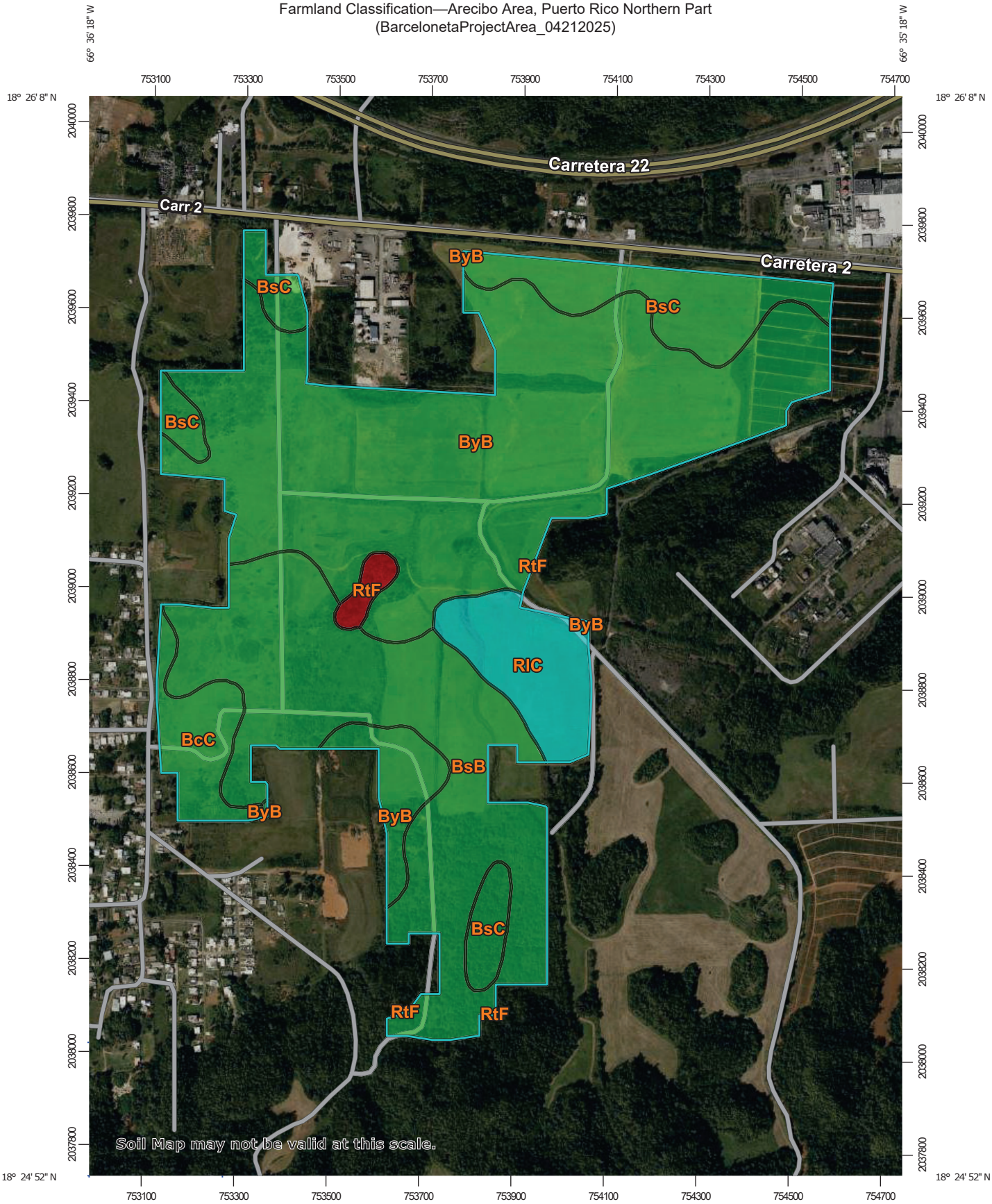
Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Farmland Classification—Arecibo Area, Puerto Rico Northern Part
(BarcelonetaProjectArea_04212025)



Map Scale: 1:11,300 if printed on A portrait (8.5" x 11") sheet.

N

0 150 300 600 900 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

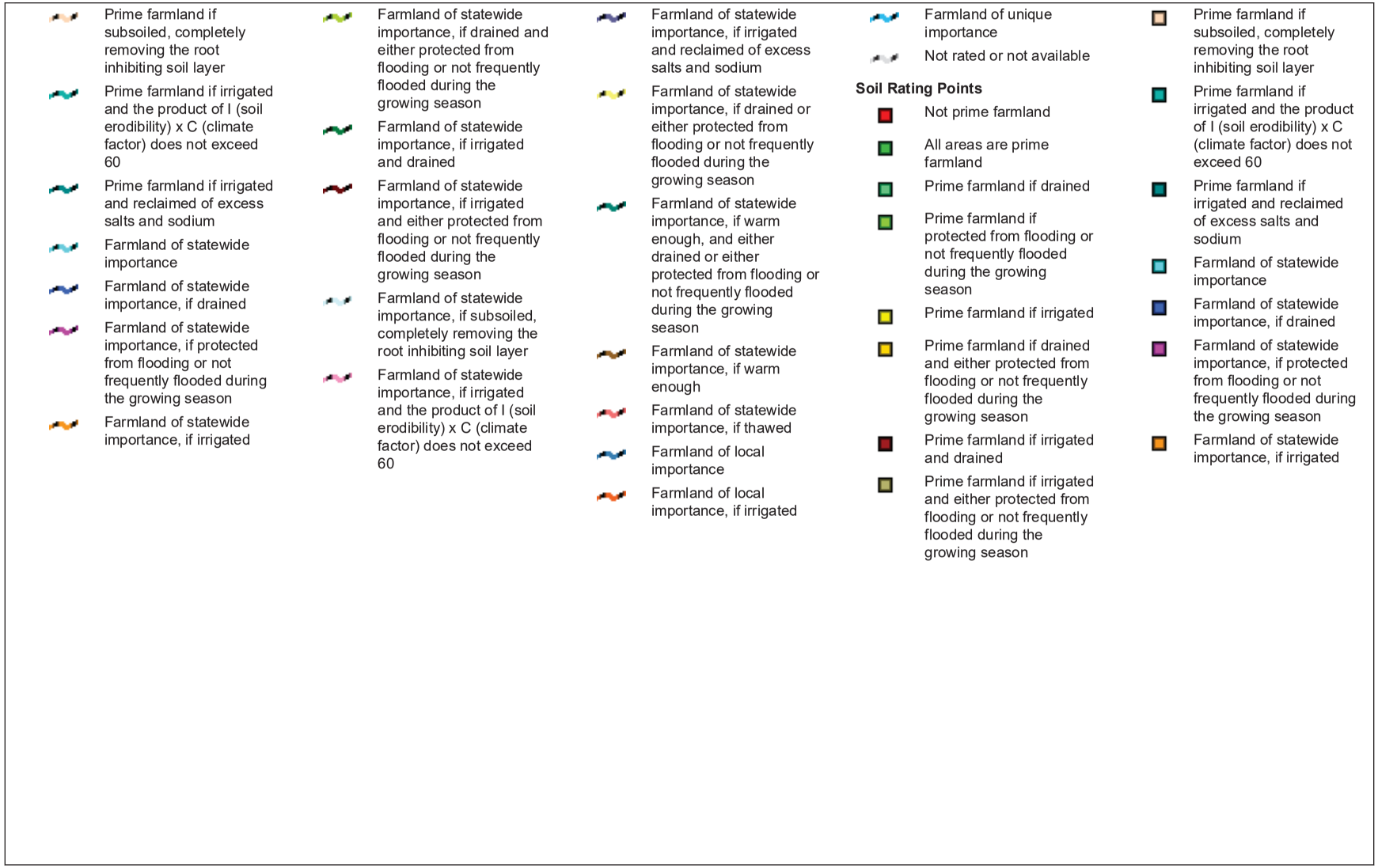
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season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Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
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Farmland of statewide importance, if irrigated

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- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Arecibo Area, Puerto Rico Northern Part
Survey Area Data: Version 20, Sep 10, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BcC	Bayamon sandy loam, 5 to 12 percent slopes	All areas are prime farmland	11.9	4.1%
BsB	Bayamon sandy clay loam, 2 to 5 percent slopes	All areas are prime farmland	80.1	27.6%
BsC	Bayamon sandy clay loam, 5 to 12 percent slopes	All areas are prime farmland	31.8	11.0%
ByB	Bayamon clay, 2 to 5 percent slopes	All areas are prime farmland	145.1	50.0%
RlC	Rio Lajas sand, 2 to 12 percent slopes	Farmland of statewide importance	18.5	6.4%
RtF	Rock outcrop-Tanama complex, 12 to 60 percent slopes	Not prime farmland	2.6	0.9%
Totals for Area of Interest			**290.0**	**100.0%**

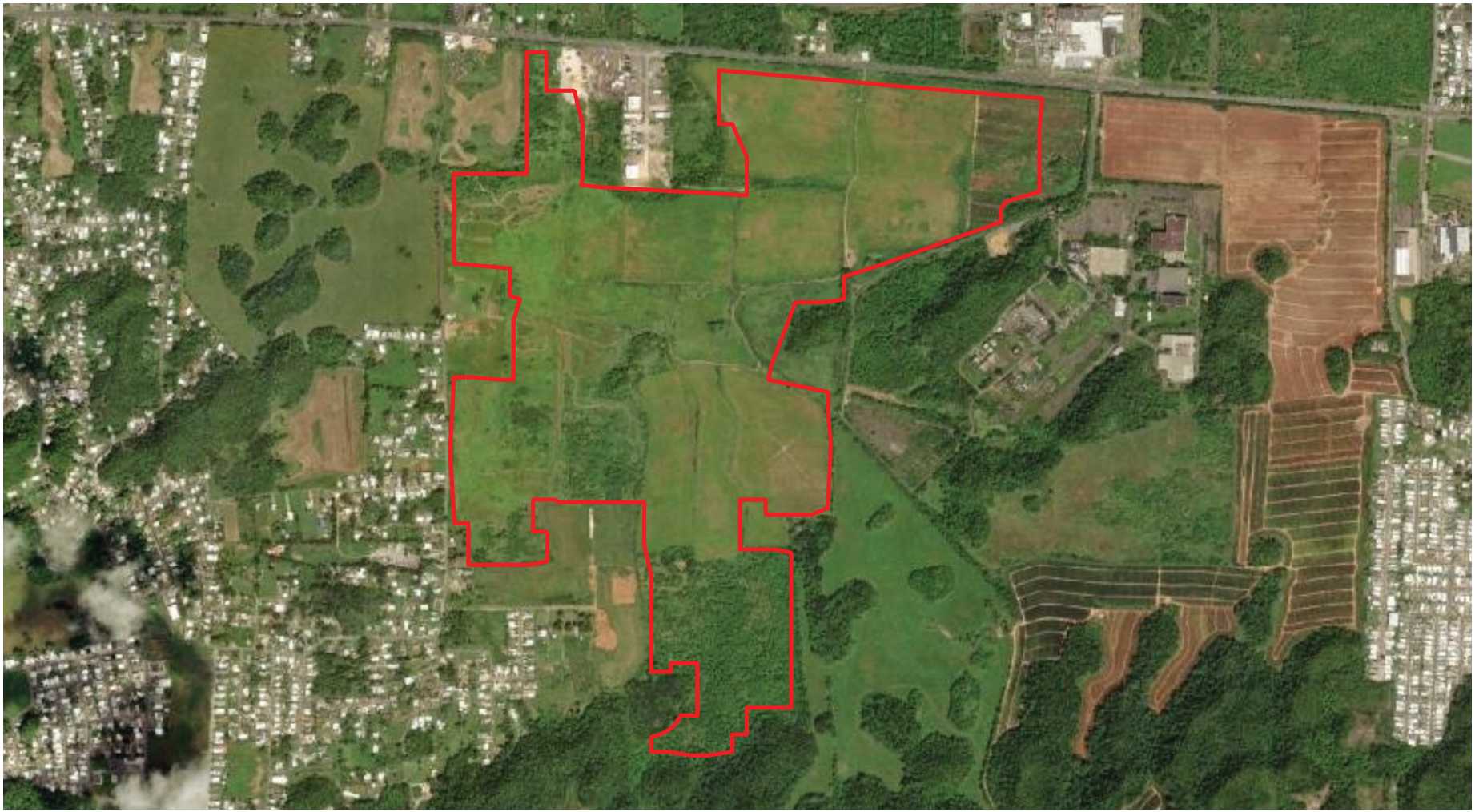
Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



Barceloneta Site Boundary

N

0 0.5 1 Miles

1:15,000

Department of Energy, Loan Programs Office
Barceloneta Site - Project Location

Farmland Classification—Arecibo Area, Puerto Rico Northern Part
(BarcelonetaProjectArea_04212025)

Map Scale: 1:11,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

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- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
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- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
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- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
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- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

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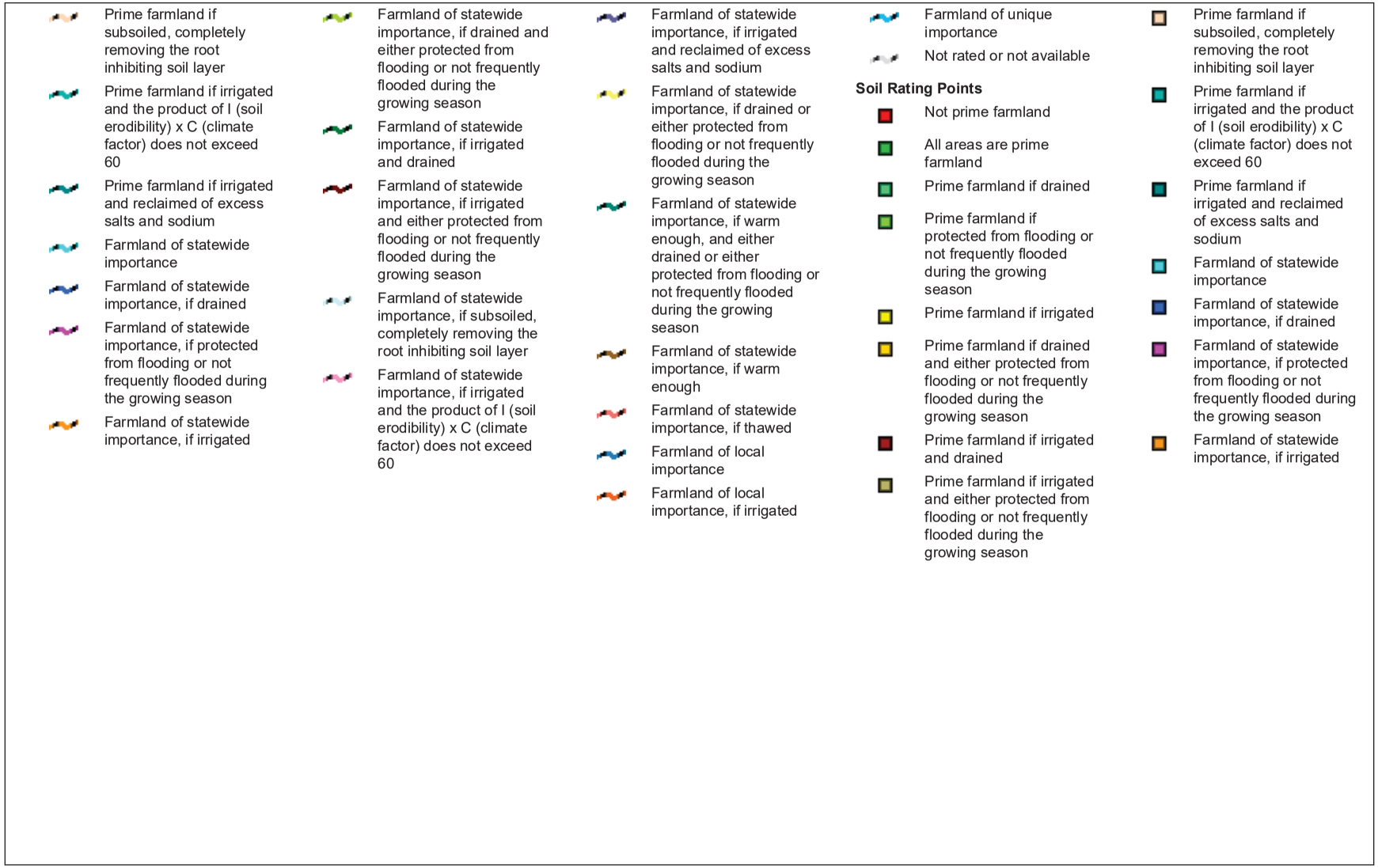
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- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Arecibo Area, Puerto Rico Northern Part
Survey Area Data: Version 20, Sep 10, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BcC	Bayamon sandy loam, 5 to 12 percent slopes	All areas are prime farmland	11.9	4.1%
BsB	Bayamon sandy clay loam, 2 to 5 percent slopes	All areas are prime farmland	80.1	27.6%
BsC	Bayamon sandy clay loam, 5 to 12 percent slopes	All areas are prime farmland	31.8	11.0%
ByB	Bayamon clay, 2 to 5 percent slopes	All areas are prime farmland	145.1	50.0%
RlC	Rio Lajas sand, 2 to 12 percent slopes	Farmland of statewide importance	18.5	6.4%
RtF	Rock outcrop-Tanama complex, 12 to 60 percent slopes	Not prime farmland	2.6	0.9%
Totals for Area of Interest			**290.0**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Department of Energy
Washington, DC 20585

November 21, 2024

Arielle Benjamin
Environmental Engineer
U.S. Environmental Protection Agency, Region 2
290 Broadway, 25th Floor
New York, NY 10007-1866
Via Email: Benjamin.Arielle@epa.gov

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS)

Dear Arielle Benjamin,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support clean energy deployment and energy infrastructure reinvestment (EIR) in the United States and U.S. territories.

DOE is evaluating whether to provide a federal loan guarantee to Amanecer Puerto Rico (the Applicant), to support one proposed solar PV installation and three BESS in the municipalities of Arecibo and Santa Isabel, Puerto Rico (Project). The PV installations will provide electricity to the distribution network of the Puerto Rico Electric Power Authority (PREPA). The decision to prepare an EA for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The purpose and need for agency action is to comply with the DOE mandate under Title XVII of the EPAct to select projects for loan guarantees that are consistent with the goals of the Act. The DOE LPO has determined that the Project as proposed by the Applicant, is eligible pursuant to Section 1706 of EPAct and is using the NEPA process to assist in determining whether to issue a loan guarantee to Amanecer Puerto Rico LLC to support the development of the Project. A goal of DOE's financial assistance for EIR projects is to support the construction of and startup of projects and energy technologies that avoid, reduce, or sequester anthropogenic emission of greenhouse gases.

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The DOE NEPA regulations provide for the notification of host states and territories of NEPA determinations and for the opportunity for host states and territories to review EAs prior to DOE approval. This process is intended to improve coordination and to facilitate early and open communication.

If you or your staff would like to receive further information concerning this Project or DOE's NEPA process, please contact me at 240-457-7973 or email at LPO_Environmental@hq.doe.gov.

Respectfully,

David Oster

Digitally signed by David Oster
Date: 2024.11.21 15:20:29 -05'00'

David Oster
Environmental Protection Specialist
Loan Programs Office

Figures and Attachments:
Figure 1: Barceloneta Project Location Map
Figure 2: Santa Isabel Project Location Map
Attachment 1: Preliminary Site Plans

Figure 1: Barceloneta Project Location Map

Figure 2: Santa Isabel Project Location Map

Department of Energy
Washington, DC 20585

November 21, 2024

Carlos Rubio-Cancela
State Historic Preservation Officer
Office of the Governor
State Historic Preservation Office
PO Box 9023935
San Juan, PR 00902-3935
Via Email: carubio@prshpo.pr.gov

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS)

Dear Carlos Rubio-Cancela,

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Respectfully,

David Oster

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Date: 2024.11.21 15:21:12 -05'00'

David Oster
Environmental Protection Specialist
Loan Programs Office

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Department of Energy
Washington, DC 20585

November 21, 2024

Omar A. Vega-Albino
Senior Advisor to Energy Affairs
Office of the Governor
PO Box 9020082
San Juan, PR 00902-0082
Via Email: Ovega@fortaleza.pr.gov

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS)

Dear Omar A Vega-Albino,

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Respectfully,

David Oster

Digitally signed by David Oster
Date: 2024.11.21 15:22:37 -05'00'

David Oster
Environmental Protection Specialist
Loan Programs Office

Figures and Attachments:
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Department of Energy
Washington, DC 20585

November 21, 2024

Silmarie Padron
Acting Field Supervisor
U.S. Fish and Wildlife Service, Caribbean Ecological Field Office
290 Calle B
Bayamon, PR 0961
Via Email: Caribbean_es@fws.gov

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS)

Dear Silmarie Padron,

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Digitally signed by David Oster
Date: 2024.11.21 15:23:17 -05'00'

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Environmental Protection Specialist
Loan Programs Office

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Department of Energy
Washington, DC 20585

November 25, 2024

Manuel Matos Rodríguez
State Soil Scientist
Natural Resource Conservation Service
654 Munoz Rivera Avenue, Suite 604
San Juan, PR 00918
Via Email: manuel.matos@usda.gov

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS)

Dear Manuel Matos Rodríguez,

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David Oster

Digitally signed by David Oster
Date: 2024.11.25 10:21:19 -05'00'

David Oster
Environmental Protection Specialist
Loan Programs Office

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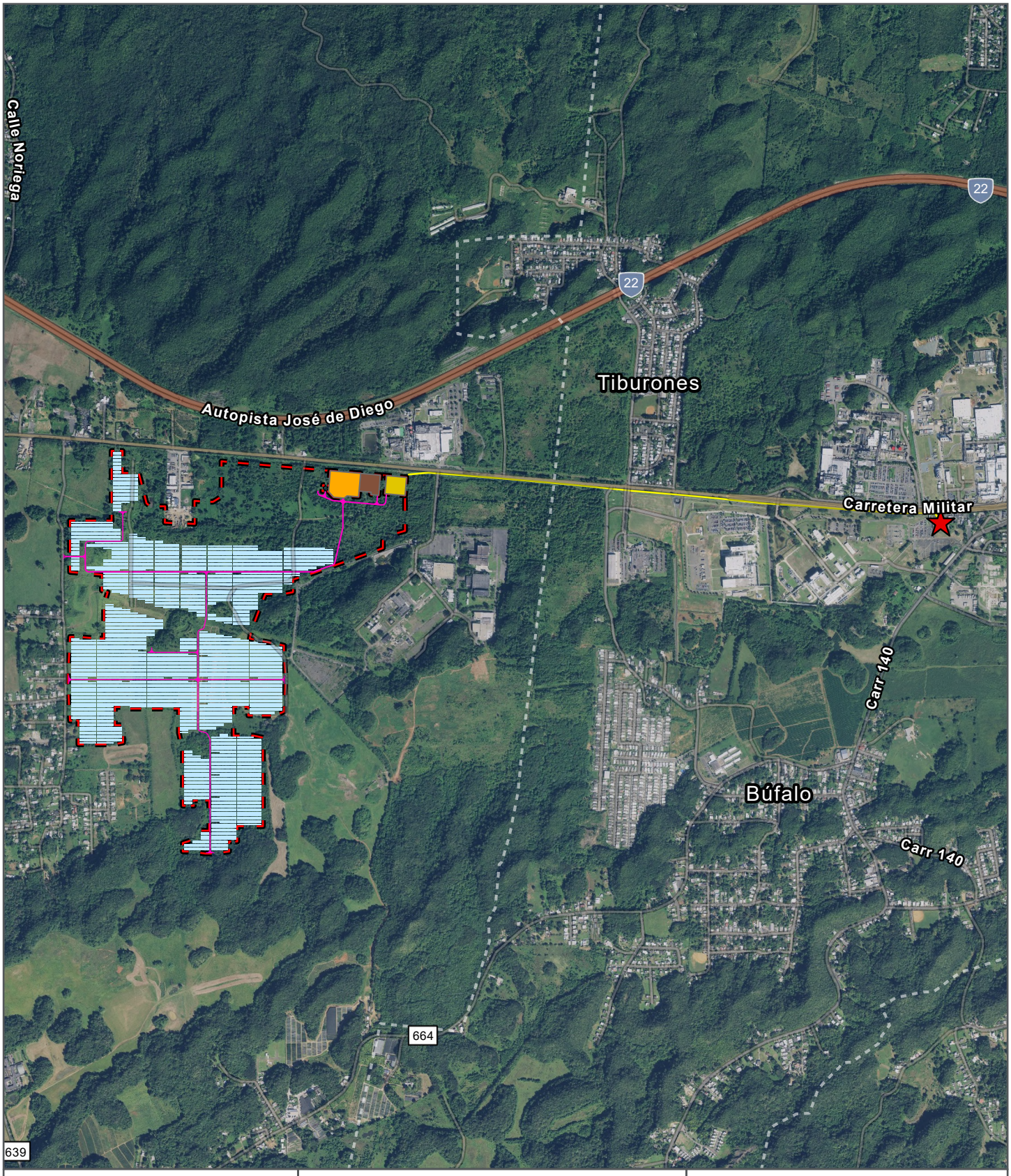

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MILES

Pattern

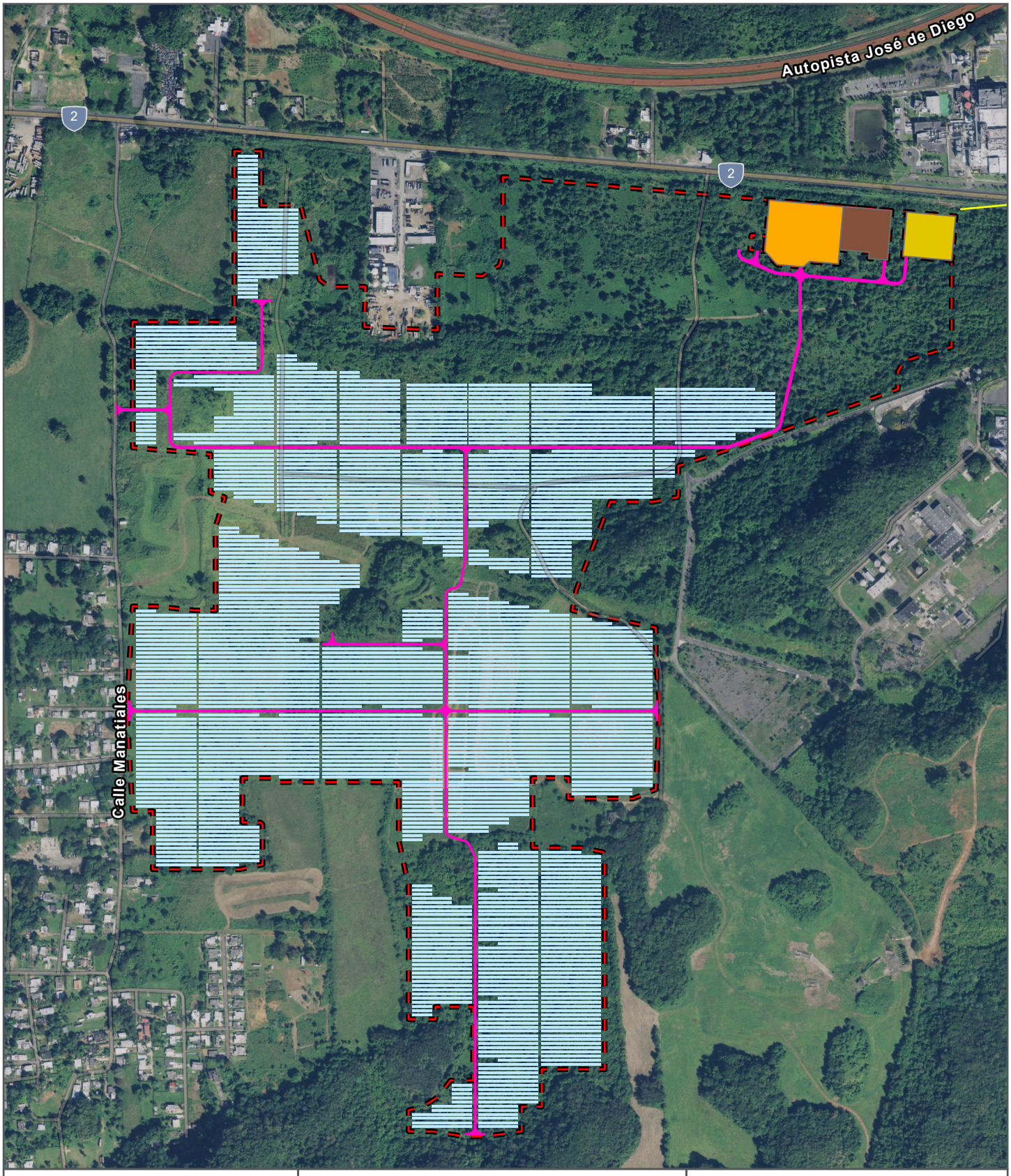
HDR

- Luma Barceloneta TC
- Fence
- Substation
- Barceloneta Solar Project BESS
- Barceloneta Storage Project BESS
- Roads
- Transmission Line
- PV Panels

SITE PLAN

BARCELONETA SOLAR FACILITY PROJECT/ BARCELONETA BATTERY ENERGY STORAGE SYSTEM PROJECT

OCT 2024



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Pattern

HDR

- Transmission Line
- Substation
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- PV Panels
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- Barceloneta Solar Project BESS
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SITE PLAN

BARCELONETA SOLAR FACILITY PROJECT/ BARCELONETA BATTERY ENERGY STORAGE SYSTEM PROJECT

OCT 2024

GOBIERNO DE PUERTO RICO
INSTITUTO DE CULTURA PUERTORRIQUEÑA
Built Historical Heritage

SEPTEMBER 22, 2022

Félix E. Rivera, Esq.
Assistant Secretary
DEPARTMENT of ECONOMIC DEVELOPMENT AND Commerce
Permits Management Office
PO Box 41179
San Juan, Puerto Rico 00940-1179

NO OBJECTION

OGPE CASE:	2023-502063-SRA-073422
DESCRIPTION:	BARCELONETA SOLAR
MUNICIPALITY:	ARECIBO
LOCATION:	PR-2 BARRIO SABANA HOYOS
CADASTRE:	040-004-117-11
RATING:	A-P (86%), CR (13%)
OWNER:	LAND AUTHORITY
PROPONENT:	PATTERN PUERTO RICO RENEWABLES DEVELOPMENT LLC

The Institute of Puerto Rican Culture (**ICP** for its Spanish language acronym), through its Built Historical Heritage Program (**ICP-PPHE** for its Spanish language acronym), has examined the referenced project to determine if it affects Properties of Historic and Architectural Value that are protected, or are eligible to be protected, under the laws and regulations that our agency is responsible for administering, as primary, endorsing or recommending agency. These laws and regulations include, but are not limited to:

1. Act 89 of June 21, 1955 S.E., Organic Act of the Institute of Puerto Rican Culture, especially subsection 4(a)(7), "Determine which buildings or structures in Puerto Rico are of historical or artistical value in Puerto Rico (...)" and subsection 4(a)(8), "To advise the Planning Board in the regulation of construction in those zones it determines to be zones of historical value (…)".
2. Act 89 of June 21, 1955 S.E., Organic Act of the Institute of Puerto Rican Culture, in its subsection 4(b)(3) as amended by Act 119 of September 26, 2005, which allows "[t]o adopt, amend or repeal, through its Board of Directors, the bylaws governing the operation and discharge of the powers" conferred and imposed on the ICP by law, and the imposition of administrative fines and/or other sanctions for its noncompliance or violation.

    a. Regulations of Administrative Procedures for the Built Historical Heritage Program of the Institute of Puerto Rican Culture, registered in the Department of State as Regulation No. 7746, effective April 3, 2009.

3. Act No. 161 of December 1, 2009, S.E., Puerto Rico Permit Process Reform Act, Section 1.5, subsection 31, the Institute of Puerto Rican Culture is identified as one of the government agencies concerned and with influence over the process of evaluating applications for the development and use of land, consultations, permits, licenses, certifications, authorizations, or any procedure for the operation of businesses in Puerto Rico. This Act clearly establishes the requirement of prior written authorization from the ICP for any intervention and operation on properties included in the Register of Historic Sites and Zones of Puerto Rico, *recreational plazas*, and foundational centers (see Joint Regulations).

   A. Joint Regulations for the Evaluation and Issuance of Permits Related to Development, Land Use and Business Operations (RC-2023); registered with the Department of State of Puerto Rico effective June 16, 2023. Volume X: Preservation of Historic Resources
   B. Joint Regulations for the Evaluation and Issuance of Permits Related to Development, Land Use and Business Operations (RC-2023); registered with the Department of State of Puerto Rico effective June 16, 2023. Volumes II, III, IV, VI, VII, IX (see Appendix 1 with identification of corresponding Rules).

4. Act No. 183 of August 21, 2000, S.E., Organic Act of the State Historic Preservation Office, Section 7(b) and Section 8(b), implicitly establishes the requirement of the prior favorable recommendation of the ICP in permits for projects that have funds, permits or assistance from any federal agency to carry out interventions that may impact properties located in the territory of Puerto Rico that have been included in the National Register of Historic Places in Washington or are eligible for the same.[1]
5. Act No. 60 of July 1, 2019, S.E., Puerto Rico Incentives Code, Chapter 7 Infrastructure and Green Energy, Section 2071.01, Subsection 1: Provides that a business established, or to be established, in Puerto Rico by a Person, whether or not organized under a common name, may apply to the Secretary of DDEC [Acronym in Spanish for Department of Economic Development and Commerce] for the Grant of Incentives when the Entity is established in Puerto Rico to engage in one of the following eligible activities: To carry out works of improvement, restoration or reconstruction of existing buildings, or works of restructuring or new construction on vacant lots in the **Historic Zones of Puerto Rico**, and the rentals of such buildings located in such zones once they have been improved, restored, reconstructed, restructured or constructed, as the case may be. The Recommendation of the ICP is required.
6. The **ICP** endorsement or commentary requirement applicable to properties designated of historic and architectural value by other means, such as:
   a. A Resolution of the Legislative Assembly.
   b. Historic Monuments designated by the **ICP** Board of Directors**.**
   c. Properties so designated by an Autonomous Municipality land use plan in effect, or by the Puerto Rico Land Use Plan.
   d. Being declared historic in a special zoning plan.
   e. Other properties referenced by any component of the Unified Information System/Single Business Portal (**SUI/SBP**), the Permits Office of an Autonomous Municipality with power to grant permits, the Planning Board, the **ICP** Archaeology and Ethnohistory Program, or other government agency or entity with regulatory power.
7. Voluntary request from a property owner or rightful claimant of a property.

According to our records and the information provided:

[1] OECH [Acronym in Spanish for State Historic Preservation Office] assists federal agencies in the process of complying with 54 USC 306108 (Section 106 of the National Historic Preservation Act) and 36 CFR Part 800: Protection of Historic Properties, but this consultation is **not a substitute for** permits or recommendations required in Puerto Rico for interventions on historic properties under Act 161-2009, as amended, Puerto Rico Permit Process Reform Act and Act 89-1955, as amended, Organic Act of the Institute of Puerto Rican Culture.

1. The site to be developed has no elements of historical value belonging to the built heritage.
2. The development of a photovoltaic energy project is being proposed.
3. The proposed project does not adversely affect historic architectural heritage resources.

Therefore, a determination of **NO OBJECTION TO PROPOSED DRAFT** is issued.

This evaluation does not include the elements to be evaluated under Act 112-1988, Puerto Rico Terrestrial Archaeological Heritage Protection Act, which must be done through a separate request to the Archaeology and Ethnohistory Program of the **ICP**. The evaluations of both programs are necessary to conclude the process with this agency.

This document is valid for one (1) year from the date of its issuance.

With no other particulars, I remain.

Mildred González Valentín, BDA. MArq.
Deputy Director
Built Historical Heritage Program

MGV/ejc

APPENDIX 1

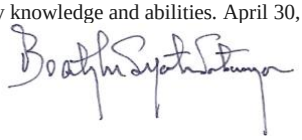
1. Joint Regulations for the Evaluation and Issuance of Permits Related to Development, Land Use and Business Operations (RC-2023); registered with the Department of State of Puerto Rico effective June 16, 2023. Volume X: Conservation of Historic Resources
    a. Chapter 10.2 Preservation of Historic Sites, Historic Areas and Foundational Centers,
        1. Rule 10.2.2 Requirement of Issuance of Permits and Recommendations in Historic Sites and Zones, Section 10.2.2.3, Section 10.2.2.4, Section 10.2.2.3 and Section 10.2.2.4
        2. Rule 10.2.5 General Standards for Intervention
        3. Rule 10.2.7 Interventions in Public Spaces and Parking Lots where Historic Sites and Zones are Located
        4. Rule 10.2.8 Work in Plazas, Small Plazas, Recreational Plazas and on Surrounding Properties in Designated Historic Areas or in the Process of Designation.
        5. Rule 10.2.9 Parking in Historic Sites and Zones
        6. Rule 10.2.10 Signs, Curtains and Awnings in Historic Sites and Zones
        7. Rule 10.2.11 Conservation of Immovable Heritage, Section 10.2.11.5 Requirement of Recommendations or Certifications
2. Joint Regulations for the Evaluation and Issuance of Permits Related to Development, Land Use and Business Operations (RC-2023); registered with the Department of State of Puerto Rico effective June 16, 2023. Volumes II, III, IV, VI, VII, IX

a. Rule 2.1.8, Section 2.1.8.7, Subsection "b": Any public or private project involving earthworks, excavation, earth crust removal or construction, reconstruction or canalization shall request the recommendation of the ICP on Archaeology and Historic Preservation from the Division or Unit of Environmental Assessment (DECA for its Spanish language acronym), either through the OGPe [Acronym in Spanish language for Office of Management and Budget] , the Autonomous Municipalities with Hierarchy 1 to III or the Authorized Professional.
b. Rule 2.2.8, Subsection c-10: Siting consultations for municipal public improvement projects on properties and structures located in the foundational centers, within Historic Zones or designated historic sites must have the recommendation of the ICP prior to commencement of work.
c. Rule 2.3.1: The PA shall require an ICP Recommendation on all single permits to be issued for officially designated structures included in the JP Register of Historic Sites and Areas and for foundational centers of municipalities. Permits and final determinations to a building permit and for the demolition, repair, restoration or remodeling of a structure of historic value will require the recommendation of the ICP.
d. Rule 3.2.1 Building Permits, Section 3.2.1.2, subsection "l": The project that is located in a historic area, traditional urban centers and archaeological sites, the OGPe, Autonomous Municipalities with hierarchies I to III or APs, shall require the written recommendation of the ICP before authorizing any building permit, pursuant to Rule 3.2.11,
of Conservation of Immovable Heritage, in Volume X of these Joint Regulations.
e. Rule 3.2.2, subsection "b-6": If the project is located in a historic zone, traditional urban centers and archaeological sites, the OGPe, the Autonomous Municipalities with Hierarchy I to III, or the APs, shall require the written recommendation of the ICP before authorizing the demolition activity. In the case of a historic property, it shall be in accordance with the provisions of these Joint Regulations on the Preservation of Historic Sites and Zones, Volume X, or any formal document issued by the Concerned Governmental Entities when there is an emergency situation previously decreed by the Government of Puerto Rico or the Federal Government.
f. Rule 3.2.4 Works Exempt from Building Permits
    1. Section 3.2.4.1 Activities that are not considered Construction work, subsection "c": When the activity is to be carried out in Historic Sites and Zones so declared by the JP, the ICP or the Legislative Assembly, or in other special areas where so established by Regulation or resolution, the corresponding authorization must be obtained from the ICP, through a Request for Recommendation from Archeology and Historic Preservation ("SRA" for its Spanish language acronym).
    2. Section 3.2.4.2 Exempted Minor Works, subsection "b": When the exempted work is to be carried out in Historic Sites and Zones so declared by the JP, the ICP or the Legislative Assembly, or in other special areas where so established by Regulation or resolution, the corresponding authorization must be obtained from the ICP, through a Request for Recommendation from Archeology and Historic Preservation ("SRA").
g. Rule 3.5.9 Formal Permit for Extraction, Excavation, Removal and Dredging of Components of the Earth's Crust, Section 3.5.9.4, subsection "u": Recommendation of the ICP for the area where extraction is proposed, when the same has been predetermined by ICP or the Legislative Assembly as an area of historical or archeological value.
h. Rule 3.7.1 Single Permit, Section 3.7.1.7, subsection "g": The recommendation of the ICP in Historic Sites and Areas shall be required prior to issuance of this type of permit for activities whose duration exceeds thirty (30) days.
i. Rule 4.4.1.2 Retail Liquor Licenses, Section 4.4.1.2, subsection "c": ICP recommendation in cases where the property is located in a historic area.
j. Rule 6.1.27 S-H District: Historic Site, Section 6.6.27.2 (see Table 6.85 - Permitted Uses in S-H District) and Section 6.1.27.4 (see Table 6.86 - District S-H Design Parameters).
k. Rule 6.1.28 C-H District: Historic Preservation, Section 6.1.28.2 (see Table 6.87 - Permitted Uses in C-H District) and Section 6.1.28.4 (see Table 6.88 - Design Parameters C-H District).
l. Rule 7.3.6 Urban Center (CU), Section 7.3.6.1, Subsection "d": All interventions in delimited urban centers shall be made in accordance with the Land Use Plan, Traditional Urban Center Area Plan or Urban Center Rehabilitation Plan, complying with the provisions of Rule 10.2.11 in Volume X of these Joint Regulations.
m. Chapter 9.1 Electrical Works, Section 9.1.2.2 subsection "k": Permits and authorizations in Historic Sites and Zones, Playgrounds and surrounding blocks, that is, foundational centers of towns shall require the recommendation of the ICP.
n. Chapter 9.6 Water and Sewage Works, Section 9.6.2.2, Subsection "l": Permits and Authorizations in Historic Sites and Zones, recreational plazas and surrounding blocks, that is, foundational centers of towns, shall require the recommendation of the ICP.
o. Chapter 9.8 Individual Household Waste Disposal Systems (IHWDS), Section 9.8.3.1, subsection "d".
p. Chapter 9.11 Construction, Installation and Siting of Telecommunications Towers and Facilities, Section 9.11.6.3, subsection "e" Historic Zones and Foundational Centers.

mgv

CERTIFICATION:

I, Beatriz M. Sifontes, attorney, with Certificate in Translation issued by the School of Languages and International Studies, AU at D.C. (1987), DO CERTIFY that I have translated the attached document into English, as submitted in Spanish by the interested party and that said translation is true and accurate to the best of my knowledge and abilities. April 30, 2024.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Bayamón | Mayagüez | Maricao | Rio Grande | St Croix
P.O. Box 491
Boquerón, Puerto Rico 00622

In Reply Refer to:
FWS/R4/CESFO/72MM-205

Via Electronic Mail: LPO_Environmental@hq.doe.gov

Mr. David Oster
Environmental Protection Specialist
Loan Programs Specialist
Department of Energy, Loan Programs Office
Washington, DC 20585

Re: U.S. Department of Energy Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to Amanecer Puerto Rico LLC for the Construction of a 70-Megawatt (MW) Solar Photovoltaic (PV) Installation and Three Battery Energy Storage Systems (BESS).

Dear Mr. Oster:

Thank you for your letter dated November 21, 2024, requesting technical assistance for the above referenced project. As per your request, our comments are provided under the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The Department of Energy-Loan Program Office (DOE-LPO) is evaluating whether to provide a federal loan guarantee to Amanecer Puerto Rico (the Applicant), to support one proposed solar energy installation and three energy storage facilities in the municipalities of Arecibo and Santa Isabel, Puerto Rico (Projects). The installations will provide electricity to the distribution network of the Puerto Rico Electric Power Authority (PREPA). The decision to prepare an Environmental Assessment (EA) for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The information provided by the Applicant, states they plan to develop a 70-MW PV solar generation facility between the boundary of the municipalities of Arecibo and Barceloneta. The project will also include a dedicated 32-MW Battery Energy Storage Systems (BESS), a co-located 50-MW storage facility, a combined project substation, and an underground 115-kV transmission line to connect the facilities to the existing Luma Barceloneta TC substation. The information provided states that the Arecibo project site will be located within an agricultural landscape.

In addition, at the municipality of Santa Isabel the Applicant plans to develop two BESS (50MW and 70MW) for the nearby operating Santa Isabel Wind Farm. The project will require a reconfiguration and small expansion of the existing operations and maintenance facility and substation, including an underground 34.5-kV collection line from the BESS to the existing substation. The information provided states that the Santa Isabel project site will also be located within an agricultural landscape.

Based on the information provided for both projects, the site locations are areas that have been historically used for agricultural purposes and are surrounded by agricultural and residential areas. According to the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) tool, the projects' locations lie within the range of the federally endangered Puerto Rican boa (*Chilabothrus inornatus*). Therefore, the Service recommends the DOE-LPO adhere to the terms and conditions included in the Service's Amended Programmatic Biological Opinion (PBO) https://www.fws.gov/ media/programmatic-biological-opinion-pbo-puerto-rican-boa-and-virgin-islands-tree-boa.pdf issued in July 2023, to exempt the Federal Agency and their Applicants from the take that would result from the actions described in Section 2 of the amended PBO (including the capture and relocation of the boas out of harm's way), these should be implemented by the Applicant.

Please include this information in your NEPA review and Endangered Species Act consultation.

Thank you for the opportunity to comment on this project. If you have any questions or require additional information, please contact Mr. Felix Lopez, of my staff via email at felix_lopez@fws.gov or caribbean_es@fws.gov, or by phone at (786) 244-0081.

Sincerely,

LOURDES MENA

Digitally signed by LOURDES MENA
Date: 2024.12.11 20:59:44 -04'00'

Lourdes Mena
Field Supervisor

oamr

cc:
PRDNER, San Juan

Department of Energy
Washington, DC 20585

February 28, 2025

Lourdes Mena
Acting Field Supervisor
Caribbean Ecological Services Field Office
U.S. Fish and Wildlife Service
P.O. Box 491 Boqueron, P.R. 00622

SUBJECT: Formal Consultation Under Section 7 of the Endangered Species Act for the Amanecer Puerto Rico, LLC, Solar and Storage Project in Santa Isabel and Barceloneta, Puerto Rico

Dear Lourdes Mena,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects that support energy infrastructure reinvestment and authorizes the Secretary of Energy to make loan guarantees available for those projects. Amanecer Puerto Rico, LLC, an affiliate of Pattern Energy Group LP (Pattern or Applicant), has applied for a loan guarantee pursuant to the U.S. Department of Energy's (DOE) Title XVII Energy Infrastructure Reinvestment Program. DOE is evaluating whether to provide a federal loan guarantee to the Applicant to support a 70-megawatt (MW) solar photovoltaic facility with co-located 50-MW battery energy storage system (BESS) in Arecibo and Barceloneta, as well as two BESS (50 and 75 MW) at one site in Santa Isabel.

The Applicant proposes to construct the Project at two separate sites, known as Barceloneta and Santa Isabel (see Figure 1, Barceloneta Project Location Map and Figure 2, Santa Isabel Project Location Map). Preliminary site plans are provided as attachments.

The Barceloneta shared Project Site is located south of PR Hwy 2, approximately 8.35 miles southeast of the town center of Arecibo. This Project Site would include the development of the 70-MW PV solar generation facility (Barceloneta Solar), including a dedicated 32-MW BESS to comply with Puerto Rico's Minimum Technical Requirements for utility-scale solar generation projects. In addition, the Applicant would construct a separate, co-located 50-MW, four-hour BESS facility (Barceloneta Storage). The Applicant would also construct a combined project substation and a shared, underground 115-kV transmission line to connect the Barceloneta Solar and Barceloneta Storage to the existing Luma Barceloneta TC substation, 1.5 miles to the east of the Project Site. The underground transmission line that will link the Project Site and the TC is being developed in agreement with the Puerto Rico Department of Transportation and Public Works (PR-DTOP) and would be located within the PR-2 DTOP Right of Way.

The Santa Isabel Project Site is located adjacent to PR-153 Road and approximately 0.75 miles north of the town center of Santa Isabel. This Project Site would include development of two, standalone four-hour BESS (50MW and 70MW) which can effectively store power generated from the nearby operating Santa Isabel Wind Farm. Both BESS would separately interconnect

directly to the wind farm's existing operations and maintenance (O&M) facility and substation. To facilitate installation of a step-up transformer, a reconfiguration and small expansion of the existing O&M facility and substation would be required. Each BESS would have separate, underground 34.5-kV collection lines running 0.4 miles from the BESS to the existing substation.

A Flora and Fauna study was performed in 2023 and updated in 2024 to support local permitting efforts (Green Projects Environmental Consultants 2024). The proposed solar facility consists of several vacant parcels in a rural setting, with a few small karst hills or "mogotes" located adjacent to the southern portion of the Project Site that would be avoided with 10 meter buffers (Figure 1). The Project Site is disturbed by agricultural use and cleared parcels consist mainly of improved and maintained pastures. Historically, the site produced crops like sugar cane and pineapple, though it has not been used for those purposes for roughly 19 years. Once pineapple production ended, the site transitioned to pastures and hay production. The proposed BESS area of the Project Site consists of a vacant parcel with maintained pastures and a few shrubs and trees. No karst hills or "mogotes" are within the BESS area. Vegetation in the Project Site was identified during a site survey performed by Green Projects Environmental Consultants in July and August 2023 (Green Projects Environmental Consultants 2024). The Santa Isabel site is composed of relatively flat vacant commercial land adjacent to agricultural land along PR-153.

The Information for Planning and Consultation (IPaC) database, screening, accessed February 19, 2025, flagged the federally endangered Puerto Rican Boa (*Chilabothrus inornatus*), Puerto Rican Crested Toad (*Peltophryne lemur*), Puerto Rican Parrot (*Amazona vittata*), Puerto Rican Broad-winged Hawk (*Buteo platypterus brunnescens*), Palo De Ramon (*Banara vanderbiltii*), Palo De Rosa (*Ottoschulzia rhodoxylon*), and *Schoepfia arenaria.*

The **Puerto Rican crested toad** is currently known only from two populations: one of approximately 2,000 toads in southern Puerto Rico within the Guánica State Forest and another population of approximately 25 to 50 individuals in the north coast at Quebradillas. The Barceloneta site does not provide suitable hiding and foraging habitat for this species. There are no streams, creeks, rivers, or herbaceous and forested wetlands present within or adjacent to the site for this species to reproduce; therefore, it is unlikely to be present and DOE determines there would be no effect on this species.

The **Puerto Rican parrot** is only found in the forests at the Luquillo Mountains in El Yunque National Forest and in the Rio Abajo State Forest in Utuado. Since the species requires mature forests with open-cavity trees for reproduction, it does not occur in secondary forest. The project would clear secondary forest trees along the edge of agricultural areas. Given the species limited distribution and need for mature forest, it is unlikely to be present. Therefore, DOE determines there would be no effect on this species.

The **Puerto Rican broad-winged hawk** has been confirmed only in the Sierra de Luquillo in El Yunque National Forest, as well as Carite and Rio Abajo state forests, i.e., it is restricted to dense broadleaf forests in the mountains. The project would clear only secondary forest trees along the edge of non-mountainous agricultural areas. Given the species limited distribution and need for

mature forests in mountainous areas, it is unlikely to be present. DOE determines there would be no effect on this species.

The **Palo De Ramon** is a small, endemic Puerto Rican shrub or tree found in the evergreen forests on the humid subtropical life zone, at an elevation of 20 to 90 meters above sea level. It may grow to a height of nine meters with a trunk diameter of 13 cm dbh (diameter breast height). At present there are eight adult trees in Cambalache State Forest in Arecibo. This population was established in the 1990s to serve as a seed source. Thanks to those efforts, it has been reintroduced in Guajataca State Forest, Rio Abajo State Forest, Toa Vaca Lake and Gabia Farm, a private parcel in the municipality of Coamo. Past surveys of forested hedges did not identify the species on the site. If planted, it could occur in the forest mogotes; however, the mogotes would be buffered from the project and left unimpacted. Therefore, DOE determines there would be no effect on this species.

The **Palo De Rosa** is a small evergreen tree that may grow up to 15 meters in height. The population occurs within the subtropical dry forest and subtropical moist forest life zone, over limestone and serpentine soils. It is currently known from the Guánica, Susúa, Guajataca, Cambalache and Río Abajo State forests, and from several areas managed for conservation along the northern coast, like Hacienda Esperanza in Manati and Fort Buchanan in Guaynabo. Past surveys of forested hedges did not identify the species. Therefore, DOE determines there would be no effect on this species.

The Schoepfia arenaria is an extremely rare endemic species that grows along the northern coast of Puerto Rico. Known from elevations 0 to 30 meters above sea level, it is a small, multi-trunked evergreen tree that may reach six meters in height and up to ten centimeters in diameter. The only four known localities are found in Isabela (in a private parcel with one hundred individuals, the largest population of this species), Fajardo, and the Pinones and Rio Abajo state forests. Past surveys of forested hedges did not identify the species. Any potential habitat would be located in the forested mogotes, which will not be impacted by the project and be protected by 10-meter buffers. Therefore, DOE determines there would be no effect on this species.

In accordance with the Endangered Species Act of 1973, DOE is requesting formal consultation with your office regarding potential effects on the federally endangered Puerto Rican Boa (*Chilabothrus inornatus*) for the Project at both sites. Although the probability of Puerto Rican Boa occurrence within the roughly 310-acre construction footprint for the project is minimal due to the site history, current land use (cleared agricultural lands) and the project design, we have determined that adhering to the terms and conditions of the Programmatic Biological Assessment (PBO) for the Puerto Rican Boa is in the best interest of species conservation. Consultation under the PBO requires DOE to make a determination that the proposed action *may affect, likely to adversely affect* (MLAA) the Puerto Rican Boa. Adherence to the terms and conditions of the PBO provides for a take exemption related to this action.

DOE requests your concurrence with our MLAA determination and commitment to compliance with the terms and conditions of the PBO to support the conservation of the Puerto Rican Boa.

If you or your staff have additional questions or comments, please contact me in the DOE Loan Programs Office at 240-457-7973, or email at LPO_Environmental@hq.doe.gov.

Respectfully,

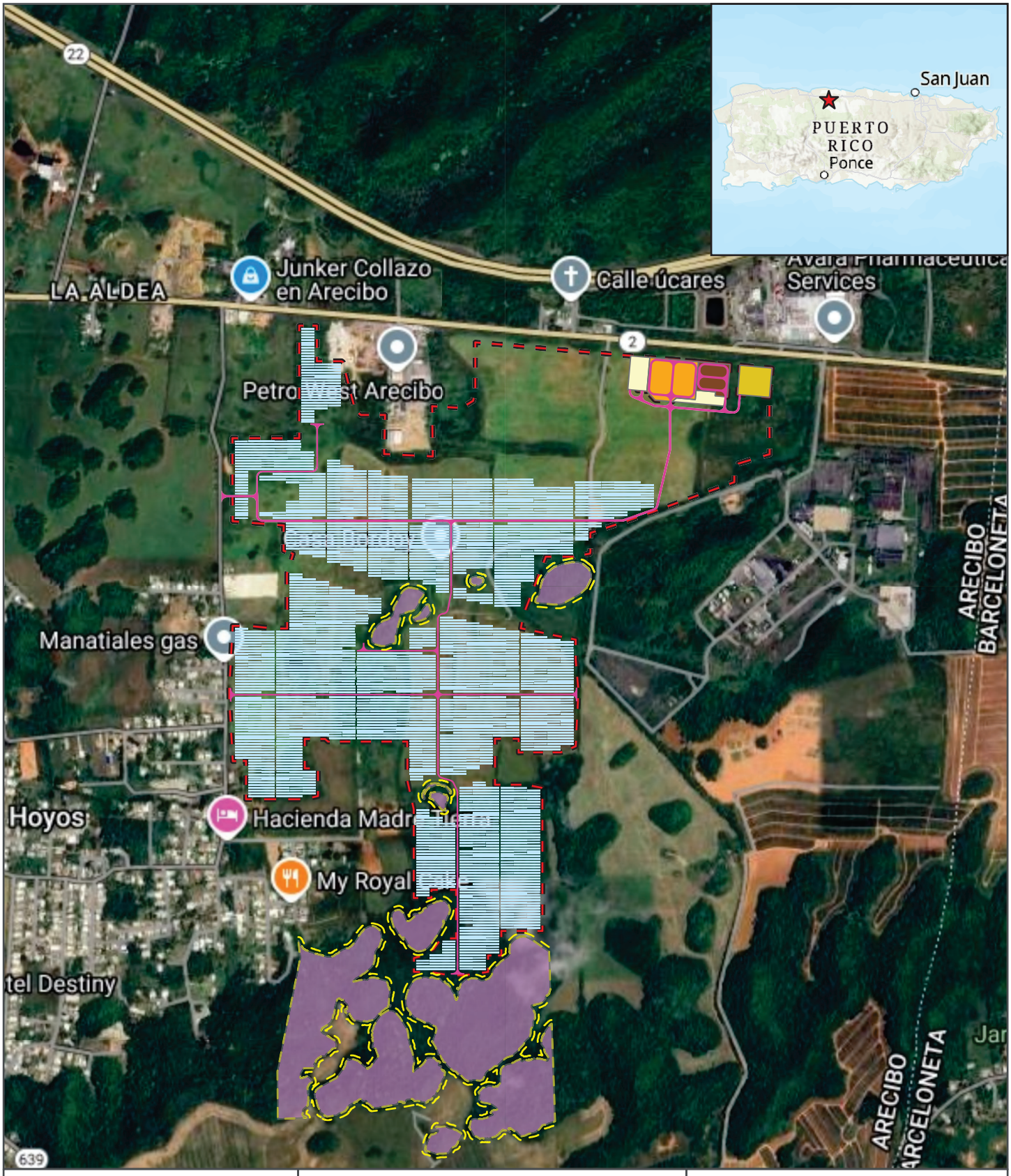
David Oster

Digitally signed by David Oster
Date: 2025.02.28 08:59:58 -05'00'

David Oster
Physical Scientist
Loan Programs Office

Attachments:
Figure 1: Barceloneta Mogotes
IPaC Resource List

References:
Green Projects Environmental Consultants, March 2024. *Estudio de Flora y Fauna, Barceloneta Solar and Storage*. Prepared for Pattern Energy.



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MILES

Pattern

HDR

- Roads
- Substation
- Barceloneta Solar Project BESS
- Barceloneta Storage Project BESS
- Proposed Construction Laydown Yard
- PV Panels
- Mogote
- Site Perimeter Fence
- Mogote Setback (10 Meters)

MOGOTE SETBACKS

BARCELONETA SOLAR FACILITY PROJECT/
BARCELONETA BATTERY ENERGY STORAGE SYSTEM PROJECT

FEB 2025

IPaC **U.S. Fish & Wildlife Service**

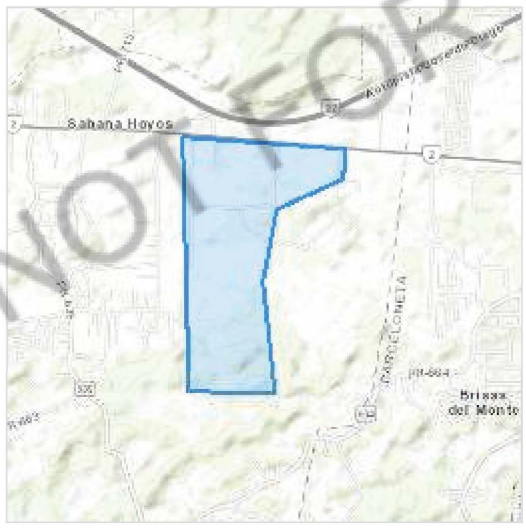
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Arecibo County, Puerto Rico



Local office

Caribbean Ecological Services Field Office

(939) 320-3135
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Puerto Rican Broad-winged Hawk *Buteo platypterus brunnescens* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5512	Endangered
Puerto Rican Parrot *Amazona vittata* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3067	Endangered

Reptiles

NAME	STATUS
Puerto Rican Boa *Chilabothrus inornatus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Amphibians

NAME	STATUS
Puerto Rican Crested Toad *Peltophryne lemur* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3958	Threatened

Flowering Plants

NAME	STATUS
Palo De Ramon *Banara vanderbiltii* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8113	Endangered

Palo De Rosa Ottoschulzia rhodoxylon — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5741

Schoepfia arenaria — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5250

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management

- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates that no migratory birds of concern have been observed in this area. This does not mean birds of concern are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine what migratory birds of concern may be present (e.g. your local FWS field office, state surveys, your own surveys).

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
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To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

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Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1F

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Santa Isabel County, Puerto Rico

Local office

Caribbean Ecological Services Field Office

(939) 320-3135
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Puerto Rican Boa Chilabothrus inornatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
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To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
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Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

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The data in this location indicates that no migratory birds of concern have been observed in this area. This does not mean birds of concern are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine what migratory birds of concern may be present (e.g. your local FWS field office, state surveys, your own surveys).

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

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What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid

Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

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Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Bayamón | Mayagüez | Maricao | Rio Grande | St Croix
P.O. Box 491
Boquerón, Puerto Rico 00622

In Reply Refer to:
FWS/R4/CESFO/72MM-205

Via Electronic Mail: LPO_Environmental@hq.doe.gov

Mr. David Oster
Physical Scientist
Department of Energy, Loan Programs Office
Washington, DC 20585

Re: Formal Consultation Under Section 7 of the Endangered Species Act for the Amanecer Puerto Rico, LLC, Solar and Storage Project in Santa Isabel and Barceloneta, Puerto Rico.

Dear Mr. Oster:

Thank you for your letter dated February 28, 2025, requesting technical assistance for the above referenced project. As per your request, our comments are provided under the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The Department of Energy-Loan Program Office (DOE-LPO) is evaluating whether to provide a federal loan guarantee to Amanecer Puerto Rico (the Applicant), to support one proposed solar energy installation and three energy storage facilities in the municipalities of Arecibo and Santa Isabel, Puerto Rico (Projects). The installations will provide electricity to the distribution network of the Puerto Rico Electric Power Authority (PREPA). The decision to prepare an Environmental (EA) for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

Based on the information provided, the Applicant, plans to develop a 70-MW PV solar generation facility between the boundary of the municipalities of Arecibo and Barceloneta (north coast). The project will also include a dedicated 32-MW Battery Energy Storage Systems (BESS), a co-located 50-MW storage facility, a combined project substation, and an underground 115-kV transmission line to connect the facilities to the existing Luma Barceloneta TC substation. Based on the information provided the Arecibo project site will be located within an agricultural landscape. Nonetheless, the project plan shows an area of haystack hills (mogotes) south of the proposed BESS area that according to the project plan and description will not be impacted by the proposed action.

These mogotes (number of acres not specified) will not be impacted and plans indicate a 10 meter buffer from the base of the hills. Due to the proximity of the project area to the Cambalache Forest and the good quality of the habitat, these hills may harbor suitable habitat for the species being evaluated below. Therefore, the Service recommends that these areas be placed in permanent conservation easement and inscribe in the property deed as such. The applicant should consider a conservation agreement or transfer these mogotes to the State Conservation Agency (PRDNER) or to a private land managing NGO (e.g., Para La Naturaleza).

For the municipality of Santa Isabel (south coast) the Applicant plans to develop two BESS (50MW and 70MW) for the nearby operating Santa Isabel Wind Farm. The project will require a reconfiguration and small expansion of the existing operations and maintenance facility and substation, including an underground 34.5-kV collection lines from the BESS to the existing substation. Based on the information provided the Santa Isabel project site will be located within an agricultural landscape.

Based on the information provided, both projects' areas have been historically used for agricultural purposes and are surrounded by a mosaic of agricultural and residential areas. According to the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) tool, the projects' locations lie within the range of the federally endangered Puerto Rican boa (*Chilabothrus inornatus*), Puerto Rican Crested Toad (*Peltophryne lemur*), Puerto Rican Parrot (*Amazona vittata*), Puerto Rican Broad-winged Hawk (*Buteo platypterus brunnescens*), Palo de Ramon (*Banara vanderbiltii*), Palo de rosa (*Ottoschulzia rhodoxylon*), and *Schoepfia arenaria*.

For the Puerto Rican boa, DOE-LPO has made a may affect, likely to adversely affect (MLAA) determination, indicating the reasonable and prudent measures and terms and conditions included in the Service's Amended Programmatic Biological Opinion (PBO) issued in July 2023, would be implemented. We have reviewed the information provided by the DOE-LPO and concur with your MLAA determination for the Puerto Rican boa. Based on the DOE-LPO commitment to implement all Terms and Conditions, and Monitoring Requirements described in Sections 6.4 and 6.5 of the PBO, we believe the proposed actions will not jeopardize the continued existence of Puerto Rican boa.

Based on the proposed SOW, species' life history and ecology, and project's site characteristics, DOE-LPO has made a no effect (NE) determination for the Puerto Rican Crested Toad, Puerto Rican Parrot, Puerto Rican Broad-winged Hawk, Palo de Ramon, Palo de rosa, and *Schoepfia arenaria*. The Service acknowledges receipt of DOE-LPO NE determination for the above-mentioned species. Currently, we do not have any information to refute that determination. Because FEMA made a NE determination, FEMA is not required to conduct formal or informal section 7 consultation with the Service, and the Service is not required to concur with FEMA's NE determination.

In view of the above, we believe that requirements of section 7 of the Endangered Species Act (Act) have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or, (3) a new species is listed, or critical habitat determined that may be affected by the identified action.

Mr. Oster:

Thank you for the opportunity to comment on this project. If you have any questions or require additional information, please contact me or Felix Lopez from my staff at felix_lopez@fws.gov or at (939) 320-3135. You can also reach us at caribbean_es@fws.gov.

Sincerely,

LOURDES MENA Digitally signed by LOURDES MENA
Date: 2025.04.14 13:30:08 -04'00'

Lourdes Mena
Field Supervisor

oamr

cc:
DNER, San Juan

Department of Energy
Washington, DC 20585

July 21, 2025

Miguel Bonini
Senior Historic Property Specialist
State Historic Preservation Office
Office of the Governor
P.O. Box 9023935
San Juan, P.R. 00902-3935

SUBJECT: U.S. Department of Energy, Loan Programs Office, Section 106 Consultation Amanecer Puerto Rico Solar Photovoltaic and Battery Energy Storage Portfolio

Dear Mr. Bonini,

Pursuant to its authority under Title XVII of the Energy Policy Act of 2005, which established a Federal loan guarantee program, the U.S. Department of Energy (DOE), Loan Programs Office (LPO), is evaluating whether to provide a Federal loan guarantee to Amanecer Puerto Rico, LLC, an affiliate of Pattern Energy Group LP (Pattern, or the Applicant), for the Amanecer Puerto Rico Portfolio (the Project). The Applicant is proposing this portfolio of energy projects to supply power to the Puerto Rico Electric Power Authority (PREPA) network, thereby improving grid reliability and enabling PREPA to avoid or reduce greenhouse gas (GHG) emissions at its power generating plants.

The purpose of this letter is to consult with the Puerto Rico State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [U.S.C.] 306108), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, "Protection of Historic Properties." This letter presents descriptions of the undertaking, the Area of Potential Effects (APE), the efforts to identify historic properties, the undertaking's effects on historic properties, and seeks your concurrence with DOE's Finding of No Adverse Effect this undertaking.

Description of the Undertaking

DOE's action is the issuance of a proposed federal loan guarantee to the Applicant for the undertaking (i.e., the Project). The Project includes the construction of three individual energy facilities at two locations, consisting of Barceloneta Photovoltaic Solar (Barceloneta Solar) and Barceloneta Battery Energy Storage System (Barceloneta Storage) near Arecibo and Santa Isabel Battery Energy Storage System (Santa Isabel Storage) near Santa Isabel.

The shared Project site for Barceloneta Solar and Barceloneta Storage is located south of PR Hwy 2, approximately 8.35 miles southeast of the town center of Arecibo. Barceloneta Solar would be a 70-megawatt (MW), alternating-current (AC) solar photovoltaic (PV) generation facility near Arecibo; the facility would include a dedicated 32 MW Battery Energy Storage System (BESS) for compliance with Puerto Rico's minimum technical requirements for utility-scale solar generation projects. In addition, the 120 MW Barceloneta Storage would be co-located on the same approximately 290-acre (298.6-cuerdas) parcel, allowing the two facilities to share a substation but with separate metering (one for Barceloneta Solar and one for Barceloneta Storage). A shared, 115-kilovolt (kV) underground transmission line would connect the facilities to the existing Luma Barceloneta Transmission Center (TC) substation, which is 1.5 miles (2.4 kilometers) to the east. The underground transmission line that will link the Project and the TC is being developed in agreement with the Puerto Rico Department of Transportation and Public Works (PR-DTOP) and would be located within the PR-2 DTOP Right-of-way (ROW).

The Santa Isabel Project site is located adjacent to PR-153 Road and approximately 0.75 miles north of the town center of Santa Isabel. The 100 MW Santa Isabel Storage facility would be located on two adjacent parcels, approximately 6.4 and 10.1 acres (6.6 and 10.4 cuerdas), in Santa Isabel. The facility's BESS would be connected to an existing substation within the operations and maintenance (O&M) facility for the Santa Isabel Wind Farm. The proposed connection line will be installed in a trench that will measure approximately 7 feet (2 meters) wide and 4 feet (1 meter) deep within an approximately 2.6-acre (2.7-cuerda) ROW corridor extend from the BESS to the existing O&M facility. This connection would require a roughly 0.29-acre (0.298-cuerda) expansion to the existing O&M facility.

Description of the Area of Potential Effects

As defined in the Section 106 regulations (36 CFR § 800.16(d)), the APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The dimensions of the APE are influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The APE for this undertaking is defined as the Project's construction limits of disturbance (LOD) where ground-disturbing activities may occur, plus a 300-foot buffer surrounding the LOD within which potential non-physical effects (e.g., visual, vibrational, auditory, or atmospheric) could occur.

Description of the Efforts to Identify Historic Properties

The Applicant conducted cultural resources surveys of the APE at both the Barceloneta Project site and the Santa Isabel Project site. The results of these investigations are provided in a series of technical reports covering archaeological surveys and historic architectural resource surveys. The findings are summarized below.

Archaeological Resources

Previously, the Barceloneta Project site was approved for two separate solar projects: Arecibo Photovoltaic Power Plant in the northern half of the property, and Blue Beetle Solar in the southern half of the property. Each prior project was the subject of separate permits and approvals, as described below.

Arecibo Photovoltaic Power Plant (developed by RESUN Barceloneta, LLC) received an Environmental Compliance Approval (2013-122200-DEA-18320) from the Puerto Rico General Permits Office (OGPE for its Spanish language acronym) on October 1, 2013. As part of the Environmental Compliance process, a Phase 1A-1B Archaeological Evaluation was completed in 2013 by Arqueologia Inc. at the request of the Institute of Puerto Rican Culture (ICPR for its Spanish language acronym). The report stated that the proposed Barceloneta site is located in an archeologically sensitive area; however, the subsurface soil prospecting tests within the site revealed a clay subsoil stratum, which was uniformly distributed across the Project site and was negative for the presence of cultural resources. Based on this evidence, the report concluded there is no possibility that the construction of the proposed Barceloneta projects would adversely affect cultural resources. On June 6, 2013, ICPR provided an authorization letter stating they had "…determined that at present no significant evidence has been detected that suggests that the development of the project in question could cause any type of adverse impact to archaeological resources."

Blue Beetle Solar (developed by Blue Beetle III, LLC) received an acknowledgement of compliance with Article 4(3)(b) (EA 12-0559) from the Puerto Rico General Permits Office (OGPE for its Spanish language acronym) on October 24, 2012. As part of the Article 4(3)(b) approval process, ICPR provided an evaluation letter (August 27, 2012) stating that there was minimal likelihood of impacts to archaeological resources and that ICPR had no objection to the project.

In the process of completing a new, consolidated Environmental Compliance Approval for the full site of Barceloneta Solar and Barceloneta Storage, Pattern provided ICPR the history of archaeological reviews that the agency had considered for the two original projects. After discussion, ICPR provided an authorization letter on November 22, 2023, confirming no further studies would be required. This authorization will be incorporated into the final Environmental Compliance Approval, which is expected to be completed in Q1 2025.

The Phase 1A-1B archaeological survey of the Santa Isabel site was conducted in May and June of 2025. The ICPR and SHPO databases were reviewed to identify previously conducted surveys and previously recorded archaeological resources in the Project vicinity and to determine the archaeological sensitivity of the Project site. Pedestrian reconnaissance was conducted across the Project site, during which a previously recorded historic resource referred to as "Canal #12" was observed. Canal #12 was constructed prior to 1970 and portions of the resource outside of the Project site have been destroyed by modern development. Subsurface tests were conducted in 50-meter intervals across the Project site, resulting in excavation of 51 test pits. No cultural material was observed on the surface or within the soil matrix of the excavated test pits. Therefore, no new cultural resources were identified during the survey. The

archaeologist recommends the Project establish a 5-meter construction exclusion zone surrounding Canal #12 to protect the remnant historic feature within the Project site.

Additional details are included in the technical reports, which have been uploaded to the SHPO Online Project Submission Dashboard with this request for consultation.

Historic Architectural Resources

All historic age (45 years and older) built environment resources within the APE were surveyed. For Barceloneta, 24 built environment resources dating from the 1950s through the 1970s were documented and evaluated for the National Register of Historic Places (NRHP). Of the 24 resources surveyed, two resources are recommended individually eligible for inclusion in the NRHP (Resources B-1 and B4), and one historic district consisting of 12 resources is proposed as eligible for inclusion in the NRHP (the proposed Calle Manantiales Historic District). For Santa Isabel, seven (7) built environment resources dating from ca. 1910 through the 1970s were documented and evaluated for the NRHP, none of which are recommended eligible for inclusion in the NRHP.

Additional details are provided in the technical reports, which have been uploaded to the SHPO Online Project Submission Dashboard with this request for consultation.

Description of the Undertaking's Effects on Historic Properties

Resource B-1 is a two-story, single-family dwelling constructed ca. 1975. It is located on parcel number 054-045-315-49 adjacent to agricultural lands and is oriented facing north. The dwelling is recommended eligible for the NRHP under Criterion C for its local significance in the area of architecture and as a late example of the tropical modern architectural style. The dwelling embodies the style's distinctive characteristics as reflected by its character-defining features, which include the overall building and roof forms, concrete and steel post-and-beam construction, large front porch, molded balusters, fenestration pattern, and metal jalousie windows. The dwelling retains overall integrity. The dwelling appears to remain at its original rural location. The building has undergone some changes since ca. 1975, such as the replacement of second-story windows, that have slightly diminished integrity of design, materials, and workmanship. The dwelling generally retains integrity of setting as characterized by the rural landscape.

Resource B-1 is within the APE but is located outside the Project LOD; therefore, no physical effects would occur and none of its character-defining features would be impacted by the Project. Furthermore, the property's setting is not a character-defining feature, and changes to setting as a result of Project visibility would not diminish the property's historic integrity. Therefore, the Project would pose No Adverse Effect to this historic property.

Resource B-4 is a ca. 1950 one-story dwelling located on parcel number 054-000-003-31 at the north side of Highway 2. The dwelling is recommended eligible for the NRHP under Criterion C for its local significance in the area of architecture for embodying the distinctive characteristics of the tropical modern architectural style, including one-story form, rectangular

plan, concrete construction, flat roof, deep integrated front porch, and original jalousie windows. Based on available aerial imagery and partial views from the public ROW during the field survey, the dwelling appears to retain integrity. The one-story form, rectangular plan, concrete construction, deep integrated front porch, and original jalousie windows, indicate that the dwelling retains integrity of design, materials, and workmanship. The dwelling generally retains integrity of setting as characterized by the rural landscape and proximity Highway 2.

Resource B-4 is within the APE but is located outside the Project LOD; therefore, no physical effects would occur and none of its character-defining features would be impacted by the Project. Furthermore, the property's setting is not a character-defining feature, and changes to setting as a result of Project visibility would not diminish the property's historic integrity. Therefore, the Project would pose No Adverse Effect to this historic property.

Research and field survey identified the potential Calle Manantiales Historic District (CMHD) that appears to be locally significant in the area of architecture as a grouping of modest single-family dwellings constructed in the tropical modern style. The survey identified a total of 12 resources within the proposed CMHD boundary, including 10 contributing and two non-contributing resources. CMHD's period of significance is recommended as ca. 1950 to ca. 1970, which encompasses the time period within which historic-age resources in the proposed district boundary were constructed. CMHD's boundary, which contains 9 parcels, begins at the southwest corner of the Calle Manantiales and Calle Mercedes Correa intersection, extending approximately 0.25 miles south along the west side of Calle Manantiales before terminating at an unnamed road. The boundary includes the properties along Calle Manantiales maintaining integrity that embody the tropical modern architectural style as applied to the street's modest rural dwellings. The boundary generally excludes properties that lack significance and/or integrity.

CMHD is recommended eligible for listing under Criterion C as a rural residential historic district for its local significance in the area of architecture. The 10 contributing resources within CMHD collectively embody the distinctive characteristics of the tropical modern, a mid-century architectural style that incorporated modernist design elements and building materials to meet the challenges presented by Puerto Rico's tropical climate. CMHD reflects the design philosophy of tropical modern as the style was applied to small, relatively inexpensive rural dwellings.

The distinctive characteristics of CMHD's 10 contributing dwellings are their small one-story forms and modest rectangular (or slightly irregular) plans oriented facing Calle Manantiales. The dwellings' concrete construction and molded concrete architectural detailing were likely chosen over wood construction based on concrete's ability to better withstand strong winds and rains. In addition, concrete materials were likely incorporated to reduce potential damage from fire, moisture, and termites. The dwellings' flat or low-pitched roofs, typical of modernist design, provide economical roof forms that are better at withstanding strong winds and rains than pitched roofs. The deep, integrated front porches provide shaded breezy exterior living spaces, enhanced by decorative molded balusters or concrete breezeblocks that further promote air circulation. The jalousie windows, usually consisting of metal slats, provide shade and help control air flow to interior living spaces. Nearly all the contributing dwellings have original

attached carports with vehicle bays oriented facing Calle Manantiales. In general, the carports are at least partially open and often have jalousie or breezeblock windows along the carport walls and along the shared carport/dwelling wall to promote air flow through carport and adjacent interior space. Most of the dwellings also feature low, concrete perimeter walls or wall sections, often integrated with concrete posts.

The CMHD is within the APE but is located outside the Project LOD; therefore, no physical effects would occur and none of the district's character-defining features would be impacted by the Project. Furthermore, the district's setting is not a character-defining feature, and changes to setting as a result of Project visibility would not diminish the district's historic integrity. Therefore, the Project would pose No Adverse Effect to this historic property.

Requesting your Concurrence and Next Steps

Based on DOE's review of the efforts to identify historic properties and conclusions drawn from this information, DOE is issuing a Finding of No Adverse Effect, consistent with 36 CFR § 800.5(d)(1).

In the event of a post-review unanticipated discovery of cultural resources and/or human remains during construction, DOE LPO will determine actions to resolve adverse effects and notify the SHPO and the Advisory Council on Historic Preservation (ACHP) within 48 hours of the discovery, pursuant to 36 CFR 800.13(b)(3).

As part of the Section 106 process, DOE requests the concurrence of the Puerto Rico SHPO on the APE and the Finding of No Adverse Effect, as well as any comments you may have on the Project **within thirty (30) days of receipt of this letter**. We look forward to consulting with your office throughout the Section 106 process. If you have any questions or would like to discuss this project further, please contact me at 240-687-7266 or via email at LPO_Environmental@hq.doe.gov.

Respectfully,

Molly R. Cobbs
NEPA Document Manager
Loan Programs Office

Outlook

FW: Proyecto Sometido OECH - SHPO-CF-07-21-25-05

From Birnbaum, David <David.Birnbaum@icf.com>
Date Mon 7/21/2025 1:59 PM
To Palm, Kara <Kara.Palm@icf.com>; Cobbs, Molly <molly.cobbs@hq.doe.gov>

See below confirmation of SHPO submittal for Pattern. I will let you know when we receive a response.

Thanks, and have a good evening,

DAVID BIRNBAUM
Senior Archaeologist
Supporting the U.S. Department of Energy, Loan Programs Office (DOE LPO)

CUI//SP-PROCURE

From: notifications PRSHPO <notifications@prshpo.pr.gov>
Sent: Monday, July 21, 2025 4:56 PM
To: Birnbaum, David <David.Birnbaum@icf.com>
Subject: Proyecto Sometido OECH - SHPO-CF-07-21-25-05

SHPO
OECH
OFICINA ESTATAL DE CONSERVACIÓN HISTÓRICA
OFICINA DEL GOBERNADOR
STATE HISTORIC PRESERVATION OFFICE
OFFICE OF THE GOVERNOR

Proyecto sometido

Usted ha sometido el proyecto número **SHPO-CF-07-21-25-05** a la Oficina Estatal de Conservación Histórica para su evaluación.

Resumen:

Núm. de referencia: SHPO-CF-07-21-25-05
Nombre del proyecto: Amanecer Puerto Rico Solar Photovoltaic and Battery Energy Storage Portfolio
Descripción del proyecto:
The Project includes the construction of three individual energy facilities at two locations, consisting of Barceloneta Photovoltaic Solar (Barceloneta Solar) and Barceloneta Battery Energy Storage System (Barceloneta Storage) near Arecibo and Santa Isabel Battery Energy Storage System (Santa Isabel Storage) near Santa Isabel.
Costo: $0.00

Municipio: Island-Wide
Fecha de envío para evaluación / Fecha de sometimiento: 21 Jul 2025
Fecha límite para evaluación: 20 Aug 2025

Para cualquier consulta o saber el estado de la evaluación, visite el portal: www.oechpr.com

APPENDIX B PERMITS AND APPROVAL

Table B-1: Permit Matrix for Barceloneta Solar and Barceloneta Storage

Permit/Approval	Agency	Status
Puerto Rico Requirements		
Puerto Rico Agency Recommendations	Aqueducts and Sewer Authority (AAA) Fire Department Bureau (Bomberos) Highway and Transportation Authority (ACT) LUMA Puerto Rico Telecommunications Bureau (NET)	Approval received Jan. 2024 Approval received Oct. 2023 Approval received Oct. 2023 Approval received Dec. 2023 Approval received Oct. 2023
Habitat Categorization	DRNA	Approval received Jun. 2024
Municipal Endorsement	Arecibo	Approval received Oct. 2023
Environmental Compliance Recommendation (REA)	OGPe Institute of Puerto Rican Culture – Program for Archaeology and Ethnohistory (ICPR – PAE) Institute of Puerto Rican Culture – Program for Built Historical Heritage (ICPR – PPHE) Department of Natural and Environmental Resources (DRNA) Department of Agriculture (Agricultura)	Approval received Mar. 2025 Approval received Oct. 2023 Approval received Oct. 2023 Approval received Mar. 2025 Approval received Oct. 2023
Environmental Compliance Determination (DEA)	OGPe	Approval received May 2025
Solar Land Use Consultation (CUB) Amendment	OGPe	Approval received June 2025
Construction Document Engineering Approvals	AAA ACT and PR-DOT Bomberos NET	Submission pending Submitted, approval pending Submission pending Submission pending
Construction Permit (PCOC)	OGPe	Submission pending
Construction Authorization (Road Use and Gen-tie)	PR-DTOP	Submission pending
Construction Authorization (Backup Generator)	DRNA	Submission pending
Unique Operational Incidental Permit (PUI)	OGPe	Submission pending
National Pollutant Discharge Elimination System (NPDES)/SWPPP	EPA	Submission pending
DOE LPO Requirements		
National Environmental Policy Act	DOE LPO	Ongoing
National Historic Preservation Act	SHPO	Ongoing

Table B-1: Permit Matrix for Barceloneta Solar and Barceloneta Storage

Permit/Approval	Agency	Status
Endangered Species Act	USFWS	Ongoing

Table B-2: Permit Matrix for Santa Isabel Storage

Permit/Approval	Agency	Status
Puerto Rico Requirements		
Puerto Rico Agency Recommendations	Bomberos ACT NET	Approval received May 2025 Approval received May 2025 Approval received Apr. 2025
Habitat Categorization	DRNA	Approval received Feb. 2025
Municipal Endorsement	Santa Isabel	Approval received Mar. 2025
Environmental Compliance – REA	OGPe ICPR-PAE ICPR-PPHE DRNA Agricultura	Approval received Apr. 2025 Submitted, approval pending Approval received Mar. 2025 Approval received Mar. 2025 Approval received Apr. 2025
Environmental Compliance – DEA	OGPe	Submission pending
Construction Document Engineering Approvals	ACT and PR-DOT Bomberos NET	Submission pending Submission pending Submission pending
Construction Permit (PCOC)	OGPe	Submission pending
Construction Authorization (Road Use and Gen-Tie)	PR-DTOP	Submission pending
Construction Authorization (Backup Generator)	DRNA	Submission pending
Unique Operational Incidental Permit (PUI)	OGPe	Submission pending
NPDES/SWPPP	EPA	Submission pending
DOE LPO Requirements		
National Environmental Policy Act	DOE LPO	Ongoing
National Historic Preservation Act	SHPO	Requested Consultation July 18, 2025
Endangered Species Act	USFWS	Concurrence, April 2025
Farmland Policy Protection Act	USDA	Completed, May 27, 2025

APPENDIX C FEMA FLOOD INSURANCE RATE MAPS

Figure C-1. Barceloneta FEMA Floodplain

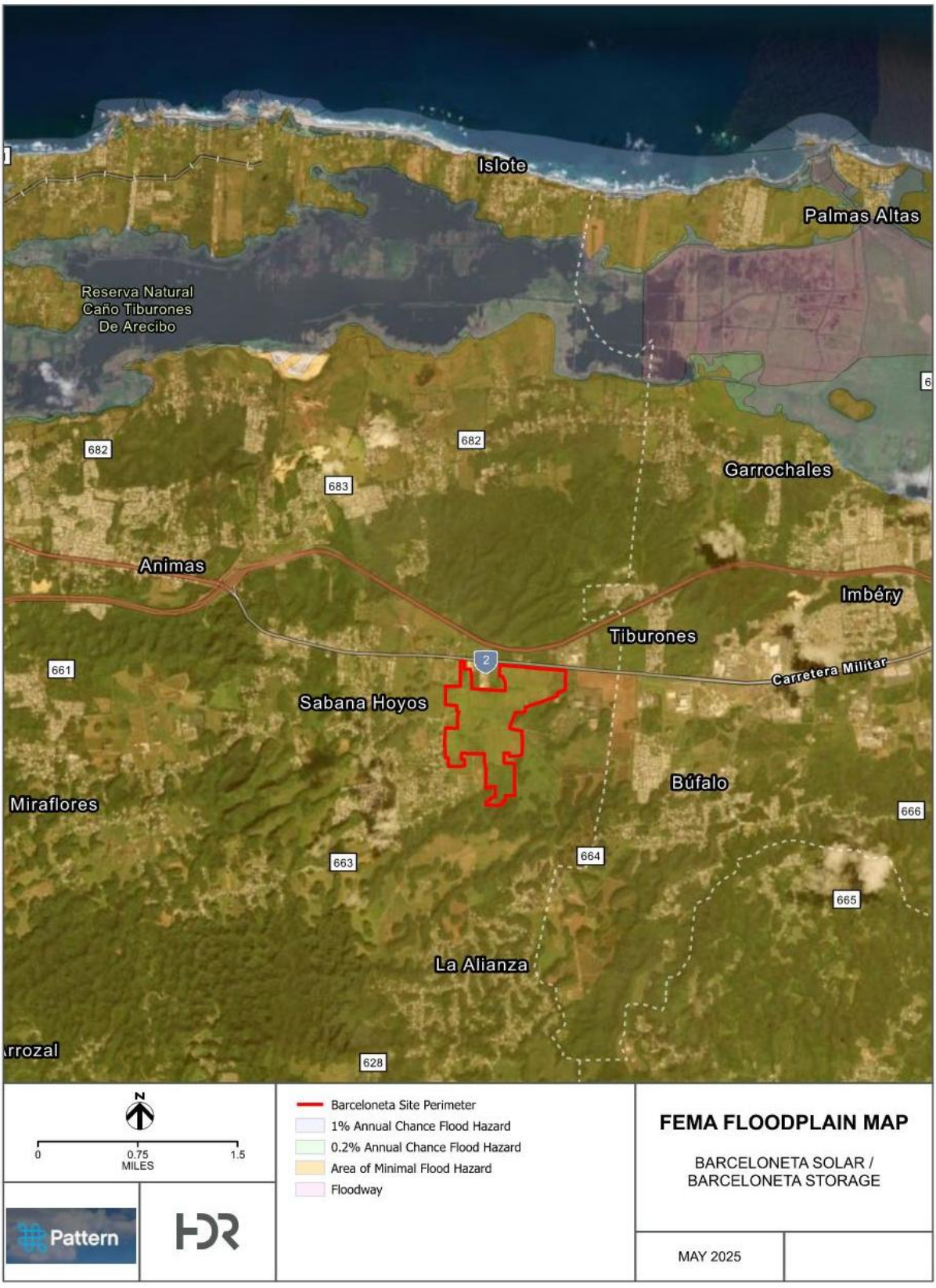

Figure C-2. Santa Isabel FEMA Floodplain

APPENDIX D USFWS INFORMATION FOR PLANNING AND CONSULTATION RESOURCES LISTS

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Arecibo County, Puerto Rico

Local office

Caribbean Ecological Services Field Office

(939) 320-3135
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Puerto Rican Broad-winged Hawk Buteo platypterus brunnescens Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5512	Endangered
Puerto Rican Parrot Amazona vittata Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3067	Endangered

Reptiles

NAME	STATUS
Puerto Rican Boa Chilabothrus inornatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Amphibians

NAME	STATUS
Puerto Rican Crested Toad Peltophryne lemur Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3958	Threatened

Flowering Plants

NAME	STATUS
Palo De Ramon Banara vanderbiltii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8113	Endangered

Palo De Rosa Ottoschulzia rhodoxylon — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5741

Schoepfia arenaria — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5250

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates there are no migratory birds of conservation concern expected to occur in this area.

There may be migratory birds in your project area, but we don't have any survey data available to provide further direction. For additional information, please refer to the links above for recommendations to minimize impacts to migratory birds or contact your local FWS office.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact

Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Santa Isabel County, Puerto Rico

Local office

Caribbean Ecological Services Field Office

(939) 320-3135
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS

Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS

Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Puerto Rican Boa Chilabothrus inornatus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates there are no migratory birds of conservation concern expected to occur in this area.

There may be migratory birds in your project area, but we don't have any survey data available to provide further direction. For additional information, please refer to the links above for recommendations to minimize impacts to migratory birds or contact your local FWS office.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.