Environmental Assessment
Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

Project Information

Project ID: PR-RGRW-02468

Project Name: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Responsible Entity: Puerto Rico Department of Housing

Grant Recipient (if different than Responsible Entity): Same as above

State/Local Identifier: Puerto Rico/Camuy, PR

Preparer: Gabriela Rodríguez

Certifying Officer Name and Title: Permit and Compliance Officers: Sally Acevedo Cosme, Pedro De León Rodriguez, María T. Torres Bregón, Ángel G. López-Guzmán, Ivelisse Lorenzo Torres, Santa Damarys Ramírez Lebrón, Janette I. Cambrelén, Limary Vélez-Marrero, Juan Carlos Perez Bofill, Mónica Machuca Ríos, Javier Mercado Barrera, Abdul Feliciano Plaza, Aldo A. Rivera Vázquez and Priscilla Toro Rivera.

Consultant (if applicable): Tetra Tech, 251 Calle Recinto Sur, Ste. 202, San Juan, PR 00091

Direct Comments to: PRDOH (environmentcdbg@vivienda.pr.gov)

Project Location:

The property is a 12.43-acre site located at Carretera 4486, Km. 2.4, Cibao ward, in the Municipality of Camuy, Puerto Rico (Parcel ID# 074-000-002-15-000). The coordinates of the project site are 18.392450, -66.860176.

Description of the Proposed Project [24 CFR 58.32; 40 CFR 1508.25]**:**

The intended use of funds includes the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems.

Scope of work 1 (SOW-1) includes the purchase and installation of 3 hydroponic systems on nutrient fil technique (NFT) tables at coordinates 18.392450, -66.860176. Each proposed hydroponic system is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks (1 per NFT Table), water and air pumps (3), fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. At least 14 structural posts per hydroponic system will be anchored

directly to the ground with an estimated depth of up to 3 ft. No concrete floor or ground cover is proposed as part of the SOW.

The Scope of Work 2 (SOW-2) consists of the purchase and installation of a solar system (PV system) at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW Inverter/Charger 40/48, FM80 Outback Charge Controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS Batteries, 4 Solar Panel Racks, 1 Galvanized Tube Battery Rack 1 Midnite Combiner Box 6 Strings, 1 Midnite Braker Box 175 AMPS, 1 Braker DC 80 AMPS, 4 Braker DC 20 AMPS, Braker AC 30 AMPS and Braker Box Interior. Batteries and electrical components are proposed to be located at coordinates 18.392301, -66.860244. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases and the anchoring of solar base with bolts to the base.

The intent use of funds includes the purchase of a Utility Task Vehicle (UTV) that will be stored in the applicant house area, at coordinates 18.392344, -66.860315.

No new water or electric connection to local utility services, PRASA and PREPA/LUMA respectively, is required. The facilities are currently connected to the local water service provided by PRASA but is not connected to local power utility provider PREPA/LUMA. The water to be used for the hydroponic system will be obtained from the existing local utility connection (PRASA) located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear ft. No connection to PREPA/LUMA is contemplated. The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries and electrical components are proposed to be located at coordinates 18.392301, - 66.860244. An aboveground connection, with an estimated length of 60 ft, will be installed from the batteries to the hydroponic proposed structure. While the applicant plans to pay for the materials and activities related to water and PV system connection themselves and no HUD funds would be utilized for this portion of work, the potential impacts from this action are included in the analyses below and it is contained within the delimited Area of Potential Effect (APE). The APE for the proposed project is approximately 0.20 acres.

The project site will require clearing, grading, leveling, vegetation and/or underbrush removal, and cutting of some tree branches and/or shrubs. However, proposal does not contemplate cutting or transplanting of trees.

Site photos are included in **Appendix A**. A site map (Figure 1) is included in **Appendix B**.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

The Re-Grow Puerto Rico Urban-Rural Agriculture Program (RGRW) will increase agricultural capacity while promoting and increasing food security island wide. This Program will enhance and expand agricultural production related to economic

revitalization and sustainable development activities. The purpose of this project is to increase the productivity of the farm. This agricultural project associated with the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems is keeping with the overall objectives of the Economic Development Program.

Existing Conditions and Trends [24 CFR 58.40(a)]:

The land proposed for the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems is used for agricultural purposes with the cultivation of beans, cilantro, and currently bananas. Therefore, there is no change in land use associated with the project. Some ground disturbance will be required. The proposed project location is a rural, mountainous terrain surrounded by mature vegetation.

Structure of this Environmental Review Report (ERR).

This ERR discusses the Funding Information immediately below. The environmental impacts of the proposed action are discussed in the Compliance with 24 CFR 58.5 and 58.6 Laws and Authorities checklist and Environmental Factors checklist. The listing of Additional Studies Performed, and Sources, Agencies and Persons Consulted follows the checklists. The discussions of Public Outreach, Cumulative Impacts, Alternatives, and Summary of Findings and Conclusions are presented at the end of the ERR, before the listing of Mitigation Measures and Determination signatures. The appendices contain detailed information.

Appendix A – Site Inspection
Appendix B – Maps
Appendix C – Additional Documentation
Appendix D – Endangered Species
Appendix E – SHPO Consultation

Funding Information

Grant Number	HUD Program	Funding Amount
B-17-DM-72-0001, B-18-DP-72-0001, B-19-DP-78-0002, B-18-DE-72-0001	Community Development Block Grant – Disaster Recovery (CDBG-DR) CDBG-DR, Re-Grow Puerto Rico Urban-Rural Agricultural Program	$11,938,162,230

Estimated Total HUD Funded Amount: $36,271.00.

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**:** $36,271.00.

Compliance with 24 CFR 58.5 and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The nearest civil airport, "Aeropuerto Internacional Rafael Hernández (BQN)", is approximately 95,940 feet from the proposed site. The nearest military airport, "Aeropuerto Internacional Luis Muñoz Marín (SJU)", is approximately 293,080 feet from the proposed site. The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The project is in compliance with Airport Hazards requirements. Refer to Figure 2 in **Appendix B.**
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	Puerto Rico has various Coastal Barrier Resources Systems (CBRS). The project is in the northwestern region of Puerto Rico. The distance to the nearest CBRS unit is 33,092 feet. Therefore, this project has no potential to impact a CBRS Unit and is in compliance with the Coastal Barrier Resources Act. Refer to Figure 3 in **Appendix B**.
Flood Insurance	Yes ☐ No ☒	The Project site is located in Zone X, area of minimal flood hazard, as per Flood Insurance Rate Map (FIRM) 72000C0215H, effective date

Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]		April 19, 2005. This project is in compliance with Flood Insurance requirements. (See Figures 4 and 5 in **Appendix B**.)

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	The Project site is located in the municipality of Camuy. The Project site is not located in a county or air quality management district that is non-attainment status for any criteria pollutants. The identified non-attainment areas are in the municipalities of Arecibo, Bayamón, Cataño, Guaynabo, Toa Baja, Guayama-Salinas, and San Juan. The Municipio of Camuy is not listed in the EPA Green Book "Puerto Rico Nonattainment/Maintenance Status for Each County by Year for all Criteria Pollutants". The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Project would have no impact on air quality. The project is in compliance with Clean Air Act. Refer to EPA listing in **Appendix C**.
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	The project is located 31,966 feet from the nearest Coastal Zone Management area and does not affect a Coastal Zone as defined in the PR Coastal Zone Management Plan. The project is in compliance with the Coastal Zone Management Act. See Figure 7 in **Appendix B**.
Contamination and Toxic Substances 24 CFR Part 58.5(i)(2)	Yes ☐ No ☒	A site visit conducted on January 3, 2024, no debris or rubbish or visible signs vegetative stress, contamination, or toxic substances were identified at the project site. The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed action does not include demolition of structures nor mid- to long-term occupation of structures that would require testing for lead-

		based paint (LBP) and asbestos containing materials (ACM). Therefore, testing for LBP and/or ACM is not required. The proposed action does not include residential occupation or mid- to long-term occupation (more than 4 hours a day) of structures. Therefore, the consideration of radon in the contamination analysis is exempted under the CPD Notice #CPD-23-103 and no further consideration or action with respect to radon is needed. Site contamination was evaluated through online data searches to determine if toxic sites are located within 3,000-feet of the proposed project. There are no sites of environmental concern identified within 3,000 feet of the project site. Refer to Figures 8 and 9 in **Appendix B** and the Site inspection report and photos in **Appendix A**. The project is in compliance with Contamination and Toxic Substances.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☒ No ☐	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed location of project is an area that has been used for agricultural purposes. According to EPA NEPAssist Enviromapper, the nearest critical or proposed critical habitat is 23,541 feet to the northwest of the project location. The Official Species List from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website lists the Puerto Rican Boa, Puerto Rican Harlequin Butterfly, Puerto Rican Parrot, and the Fern (*Tectaria estremerana*) as being able to be found in the area, but there are no critical habitats for them at this location. A site-specific review of endangered species was conducted in accordance with the Fish and

		Wildlife Act (47 Stat. 401, as amended: 16 U.S.C. 661 et seq.) (See **Appendix D**). The project is "May affect, but not likely to adversely affect" (NLAA) the Puerto Rican Boa, Puerto Rican Harlequin Butterfly, Puerto Rican Parrot, and the Fern (*Tectaria estremerana*), provided conservation measures are implemented as part of the project. The USFWS concurred with the NLAA determination on October 28, 2024. If a Puerto Rican Boa is encountered, work will cease until it moves off the site or, failing that, the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers will be notified for safe capture and relocation of the animal, in accordance with the USFWS Puerto Rican Boa Conservation Measures. PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). If a worker believes they have spotted a Puerto Rican Harlequin Butterfly, work should cease within the area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). If a Puerto Rican Parrot is found within any of the working or construction areas, activities should stop at that area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). No habitat requirements are listed for the fern. As per USFWS requirement a survey for the fern (*Tectaria estremerana*) within the construction area should be conducted before any vegetation is removed. Refer to Figures 10 and 11 in **Appendix B** and the Endangered Species Package in **Appendix D**. This

		project is in compliance with the Endangered Species Act.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The project does not include development, construction, or rehabilitation of a hazardous site or any construction that will increase residential density. The project is in compliance with Explosive and Flammable Hazard requirements. Refer to site visit report in **Appendix A**.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Parcel's south boundary area and part of the location of the hydroponic systems are designated as prime farmland. The project does not include any activities that could potentially convert agricultural land to nonagricultural use. Although the project includes new construction, the project is exempt from review under the Farmland Protection Policy Act (FFPA) as the project is limited to construction of on-farm structures needed for farm operations. No further review is required. This project is in compliance with the Farmland Protection Policy Act. Refer to Figure 12 in **Appendix B.**
Floodplain Management Executive Order 11988, as amended by Executive Order 13690, particularly section 2(a); 24 CFR Part 55	Yes ☐ No ☒	The project consists of the purchase and installation of a solar system and 3 hydroponic systems, and the purchase of a UTV. The proposed project is not located in a Federal Flood Risk Management Standard (FFRMS) floodplain. FFRMS was determine using the 0.2-Percent-Annual-Chance (PAC) (500- Year) Flood Approach. The Project site is not located in an Advisory Base Flood Elevation (ABFE) special flood hazard area

		as per ABFE Map, number 72000C0215H, effective date April 18, 2018. Since the project site does not lie within the 1 percent (100-year), nor within the 0.2 PAC floodplain on the ABFE, it is not within the FFRMS. PFIRMs in Puerto Rico were only developed for certain sections of the municipalities of Carolina, Canóvanas, Loiza, San Juan and Trujillo Alto. The proposed project is located in the municipality of Camuy; therefore, PFIRM information was not available for the area and therefore not considered in the review. The Project site is located in Zone X, area of minimal flood hazard, as per Flood Insurance Rate Map (FIRM) 72000C0215H, effective date April 19, 2005. This project is in compliance with Executive Order 11988 and Order 13690.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☐ No ☒	The site was evaluated on February 14, 2024, by a SOI Qualified Architect/Architectural Historian and by a SOI Qualified Archaeologist. SHPO concurred with a finding of **No Historic Properties Affected** within the project's Area of Potential on Effects on September 25, 2024. Refer to Figure 13 in **Appendix B** and the Section 106 Consultation Package in **Appendix E.** This project is in compliance with Historic Preservation requirements.
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project is in compliance with Noise Abatement and Control.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	There are no EPA sole source aquifers in Puerto Rico. The nearest Sole Source Aquifer is 5,210,628 feet to the northwest of the project site. The project is in compliance with Sole Source Aquifer requirements. Refer to Figure 17 in **Appendix B**.

Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☐ No ☒	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The closest fresh-water bodies include a perennial unnamed creek 300 feet east, outside of the property. The creek is identified as a riverine wetland in the NWI map. No impact to wetlands is contemplated as part of the proposed activities. The project is in compliance with Executive Order 11990. Refer to Figure 14 in **Appendix B**.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	This project is not within proximity of a National Wild and Scenic River (WSR). The distance to the nearest WSR is approximately 371,713 feet. The project is in compliance with the Wild and Scenic Rivers Act. Refer to Figure 15 in **Appendix B**.

ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	Yes ☐ No ☒	No adverse environmental impacts were identified in any other compliance review portion of this project that may disproportionately be high for low-income and/or minority communities. Therefore, this topic complies with Executive Order 12898. Refer to EJ Report in **Appendix C.**

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features, and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable, and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.

(1) Minor beneficial impact

(2) No impact anticipated

(3) Minor Adverse Impact – May require mitigation

(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project is located on a private farm. The project site is zoned as "Conservación de Recursos (CR)". The proposed action is compliant with the current agricultural land use of the Project area and will not contribute to urban sprawl. Location of proposed project is also on an over-imposed district "Área de Planificación Especial-Restringida del Carso (APE-RC)". Activities to be conducted along "Área de Planificación Especial-Zona de Carso (APE-ZC)" requires the notification of proposed activities to the PRDNER. Construction activities to be conducted on "Área de Planificación Especial-Restringida del Carso (APE-RC)" and "Área de Planificación Especial-Restringida del Carso-Zona de Amortiguamiento (APE-RC-ZA)" areas, require the submittal and approval of a Karst Authorization by the PRDNER. Applicant is responsible for any permits or actions to ensure legalization of proposed activities in APE-RC.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project is in a rural, mountainous terrain, with estimated slopes of 42%, previously use for agricultural purposes, and now used for growing plantains. Soils in the proposed project area are classified as San German gravelly clay loam (SgD), surrounded by farmland with mature secondary moist limestone evergreen and semideciduous forest, 250 meters above mean sea level.

		Projects larger than 1 acre must comply with the CWA and develop a SWPPP with the NPDES. The proposed project area is approximately 0.20 acres. The project site has been cleared and it is routinely maintained as part of the operations and use of the farm. However, solar system and hydroponic systems locations will require clearing, grading, leveling, vegetation and/or underbrush removal, and cutting of some tree branches and/or shrubs. However, proposal does not contemplate cutting or transplanting of trees. Activities involving clearing, excavation or movement of more than 40 cubic meters of any component of the terrestrial cortex material and activities involving cutting, pruning, removal or transplant of tress with 4 inches diameter or more require the submittal and approval of permits by the PRDNER. The applicant is responsible for any permits or actions to ensure legalization of proposed activities. The project site area is rated "low to moderate" for landslide susceptibility (see Figure 16 in **Appendix B**). There will be little to no additional runoff associated with the project.
Hazards and Nuisances including Site Safety and Noise	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. During implementation of the project, construction activities may result in temporary elevation of ambient noise levels in immediate areas around active construction areas. The only nearby receptors are the residents of the farm. There is no access to the project area by the public.
Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Temporary employment of workers related to construction activities would result, but no new permanent jobs would be created as a result of this project. These workers are expected to come from the local region. However, since the project will

		include an economic component, it may aid in restoring some employment opportunities and increase income. The proposed project would not negatively impact employment or income patterns.
Demographic Character Changes, Displacement	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project would not result in demographic character changes or displacement. Given the nature of the project area, no relocations or demolition of residential structures or businesses would occur as part of this project.
Environmental Justice	1	In the area (one mile radius) in which project will occur. 100% are people of color compared to PR average of 97% 89% are low income compared to PR average of 70% 0% are unemployed compared to PR average of 14% The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. This project will result in restoration and increase in income and potential employment opportunities in the local area. This project will result in restoration and increase in income and potential employment opportunities in the local area. The installation and maintenance of equipment, research and implementation of new techniques, education and training of personnel, and the commercialization and sale of agricultural products are some of the opportunities offered by the agricultural market for new employment opportunities. The multiplier effect estimates 1-3 direct and indirect jobs for every primary job created. The increase in production with the installation of the hydroponic systems will generate at least 2 employment opportunities. The impacts would be beneficial. See EJScreen Report in **Appendix C**

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		

Educational and Cultural Facilities	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The project would not result in any change to regional or local area educational and cultural facilities or increase demand for them.
Commercial Facilities	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The agricultural activity of the project property will improve. Other commercial facilities would not be impacted by the proposed project.
Health Care and Social Services	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Health care and social services facilities would not be impacted by the proposed project. The project would not increase demand for health care and social services facilities.
Solid Waste Disposal / Recycling	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Waste vegetation from clearing activities will either be composted on site or at regional composting centers. Soil from grading would be recycled on the farm as fill. Left over construction materials that could be reused on the farm (e.g., piping, structural materials, greenhouse covering fabrics) would be stored for later use. The remaining construction solid waste materials would be collected for transport to the local landfill. The amount of impact of solid waste resulting from the construction of the proposed project would be minor. During operations, the products and by-products would be agricultural, which waste would be biodegradable. Other waste components related to the operation of the proposed project includes recyclable materials such as plastics and cardboard. Recyclables will be set aside and dispose according to the local recycling management plan. The remaining municipal solid waste would be collected for the transport to the local landfill.
Wastewater / Sanitary Sewers	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project would not include any bathrooms, wastewater, or sewage facilities. Current farm conditions would remain unchanged.

Water Supply	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Facilities are currently connected to local utility service (PRASA). Water will be supplied to the new hydroponic systems (3) from the existing connection available at an estimated distance of 80 ft through an aboveground PVC piping system. The applicant is responsible for any permits or actions with service provider (PRASA) to ensure legalization of utility connections. The proposed project will increase the current water demand of operations. The proposed project will have minor impact on water usage.
Public Safety – Police, Fire and Emergency Medical	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project would not create any new demand for emergency or health services.
Parks, Open Space and Recreation	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project would not create or destroy any new parks, open space, or recreational activities. It also would not increase use of those facilities.
Transportation and Accessibility	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project would not involve the creation of new roads nor any increase in long-term traffic on existing roads. There would be some minor use of the existing road during construction. All residents and businesses would retain access to their properties during and after the project.

Environmental Assessment Factor	Impact Code	Impact Evaluation
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project will be situated on land previously used for agricultural purposes, currently used for growing bananas.

		The APE of the installation of the hydroponics and its structure is at an estimated distance of 300 feet northwest of the identified unnamed creek outside of the parcel. There are no water resources on the property. The proposed project will have no impact to unique natural features or water resources.
Vegetation, Wildlife	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The proposed project will occur on land previously used for agricultural purposes and will continue in that capacity. Waste vegetation from clearing activities will either be composted on site or at regional composting centers. Soil from grading would be recycled on the farm as fill. Proposal does not contemplate cutting or transplanting of trees. The proposed project will have minimal impact on vegetation and no impact on wildlife.

Environmental Assessment Factor	Impact Code	Impact Evaluation
CLIMATE AND ENERGY		
Climate Change Impacts	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The project area is rural and does not have urban heat island effects. There would be no changes to the site configuration or structure that would specifically address the possibility and uncertainty of rising sea levels or the possibility of increases in rainfall intensity. Proposal includes a 55 gallons storage tank for each NFT table (3). Hydroponic systems are sustainable system that recirculates water. Water recharge will only need to account for evaporation and minor loses. Water will be used on an "as needed" basis to minimize the possible impact of drought. However, due to the location of project in an area of mature secondary moist forest, drought is not expected. This is a small agricultural project with no measurable impact on climate change factors.
Energy Efficiency/Energy Consumption	2	The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The power needed to operate proposed hydroponic systems will be achieved with the installation of the proposed solar system. Therefore, there would be no change in energy demand in the area.

		Since the project involves the addition of solar equipment to supply/reduce energy requirements, the applicant is not planning to connect project to the local electricity provider (PREPA/LUMA). However, the applicant is responsible for any permits or actions with local service provider (PREPA/LUMA) to ensure legalization of PV System and/or any utility connections.

Additional Studies Performed: None required.

Field Inspection (Date and completed by)**:**

Site inspection was conducted on January 3, 2024 by Javier Ramos.

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

Puerto Rico State Historic Preservation Office

FAA, National Plan for Integrated Airport Systems:

www.faa.gov/airports/planning_capacity/npias/reports/NPIAS-Report-2017-2021-Appendix-B-Part6.pdf

John H. Chafee Coastal Barrier Resources System, Puerto Rico map. www.fws.gov/CBRA/Maps/Locator/PR.pdf

National Wild and Scenic Rivers System: www.rivers.gov/puerto-rico.php

Puerto Rico Community Development Block Grant Disaster Recovery Action Plan, July 2018. www.cdbg-dr.pr.gov/en/action-plan/

Programmatic Agreement among the Federal Emergency Management Agency, the Puerto Rico State Historic Preservation Office and the Central Office for Recovery, Reconstruction and Resilience – amended to include the Puerto Rico Department of Housing.

US Environmental Protection Agency, National Ambient Air Quality Standards, Nonattainment Areas for Criteria Pollutants (Green Book): www3.epa.gov/airquality/greenbook/anayo_pr.html

US EPA, Environmental Topics, Air Topics: www.epa.gov/environmental-topics/air-topics

US Fish and Wildlife Service, Environmental Conservation Online System: https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=PR&stateName=Puerto%20Rico&statusCategory=Listed

Federal Emergency Management Agency, Flood Mapping Service: https://msc.fema.gov/portal/home (compilation of numerous maps)

US Fish and Wildlife Service, National Wetlands Inventory:

www.fws.gov/wetlands/data/mapper.html (compilation of numerous maps)

Puerto Rico Coastal Zone Management Program Plan, September 2009.

US EPA, Sole Source Aquifers. Esri HERE, Garmin, NOAA, USGS, EPA.

US Geological Survey, Data Release of May Showing Concentration of Landslides Caused by Hurricane Maria,

www.sciencebase.gov/catalog/item/59de6459e4b05fe04ccd39d8

List of Permits Obtained:

None

Public Outreach [24 CFR 58.43]**:**

The local community has been very proactive in the recovery process. Puerto Rico Department of Agriculture has worked closely with the agricultural community. The project will include a FONSI / NOI-RROF in compliance with NEPA regulations for HUD.

Cumulative Impact Analysis [24 CFR 58.32]**:**

In accordance with 24 CFR 58.32 (Aggregation), there are no cumulative impacts associated with the proposed project. The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. The project would allow an efficient processing of the agricultural products. Water use would increase to a minor degree in the new hydroponic systems but would only impact the existing site water supply. There are no wells nearby that can be affected.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]

The RGRW Program's goal is to increase agricultural capacity while promoting and increasing food security island-wide. This Program seeks to enhance and expand agricultural production related to economic revitalization and sustainable development activities. The applicant submitted a proposal to enhance and expand agricultural production on their property. The proposed use of grant funds will allow the applicant to expand the cultivation, processing, and delivery of agricultural products through the purchase and installation of a solar system and 3 hydroponic systems, and the purchase of a UTV.

Among the reasonable courses of action, other uses of the subject site, alternative locations (on and off property), and design modifications, were the analyzed alternatives. The actions are proposed in an area that has been used for agricultural purposes. The alternative to give another use to the subject site could potentially convert agricultural land to nonagricultural use, could delay current agricultural production, and would not increase, enhance or expand agricultural production. This action is not

consistent with the Program's goal, the alternative to give another use to the subject site was not selected.

Among the possibles impacts of alternative location, the location of the proposed SOW's off property will require transportation of equipment and products in and out of the property creating an increase in traffic and other vial impacts due to the transportation of materials and heavy equipment. Any alternative that would involve an off-property or give other uses to the site might require the relocation of current agricultural activities, purchase of land, the need for storage area, the movement of products, equipment, infrastructure, water and power utility connections, the preparation of cropping areas, among others, representing an additional cost. Given the above-mentioned possible impacts of an alternative location, an off-property alternative was not selected. Alternative locations off and on property, and design modifications to the proposed scopes of works may also represent an impact to undisturbed ground, or within forested areas, which could require heavier clearing, grading, and leveling activities.

To give other uses to subject site, an alternative on and off property location, and design modifications to proposed scopes of works, will not enhance and expand agricultural production or allow for the economic development for this applicant. Given the above-mentioned possible impacts of the presented courses of action to give other uses to the subject site, an alternative location off and on the property, and design modifications to the proposed scopes of works or were not the selected alternatives.

No Action Alternative [24 CFR 58.40(e)]:

The project consists of the purchase of a Utility Task Vehicle (UTV), as well as the purchase and installation of a solar system and three hydroponic systems. Under the No Action Alternative, the applicant would not receive federal funding for the proposed action, which would inhibit the economic growth opportunity that the applicant would not otherwise have under the PRDOH Re-Grow Puerto Rico program. As a result, these owners may not be able to experience the growth needed to recover and expand their agriculture activities. A provision of the grant allows for economic development for businesses. The No-Action alternative would not allow for the economic development for this applicant.

Summary of Findings and Conclusions:

The proposed activity has been found to not have any adverse effects on the environment nor is there the requirement for further consultation with federal agencies associated with the topics evaluated above. There are no environmental review topics addressed above that result in the need for additional formal compliance steps with federal agencies or the requirement for mitigations other than those listed below. There may be additional approvals or permits from local agencies. For example, permits may be required from PRDNER for any water or other utility connections and the Office of Permit Management (OGPe) is responsible for granting permits, licenses, certifications,

consultations, construction, and any other procedure necessary for business development and land use in Puerto Rico. The appropriate and necessary permits should be obtained by the applicant and/or contractor, from the appropriate Department or concerned agency, prior to construction activities.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

The environmental review topics addressed in this environmental review include all formal compliance steps with federal agencies and mitigations (listed in table below) needed for compliance with 24 CFR 58.

Any permits or approvals that have been issued during the preparation of this environmental review have been included in the evaluation of impacts and mitigations. Any special permit conditions or requirements associated with these permits are listed in the Mitigation Measures and Conditions table below.

Law, Authority, or Factor	Mitigation Measure
Endangered Species	The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR boa and its habitat: 1.Inform all project personnel about the potential presence of the PR boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PR boas. An educational poster or sign with photo or illustration of the species should be displayed at the project site. 2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas. 3. Once areas are clearly marked, and prior to the use of heavy machinery and any construction activity including removal of vegetation and earth movement), a biologist or project personnel with experience on this species should

	survey the areas to be cleared to verify the presence of any PR boa within the work area. 4. If a PR boa is found within any of the working or construction areas, activities should stop at that area and information recorded (see #5). Do not capture the boa. If boas need to be moved out of harm's way, designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #s: (787) 724-5700, (787) 230-5550, (787) 771-1124). If immediate relocation is not an option, project-related activities at that area must stop until the boa moves out of harm's way on its own. Activities at other work sites, where no boas have been found after surveying the area, may continue. 5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. PR boa data should also include a photo of the animal (dead or alive), site GPS coordinates, the time and date, and comments on how the animal was detected and its behavior. 6. If a PR boa is captured by PRDNER personnel, record the name of that person and information on where the PR boa will be taken. This information should be reported to the Service. 7. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal, and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal (see #4). If not possible, the animal should be left alone until it leaves the vehicle on its own. 8. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future. 9. If a dead PR boa is found, immediately cease all work in that area and record the information accordingly (see #5). If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures

	had been implemented and what actions will be taken to avoid further killings. A dead boa report should be sent by email (see contacts below) to the Service within 48 hours of the event. 10. Projects must comply with all state laws and regulations. Please contact the PRDNER for further guidance. PRDNER phone #s: (787) 724-5700, (787) 230-5550, (787) 771-1124 Conservation measures can be found at Caribbean ES Puerto Rican Boa (fws.gov). If a worker believes they have spotted a Puerto Rican Harlequin Butterfly, work should cease within the area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). If a Puerto Rican Parrot is found within any of the working or construction areas, activities should stop at that area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124). As per USFWS requirement a survey for the fern (*Tectaria estremerana*) within the construction area should be conducted before any vegetation is removed. For specific conservation measures of species refer to USFWS Consultation Package included in **Appendix D**.
Permits or Agency Approvals Required	
Permit or Approval	Permit Conditions
Ground disturbance	Projects whose earthworks are more than 40 m^3 must submit an Incidental Permit. The permit must be submitted via the Single Business Portal to the OGPe to be evaluated and physicalized by the Water Quality Division of the PRDNER. Any necessary permits should be obtained by the applicant and/or contractor prior to construction activities.
Clearing activities	Activities involving the excavation or movement of any component of the terrestrial cortex material that exceeds five hundred (500) cubic meters and up to a maximum of five thousand (5,000) cubic meters require the submittal and approval of a Simple Terrestrial Cortex Removal Permit.

	Applications are submitted via the Single Business Portal of the OGPe to be evaluated and physicalized by terrestrial Cortex Extraction Permit Division of the PRDNER.
Utility Connections- Water supply- (PRASA)	The project does not involve new connections to the local utility services provided by PRASA. Facilities have local water utility services connections. However, the applicant is responsible for any permits or actions to ensure legalization of utility connections (if needed) prior to construction activities.
Utility Connections- PREPA/LUMA	The project does not involve new utility connections provided by PREPA/LUMA. The project proposes the use of solar system as power source with no connection to local utility services. However, the applicant is responsible for any permits or actions to ensure legalization of utility connections (if needed) prior to construction activities.
Cutting, Pruning, Transplanting and Planting of Trees	The cutting or transplanting of trees with a trunk diameter greater than or equal to 4 inches (DAP, by its acronym in Spanish) requires the submittal of a "Permiso Único Incidental (PUI)", including an "Autorización de Corte, Poda, Trasplante y Siembra de Arboles (ACP)". The ACP contains the plan of transplanting, cutting and the proposed mitigation measures. Mitigation measures varies depending on the activity and the DAP of trees. Mitigation can be achieved by on-site, off-site, a combination of on-site/off-site planting and/or monetary compensation. Plan must be developed by an Arborist certified by the PRDNER and be submitted via the Single Business Portal to the OGPe to be evaluated, approved and physicalized by PRDNER.
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	Construction activities on "Área de Planificación Especial-Restringida del Carso (APE-RC)" requires the notification of proposed activities to the PRDNER. Construction activities to be conducted on "Área de Planificación Especial-Restringida del Carso (APE-RC) and "Área de Planificación Especial-Restringida del Carso-Zona de Amortiguamiento (APE-RC-ZA)" requires the submittal and approval of a Karst Authorization by the PRDNER. Applicant is responsible for any permits or actions to ensure legalization of proposed activities in APE-RC.
Endangered Species	As per USFWS Concurrence letter dated October 28, 2024, PRDOH requires a survey for the fern (Tectaria estremerana), within the construction area, to be conducted before any vegetation is removed or construction activity.

Determination:

☒ **Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]

The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]

The project may significantly affect the quality of the human environment.

Preparer Signature: _____ Date: 12/9/2024

Name/Title/Organization: Gabriela Rodríguez, Senior Environmental Scientist, Tetra Tech Inc.

Certifying Officer Signature: _____ Date: 12/17/2024

Name/Title: Priscilla M. Toro Rivera/ Environmental Specialist

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

APPENDIX A

Site Inspection and Photos

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

RE-GROW PR URBAN AND RURAL AGRICULTURE PROGRAM

Environmental Field Observation - Puerto Rico Department of Housing

APPLICANT INFORMATION	
Application ID	PR-RGRW-02468
Applicant Name	Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso
Property Address	Carretera 4486, Hacienta Maraydas; Cosechas del Paraiso
Parcel ID	074-000-002-15
Coordinates	18.392450, -66.860176
Inspector Name	Javier Ramos
Inspection Date	01/03/2024
Building Type	None
Number of Units	0
Number of Stories	0
Year Built; Data Source	----; Historian

ENVIRONMENTAL OBSERVATIONS (attach photos and notes, as necessary, for any YES answers)			
OBSERVATION ITEMS	**YES**	**NO**	**COMMENTS**
A. Is the **structure in use**?	☑	☐	Applicant house
B. is **structure a greenhouse?**	☐	☑	
C. Is **Electricity connected**?	☐	☑	
D. Is **water connected?** (Utilities or Well)	☑	☐	Water meter
1. Are there signs of **poor housekeeping** on site? (mounds of rubble, garbage, storm debris, solid waste, petroleum products, paint, pesticides, cleaning fluids, vehicle batteries, abandoned vehicles, pits, pools, ponds of hazardous substances, etc.)	☐	☑	
2. Are there any **55-gallon drums** visible on site? If yes, are they leaking?	☐	☑	
3. Are there any (or signs of any) **underground storage tanks** on the property?	☐	☑	
4. Are there signs of **ASTs** on the parcel or adjacent parcel? If yes, list approximate size and contents, if known.	☑	☐	1 X 80 pounds 1 X Propane gas tank
5. Is there any **stained soil or pavement** on the parcel?	☐	☑	
6. Is a water **drainage system** in use?	☐	☑	
7. Is a warehouse in use for storage of **Fertilizer or Pesticides**?	☐	☑	
8. Are there any **groundwater monitoring wells** on the site or adjacent parcel?	☐	☑	
9. Is there evidence of a **faulty septic system**?	☐	☑	
10. Is there **distressed vegetation** on the parcel?	☐	☑	
11. Is there any visible indication of **MOLD**?	☐	☑	
12. Is there any visible evidence of **asbestos, chipping, flaking or**	☐	☑	

peeling paint, or hazardous materials present in or on the structure?			
13. Are any **additional site hazards** observed?	☐	☑	
14. Is there any **permanent standing water**, such as a pond or stream, located on the site (do not include ponding from recent rain / weather events)?	☐	☑	
15. Does the subject property have **water frontage**?	☐	☑	
16. Is there any indication of the presence of **Wetlands**?	☐	☑	
17. Are there any obvious signs of **animals or birds nesting** on or near the site?	☐	☑	
18. Is the applicant aware of any **significant historical event or persons** associated with the structure, or of it being located in a historic district/area?	☐	☑	
19. Is a **historic marker** present?	☐	☑	

Case: PR-RGRW-02468
Project Name: Aida R. Ocasio Perez DBA Hacienda Maraydas
Coordinates: 18.392450, -66.860176

Is the field graded? For what purpose the field was graded? Month, Year: none

Scope of Work: The proposed project includes the purchase and installation of a solar system, hydroponic system and UTV.
Land current in use for: The farm is currently used for banana plantation.

Past Land use was: The farm was use for beans and cilantro.

Where the applicant plans to do the ground disturbances for the scopes of work, add the coordinates, descriptions and approximately the measurements:

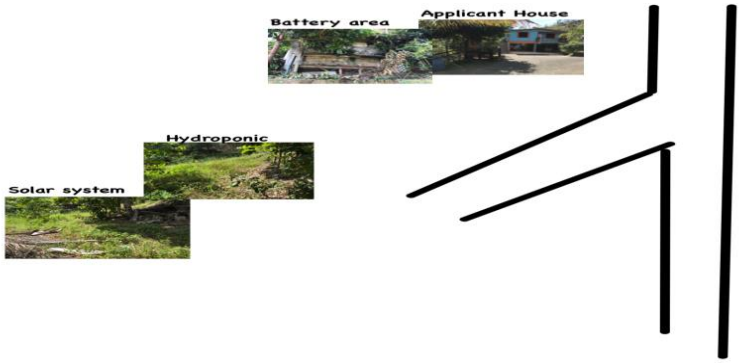
Scope of work 1: 18.392450, -66.860176, The proposed project includes the purchase and installation of a hydroponic system. Approximately measures 25' X 15' in metal and saran. The water to be used for the hydroponic system will be obtained from the main water meter system connections in the coordinates 18.392420, -66.860389, aboveground with approximately distance of 80 feet linear. The power connection will be from the proposed installation of the solar system describe in the Scope of Work 2. An aboveground connection from the battery proposed area location in the coordinates 18.392301, -66.860244 to the greenhouse with approximately 60 feet linear.

Scope of work 2: 18.392499, -66.860166, The proposed project includes the purchase and installation of a solar system consist of 8 solar panels overground in metal racks and with a proposed battery station area in the coordinates 18.392301, -66.860244 (transfer switch not required).

Any new water connection or power connection?
The water to be used for the hydroponic system will be obtained from the main water meter system connections in the coordinates18.392420, -66.860389, aboveground with approximately distance of 80 feet linear. The power connection will be from the proposed installation of the solar system describe in the Scope of Work 2. An aboveground connection from the battery proposed area location in the coordinates 18.392301, -66.860244 to the greenhouse with approximately 60 feet linear.

If the scope of work included tools, machinery or farms products, Where the applicant will be storing them?
UTV will be storage in the applicant house area in the coordinates: 18.392344, -66.860315

Site Sketch



Front of Structure

Photo Direction: Southeast

Facing Away From Front

Photo Direction: Northwest

Side #1 of Structure

Photo Direction: Southwest

Facing Away From Side #1

Photo Direction: Northeast

Back of Structure

Photo Direction: Southwest

Facing Away From Back

Photo Direction: Northeast

Side #2 of Structure

Photo Direction: Northwest

Facing Away From Side #2

Photo Direction: Southeast

Streetscape #1

Photo Direction: Southeast

Streetscape #2

Photo Direction: Northwest

TETRA TECH

Photo Log - PR-RGRW-02468

Address
Photo Direction: South

Outbuildings
Photo Description: Applicant house
Photo Direction: Southwest

Structural Details
Photo Description: Architectural details
Photo Direction: Northwest

Structural Details
Photo Description: Architectural details
Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: Northeast

Structural Details

Photo Description: Architectural details

Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Northwest

Structural Details
Photo Description: Architectural details
Photo Direction: Southeast

Structural Details
Photo Description: Architectural details
Photo Direction: Northeast

Structural Details
Photo Description: Architectural details
Photo Direction: Southeast

Structural Details
Photo Description: Architectural details
Photo Direction: East

TETRA TECH

Photo Log - PR-RGRW-02468

Structure Occupied
Photo Description: Applicant house
Photo Direction: Southwest

Water Connected
Photo Description: Water meter
Photo Direction: Southeast

Aboveground Storage Tanks
Photo Description: Propane gas tank
Photo Direction: Southwest

Scope Of Work
Photo Description: Scope of work 1: Installation of a Hydroponic System
Photo Direction: Southwest

Scope Of Work
Photo Description: Scope of work 1: Installation of a Hydroponic System
Photo Direction: Southwest

Scope Of Work
Photo Description: Scope of work 1: Installation of a Hydroponic System
Photo Direction: Southwest


Scope Of Work
Photo Description: Scope of work 1: Installation of a Hydroponic System
Photo Direction: Northeast


Scope Of Work
Photo Description: Scope of work 1: Installation of a Hydroponic System
Photo Direction: Northeast

Scope Of Work
Photo Description: Scope of work 2: Installation of a solar system
Photo Direction: Southeast

Scope Of Work
Photo Description: Scope of work 2: Installation of a solar system
Photo Direction: Southwest


Scope Of Work
Photo Description: Scope of work 2: Installation of a solar system
Photo Direction: Southwest


Scope Of Work
Photo Description: Scope of work 2: Installation of a solar system
Photo Direction: Northwest

Scope Of Work
Photo Description: Scope of work 2: Solar system battery area
Photo Direction: Northwest

Scope Of Work
Photo Description: UTV Parking area
Photo Direction: South

APPENDIX B

Maps

Legend

- Project Parcel
- Parcels

PUERTO RICO

TETRA TECH

Source: ESRI
https://catastro.crimpr.net/cdprpc/

Author: TG	Date: 11/12/2024

Figure 1: PROJECT LOCATION

APPLICANT ID: PR_RGRW_02468

ADDRESS: Carretera 4486, Hacienta Maraydas; Cosechas del Paraiso, PR 00627

Name of Development: Camuy

Parcel Coordinates: 18.392450 , -66.860176

N

0 125 250

Feet

File Path: C:\Users\SWATI.UNIYAL\Downloads\test11\RegrowSeparateMaps\PRLLOC_test.aprx

Legend

- Project Parcel
- Civilian Runway Protection Zones
- Military Accident Potential Zones
- Airport Runways
- Civilian Airport 2,500 Feet Buffer
- Military Airport 15,000 Feet Buffer

Distance to Nearest Airport in Feet: 95,940

Distance to Nearest Civilian Airport in Feet: 95,940

Distance to Nearest Military Airport in Feet: 293,080

PUERTO RICO

TETRA TECH

Source: USDOT
https://www.faa.gov

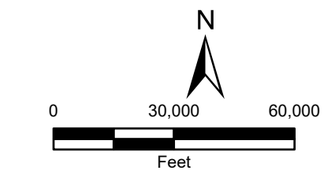
Author: TG	Date: 5/3/2024

Figure 2: AIRPORT ZONES
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176



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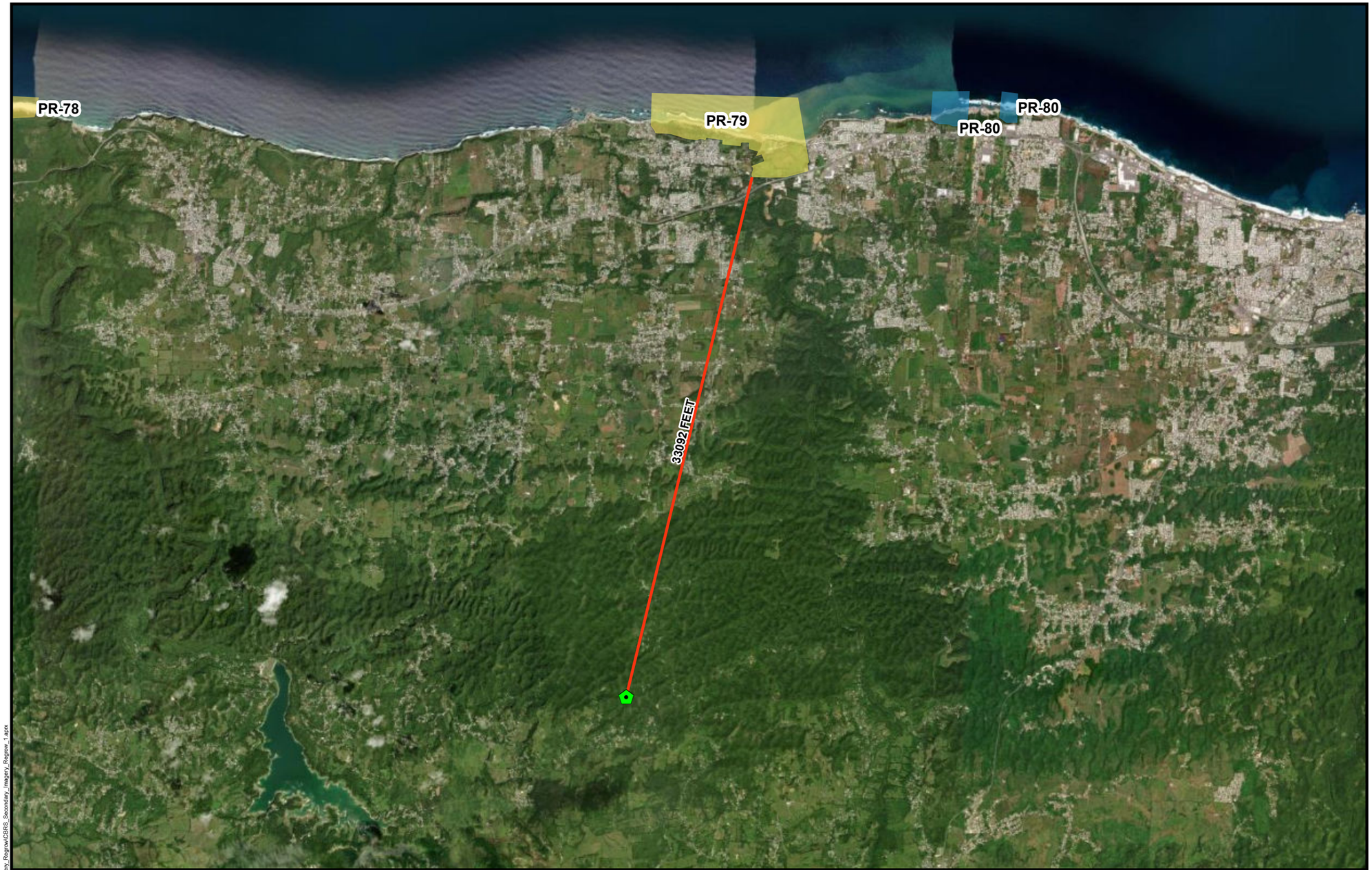


Legend

Project Parcel

Coastal Barrier Resources System Boundary

Unit

PR-78

PR-79

PR-80

Distance to Nearest Coastal Barrier Resources System:
33092 Feet

PUERTO RICO

TETRA TECH

Source: U. S. Fish & Wildlife Service
<LINK>https://www.fws.gov</LINK>

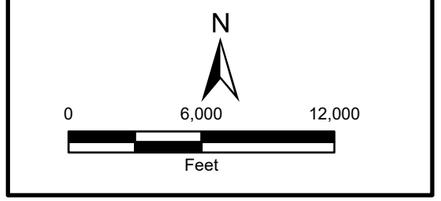
Author: TG	Date: 10/17/2023

Figure 3: COASTAL BARRIERS IMPROVEMENT ACT
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176



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FIRM: 72000C0215H, EFF_DATE: 4/19/2005

Scope of Work 2: Installation of solar system

Scope of Work 1: Installation of 3 hydroponic systems

Legend

- Project Parcel
- Parcels
- FIRM Panels
- Floodway
- 100 Yr Floodzone
- 500 Yr Floodzone
- Area Of Minimal Flood Hazard
- Unmapped for Floodplain
- Area of Potential Effect

PUERTO RICO

TETRA TECH

Source: FEMA
https://msc.fema.gov

Author: TG	Date: 1/4/2024

Figure 4: FLOOD INSURANCE RATE MAP (FIRM)
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

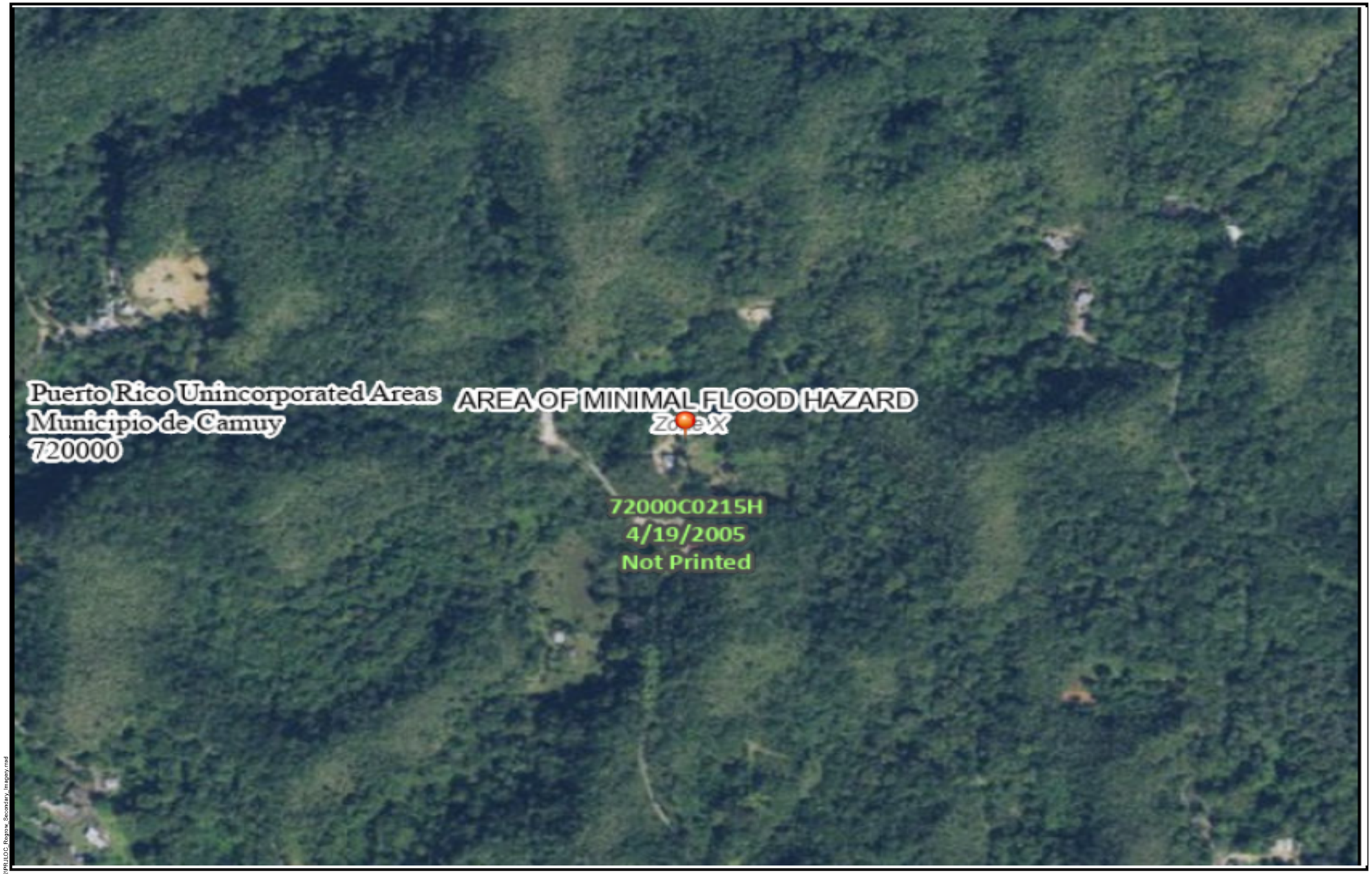
Parcel Coordinates: 18.392450 , -66.860176

N

0 270 540

Feet

File Path: Z:\data\USPR\Tier2\Regrow\apox\FLDZ_Secondary_Imagery_Regrow\FLDZ_Secondary_Imagery_Regrow.apox



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

PUERTO RICO

TETRA TECH

Source: FEMA
https://www.msc.fema.gov

Author: TG | Date: 5/31/2023

Figure 5: NATIONAL FLOOD HAZARD LAYER FIRMETTE
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

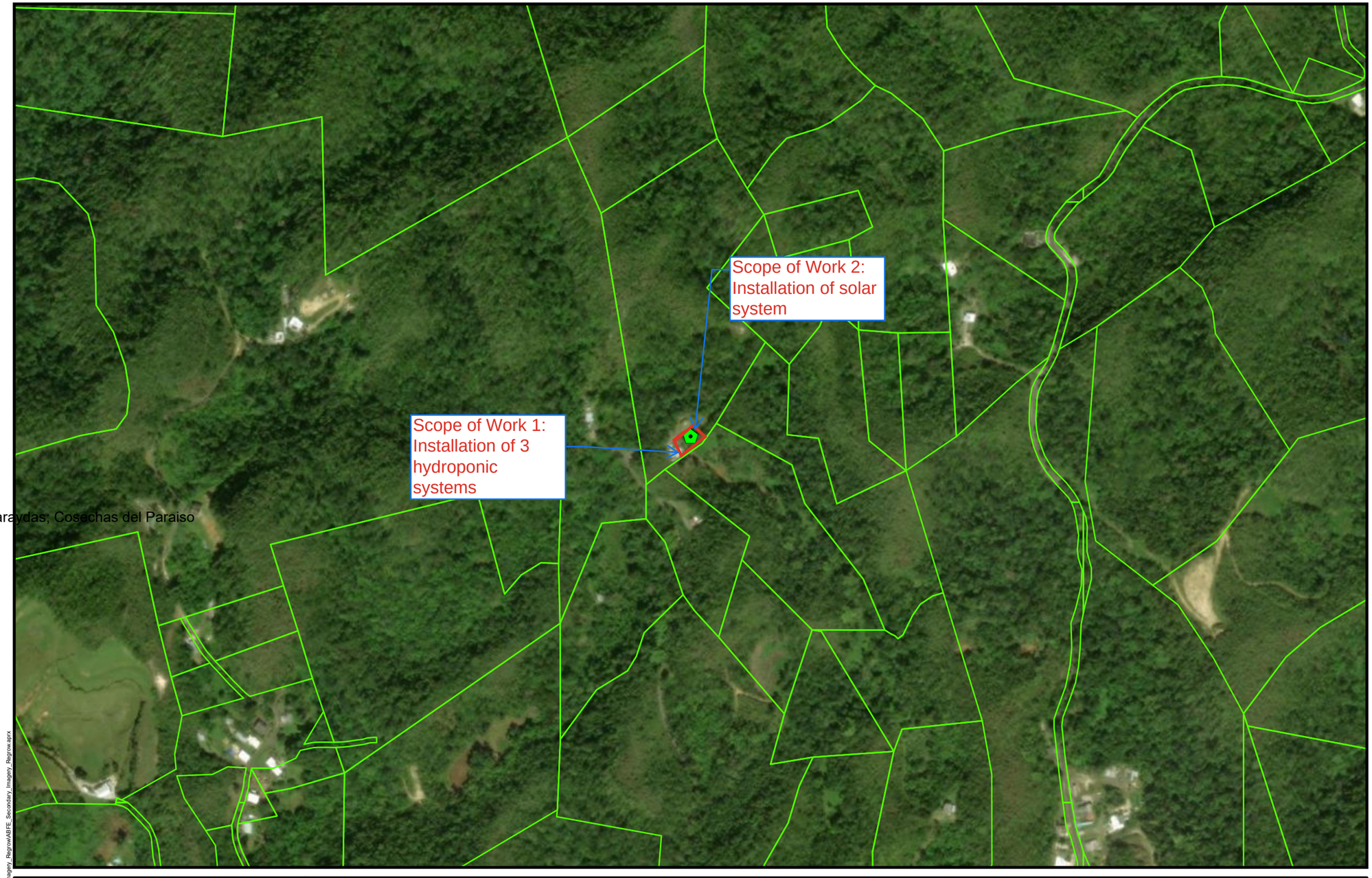
Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 250 500 1,000 1,500 2,000 Feet

File Path: \\etss706gis51\CORRArcGisShare\TDR\data\USPRLT\ec\PRJLOC_Regrow_Secondary_Imagery.mxd



da Maraydas; Cosechas del Paraiso

Legend

Project Parcel

Parcels

ABFE Floodzone

A

AE

AO

VE

X (0.2 % ACF)

Area of Potential Effect

PUERTO RICO

TETRA TECH

Source: FEMA
https://gis.fema.gov

Author: TG	Date: 2/13/2024

File Path: Z:\data\USPR\Tier2\Regrow\apox\ABFE_Secondary_Imagery_Regrow\ABFE_Secondary_Imagery_Regrow.aprx

Figure 6: ADVISORY BASE FLOOD ELEVATION (ABFE) MAP
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

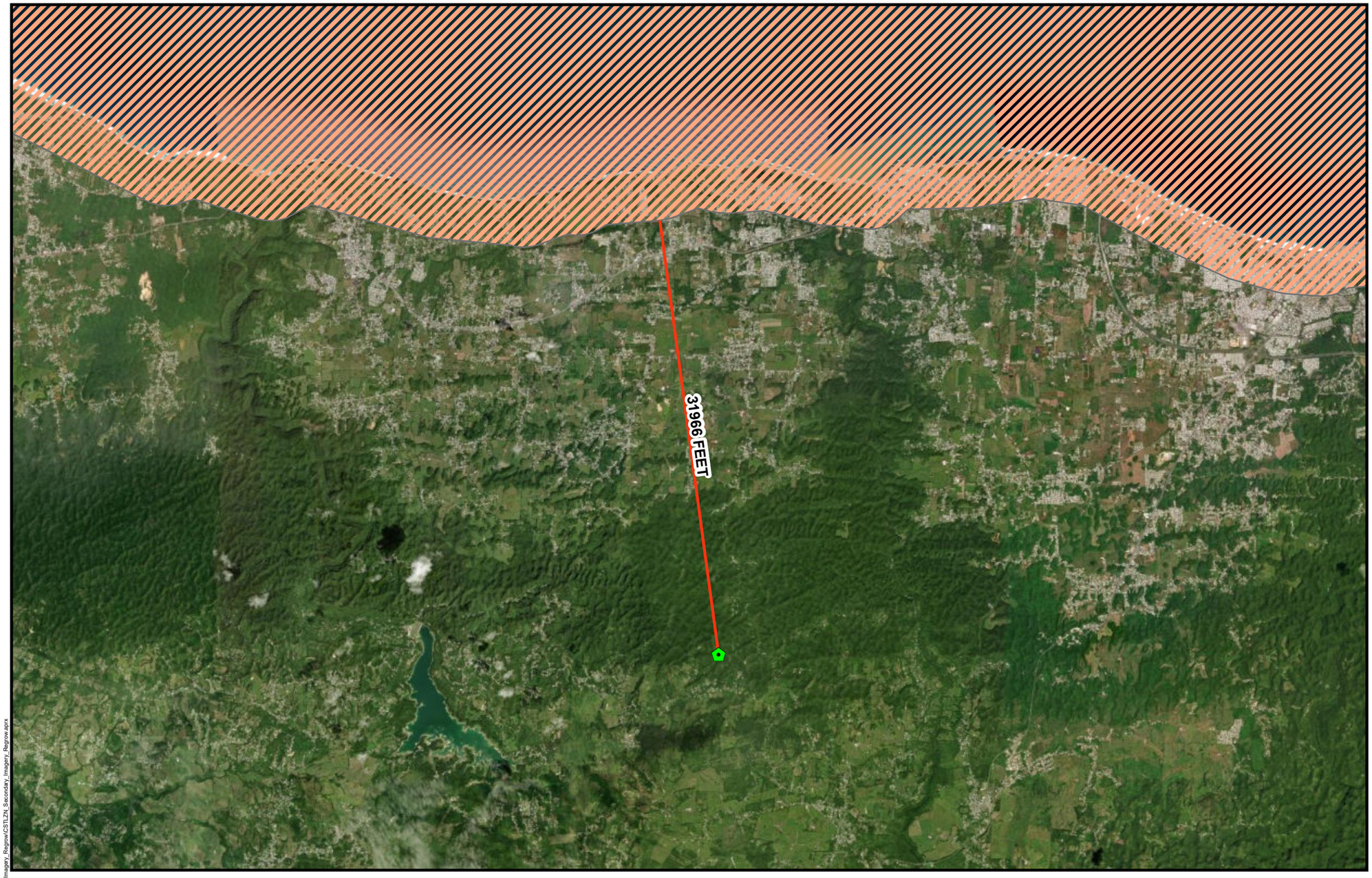
Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 425 850

Feet



Legend

Project Parcel

Coastal Zone Management Boundary

Distance to Nearest Coastal Zone:
31966 Feet

PUERTO RICO

TETRA TECH

Source: NOAA's Ocean Service
https://data.noaa.gov

Author: TG	Date: 10/17/2023

Figure 7: COASTAL ZONE MANAGEMENT
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 7,500 15,000

Feet

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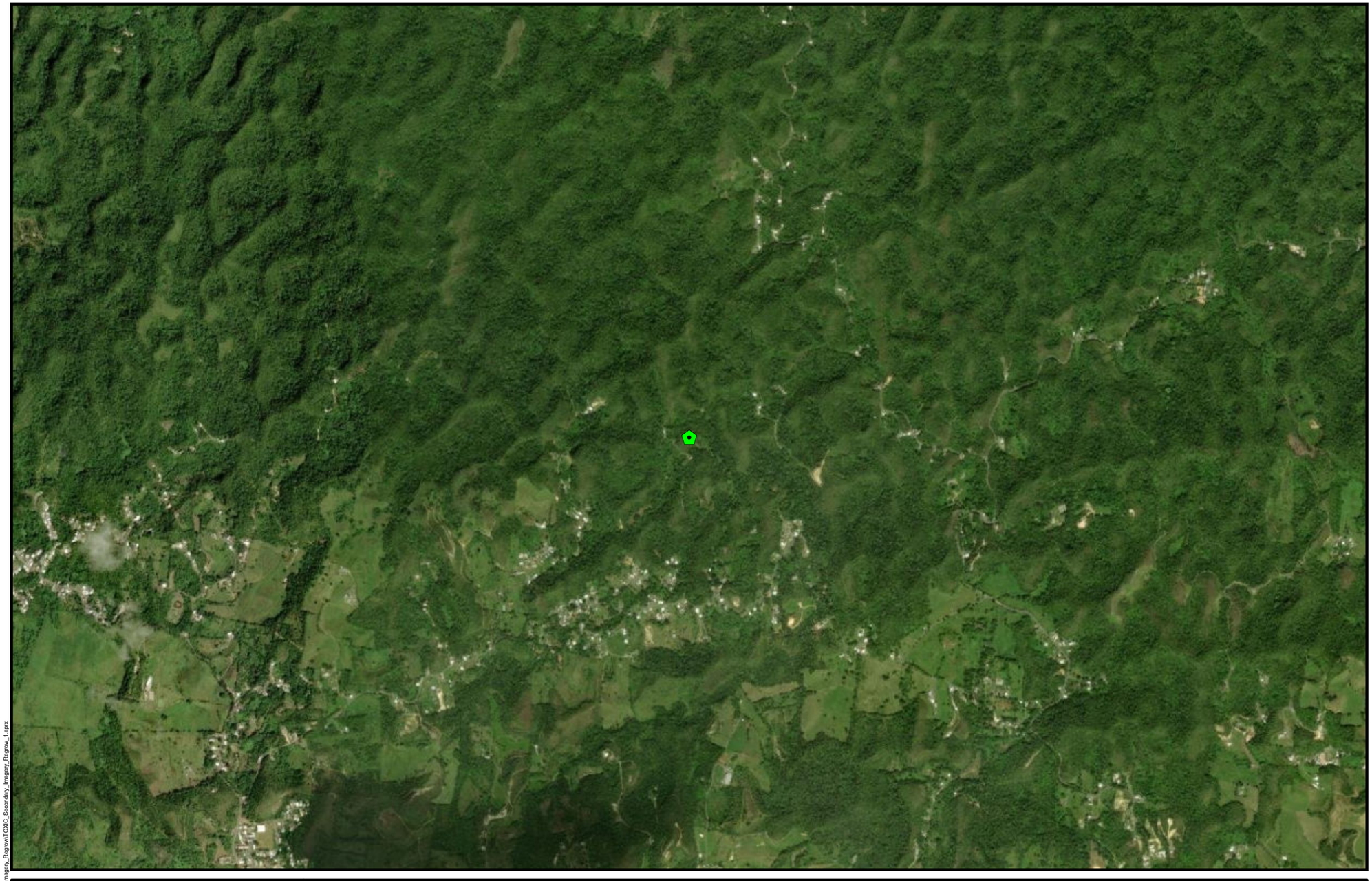

Legend

- Project Parcel
- AIR
- NPDES
- RCRA
- Toxic Release Inventory Site
- Superfund Site
- Brownfield Sites
- 3000 Ft Buffer AIR
- 3000 Ft Buffer NPDES
- 3000 Ft Buffer TRI
- 3000 Ft Buffer Superfund
- 3000 Ft Buffer RCRA
- 3000 Ft Buffer Brownfield

PUERTO RICO

TETRA TECH

Source: E.P.A.
https://www.epa.gov/frs/geospatial-data-download-service

Author: JB/AK | Date: 4/11/2024

Figure 8: TOXIC CHEMICALS AND GASES, HAZARDOUS MATERIALS, CONTAMINATION, AND RADIOACTIVE SUBSTANCES

APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 1,000 2,000

Feet

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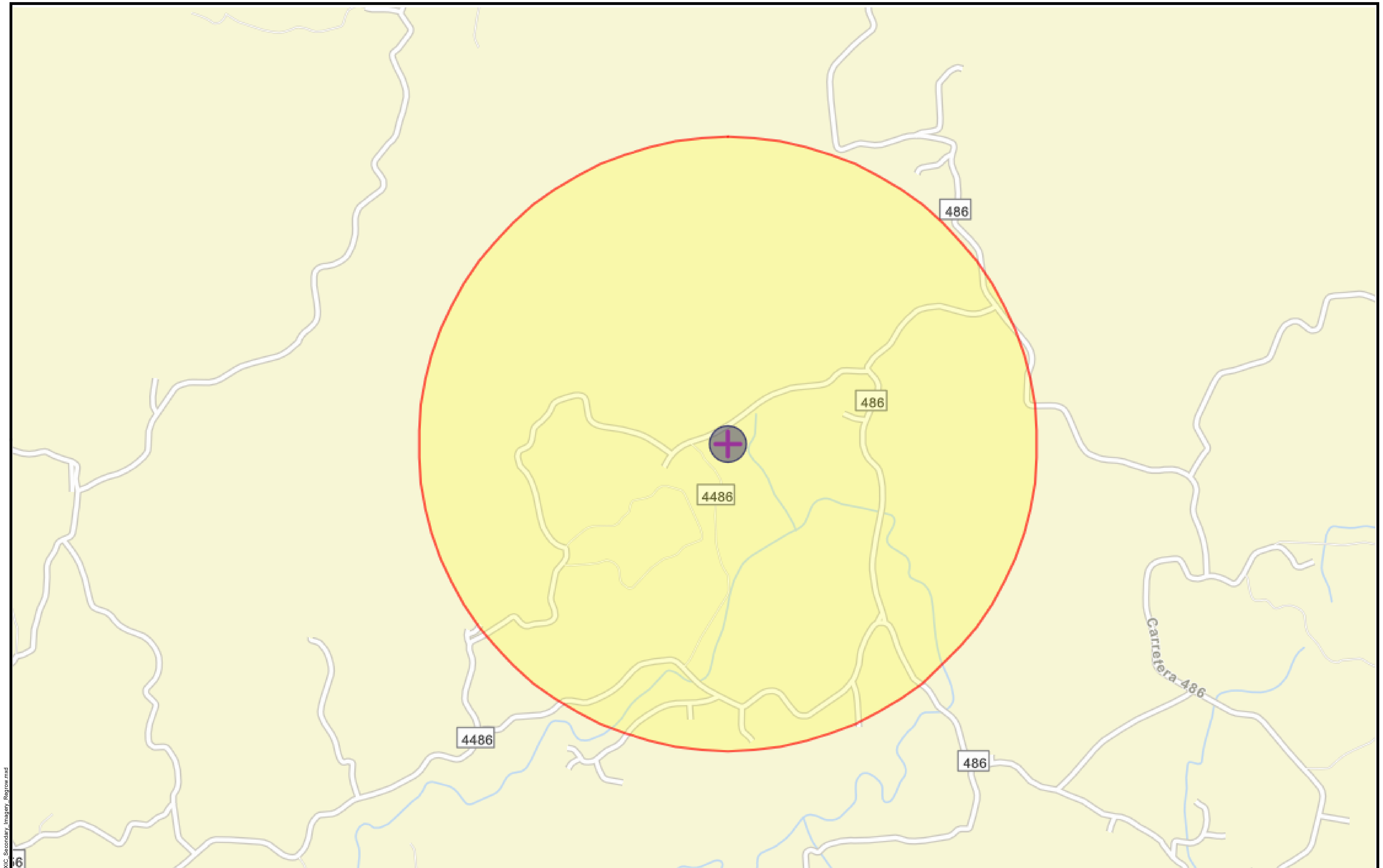


Legend
- Superfund (NPL)
- Toxic Substances Control Act (TSCA)
- Toxic Releases (TRI)
- Brownfields (ACRES)
- Hazardous Waste (RCRAInfo)
- 3000 Ft Buffer

PUERTO RICO

N

0 1,500 3,000

Feet

TETRA TECH

Source: E.P.A.

https://www.epa.gov/frs/geospatial-data-download-service

Author: JB/AK | Date: 5/18/2023

Figure 9: NEPA Assist Map
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

Scope of Work 2: Installation of solar system

Scope of Work 1: Installation of 3 hydroponic systems

Legend

- Project Parcel
- Parcels
- Area of Critical Habitat
- Area of Potential Effect

PUERTO RICO

TETRA TECH

Source: U.S. FISH & WILDLIFE SERVICE
<LINK>https://ecos.fws.gov</LINK>

Author: TG	Date: 4/11/2024

Figure 10: ENDANGERED SPECIES ACT
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

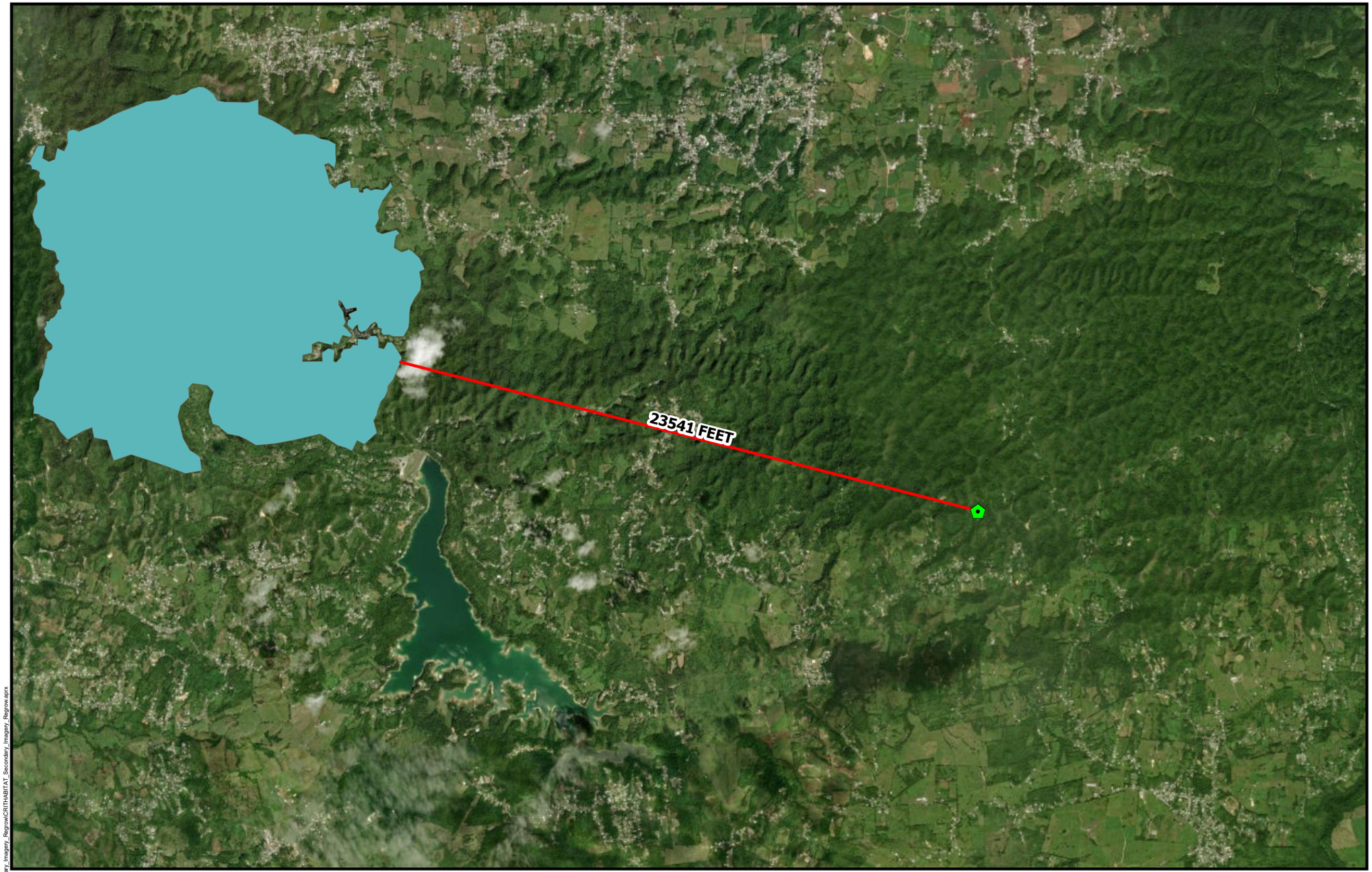
Parcel Coordinates: 18.392450 , -66.860176

N

0 425 850

Feet

File Path: Z:\data\USPR\Tim2\Regrow\aprx\ESA_Secondary_Imagery_Regrow\ESA_Secondary_Imagery_Regrow.aprx



Legend

Project Parcel

Common Name

Puerto Rico harlequin butterfly

Distance to Nearest Critical Habitat:
23541 Feet

PUERTO RICO

TETRA TECH

Source: U.S. FISH & WILDLIFE SERVICE
<LINK>https://ecos.fws.gov</LINK>

Author: TG	Date: 11/3/2023

Figure 11: CRITICAL HABITATS
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

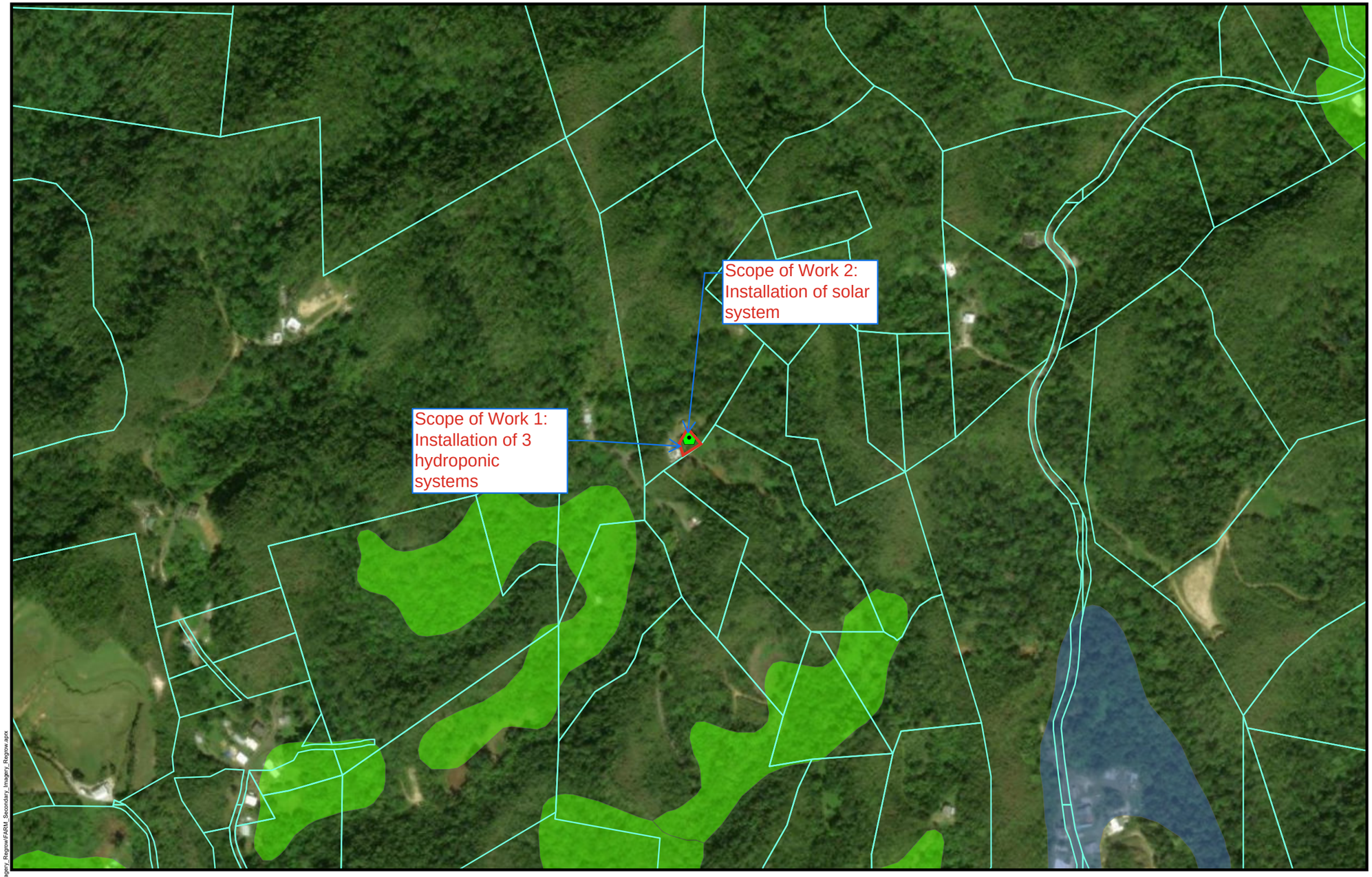
Parcel Coordinates: 18.392450 , -66.860176

N

0 4,000 8,000

Feet

File Path: Z:\data\USPR\TraO\Regrow\arcx\CRITHABITAT_Secondary_Imagery_Regrow\CRITHABITAT_Secondary_Imagery_Regrow.aprx



Legend

Project Parcel

Farm Class

- All areas are prime farmland
- Farmland of statewide importance
- Farmland of statewide importance, if irrigated
- Prime farmland if drained
- Prime farmland if irrigated
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Prime farmland if protected from flooding or not frequently flooded during the growing season

Area of Potential Effect

PUERTO RICO

TETRA TECH

Source: USDA
https://websoilsurvey.sc.egov.usda.gov

Author: TG | Date: 11/3/2023

File Path: Z:\data\USPR\TtaO\Regrow\arcx\FARM_Secondary_Imagery_Regrow\FARM_Secondary_Imagery_Regrow.aprx

Figure 12: FARMLAND PROTECTION
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 425 850

Feet

Legend

- Project Parcel
- Historic ICP Sites
- Cultural Resource Building Point
- Cultural Resource District Point
- Cultural Resource Site Point
- Cultural Resource Structure Point
- Historic Comunidades
- Traditional Urban Centers
- Cultural Resource Building Polygon
- Cultural Resource District Polygon
- Cultural Resource Site Polygon
- Cultural Resource Structure Polygon
- 1 Mile Property Buffer

PUERTO RICO

TETRA TECH

Source: National Park Service
https://www.nps.gov/

Author: TG | Date: 4/11/2024

Figure 13: HISTORIC PRESERVATION
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

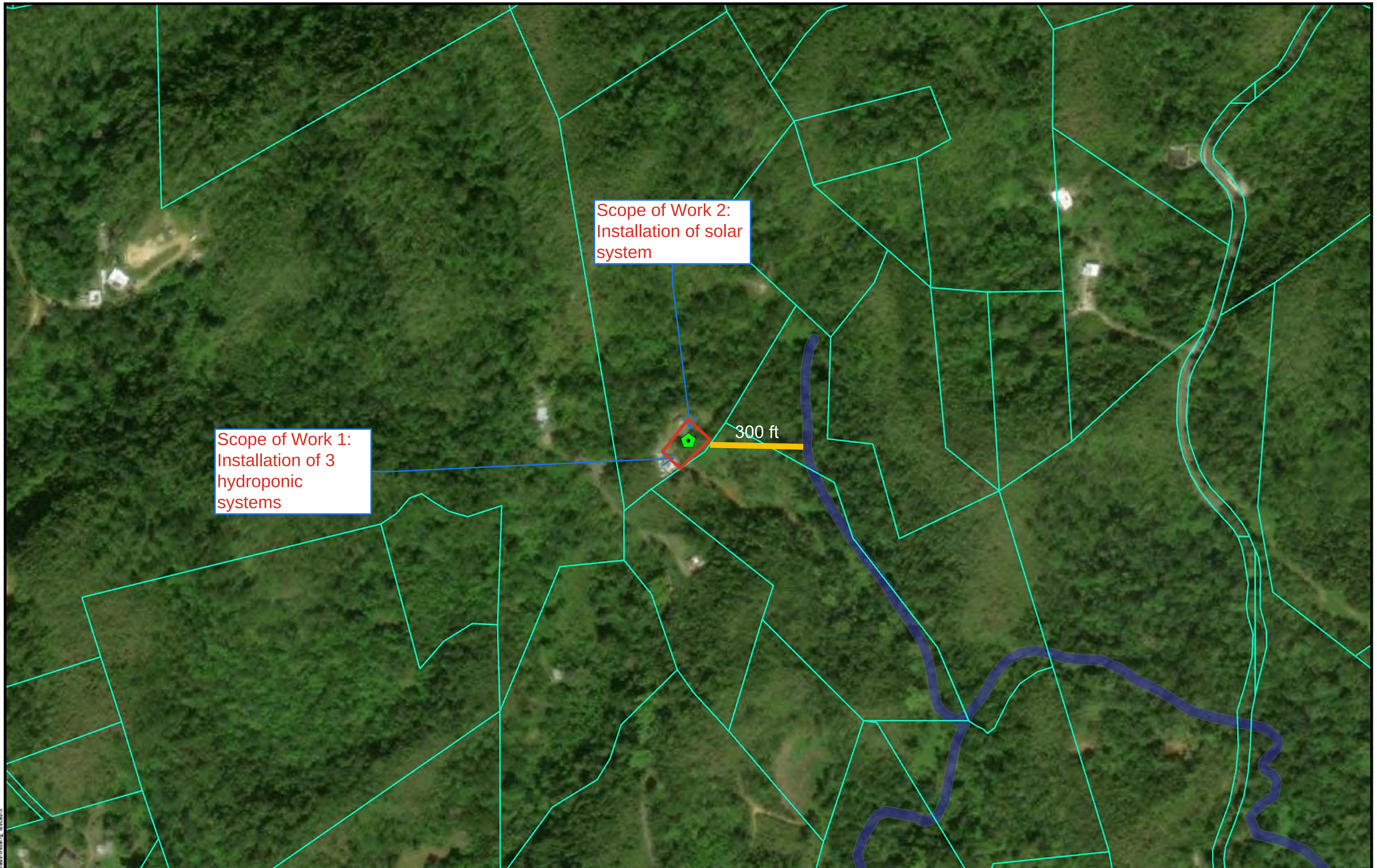
Parcel Coordinates: 18.392450 , -66.860176

N

0 1,000 2,000

Feet

File Path: Z:\data\USPR\Title2\Regrow\aprx\HIST_Secondary_Imagery_Regrow\HIST_Secondary_Imagery_Regrow_1.aprx



Legend

- Project Parcel
- Parcels

WETLAND TYPE

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Area of Potential Effect
- Distance to Weland 300 ft

PUERTO RICO

N

0 300 600

Feet

TETRA TECH

Source: U. S. Fish & Wildlife Service
<LINK>https://www.fws.gov</LINK>

Author: TG | Date: 10/29/2024

Figure 14: WETLANDS
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

Legend

Project Parcel

Wild and Scenic Rivers

Distance to Nearest Wild and Scenic River: 371713 Feet

PUERTO RICO

TETRA TECH

Source: U. S. Forest Service
https://www.fs.usda.gov

Author: TG	Date: 10/23/2023

Figure 15: WILD AND SCENIC RIVERS ACT
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 30,000 60,000

Feet

File Path: Z:\data\USPR\Tier2\Regrow\aprx\WSR_Secondary_Imagery_Regrow\WSR_Secondary_Imagery_Regrow_1.aprx

Legend

- Project Parcel
- Parcels

Landslide Susceptibility

- Extremely High
- Very High
- High
- Moderate
- Low

Area of Potential Effect

PUERTO RICO

TETRA TECH

Source: PRDOH
https://usgs.maps.arcgis.com
apps/webappviewer/index.html?id=10506ecc7f15491daee17647f19248ee

Author: TG	Date: 4/11/2024

Figure 16: SLOPE AND EROSION
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 500 1,000

Feet

File Path: Z:\data\USPR\Tite2\Regrow\aprx\LSLIDE_Secondary_Imagery_Regrow\LSLIDE_Secondary_Imagery_Regrow.aprx

Legend

Project Parcel

Sole Source Aquifer

Biscayne Aquifer SSA

Biscayne Aquifer SSA Streamflow and Recharge Source Zones

Distance to Nearest Aquifer:
5,210,628 FT

PUERTO RICO

TETRA TECH

Source: USGS
https://catalog.data.gov/dataset/epa-sole-source-aquifers

Author: TG	Date: 2/27/2024

File Path: Z:\data\USPR\Tier2\Regrow\apox\AQUIFER_Secondary_Imagery_Regrow\AQUIFER_Secondary_Imagery_Regrow_1.aprx

Figure 17:SOLE SOURCE AQUIFERS
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486 Km 2.4, Bo. Cibao, Camuy P.R. 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.392450 , -66.860176

N

0 459,740 919,480

Feet

APPENDIX C

Additional

Information

Puerto Rico Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of July 31, 2024

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m^3) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:
PUERTO RICO GO

Important Notes

Download National Dataset: dbf | xls | Data dictionary (PDF)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
PUERTO RICO								
Arecibo Municipio	Lead (2008)	Arecibo, PR	11 12 13 14 15 16 17 18 19 20 21 22 23 24	/ /		Part	32,185	72/013
Bayamon Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	22,921	72/021
Catano Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Whole	28,140	72/033
Guaynabo Municipio	PM-10 (1987)	Mun. of Guaynabo, PR	92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09	02/11/2010	Moderate	Part	90,470	72/061
Guaynabo Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	23,802	72/061
Salinas Municipio	Sulfur Dioxide (2010)	Guayama-Salinas, PR	18 19 20 21 22 23 24	/ /		Part	23,401	72/123
San Juan Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	147,963	72/127
Toa Baja Municipio	Sulfur Dioxide (2010)	San Juan, PR	18 19 20 21 22 23 24	/ /		Part	52,441	72/137

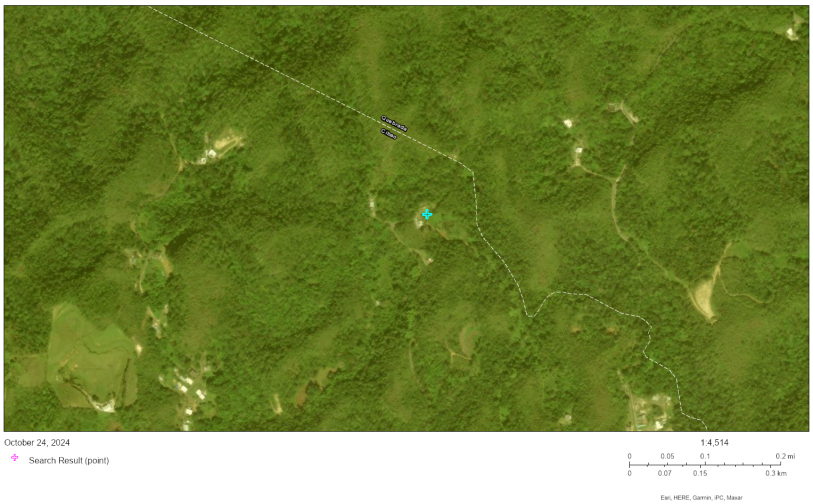
Important Notes

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Camuy Municipio, PR

1 mile Ring Centered at 18.392453,-66.860175
Population: 513
Area in square miles: 3.14



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	2%
Spanish	98%
Total Non-English	98%

COMMUNITY INFORMATION

- Low income: 89 percent
- People of color: 100 percent
- Less than high school education: 54 percent
- Limited English households: 88 percent
- Unemployment: 0 percent
- Persons with disabilities: 22 percent
- Male: 49 percent
- Female: 51 percent
- N/A — Average life expectancy
- $11,246 — Per capita income
- Number of households: 204
- Owner occupied: 78 percent

BREAKDOWN BY RACE

- White: 0%
- Black: 0%
- American Indian: 0%
- Asian: 0%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 0%
- Hispanic: 100%

BREAKDOWN BY AGE

From Ages 1 to 4	3%
From Ages 1 to 18	19%
From Ages 18 and up	81%
From Ages 65 and up	32%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	100%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

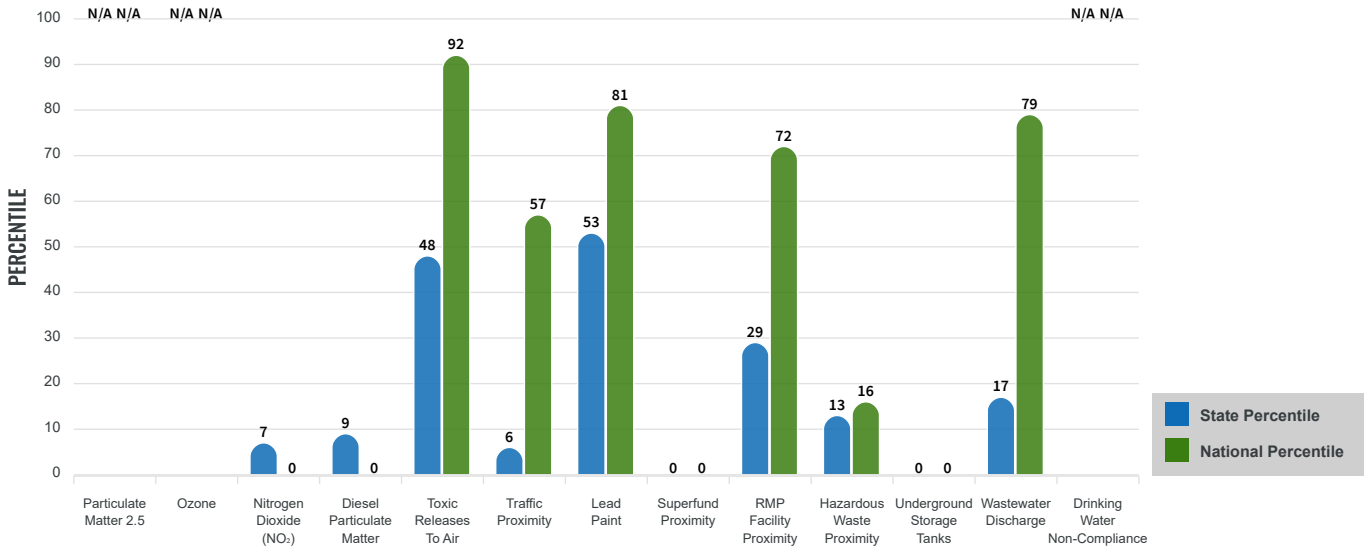
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

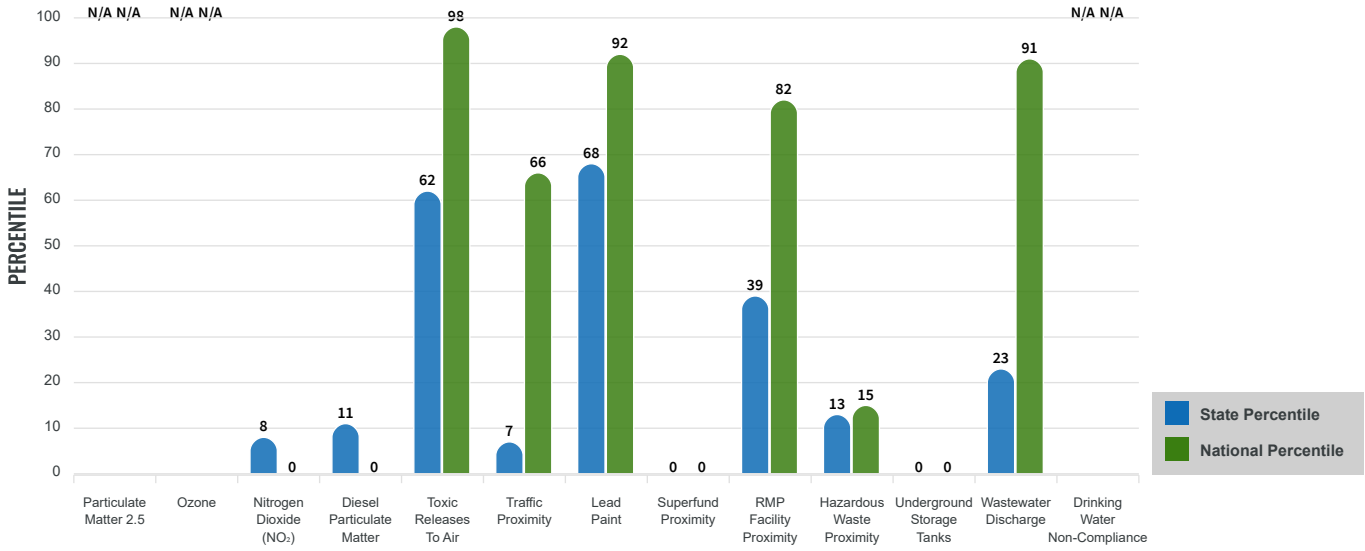
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for 1 mile Ring Centered at 18.392453,-66.860175

Report produced October 24, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
ENVIRONMENTAL BURDEN INDICATORS					
Particulate Matter 2.5 ($\mu g/m^3$)	N/A	N/A	N/A	8.45	N/A
Ozone (ppb)	N/A	N/A	N/A	61.8	N/A
Nitrogen Dioxide (NO_2) (ppbv)	1.2	5.5	5	7.8	0
Diesel Particulate Matter ($\mu g/m^3$)	0.0129	0.0618	8	0.191	0
Toxic Releases to Air (toxicity-weighted concentration)	620	4,300	44	4,600	50
Traffic Proximity (daily traffic count/distance to road)	100,000	1,100,000	5	1,700,000	17
Lead Paint (% Pre-1960 Housing)	0.094	0.16	50	0.3	34
Superfund Proximity (site count/km distance)	0	0.23	0	0.39	0
RMP Facility Proximity (facility count/km distance)	0.083	0.66	28	0.57	29
Hazardous Waste Proximity (facility count/km distance)	0.008	1.2	13	3.5	15
Underground Storage Tanks (count/km^2)	0	0	0	3.6	0
Wastewater Discharge (toxicity-weighted concentration/m distance)	5000	670000	75	700000	85
Drinking Water Non-Compliance (points)	N/A	N/A	N/A	2.2	N/A
SOCIOECONOMIC INDICATORS					
Demographic Index USA	3.67	N/A	N/A	1.34	99
Supplemental Demographic Index USA	5.52	N/A	N/A	1.64	99
Demographic Index State	5.16	4.63	82	N/A	N/A
Supplemental Demographic Index State	3.87	2.72	97	N/A	N/A
People of Color	100%	97%	30	40%	97
Low Income	89%	70%	81	30%	99
Unemployment Rate	0%	14%	18	6%	22
Limited English Speaking Households	88%	66%	91	5%	99
Less Than High School Education	54%	20%	99	11%	99
Under Age 5	3%	3%	56	5%	34
Over Age 64	32%	23%	81	18%	90

*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities 0
Water Dischargers 0
Air Pollution 0
Brownfields 0
Toxic Release Inventory 0

Other community features within defined area:

Schools 0
Hospitals 0
Places of Worship 0

Other environmental data:

Air Non-attainment ..... No
Impaired Waters ..... No

Selected location contains American Indian Reservation Lands* ..... No
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... Yes
Selected location contains an EPA IRA disadvantaged community ..... Yes

Report for 1 mile Ring Centered at 18.392453,-66.860175

Report produced October 24, 2024 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	N/A	N/A	N/A	20%	N/A
Heart Disease	N/A	N/A	N/A	5.8	N/A
Asthma	N/A	N/A	N/A	10.3	N/A
Cancer	N/A	N/A	N/A	6.4	N/A
Persons with Disabilities	22.2%	22.7%	48	13.7%	90

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	N/A	N/A	N/A	12%	N/A
Wildfire Risk	N/A	N/A	N/A	14%	N/A

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	50%	29%	87	13%	98
Lack of Health Insurance	4%	7%	18	9%	25
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access Burden	No	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for 1 mile Ring Centered at 18.392453,-66.860175

Report produced October 24, 2024 using EJScreen Version 2.3

APPENDIX D

Endangered Species

United States Department of the Interior

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

In Reply Refer to:
FWS/R4/CESFO/72027-Gen

Submitted Via Electronic Mail: jcperez@vivienda.pr.gov

Juan Carlos Pérez-Bofill, PE, MEng.
Director – Disaster Recovery CDBG-DR Program
Puerto Rico Department of Housing
P.O. Box 21365
San Juan, P.R 00928-1365

Re: CDBG-DR PR-RGRW-02468 Aida R. Ocasio Pérez
DBA Hacienda Maraydas: Coshechas del Paraíso,
Camuy, Puerto Rico

Dear Mr. Pérez-Bofill

Thank you for your letter dated September 17, 20234, requesting comments on 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 Puerto Rico Department of Housing (PRDOH) is proposing the purchase and installation of a solar system, hydroponic system and the purchase of a utility task vehicle (UTV) for a parcel located at State Road PR-4486, Km. 2.4, Cibao Ward in the municipality of Camuy. During this project no trees will be removed but some vegetation clearing and grading will be required. The proposed scope of work (SOW) consists of the following:

SOW 1: 18°23'32.8"N 66°51'36.6"W

- Purchase and installation of three hydroponic systems (30 feet (Ft) x 15 Ft) metal structure with Saran and plastic cover.
- Germination table, 55 gallons nutrient tanks, water and air pumps.
- No concrete floor is proposed in this SOW.

SOW 2: 18°23'33.0"N 66°51'36.6"W

- Purchase and installation of a solar system.
- The installation of the support solar panel racks will require the construction of 2.5 Ft x 2.5 Ft x 2.5 Ft onsite poured concrete bases.

Using the Information for Planning and Consultation (IPaC) system the proponent has determined that the proposed project lies within the range of Puerto Rican boa (*Chilabothrus inornatus*), Puerto Rican parrot (*Amazona vittata*), Puerto Rican harlequin butterfly (*Atlantea tulita*) and the fern, *Tectaria estremerana* (no common name).

The Caribbean Determination Key (DKey) in the U.S. Fish and Wildlife Service's (the Service) online IPaC application was used (project code: 2024-0140538) to evaluate the potential impacts to federally listed species for this project. Based on the answers provided, a concurrence letter was obtained for the Puerto Rican boa which determined that the proposed actions for this Project may affect but not likely to adversely affect (NLAA) this species. Conservation measures will be implemented. As for the Puerto Rican harlequin butterfly, Puerto Rican parrot and *Tectaria estremerana* a consultation is required.

Based on the nature of the project, scope of work, information available, and analysis of the area where the project will be developed (currently used for banana plantation), PRDOH has determined that the proposed project may affect, but is not likely to adversely affect (NLAA) the Puerto Rican harlequin butterfly, Puerto Rican parrot and *Tectaria estremerana.* Conservation measures provided by IPaC will be implemented. For the fern, PRDOH will require that a survey should be conducted before any vegetation is removed.

We have reviewed the information provided and our files, and concur with PRDOH's determination that the proposed project may affect, but is not likely to adversely affect the Puerto Rican parrot, Puerto Rican harlequin butterfly and *Tectaria estremerana* with the implementation of the conservation measures. Also, the Service acknowledge receipt of the NLAA concurrence letter for the Puerto Rican boa.

In view of this, 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.

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

Sincerely,

LOURDES MENA

Digitally signed by LOURDES MENA
Date: 2024.10.28 21:44:56 -04'00'

Lourdes Mena
Field Supervisor

drr
cc:
HUD

September 17, 2024

Lourdes Mena
Field Supervisor
Caribbean Ecological Services Field Office
U.S. Fish and Wildlife Service
Office Park I, Suite 303
State Road #2 Km 156.5
Mayagüez, Puerto Rico 00680
Email: Caribbean_es@fws.gov; Lourdes_Mena@fws.gov

RE: Puerto Rico Department of Housing / Re-Grow Program
PR-RGRW-02468 – Aida R. Ocasio Pérez DBA Hacienda Maraydas: Coshechas del Paraíso
Endangered Species Concurrence for NLAA Determination

Dear Ms. Mena:

The Puerto Rico Department of Housing (PRDOH) is requesting an informal consultation under Section 7 (a)(2) of the Endangered Species Act (Act) (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and in accordance with the Fish and Wildlife Coordination Act (47 Stat. 401, as amended; 16 U.S.C. 661 et seq.) for the proposed project PR-RGRW-02468, located at PR-4486 Road Km. 2.4, Cibao Ward, Camuy, PR 00627 (Parcel ID# 074-000-002-15). The farm was used in the past for beans and cilantro cropping and is currently used for banana plantation.

The project is part of the Re-Grow Puerto Rico Urban-Rural Agriculture Program (RGRW) that aims to increase agricultural capacity while promoting and increasing food security island wide. This Program will enhance and expand agricultural production related to economic revitalization and sustainable development activities.

The proposed project, PR-RGRW-02468, consists of two scopes of work (SOW) within the parcel. SOW-1 consists in the purchase and installation of three hydroponic systems on NFT tables at coordinates 18.392450, -66.860176. The proposed is a 30-foot x 15-foot metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 feet. No concrete floor is proposed for SOW-1.

SOW-2 consists in the purchase and installation of a solar system at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW inverter/charger 40/48, FM80 Outback charge controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS batteries, 4 solar panel racks, 1 galvanized tube battery rack, 1 Midnite combiner box, 6 strings, 1 Midnite braker box 175 AMPS, 1 braker DC 80 AMPS, 4 braker DC 20 AMPS, braker AC 30 AMPS and braker box interior. The installation of the support solar panel racks will require the construction of 2.5-foot x 2.5-foot x 2.5-foot on-site poured concrete bases.

The water to be used for the hydroponic system will be obtained from the existing local utility connection located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear feet. The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries are proposed to be located at coordinates 18.392301, - 66.860244. An aboveground connection, with an estimated length of 60 feet, will be installed from the batteries to the hydroponic proposed structure. The intent use of funds also includes the purchase of a utility task vehicle (UTV) that will be stored in the applicant's house area, at coordinates 18.392344, -66.860315.

The proposed project is located in a rural, mountainous terrain surrounded by mature vegetation. The property is located west of PR-4486 Road in Camuy. Trees will not be removed during this project but some vegetation clearing and grading is needed. The National Wetlands Inventory indicated that no wetlands are located within the proposed project area.

Using the Information for Planning and Consultation (IPaC) system, we have determined that the proposed project lies within the range of the following federally listed species:

Name of the species	**Threatened/Endangered/Candidate**
Puerto Rican Parrot (*Amazona vittata*)	Endangered
Puerto Rican Boa (*Chilabothrus inornatus*)	Endangered
Puerto Rican Harlequin Butterfly (*Atlantea tulita*)	Threatened
Fern (*Tectaria estremerana)*	Endangered
Critical Habitat	
There are no critical habitats at this location.	

Based on site review and site photos, no suitable habitat was found within the proposed project area for the listed species.

The Puerto Rican Parrot habitat requirements per the U.S. Fish and Wildlife Service are as follows: "The habitat of the parrot is generally identified as the *Palo Colorado*, *Palma de Sierra*, and *Tabonuco* forests types of the upper zones of the Luquillo Mountains within

the El Yunque National Forest. This bird feeds chiefly on wild fruits, particularly the Sierra Palm (*Prestoria montana*), but may also consume flowers and tender shoots. During October, when other fruits are scarce, the Tabonuco fruit (*Dacryodes excelsa*) becomes an important food item."

The Puerto Rican Boa habitat requirements per the U.S. Fish and Wildlife Service are as follows: "The Puerto Rican Boa is considered a habitat generalist and tolerates a wide variety of habitat types (terrestrial and arboreal). These include: rocky areas and haystack hills, trees and branches, rotting stumps, caves (entrances and inside), plantations, various types of forested areas such as karst and mangrove forests, forested urban and rural areas, and along streams and road edges. Cave ecosystems and their surrounding forests are considered particularly important because of the availability of such ecological resources such as prey, shelter, thermal gradients, and mates for reproduction."

The Puerto Rican Harlequin Butterfly habitat requirements per the IPaC species profile are as follows: "Forested habitat: mosaic of forested habitat with canopy cover between 50 to 85 percent, average canopy height of 20 feet, and plant host cover of more than 30 percent. Water and nectar sources for adult PRHBs may vary according to the life zone and habitat type. All the sites where the PRHB occurs have a close (within a 1 km radius) water source (e.g., creek, river, pond, among others). Caterpillar feeds almost exclusively on *Oplonia spinosa*, but there are a few records of feeding on *Odontonema cuspidatum* and *Justicia mirabiloides*. All these plant species are in the family Acanthaceae. Images have been observed feeding on flowers of several native trees."

The IPaC does not list habitat requirements for the listed fern. A survey of the area should be conducted for ferns before any vegetation is removed.

Based on the nature of the project, previous site disturbance, scope of work, information available, and a careful analysis of the Project Site, and IPaC species list, we have made the following effects determinations:

Name of the species	Effect Determination	Conservation Measures that will be implemented
Puerto Rican Parrot (*Amazona vittata*)	Not Likely to Adversely Affect (NLAA)	USFWS Puerto Rican Parrot Conservation Measures 2023
Puerto Rican Boa (*Chilabothrus inornatus*)	Not Likely to Adversely Affect (NLAA)	USFWS Puerto Rican Boa Conservation Measures 2024
Puerto Rican Harlequin Butterfly (*Atlantea tulita*)	Not Likely to Adversely Affect (NLAA)	USFWS Puerto Rican Harlequin Butterfly Conservation Measures 2023
Fern (*Tectaria estremerana)*	Not Likely to Adversely Affect (NLAA)	No Conservation Measures Listed, a site survey should be conducted before vegetation is removed.

Given the current land use and frequent disturbance and lack of sightings of the listed species within the vicinity, PRDOH has determined that the project is not likely to

adversely affect the listed species provided the attached Conservation Measures are implemented as part of the proposed project. The automated informal consultation process was completed on September 6th through USFWS Information for Planning and Consultation website (https://ipac.ecosphere.fws.gov/).

In order to complete the informal consultation process, we are requesting your concurrence for the NLAA determinations included in this letter. Attached to this letter, we are including the documents used to reach our effect determinations for the listed species.

For any questions or clarifications, please do not hesitate to contact us at the information below.

Thank you in advance for your consideration of this issue.

Sincerely,

Juan Carlos Pérez Bofill, PE, MEng.
Director – Disaster Recovery, CDBG-DR Program
environmentcdbg@vivienda.pr.gov | 787.274.2527 ext. 4320

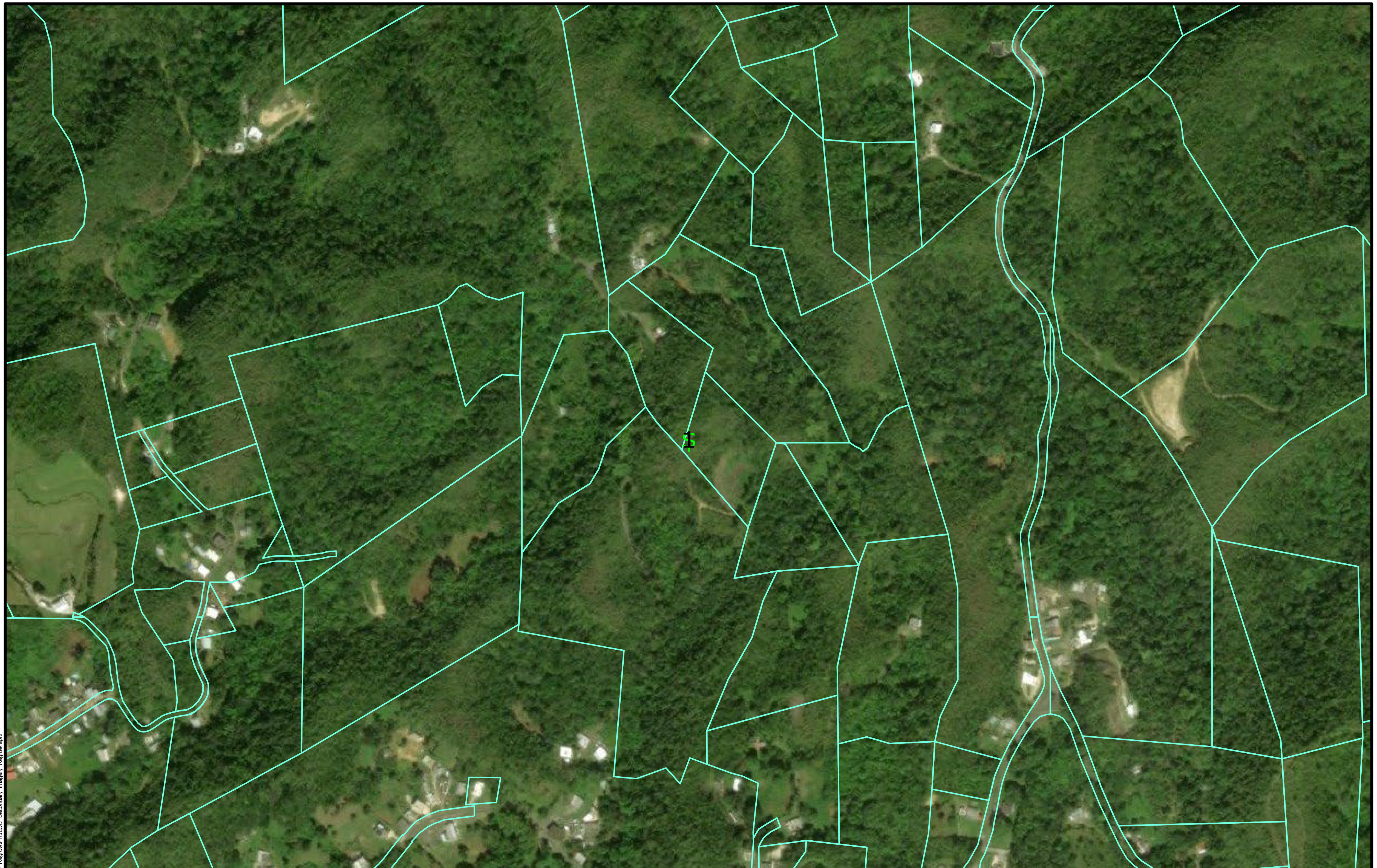
Attachments:

Appendix A:
- Figure 1 – Project Location Map
- Figure 2 – Area of Potential Effect Map
- Figure 3 – Wetland Map
- Figure 4 – Endangered Species Map
- Figure 5 – Critical Habitats Map
- Figure 6 – Farmland Protection Map

Appendix B: Species List Caribbean Ecological Services and Consistency Letter SOW-1 & SOW-2
Appendix C: Site Photos
Appendix D: USFWS Puerto Rican Parrot Conservation Measures 2023
Appendix E: USFWS Puerto Rican Boa Conservation Measures 2024
Appendix F: Puerto Rican Harlequin Butterfly Conservation Measures 2024
Appendix G: Puerto Rican Harlequin Butterfly Identification Package

C: Angel G. López-Guzmán, MSEM
Deputy Director
Permits and Environmental Compliance Division

Appendix A: Figures



Legend

Project Parcel

Parcels

PUERTO RICO

0 425 850

Feet

PROJECT LOCATION

APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486, Km. 2.4 Barrio Cibao, Camuy PR 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.39245 , -66.860176

TETRA TECH

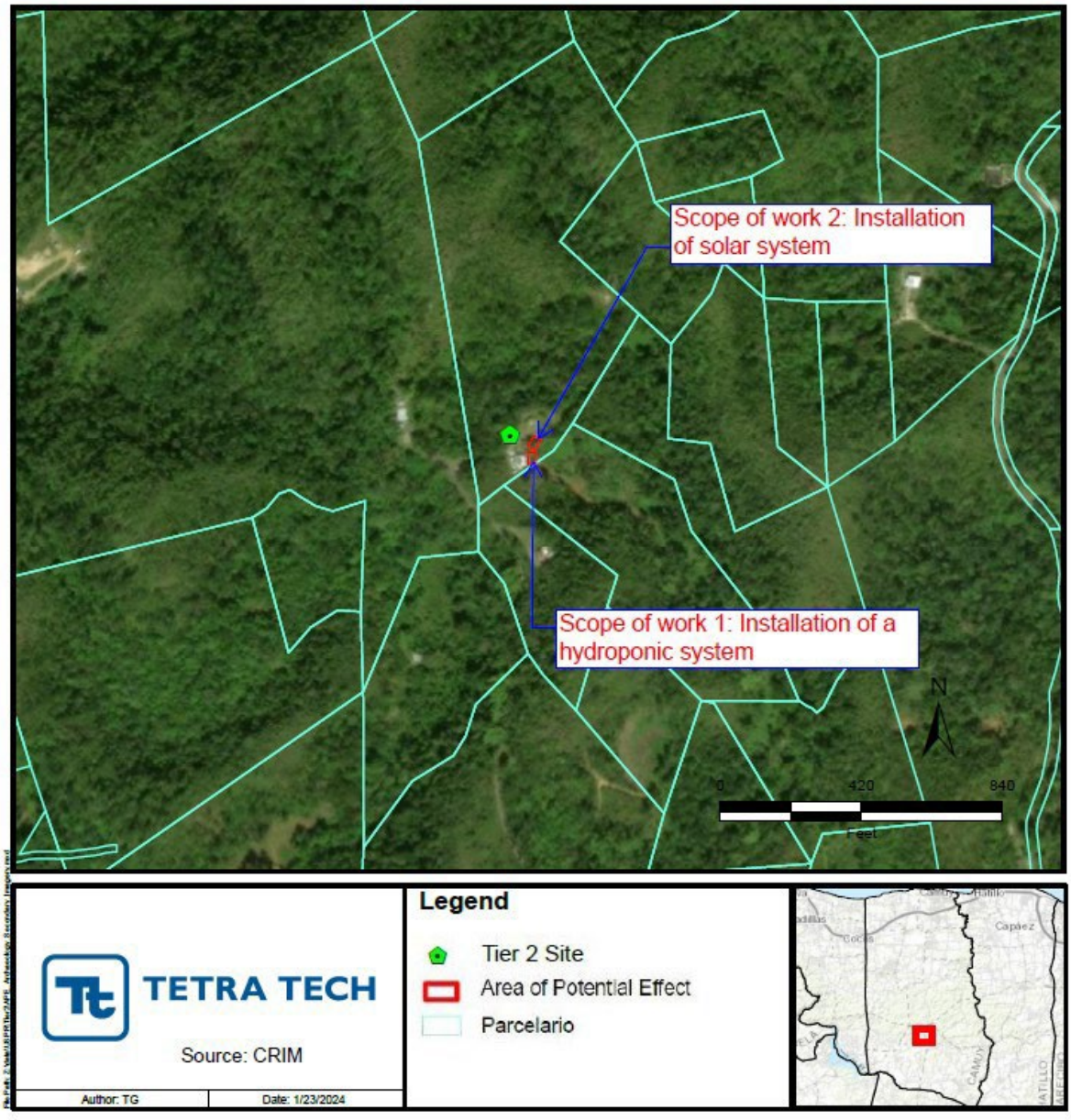
Source: ESRI

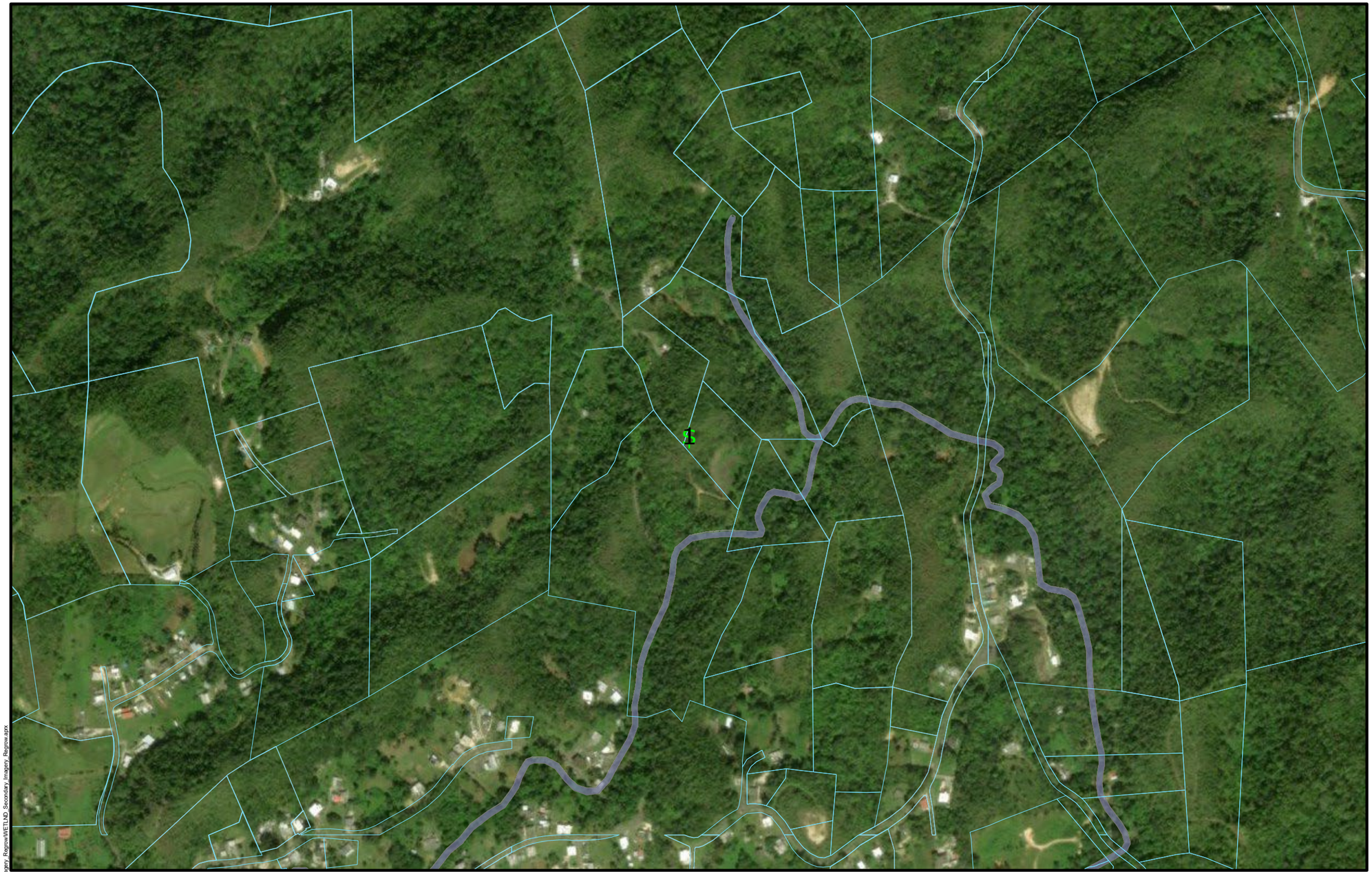
https://catastro.crimpr.net/cdprpc/

Author: TG	Date: 2/13/2024

File Path: Z:\data\USPR\Tier2\Regrow\aprx\PRJLOC_Secondary_Imagery_Regrow\PRJLOC_Secondary_Imagery_Regrow.aprx

Project (Parcel) Location – Area of Potential Effect Map (Aerial)





PUERTO RICO

WETLANDS
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486, Km. 2.4 Barrio Cibao, Camuy PR 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.39245, -66.860176

TETRA TECH

Source: U. S. Fish & Wildlife Service
https://www.fws.gov

Author: TG	Date: 11/3/2023

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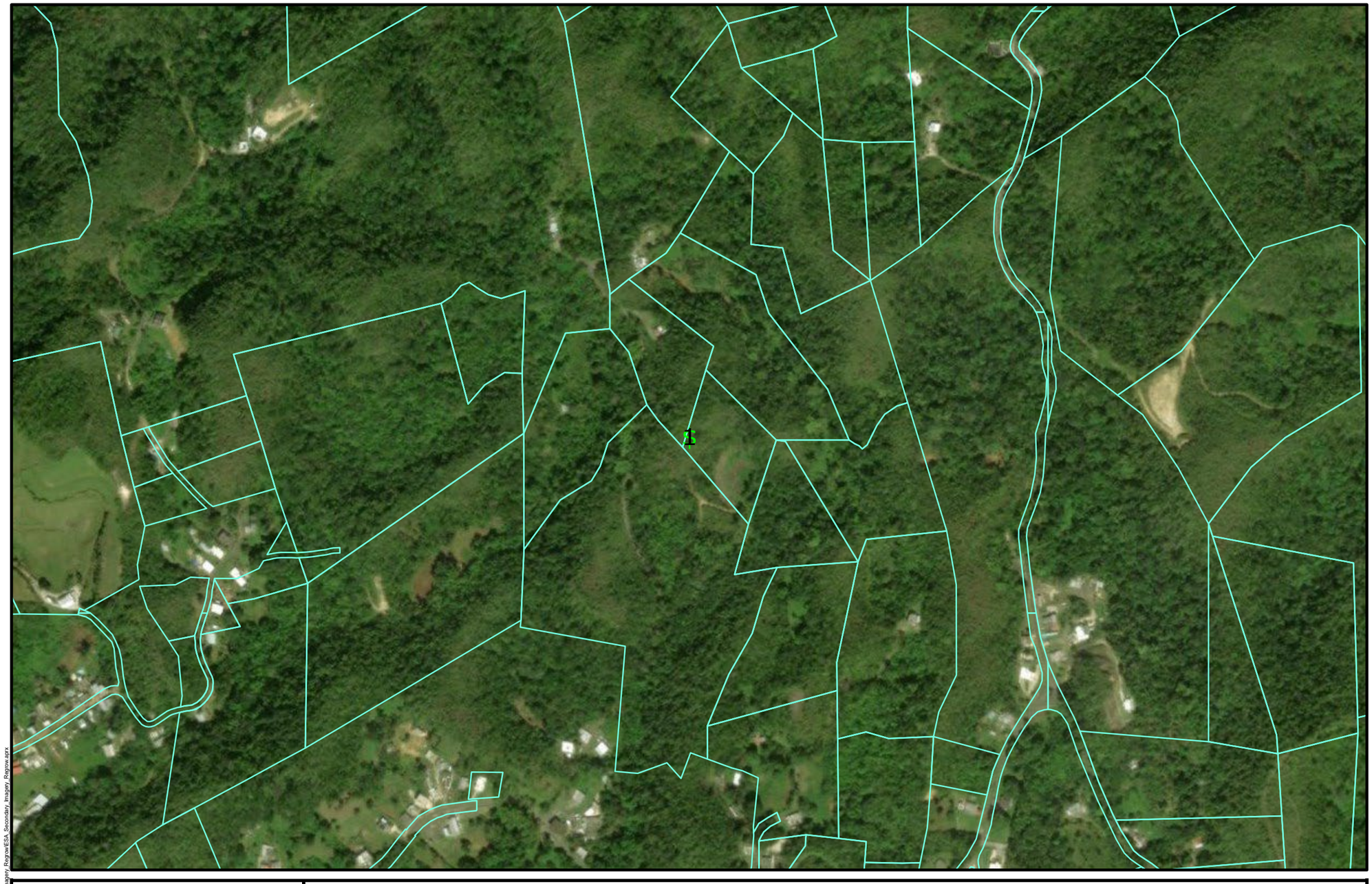

Legend

- Project Parcel
- Parcels
- Area of Critical Habitat

PUERTO RICO

TETRA TECH

Source: U.S. FISH & WILDLIFE SERVICE
https://ecos.fws.gov

Author: TG	Date: 2/13/2024

ENDANGERED SPECIES ACT
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486, Km. 2.4 Barrio Cibao, Camuy PR 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.39245, -66.860176

0 425 850

Feet

File Path: Z:\data\USPR\Tier2\Regrw\apxx\ESA_Secondary_Imagery_Regrw\ESA_Secondary_Imagery_Regrw.aprx

Legend

1 Project Parcel

Common Name

Puerto Rico harlequin butterfly

Distance to Nearest Critical Habitat:
23858 Feet

PUERTO RICO

TETRA TECH

Source: U.S. FISH & WILDLIFE SERVICE
https://ecos.fws.gov

Author: TG	Date: 11/3/2023

CRITICAL HABITATS
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486, Km. 2.4 Barrio Cibao, Camuy PR 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.39245, -66.860176

0 4,000 8,000

Feet

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Legend

Project Parcel

Farm Class

- All areas are prime farmland
- Farmland of statewide importance
- Farmland of statewide importance, if irrigated
- Prime farmland if drained
- Prime farmland if irrigated
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Prime farmland if protected from flooding or not frequently flooded during the growing season

PUERTO RICO

TETRA TECH

Source: USDA
https://websoilsurvey.sc.egov.usda.gov

Author: TG	Date: 11/3/2023

File Path: Z:\Data\USRR1Tier2\Regrow\land\FARM_Secondary_Imagery_Regrow\FARM_Secondary_Imagery_Regrow.aprx

FARMLAND PROTECTION
APPLICANT ID: PR-RGRW-02468

ADDRESS: Carretera 4486, Km. 2.4 Barrio Cibao, Camuy PR 00627

Name of Development: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso

Parcel Coordinates: 18.39245, -66.860176

0 425 850

Feet

Appendix B:
Species List Caribbean Ecological Services and Consistency Letter
SOW-1 & SOW-2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Post Office Box 491
Boqueron, PR 00622-0491
Phone: (939) 320-3135 Fax: (787) 851-7440
Email Address: CARIBBEAN_ES@FWS.GOV

In Reply Refer To: 09/06/2024 13:18:07 UTC
Project Code: 2024-0140538
Project Name: PR-RGRW-02468

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Caribbean Ecological Services Field Office
Post Office Box 491
Boqueron, PR 00622-0491
(939) 320-3135

PROJECT SUMMARY

Project Code: 2024-0140538
Project Name: PR-RGRW-02468
Project Type: Restoration / Enhancement - Agricultural
Project Description: The Scope of work 1 (SOW-1) includes the purchase and installation of a 3 hydroponic system on NFT tables at coordinates 18.392450, -66.860176. The proposed is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 ft. No concrete floor is proposed for the SOW.

The Scope of Work 2 (SOW-2) consists of the purchase and installation of a solar system at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW Inverter/Charger 40/48, FM80 Outback Charge Controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS Batteries, 4 Solar Panel Racks, 1 Galvanized Tube Battery Rack 1 Midnite Combiner Box 6 Strings, 1 Midnite Braker Box 175 AMPS, 1 Braker DC 80 AMPS, 4 Braker DC 20 AMPS, Braker AC 30 AMPS and Braker Box Interior. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases. The water to be used for the hydroponic system will be obtained from the existing local utility connection located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear ft.

The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries are proposed to be located at coordinates 18.392301, -66.860244. An aboveground connection, with an estimated length of 60 ft, will be installed from the batteries to the hydroponic proposed structure.

The intent use of funds includes the purchase of a Utility Task Vehicle (UTV) that will be stored in the applicant house area, at coordinates 18.392344, -66.860315.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@18.39236405,-66.86013364087107,14z

Counties: Camuy County, Puerto Rico

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

BIRDS

NAME	STATUS
Puerto Rican Parrot *Amazona vittata*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3067

REPTILES

NAME	STATUS
Puerto Rican Boa *Chilabothrus inornatus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6628
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/Z6OQYRJPPNHK7H4XWOZAH2BVYA/documents/generated/7159.pdf

INSECTS

NAME	STATUS
Puerto Rican Harlequin Butterfly *Atlantea tulita*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9005
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/Z6OQYRJPPNHK7H4XWOZAH2BVYA/documents/generated/7168.pdf

FERNS AND ALLIES

NAME	STATUS
Tectaria estremerana	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3630

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

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[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO FWS MIGRATORY BIRDS OF CONCERN WITHIN THE VICINITY OF YOUR PROJECT AREA.

WETLANDS

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.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

IPAC USER CONTACT INFORMATION

Agency: Tetra Tech
Name: Shelby McDowell
Address: 2301 Lucien Way #120
City: Maitland
State: FL
Zip: 32751
Email shelby.mcdowell@tetratech.com
Phone: 4096591563

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Post Office Box 491
Boqueron, PR 00622-0491
Phone: (939) 320-3135 Fax: (787) 851-7440
Email Address: CARIBBEAN_ES@FWS.GOV

In Reply Refer To: 09/06/2024 13:42:27 UTC
Project code: 2024-0140538
Project Name: PR-RGRW-02468

Subject: Concurrence letter for the project named 'PR-RGRW-02468' for specified threatened and endangered species, that may occur in your proposed project location, pursuant to the IPaC determination key titled Caribbean Determination Key (DKey).

Dear Applicant:

Thank you for using the assisted evaluation keys in IPaC. This letter is provided pursuant to the Service's authority under the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531et seq.). On September 06, 2024, Shelby McDowell used the Caribbean DKey; dated April 03, 2024, in the U.S. Fish and Wildlife Service's online IPaC application to evaluate potential impacts to federally listed species, from a project named 'PR-RGRW-02468'. The project is located in Camuy County, Puerto Rico (shown below).

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@18.39236405,-66.86013364087107,14z

The following description was provided for the project 'PR-RGRW-02468':

The Scope of work 1 (SOW-1) includes the purchase and installation of a 3 hydroponic system on NFT tables at coordinates 18.392450, -66.860176. The proposed is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 ft. No concrete floor is proposed for the SOW.

The Scope of Work 2 (SOW-2) consists of the purchase and installation of a solar system at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW Inverter/Charger 40/48, FM80 Outback Charge Controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS Batteries, 4 Solar Panel Racks, 1 Galvanized Tube Battery Rack 1 Midnite Combiner Box 6 Strings, 1 Midnite Braker Box 175 AMPS, 1 Braker DC 80 AMPS, 4 Braker DC 20 AMPS, Braker AC 30 AMPS and Braker Box Interior. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases. The water to be used for the hydroponic system will be obtained from the existing local utility connection located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear ft.

The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries are proposed to be located at coordinates 18.392301, -66.860244. An aboveground connection, with an estimated length of 60 ft, will be installed from the batteries to the hydroponic proposed structure.

The intent use of funds includes the purchase of a Utility Task Vehicle (UTV) that will be stored in the applicant house area, at coordinates 18.392344, -66.860315.

Based on your answers and the assistance of the Service's Caribbean DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Puerto Rican Boa (*Chilabothrus inornatus*)	Endangered	NLAA

Based on the answers provided in IPaC, the proposed project is consistent with a "may affect but is not likely to adversely affect" (NLAA) for the species listed above because your project impacts to the species will be avoided or minimized using the **Conservation Measures** you agreed to implement. These conservation measures must be implemented during the project development to ensure compliance with Section 7(a)(2) of the ESA.

No further action is required for the species listed above. However, be aware that reinitiation of consultation may be necessary if later modifications are made to the project so that it no longer meets the criteria or outcome described above, or if new information reveals effects of the action

that could affect listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed.

The Service will notify you within 30 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for federally listed species in the Caribbean. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the Caribbean Ecological Services Field Office to apply local knowledge to evaluate the Action, as we may identify a small subset of actions having unanticipated impacts. In such instances, the Caribbean Ecological Services Field Office may request additional information to verify the effects determination reached through the DKey.

Note: Projects located within the range of the Puerto Rican boa or the Virgin Islands tree boa might encounter these species during project activities. **This letter does not provide take to handle or move these species**. If relocation of the species is needed, please contact either the Puerto Rico Department of Natural Resources (DNER) at 787-724-5700, 787-230-5550, or 787-771-1124 for projects in Puerto Rico, or the Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife (DFW) at 340-775-6762 for projects in the Virgin Islands. Otherwise, contact the Caribbean Ecological Services Field Office (caribbean_es@fws.gov) to determine whether the consultation needs to be reinitiated.

In addition to the species listed above, the following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion. Effects to the other federally listed species or critical habitat as listed below should be considered as part of your ESA review for the project.

- Puerto Rican Harlequin Butterfly *Atlantea tulita* Threatened
- Puerto Rican Parrot *Amazona vittata* Endangered
- Tectaria estremerana Endangered

If the proposed project is located within species range where a DKey has not been developed for those species, please follow the established guidance for initiating section 7 consultation Caribbean Ecological Services Field Office.

We appreciate your interest in protecting endangered species and their habitats. It is the Service's mission to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of our people. If you have any questions or require additional information, please contact our office at Caribbean_es@fws.gov.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

PR-RGRW-02468

2. Description

The following description was provided for the project 'PR-RGRW-02468':

> The Scope of work 1 (SOW-1) includes the purchase and installation of a 3 hydroponic system on NFT tables at coordinates 18.392450, -66.860176. The proposed is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 ft. No concrete floor is proposed for the SOW.
>
> The Scope of Work 2 (SOW-2) consists of the purchase and installation of a solar system at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW Inverter/Charger 40/48, FM80 Outback Charge Controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS Batteries, 4 Solar Panel Racks, 1 Galvanized Tube Battery Rack 1 Midnite Combiner Box 6 Strings, 1 Midnite Braker Box 175 AMPS, 1 Braker DC 80 AMPS, 4 Braker DC 20 AMPS, Braker AC 30 AMPS and Braker Box Interior. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases. The water to be used for the hydroponic system will be obtained from the existing local utility connection located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear ft.
>
> The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries are proposed to be located at coordinates 18.392301, -66.860244. An aboveground connection, with an estimated length of 60 ft, will be installed from the batteries to the hydroponic proposed structure.
>
> The intent use of funds includes the purchase of a Utility Task Vehicle (UTV) that will be stored in the applicant house area, at coordinates 18.392344, -66.860315.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@18.39236405,-66.86013364087107,14z

QUALIFICATION INTERVIEW

1. Is the proposed project an EPA Multi-Sector General Permit (MSGP) renewal for an existing project? (MSGP Fact Sheet)

   No

2. Is the proposed project within an urban developed area? (i.e., cities, downtowns, shopping malls etc.)

   Note: Urban and developed areas has one or more of the following characteristics: Presence of existing buildings, residential areas, and commercial establishments. Well-established infrastructure including roads, utilities, and urban facilities. High population density. Established neighborhoods and urban amenities ("urbanizaciones"). Developed landscape with paved surfaces, parking lots, and industrial areas. Signs of human activity and urbanization, such as shopping centers and recreational facilities. Location within the boundaries of a city or town ("casco urbano"). High concentration of built-up structures and limited open spaces. Aerial imagery might be requested to the applicant. .

   No

3. Does the proposed project consist of rehabilitation or demolition of existing single-family homes and buildings?

   No

4. Does the proposed project consist of improvements to existing facilities?

   Note: Examples of facilities are occupied single family homes, and buildings; existing recreational facilities, including the installation of roofs to existing basketball courts, etc.

   No

5. Does the proposed project consist of repavement or repair of existing roads and installing transit signage or guardrails?

   No

6. Does the proposed project consist of the construction of gutters and/or sidewalks along existing roads, and developments?

   No

7. Does the proposed project consist of replacement or repair of existing bridges which include cutting vegetation or earth movement?

   No

8. Does the proposed project consist of activities within existing Right of Ways (ROWs) along roads which include cutting vegetation or earth movement?

   No

9. Is the proposed project located within a rural area covered by grassland (pasture lands "pastos")?

   No

10. Is the proposed project adjacent or within a forested area?

    Note: Examples of immediately adjacent to forested areas are rock walls and haystack hills (“mogotes”), wet montane forest, lowland wet forest, remnant coastal, mangrove forest, damp and dry limestone karst forests, pastureland with patches of exotic trees.

    No

11. Is the proposed project an existing facility or the expansion of an existing facility within the footprint of the already developed area?

    Yes

12. [Hidden Semantic] Does the proposed project intersect the Puerto Rican boa area of influence?

    Automatically answered

    Yes

13. Will the proposed project implement the U.S. Fish and Wildlife Puerto Rican boa Conservation Measures?

    Yes

14. Are you the Federal agency or designated non-federal representative for the proposed action?

    Yes

IPAC USER CONTACT INFORMATION

Agency: Tetra Tech
Name: Shelby McDowell
Address: 2301 Lucien Way #120
City: Maitland
State: FL
Zip: 32751
Email shelby.mcdowell@tetratech.com
Phone: 4096591563

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Housing and Urban Development

Appendix C: Site Photos

Front of Structure

Photo Direction: Southeast

Facing Away From Front

Photo Direction: Northwest

Side #1 of Structure

Photo Direction: Southwest

Facing Away From Side #1

Photo Direction: Northeast

Back of Structure

Photo Direction: Southwest

Facing Away From Back

Photo Direction: Northeast

Side #2 of Structure

Photo Direction: Northwest

Facing Away From Side #2

Photo Direction: Southeast

Streetscape #1

Photo Direction: Southeast

Streetscape #2

Photo Direction: Northwest

Address
Photo Direction: South

TETRA TECH

Photo Log - PR-RGRW-02468

Outbuildings
Photo Description: Applicant house
Photo Direction: Southwest

Structural Details
Photo Description: Architectural details
Photo Direction: Northwest

Structural Details
Photo Description: Architectural details
Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: Northeast

Structural Details

Photo Description: Architectural details

Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Southwest

Structural Details

Photo Description: Architectural details

Photo Direction: Northwest

Structural Details

Photo Description: Architectural details

Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: Northeast

Structural Details

Photo Description: Architectural details

Photo Direction: Southeast

Structural Details

Photo Description: Architectural details

Photo Direction: East

TETRA TECH

Photo Log - PR-RGRW-02468

Structure Occupied
Photo Description: Applicant house
Photo Direction: Southwest

Water Connected
Photo Description: Water meter
Photo Direction: Southeast

Aboveground Storage Tanks
Photo Description: Propane gas tank
Photo Direction: Southwest

Scope Of Work
Photo Description: Hydroponic System
Photo Direction: Southwest

Scope Of Work
Photo Description: Hydroponic System
Photo Direction: Southwest

Scope Of Work

Photo Description: Hydroponic System

Photo Direction: Southwest

Scope Of Work

Photo Description: Hydroponic System

Photo Direction: Northeast

Scope Of Work

Photo Description: Hydroponic System

Photo Direction: Northeast

Scope Of Work

Photo Description: Solar system

Photo Direction: Southeast

Scope Of Work

Photo Description: Solar system

Photo Direction: Southwest

Scope Of Work

Photo Description: Solar system

Photo Direction: Southwest

Scope Of Work

Photo Description: Solar system

Photo Direction: Northwest

Scope Of Work

Photo Description: Solar system battery area

Photo Direction: Northwest

Scope Of Work

Photo Description: UTV Parking area

Photo Direction: South

Appendix D:
USFWS Puerto Rican Parrot Conservation Measures 2023

Conservation Measures for the Puerto Rican Amazon (Parrot) (*Amazona vittata*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rican Parrot is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The Puerto Rican amazon (Amazona vittata), also known as the Puerto Rican parrot (Puerto Rican Spanish: cotorra puertorriqueña) or iguaca, is the only extant parrot endemic to the archipelago of Puerto Rico and belongs to the Neotropical genus Amazona. Measuring 28–30 cm (11.0–11.8 in), the bird is a predominantly green parrot with a red forehead and white rings around the eyes.

The parrot was federally listed as endangered in 1967. The parrot reaches sexual maturity at between three and four years of age. It reproduces once a year (between the months of February to June) and is a cavity nester. Once the female lays eggs, she will remain in the nest and continuously incubate them until hatching (about 24 to 28 days). The chicks are fed by both parents and will fledge 60 to 65 days after hatching. This parrot's diet is varied and consists of flowers, fruits, leaves, bark and nectar obtained from the forest canopy.

The species is the only remaining native parrot to Puerto Rico and has been listed as critically endangered by the World Conservation Union since 1994. Once widespread and abundant, the population declined drastically in the 19th and early 20th centuries with the removal of most of its native habitat; the species has completely vanished from Vieques and Mona Island. Conservation efforts commenced in 1968 to save the bird from extinction. The habitat of the parrot is generally identified as

the Palo Colorado, Palma de Sierra, and Tabonuco forests types of the upper zones of the Luquillo Mountains within the El Yunque National Forest.

The US Fish and Wildlife Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the hawk and its habitat. These recommendations may be incorporated into new project plans and under certain cirmunstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented here.

1. For any project activity that involves construction or tree-disturbing activities, all construction workers will be required to participate in environmental awareness training. The training will educate workers on: (a) special-status species that may occur in the work area, (b) procedures to follow in the event a species is observed, and (c) other environmental BMPs and emergency spill response protocols.

2. All non-emergency work activities will be confined to daylight hours (i.e., sunrise to sunset), unless necessary for assessing or protecting biological resources.

3. Whenever possible, impacts to native nesting birds will be avoided by not conducting Project activities that involve clearing of vegetation, generation of mechanical noise, or tree disturbance during the typical breeding season for this parrot (January to July), if the parrot is determined to be present. The parrot selects a large, deep tree cavity, usually in a Palo Colorado tree. The parrot normally does not build its own nest but, many times, parrot biologists do build artificial cavities that are accepted by the parrot. A check with DNER should occur if large Palo Colorado trees are in the general construction area.

4. If Project activities must be conducted during the nesting bird season, the Contractor will conduct surveys for nesting birds within a 1,000-ft radius of the construction area. If nests are detected, the Contractor will notify the DNER and establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active nests will be a minimum of 250 feet, unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting birds. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until young have fledged or the nests become inactive.

5. If a parrot is found within any of the working or construction areas, activities should stop at that area and information recorded. Designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for additional directions (PRDNER phone #s: ((787) 724-5700, (787) 230-5550, (787) 771-1124).

6. Designated critical habitat within the vicinity of project activities will be identified. All Proposed Project actions will be designed to avoid direct and indirect adverse modifications to these

areas. Minimization measures, such as establishing and maintaining buffers around areas of designated critical habitat will be implemented in the event that avoidance is not feasible.

7. If critical habitat may be adversely modified by the implementation of Proposed Project actions, the area to be modified will be evaluated by a qualified biologist to determine the potential magnitude of the project effects (e.g., description of primary constituent elements present and quantification of those affected) at a level of detail necessary to satisfy applicable environmental compliance and permitting requirements. This information shall be submitted to the PRDNER as shown in Number 5 above.

8. Projects must comply with all state laws and regulations. Please contact PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- Marelisa Rivera, Deputy Field Supervisor
  Email: marelisa_rivera@fws.gov
  Office phone (786) 244-0081 or mobile (305) 304-1814

- José Cruz-Burgos, Endangered Species Coordinator
  Email: jose_cruz-burgos@fws.gov
  Office phone (786) 244-0081 or mobile (305) 304-1386

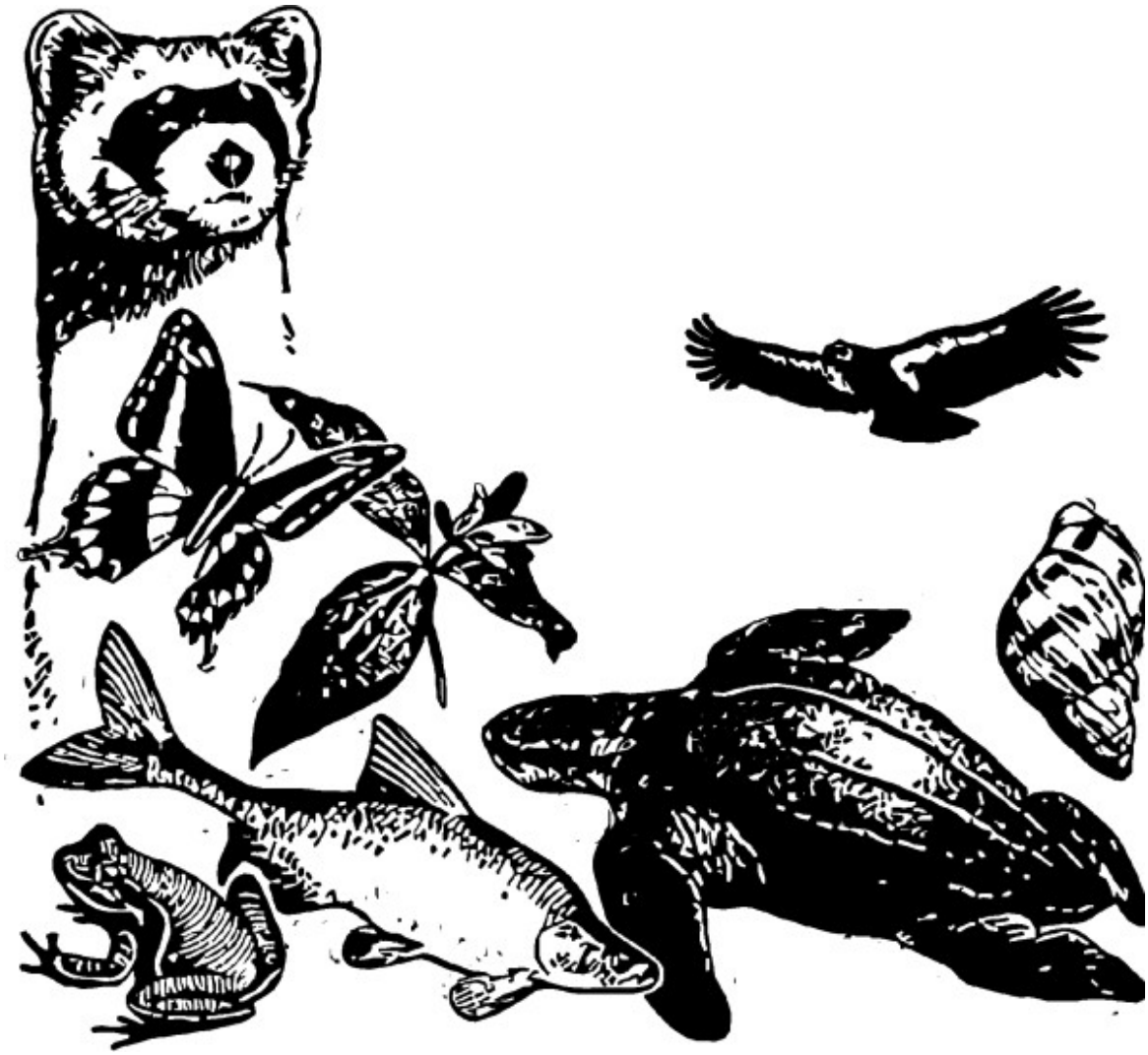
Appendix E:
USFWS Puerto Rican Boa Conservation Measures 2024

U.S. Fish & Wildlife Service

Caribbean ES Puerto Rican Boa

Puerto Rican Boa

Generated August 01, 2024 02:11 PM UTC, IPaC v6.112.0-rc2



IPaC - Information for Planning and Consultation (https://ipac.ecosphere.fws.gov/): A project planning tool to help streamline the U.S. Fish and Wildlife Service environmental review process.

U.S. FISH AND WILDLIFE SERVICE
CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE

Conservation Measures for the Puerto Rican boa (*Chilabothrus inornatus*)

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect federally listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a Puerto Rico boa is subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species.

The endangered Puerto Rican (PR) boa (*Chilabothrus inornatus*, formerly *Epicrates inornatus*) is the largest endemic snake species that inhabits Puerto Rico. The PR boa is non-venomous and does not pose any life threatening danger to humans, but some individuals may try to bite if disturbed or during capture or handling. Its body color ranges from tan to dark brown with irregular diffuse marking on the dorsum, but some individuals lack marking and are uniformly dark. Juveniles may have a reddish color with more pronounced markings. In general, as they mature, their body color tends to darken.

Adult PR boa – *Chilabothrus inornatus*
Photo: Puerto Rico by JP Zegarra

Last Revised: January 2024

The PR boa was federally listed in 1970. Currently, the species has an island-wide distribution and occurs in a wide variety of habitat types, ranging from wet montane to subtropical dry forest and can be found from mature forest to areas with different degrees of human disturbance such as roadsides or houses, especially if near their habitat in rural areas. The PR boa is considered mostly nocturnal, remaining less active, concealed or basking under the sun during the day.

The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR boa and its habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional conservation measures can be implemented besides the ones presented in this document.

Conservation Measures:

1. Inform all project personnel about the potential presence of the PR boa in areas where the proposed work will be conducted. A pre-construction meeting should be conducted to inform all project personnel about the need to avoid harming the species as well as penalties for harassing or harming PR boas. An educational poster or sign with photo or illustration of the species should be displayed at the project site.

2. Prior to any construction activity, including removal of vegetation and earth movements, the boundaries of the project and areas to be excluded and protected should be clearly marked in the project plan and in the field in order to avoid further habitat degradation into forested and conservation areas.

3. Once areas are clearly marked, and prior to the use of heavy machinery and any construction activity (including removal of vegetation and earth movement), a biologist or project personnel with experience on this species should survey the areas to be cleared to verify the presence of any PR boa within the work area.

4. If a PR boa is found within any of the working or construction areas, activities should stop at that area and information recorded (see #5). **Do not capture the boa.** If boas need to be moved out of harm's way, designated personnel shall immediately contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER) Rangers for safe capture and relocation of the animal (PRDNER phone #s: (787) 724-5700, (787) 230-5550, (787) 771-1124). **If immediate relocation is not an option, project-related activities at that area must stop until the boa moves out of harm's way on its own**. Activities at other work sites, where no boas have been found after surveying the area, may continue.

5. For all boa sightings (dead or alive), record the time and date of the sighting and the specific location where it was found. PR boa data should also include a photo of the animal (dead or alive), site GPS coordinates, the time and date, and comments on how the animal was detected and its behavior.

6. If a PR boa is captured by PRDNER personnel, record the name of that person and information on where the PR boa will be taken. This information should be reported to the Service.

7. Measures should be taken to avoid and minimize PR boa casualties by heavy machinery or motor vehicles being used on site. Any heavy machinery left on site (staging) or near potential PR boa habitat (within 50 meters of potential boa habitat), needs to be thoroughly inspected each morning before work starts to ensure that no boas have sheltered within engine compartments or other areas of the equipment. If PR boas are found within vehicles or equipment, do not capture the animal, and let it move on its own or call PRDNER Rangers for safe capture and relocation of the animal (see #4). If not possible, the animal should be left alone until it leaves the vehicle on its own.

8. PR boas may seek shelter in debris piles. Measures should be taken to avoid and minimize boa casualties associated with sheltering in debris piles as a result of project activities. Debris piles should be placed far away from forested areas. Prior to moving, disposing or shredding, debris piles should be carefully inspected for the presence of boas. If debris piles will be left on site, we recommend they be placed in areas that will not be disturbed in the future.

9. If a dead PR boa is found, immediately cease all work in that area and record the information accordingly (see #5). If the PR boa was accidentally killed as part of the project actions, please include information on what conservation measures had been implemented and what actions will be taken to avoid further killings. A dead boa report should be sent by email (see contacts below) to the Service within 48 hours of the event.

10. Projects must comply with all state laws and regulations. Please contact the PRDNER for further guidance.

If you have any questions regarding the above conservation measures, please contact the Service:

- José Cruz-Burgos, Endangered Species Program Coordinator
  - Email: jose_cruz-burgos@fws.gov
  - Office phone (305) 304-1386
- Jan Zegarra, Fish and Wildlife Biologist
  - Email: jan_zegarra@fws.gov
  - Office phone (786) 933-1451

Last Revised: January 2024

Appendix F:
Puerto Rican Harlequin Butterfly Conservation Measures 2024

U.S. FISH & WILDLIFE SERVICE
CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE

Conservation Measures for the Puerto Rican harlequin butterfly (*Atlantea tulita*)

Section 7 (a)(1) of the Endangered Species Act (ESA) mandates Federal agencies to aid in the conservation of federally listed species. Section 7 (a)(2) requires the Federal agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of federally listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as approval of private activities through the issuance of Federal funding, permits, licenses, or any other actions. Any person that injures, captures, or kills a Puerto Rican harlequin butterfly, or destroy it eggs or any other of its life stage (caterpillars, chrysalis) is subject to penalties under the ESA. Thus, Federal Actions agencies must initiate consultation with the Service under Section 7 of the ESA for any action that could affect the Puerto Rican harlequin butterfly. To initiate a consultation under the Section 7 of the ESA, the Federal Action agency must submit a project package to the Service with the established minimum requirements (see below). The conservation measures included below should be incorporated into the project plans to minimize possible impacts to the Puerto Rican harlequin butterfly. Download the project evaluations fact sheet to learn more about the requirements or visit our project evaluations webpage.

The Puerto Rican (PR) harlequin butterfly (*Atlantea tulita*), is a threatened species endemic to Puerto Rico, whose currently known range is limited to the Northern Karst

February 2024

physiographic region and the West-central Volcanic-serpentine physiographic region of the Island. Through this range, we have identified six areas occupied by the PR harlequin butterfly that we refer to as a populations: (1) along the coastal cliff in the municipalities of Isabela, Quebradillas, and Camuy; (2) Guajataca in the municipality of Isabela; (3) Río Abajo Commonwealth Forest between the municipalities of Arecibo and Utuado; (4) Río Encantado area along the municipalities of Arecibo, Florida and Ciales; (5) Maricao Commonwealth Forest in the municipality of Maricao; and (6) Susúa Commonwealth Forest between the municipalities of Sabana Grande and Yauco. In addition, adult PR harlequin butterflies have been anecdotally reported in other areas of Puerto Rico, including the municipalities of Aguadilla, Barceloneta, Ciales, Florida, Luquillo, Ceiba, Guánica, San Germán, Las Marias and Lares.

The PR harlequin butterfly is a medium sized butterfly with a life cycle includes four distinct anatomical stages: imago (adult), egg, larva (caterpillar, with several size phases called instars), and chrysalis. The species has a wingspan of about 5.1 to 6 centimeters (cm) (2 to 2.5 inches (in)) wide and is characterized by its orange, brownish-black and beige coloration patterns. The caterpillar (larva) is dark orange with a brownish black to black, thin sub-lateral line, over a thin line of white intermittent dots crossing the body from the head to the anal plate, and has spines with hairs on each body segment. The caterpillar is less than .476 centimeters (cm) (0.19 in) in the first instar (growth stage between molts) and about 3.3 cm (1.29 in) in the fifth instar. Both eggs and caterpillars have been found almost exclusively on the host plant prickly bush (*Oplonia spinosa*). The chrysalis (pupa from which the butterfly (adult, or imago) emerges) of the PR harlequin butterfly is black, with orange and white dashes, and yellow pimples. The size of chrysalis is around 3 cm (1.2 in). In the wild, the chrysalis is more often found attached to branches of plants located close to the host plant, but it has been observed attached to dried twigs of the host plant.

The PR harlequin butterfly is difficult to detect, and the species is easily misidentified with other common butterflies such as the monarch butterfly (*Danaus plexippus portoricensis*), Antillean crescent (*Antillea pelops*), and Gulf fritillary (*Agraulis vanilla insularis*). The PR harlequin butterfly adults seem to be more active in the morning, from 9:00 am to 12:00 pm, when they are often observed flying searching for food or patrolling their territory for mating or laying eggs. The species flies slowly and is weak and fragile; thus, it is considered a poor disperser. There is information that this butterfly can disperse up to 1,026 meters (m) (3366.1 feet (ft)), approximately 1 kilometer (km) (0.6 mile (mi)) from one breeding site to another. The species seems to have specific ecological requirements for reproduction and its dispersion.

The PR harlequin butterfly was federally listed as threatened on January 3, 2023 (87 FR 73655), due to threats related to habitat modification and loss, its small populations size, and because of analyses of projected effects on the species resulting from relevant factors like increment of urban development rate and climate changes, which may negatively influence the continued existence of the species in the foreseeable future.

The Service has developed the following conservation measures with the purpose of assisting others to avoid or minimize adverse effects to the PR harlequin butterfly and its

habitat. These recommendations may be incorporated into new project plans and under certain circumstances into existing projects. Depending on the project, additional recommendations can be made besides the ones presented in this document.

1. All project construction personnel must be informed about the potential presence of the PR harlequin butterfly or its occupied host plant, prickly bush (*Oplonia spinosa*), in the project areas and the need to avoid harming the species and its occupied host plant. All personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing species protected under the Endangered Species Act. Educational material (e.g., posters, flyers, or signs with photos or illustrations of all the life stages of the PR harlequin butterfly (i.e., eggs, caterpillar, chrysalis, and adult) as well as its host plant, should be prepared and available to all personnel for reference.

2. Before starting any project activity, including removal of vegetation and earth movement, the boundaries of the work area in the field clearly delineate to avoid unnecessary habitat impacts. Once the project areas are clearly marked, and before any work activity, including site preparation, personnel with knowledge and ability to identify the PR harlequin butterfly (all life stages) and the prickly bush must survey the areas where the work will be performed for the presence of the species and its host plant. It is important to note that the PR harlequin butterfly can be observed year-round in all its life stages; thus, oviposition (egg-laying) may occur at any time during the year.

3. If the prickly bush is present on the project site, try to avoid cutting it off, even if no eggs, caterpillars, or chrysalis are present.

4. If there is no prickly bush within the project area, and the butterfly is observed flying within the project area, do not harass, harm, pursue, wound, kill, trap, capture, collect, or attempt to engage in any such conduct, the species.

5. Adult butterflies are often observed flying near the host plant as part of their mating behavior and laying eggs. Project-related activities must stop if the prickle bush is found in the project area and the PR harlequin butterfly is observed flying in that same area where the plan is located. A temporary 50-meter (164 feet) buffer zone of no activity or human disturbance should be established and clearly marked around that prickly bush until the butterfly moves out on its own.

6. Once the PR harlequin butterfly has moved away, within a period of 24 to 36 hours, a search of the prickly bush that has been buffered should be conducted to determine the presence of eggs, caterpillars, or chrysalids of the butterfly on the plant. The contractor or the Applicant should send a report of the observation and its findings to caribbean_es@fws.gov after the 36-hour search is concluded.

7. If, after the initial search or after the 24 to 36-hour search, any life stage of the PR harlequin butterfly is found in the prickly bush, take the following actions:

- Clearly mark the host plant with flagging tape.

- Establish a 10-meter (32-foot) buffer zone around the bush to protect it.
- Eggs are typically found on the prickly bush's newly grown, tender branches. Once an egg hatches, the caterpillar moves and feeds throughout the plant. Therefore, avoid cutting off the prickly bush within the project site even if no eggs, caterpillars, or chrysalids are present.
- Work within the 10-meter buffered area may resume when no signs of any live life stage of the butterfly are detected, which usually takes approximately 60 to 120 days.

8. For all PR harlequin butterfly sightings (all life stages), the time and date of the sighting and the specific location where the butterfly was found must be recorded. Data should also include a photo of the butterfly (if possible) and the habitat where it was observed, site GPS coordinates, and comments on how the butterfly was detected and its behavior. All PR harlequin butterfly sighting reports should be sent to the U.S. Fish and Wildlife Service, Caribbean Ecological Service Field Office at caribbean_es@fws.gov.

9. For questions regarding the PR harlequin butterfly, the Point of Contact is:

- José Cruz-Burgos, Threatened and Endangered Species Program Coordinator:
  - Mobile: 305-304-1386
  - Office phone: 786-244-0081
  - Office Direct Line: 939-320-3120
  - Email: jose_cruz-burgos@fws.gov

February 2024

Appendix G:
Puerto Rican Harlequin Butterfly Identification Package

first discovered in the municipality of Quebradillas. For the purpose of this SSA, we refer to the common name as the Puerto Rican harlequin butterfly (hereafter, PRHB).

Figure 2-1. Map showing the distribution of the genus *Atlantea* through the Caribbean Region.

2.2 Species Description

The PRHB is a medium size butterfly. The species has a wingspan of about 5.1 to 6 centimeters (cm) (2 to 2.5 inches (in)) wide and is characterized by its orange, brownish-black and beige coloration patterns (Figures 2-2 and 2-3). The butterfly is brownish-black at the thorax area with deep orange markings. The male's abdomen is brownish-black on the dorsal side and has orange and brown bands on the ventral side. The female's abdomen is brownish-black with white bands. Wings are largely brownish-black with sub-marginal rows of deep orange spots and beige cells. The dorsal view of the forewings and the hind-wings, the outer margins are brownish-black. The coastal margin is deep orange with brownish-black markings. The inner margin is brownish-black with some deep orange markings at the half basal wing. The hind wing has a wide black border enclosing a set of reddish-bronze sub-marginal points. As a member of the checker-spot butterfly group, rows of deep orange dots (or cells) is a typical pattern on the species' brownish-black wings. The ventral sides of the forewings are similar to the dorsal sides of the forewings, and ventrally the hindwings are brownish-black with orange basal spots, a complete postdiscal beige band with a band of reddish spots distally, and sub-marginal white half-moons.

The chrysalis (pupa from which the butterfly (adult, or imago) emerges) of the PRHB is black, with orange and white dashes, and yellow pimples (Biaggi-Caballero 2009, p. 4) (Figure 2-4). Chrysalis size is around 3 cm (1.2 in).

Figure 2-2. Photos showing the dorsal (top) and ventral (bottom) coloration patterns observed in *Atlantea tulita* (Dewitz 1877). Male (left) and female (right). Photo downloaded from https://www.butterfliesofamerica.com.

Figure 2-3. Male (left) and female (right) *A. tulita*. The abdomen of the male is a deep orange color with bands, and the abdomen of the female is white with black bands. Source: Carlos Pacheco, Service.

The PRHB caterpillar (larva) is dark orange with a brownish-black to black, thin sub-lateral line, over a thin line of white intermittent dots crossing the body from the head to anal plate (Figure 2-5). The larva is less than 4.76 millimeter (mm)(0.19 in) in first instar (growth stage

between molts) and about 55.8 mm (2 in) in the fifth instar (C. Pacheco, Service, 2018, personal observation). The body of the larva has spines with hairs in each body segment (Figure 2-5).

Figure 2-4. Chrysalis of *Atlantea tulita*. Photos by C. Pacheco, Service.

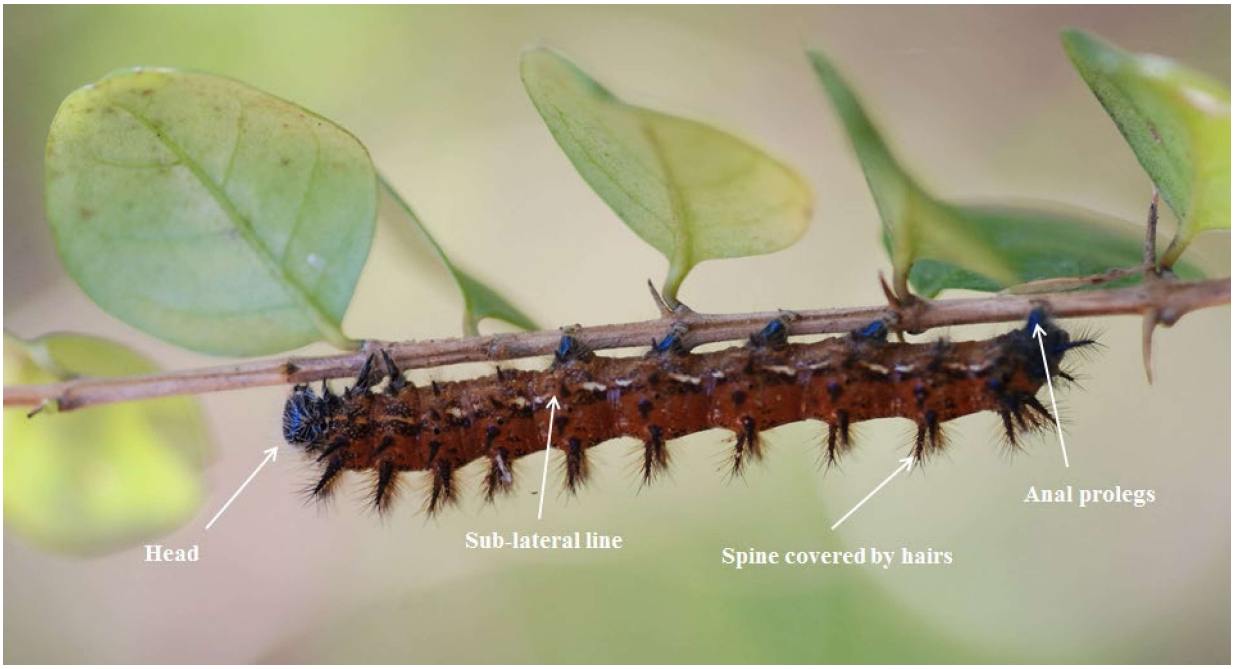


Figure 2-5. *Atlantea tulita* caterpillar. Photo by C. Pacheco, Service.

The eggs of the PRHB are greenish oily spheres, with a yellowish incipient crown (Figure 2-6).

Figure 2-6. Photo (left) showing the yellowish crown on the eggs laid by *Atlantea tulita* on *Oplonia spinosa*. Photo (right) showing the first instars of the *Atlantea tulita*. Photo by C. Pacheco, Service, 2011.

2.3. Life History

Most of what is known about PRHB life history, demography and behavior comes from field observations, information gathered from other species from the same family, and expert opinions.

2.3.1 Life Cycle

The life cycle of the PRHB includes four distinct anatomical stages: egg, larva (caterpillar, with several size phases called instars), chrysalis, and imago (adult). It is a general consensus among the species' experts (A. Morales and E. Estremera, Liga Ecologica Quebradillana; H. Torres, former Assistant Professor from the University of Puerto Rico, Mayagüez Campus; and C. Asencio, former professor Universidad Católica de Ponce) that the life cycle of the PRHB (Figure 2-7) from egg to imago in the wild may take around 125 days (Second Technical Meeting Puerto Rican Harlequin Butterfly Working Group, November 3, 2018). These experts also agree that the length of the life cycle can be affected by factors such as temperature and humidity, particularly at the caterpillar stage.

2.3.2 Dispersal, Mating, and Food Sources

PRHB dispersal and mating behavior has not been thoroughly studied. The butterfly flies slowly and is weak and fragile; thus, the species is considered a poor disperser (Carrión-Cabrera 2003, p. 51). However, Monzón (2007, p. 42) found that the butterfly can disperse up to 1,026 meters (m) (3366.1 feet (ft)), approximately 1 kilometer (km) (0.6 mile (mi)) from one breeding site to another. Additionally, the species has specific ecological requirements for reproduction and its dispersion is apparently limited by the monophagus habit of the first instar of the larvae, which feeds only on prickly bush (*Oplonia spinosa*) (Carrión-Cabrera 2003, p. 40; Biaggi-Caballero 2009, p. 4). Mating behavior has been rarely documented. For other species in the family Nymphalidae, the male grasps the female in flight and brings her to a surface, such as a leaf (Figure 2-8) or the ground, where mating occurs. Carrion-Cabrera (2003, p. 60) estimated the sex ratio of the PRHB as 2.67 males per female. It is not well known if the PRHB mates during a

particular month of the year or year-round. However, all life stages of the PRHB are observed year-round, suggesting that mating and oviposition may occur at any time during the year (Figure2-9).

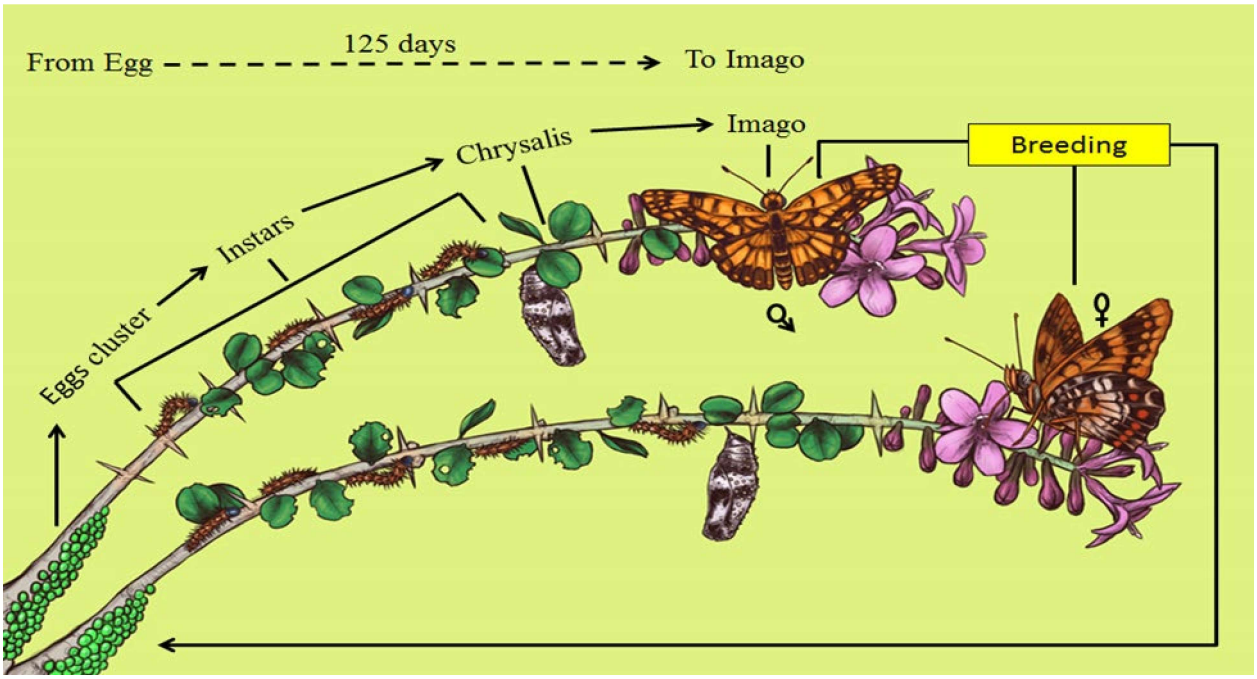


Figure 2-7. Conceptual diagram of the Puerto Rican harlequin life cycle.

Figure 2-8. Photo of Puerto Rican Harlequin butterfly mating. Photo by José Chabert (President of "Fundanción EL Pastillo") at El Pastillo in the municipality Isabela.

Females are multivoltine ovipositors (they produce several broods in a single season) (Biaggi-Caballero 2009, p. 2; 76 FR 31282, May 31, 2011, p. 31283). Eggs and larvae have been found

almost exclusively on prickly bush (*Oplonia spinosa*) (Figures 2-10 and 2-11). The female lays the eggs in rows singly or in pairs, on the underside of tender twigs of the host plant. The species uses the tender vegetative branches of new growth of the host plant for bearing its eggs and feeding during the larval stages (Carrion-Cabrera 2003, p. 40; Biaggi-Caballero and Lopez 2010, p. 2). New growth of *O. spinosa* is observed a few days after rain events, being more abundant during the wet season (from April to November).The female of the PRHB can lay between 50 to 140 eggs in about 45 minutes (Carrion-Cabrera 2003, p.38; Biaggi-Caballero 2009, p. 4). During this process the female appears to be undisturbed by the presence of humans or any other threats (Barber 2018, p. 2).

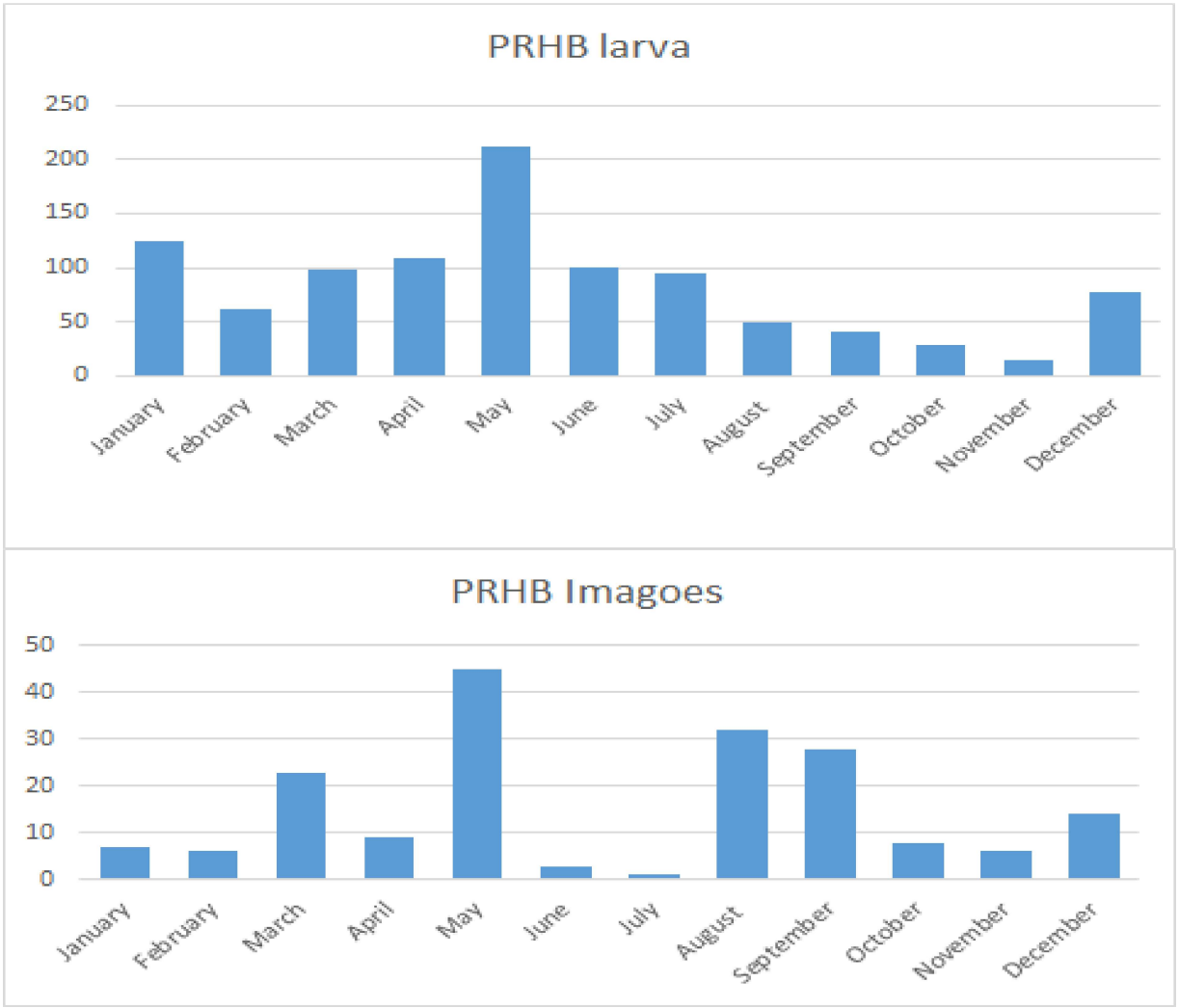


Figure 2-9. Number of observed PRHB larvae (top) and imagoes (bottom) per month throughout the year. Based on information provided by Carrion-Cabrear 2003, Monzon 2007, Biaggi-Caballero 2010, and Barber 2018.

Broods of the PRHB generally contain 50 to 150 eggs, with an average of 102 eggs per brood (Carrion-Cabrera 2003, p.38). The time to egg eclosion and viability (hatching success) rate have not been determined. After egg eclosion, the first instars devour the egg shells and then begin feeding from the most tender parts of the host plant (Biaggi-Caballero and López 2010, p.2). As

the first instar matures, PRHB larvae crawl to the older and woody part of the host plant eating any new growth, including leaves and stems.

Figure 2-10. Left: female *Atlantea tulita* laying eggs on the host plant, prickly bush (*Oplonia spinosa).* Right: eggs of *Atlantea tulita* laid on the new growth (tender part) of *O. spinosa* branches. Photo by José Vargas, 2018.

Figure 2-11. Prickly bush (*Oplonia spinosa*) (left), Family Acanthaceae; endemic to several Caribbean islands and widely distributed in Puerto Rico. Eggs (right) found on prickly bush Source: Willie Hernandez, Liga Ecológica Quebradillana, 2009.

Although the PRHB is believed to be a specialist because of its monophagous habit of feeding only on *O. spinosa*, recently Barber (2016, p. 9) documented a PRHB larva feeding on *Odontonema cuspidatum* (commonly known in Puerto Rico as "coral de jardín") in Quebradillas (Figure 2-12). Like *O. spinosa*, *O. cuspidatum* is in the family Acanthaceae, but it is native to Mexico and has been introduced to the West Indies as an ornamental shrub (Axelrod 2011, p. 50). In addition, Morales and Estremera (2018, unpublished data) found that the PRHB caterpillar also feeds on *Justicia mirabiloides* (commonly known as West Indian water-willow; or in Spanish as papayo montuno). *Justicia mirabiloides*, which is also in the family Acanthaceae, is a perennial herb native to Puerto Rico and the Virgin Islands. These rare observations of the PRHB caterpillar feeding on plants other than *O. spinosa* were of later instars (possibly 4th or 5th instar). Therefore, it is not known whether the first instar can use other plant species as a food source. Regardless, given the paucity of observations of feeding on other plant species, *O. spinosa* is an essential PRHB food source.

APPENDIX E

Section 106 Consultation

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Wednesday, September 25, 2024

Lauren B Poche

269 Avenida Ponce de León, San Juan, PR, 00917

SHPO-CF-09-12-24-03 PR-RGRW-02468 (Camuy), Aida R. Ocasio Perez DBA Hacienda Maraydas

Dear Ms. Poche,
Our Office has received and reviewed the above referenced project in accordance with 54 USC 306108 (commonly known as Section 106 of the National Historic Preservation Act, as amended) and 36 CFR Part 800: Protection of Historic Properties from the Advisory Council on Historic Preservation. The State Historic Preservation Officer (SHPO) is to advise and assist federal agencies and other responsible entities when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or reduce the project's effects.
Our records support your finding of no historic properties affected within the project's area of potential effects.
Please note that should the Agency discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions concerning our comments, do not hesitate to contact our Office.

Sincerely,

Carlos A. Rubio Cancela
State Historic Preservation Officer
CARC/GMO/ OJR

GOVERNMENT OF PUERTO RICO
DEPARTMENT OF HOUSING

April 30, 2024

Arch. Carlos A. Rubio Cancela
Executive Director
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá, Third Floor
San Juan, Puerto Rico 00901

Re: Authorization to Submit Documents for Consultation

Dear Arch. Rubio Cancela,

The U.S. Department of Housing (HUD) approved the allocations of Community Development Block Grant (CDBG-DR) funds on February 9, 2018. It also approved the allocation of Community Development Block Grant Mitigation (CDBG-MIT) funds on January 27, 2020. The purpose of these allocations is to address unsatisfied needs as a result of Hurricanes Irma and Maria in September 2017; and to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses.

To comply with the environmental requirements established by HUD, the Department of Housing of Puerto Rico (PRDOH) contracted Horne Federal LLC to provide environmental review services, among others, that will support the objectives of the agenda for both CDBG-DR and CDBG -MIT Programs.

To expedite the processes, Horne Federal LLC, is authorized to submit to the State Historic Preservation Officer, documentation of projects related to both the CDBG-DR and CDBG-MIT on behalf of PRDOH.

Cordially,

Aldo A. Rivera Vázquez, PE
Director
Division of Environmental Permitting and Compliance
Office of Disaster Recovery

September 12, 2024

Carlos A. Rubio Cancela
State Historic Preservation Officer
Puerto Rico State Historic Preservation Office
Cuartel de Ballajá (Tercer Piso)
San Juan, PR 00902-3935

Puerto Rico Disaster Recovery, CDBG-DR Re-Grow PR Urban-Rural Agricultural (Re-Grow PR) Program

Section 106 NHPA Effect Determination Submittal: PR-RGRW-02468 – Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso– Carretera 4486, Km. 2.4, Barrio Cibao, Camuy, Puerto Rico – *No Historic Properties Affected*

Dear Architect Rubio Cancela,

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, HORNE is providing information for your review and requesting your concurrence regarding the above-referenced projects on behalf of the Puerto Rico Department of Housing (PRDOH). On February 9, 2018, an allocation of Community Development Block Grant - Disaster Recovery (CDBG-DR) funds was approved by the United States Department of Housing and Urban Development (HUD) under the Federal Register Volume 83, No. 28, 83 FR 5844, to assist the Commonwealth of Puerto Rico in meeting unmet needs in the wake of Hurricanes Irma and Maria. On August 14, 2018, an additional $8.22 billion recovery allocation was allocated to Puerto Rico under the Federal Register Volume 83, No. 157, 83 FR 40314. With these funding allocations, the Puerto Rico Department of Housing (Housing) aims to lead a comprehensive and transparent recovery for the benefit of Puerto Rico residents.

On behalf of PRDOH and the subrecipient, the Puerto Rico Department of Agriculture, HORNE is submitting documentation for activities proposed by Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso located at Carretera 4486, Km. 2.4, Barrio Cibao, in the municipality of Camuy. The undertaking for this project includes the purchase and installation of a solar system, hydroponic system and UTV. The proposed hydroponic system is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 ft. No concrete floor is proposed for the structure. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases to support the 8-panel system. All electrical and water connections will be above ground.

Based on the submitted documentation, the Program requests a concurrence that a finding of no historic properties affected is appropriate for this proposed project.

Please contact me by email at lauren.poche@horne.com or phone at 225-405-7676 with any questions or concerns.

Kindest regards,

Lauren Bair Poche, M.A.
Architectural Historian, EHP Senior Manager
LBP/JLE

Attachments

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM **REGROW PUERTO RICO PROGRAM** **Section 106 NHPA Effect Determination**	GOVERNMENT OF PUERTO RICO DEPARTMENT OF HOUSING
Subrecipient: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso	
Case ID: PR-RGRW-02468	**City:** Camuy

Project Location: Carretera 4486, Km. 2.4, Barrio Cibao, Camuy, 00627	
Project Coordinates: 18.392450, -66.860176	
TPID (Número de Catastro)**:** 074-000-002-15-000	
Type of Undertaking: ☐ Substantial Repair ☒ New Construction	
Construction Date (AH est.): c2015	**Property Size** (acres)**:** 12.43

SOI-Qualified Architect/Architectural Historian: Maria F. Lopez Schmid, MAHP
Date Reviewed: 2/14/2024
SOI-Qualified Archaeologist: Pollyanna Clark, MA, RPA
Date Reviewed: 2/14/2024

In compliance with Section 106 of the National Historic Preservation Act (NHPA), the Program is responsible for identifying historic properties listed in the NRHP and any properties not listed that would be considered eligible for listing that are located within the geographic area of potential effects (APE) of the proposed project and assessing the potential effects of its undertakings on these historic properties.

Project Description (Undertaking)

The proposed project includes the purchase and installation of a solar system, hydroponic system and UTV. The farm was used in the past for beans and cilantro cropping and is currently used for banana plantation. Field is not graded.

The Scope of work 1 (SOW-1) includes the purchase and installation of a 3 hydroponic system on NFT tables at coordinates 18.392450, -66.860176. The proposed is a 30-foot (ft) X 15 ft metal structure with Saran and plastic cover. The structure holds up to 1,800 plants (600 plants per system) and includes a germination table, 55 gallons nutrient tanks, water and air pumps, fertilizer, and other growing supplies such as calcium, magnesium, PeatFoam, PH & PPM Meter, and seeds. Structural posts will be anchored directly to the ground with an estimated depth of up to 3 ft. No concrete floor is proposed for the SOW.

The Scope of Work 2 (SOW-2) consists of the purchase and installation of a solar system at coordinates 18.392499, -66.860166. The system consists of one (1) Schneider SW Inverter/Charger 40/48, FM80 Outback Charge Controller, 8 solar panels (~400 Watts each), 8 AGM Nano Carbon 250 AMPS Batteries, 4 Solar Panel Racks, 1 Galvanized Tube Battery Rack 1 Midnite Combiner Box 6 Strings, 1 Midnite Braker Box 175 AMPS, 1 Braker DC 80 AMPS, 4 Braker DC 20 AMPS, Braker AC 30 AMPS and Braker Box Interior. The installation of support solar panel racks will require the construction of 2.5 ft x 2.5 ft x 2.5 ft on-site poured concrete bases.

The water to be used for the hydroponic system will be obtained from the existing local utility connection located at 18.392420, -66.860389. Metered water will be used to supply the water demand for the operation of the hydroponic system through an aboveground PVC piping system with an estimated distance of 80 linear ft.

The proposed solar system will be used to provide the required energy demand of the agricultural activities. Batteries are proposed to be located at coordinates 18.392301, -66.860244. An aboveground connection, with an estimated length of 60 ft, will be installed from the batteries to the hydroponic proposed structure.

The intent use of funds includes the purchase of a Utility Task Vehicle (UTV) that will be stored in the applicant house area, at coordinates 18.392344, -66.860315.

Area of Potential Effects

As defined in 36 CFR §800.16(d), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. Based on this definition and the nature and scope of the Undertaking, the Program has determined that the direct APE for this project is the location of the hydroponic structure and the location of the solar system. The visual APE is the viewshed of the proposed project and includes a 15-meter buffer to allow for variation in project activities. The APE for this project is approximately 0.20 acres.

Identification of Historic Properties - Archaeology

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that no archaeological sites or archaeological resource surveys were found within a half-mile radius from the project area.

The APE is composed of San German gravelly clay loam, featuring slopes ranging from 5 to 20 percent (SgD). These soils are characterized by their shallow, well-drained, and very slowly permeable nature, predominantly found on ridge tops, summits, and side slopes in the uplands of limestone hills and mountains within the Semiarid Mountains and Valleys of the Major Land Resource Area (MLRA). The depth to hard, semi-consolidated limestone varies

from 5 to 20 inches, and the nearest freshwater body is approximately 0.06 miles (0.09 km) east of the project area.

The project area is favorable for prehistoric (*Taino*) human land use, attributed to its level topography and close proximity to a freshwater source approximately 0.06 miles (0.09 km) east of the APE. Despite these advantages, the relatively shallow depth to limestone (5 to 20 inches) and the absence of reported archaeological sites within a half-mile radius diminish the likelihood of discovering new archaeological sites within the APE~~s~~. The potential for finding intact archaeological deposits is assessed as low to moderate.

Identification of Historic Properties - Architecture

Existing information on previously identified historic properties has been reviewed to determine if any such properties are located within the APE of this undertaking. The review of this existing information, by a Program contracted Historic Preservation Specialist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61), shows that the project area is **not** within the boundaries of a National Register of Historic Places (NRHP)-eligible or listed Traditional Urban Center or Historic District. Additionally, there are **no** NRHP-listed historic properties within the quarter mile buffer zone from the APE.

The proposed project is located in a rural, mountainous terrain surrounded by mature vegetation. The property is located west of Road PR-4486 in Camuy. A circa 2015 building is located to the southwest of the APE geocoordinates. This building appears in a 2013 aerial image, shown below left, but is not present lin a 2012 aerial image.

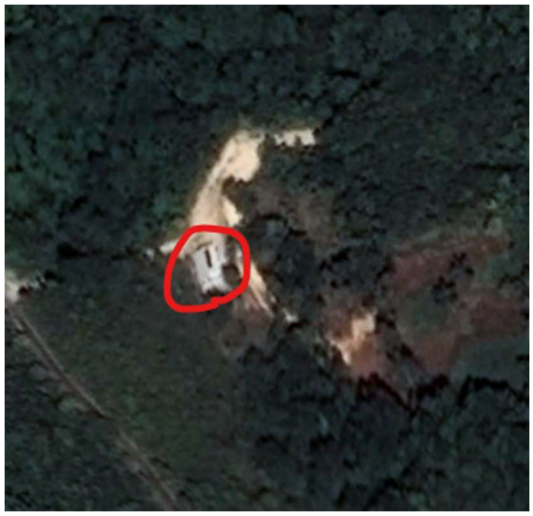


Figure 1 & 2. Detail of the 2013 aerial image showing the building on the property and house façade, view to the southwest.

The building is the applicant's house shown above right that is a casa criolla style wood frame house on concrete columns with front gable wood frame and corrugated metal roof. The first level is a concrete carport under the main level of the house. Access to the main level is via concrete stairs on the left side of the house. The recessed front porch is on the right side of the façade and the roof is supported by a wood column in the corner and enclosed by metal railing. The porch door is metal and glass, and the windows are metal jalousies.

This house is modern and **does not** meet the requirements to be eligible for listing on the National Register of Historic Places.

Determination

The following historic properties have been identified within the APE:

- Direct Effect:
- Indirect Effect:
    - N/A

Based on the results of our historic property identification efforts, the Program has determined that project actions **will not** affect the historic properties that compose the Area of Potential Effect.

Based on the results of our historic property identification efforts, the Program has determined that the project area is not within or adjacent to the boundaries of a National Register of Historic Places (NRHP)-eligible or listed historic district or Traditional Urban Center. There are no reported archaeological materials or significant cultural properties within a half-mile radius of the proposed project location. No known archaeological sites or NRHP listed/eligible properties are within or adjacent to the property or the parcel in which the Areas of Potential Effect of case PR-RGRW-02468 is located. The closest freshwater body is approximately 0.06 miles (0.09 km) of the project area. The construction of public roads and agricultural infrastructure have minimally impacted the surrounding terrain. Therefore, no historic properties will be affected by the proposed project activities

PUERTO RICO 2017 DISASTER RECOVERY, CDBG-DR PROGRAM REGROW PUERTO RICO PROGRAM Section 106 NHPA Effect Determination	
Subrecipient: Aida R. Ocasio Perez DBA Hacienda Maraydas; Cosechas del Paraiso	
Case ID: PR-RGRW-02468	**City:** Camuy

Recommendation *(Please keep on same page as SHPO Staff Section)*

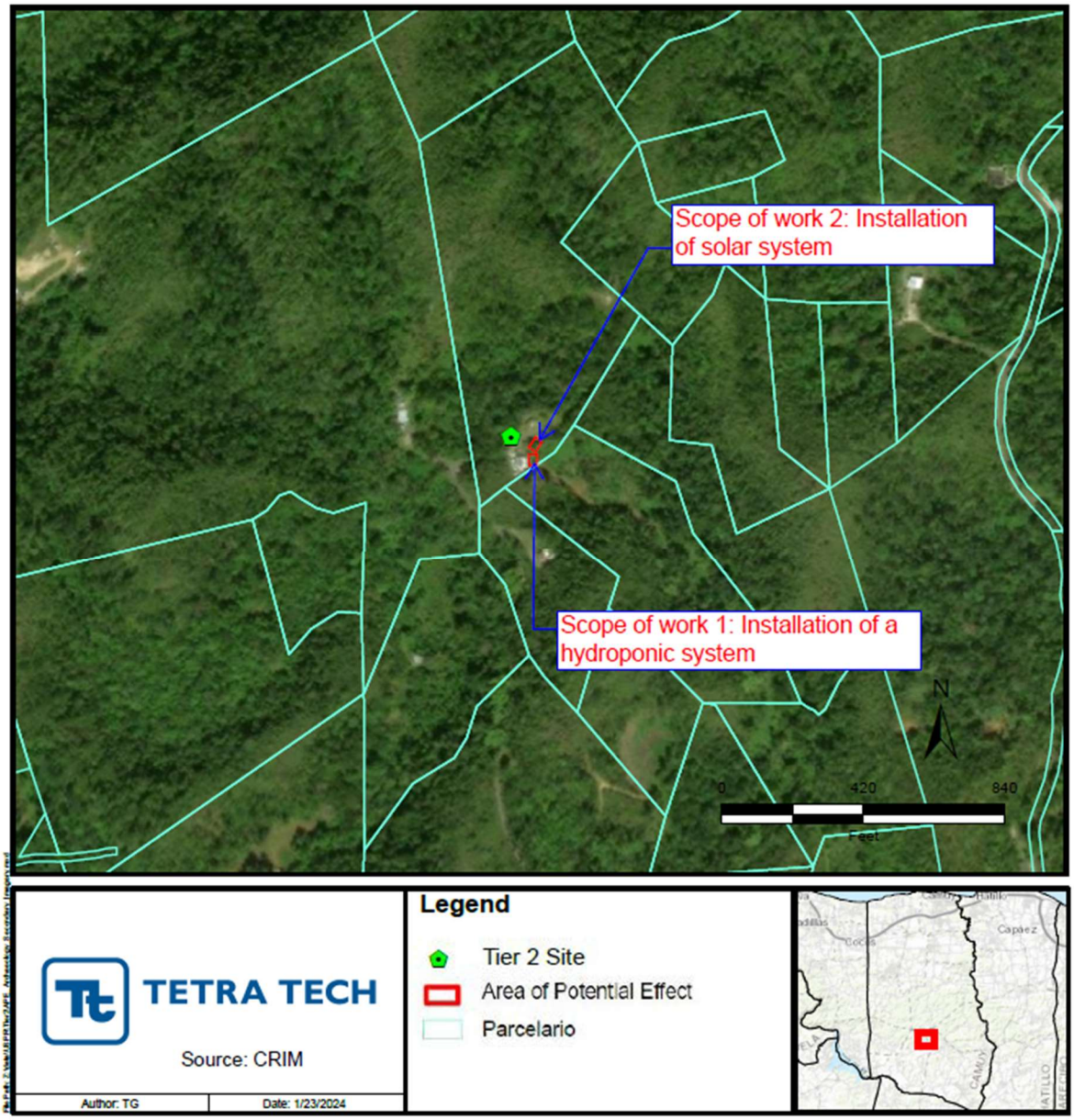
The Puerto Rico Department of Housing requests that the Puerto Rico SHPO concur that the following determination is appropriate for the undertaking (Choose One):

☒ No Historic Properties Affected
☐ No Adverse Effect
Condition (if applicable):
☐ Adverse Effect
Proposed Resolution (if appliable)

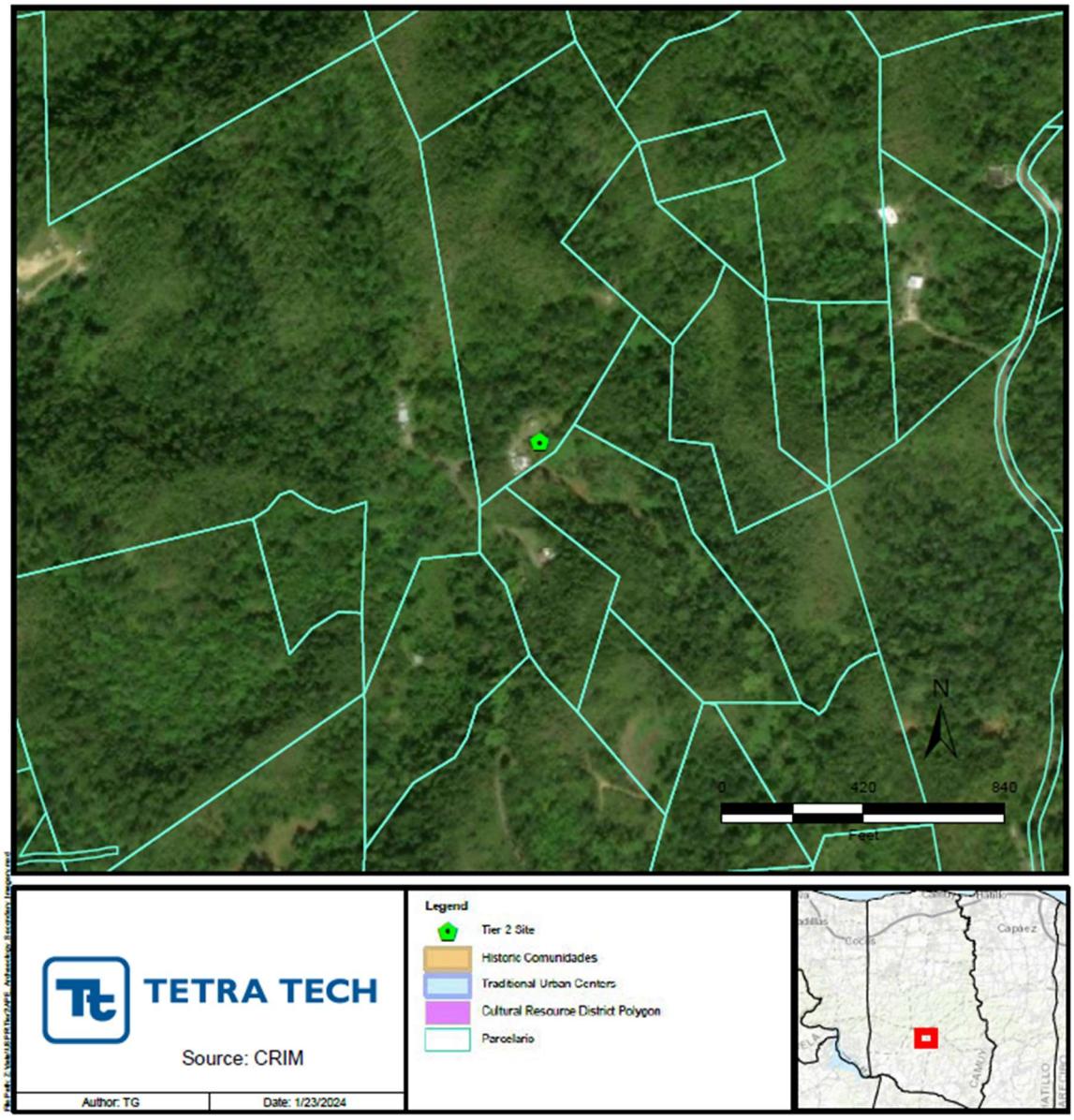
This Section is to be Completed by SHPO Staff Only

The Puerto Rico State Historic Preservation Office has reviewed the above information and: ☐ **Concurs** with the information provided. ☐ **Does not concur** with the information provided.	
Comments:	
Carlos Rubio-Cancela State Historic Preservation Officer	Date:

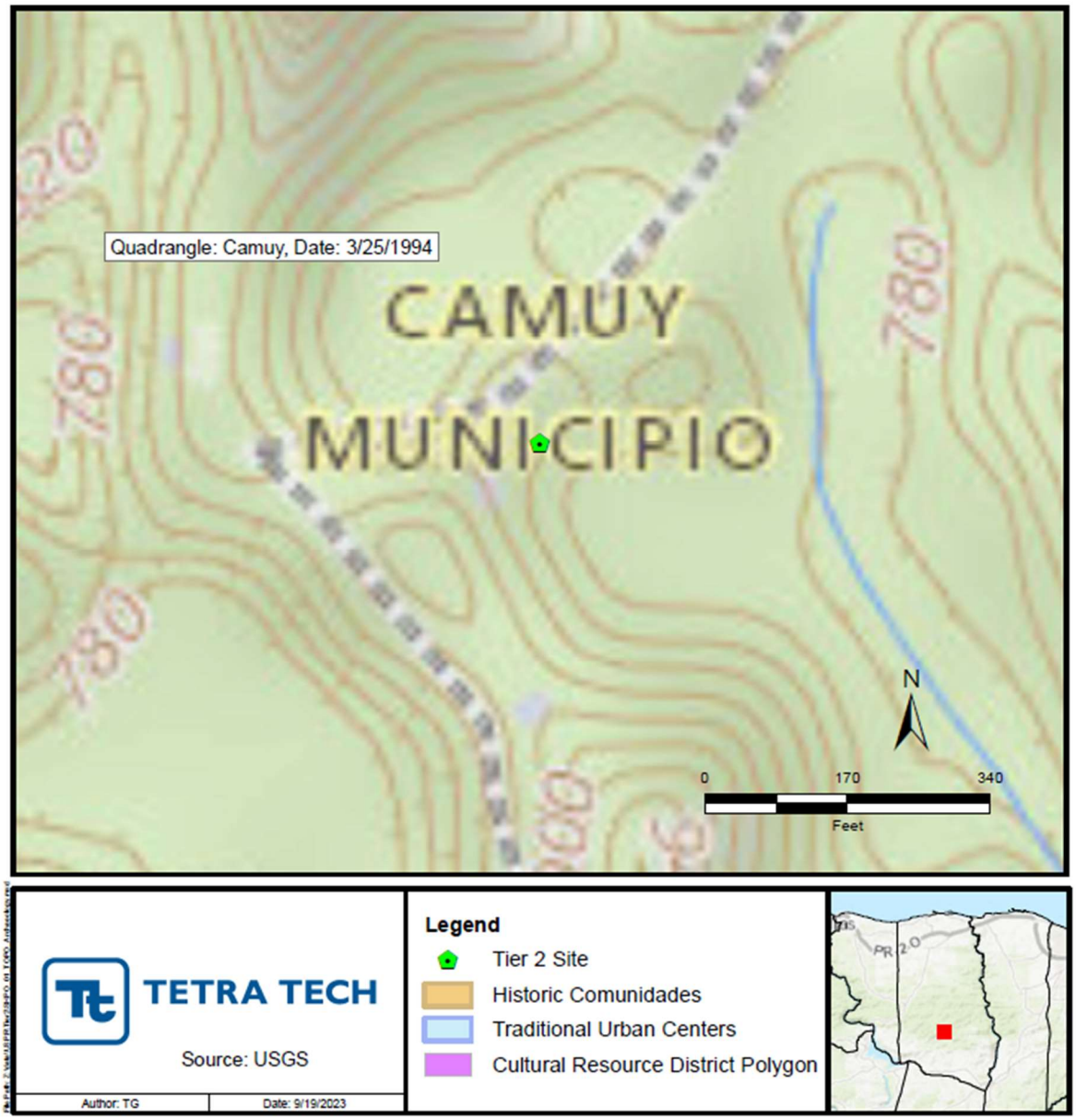
Project (Parcel) Location – Area of Potential Effect Map (Aerial)



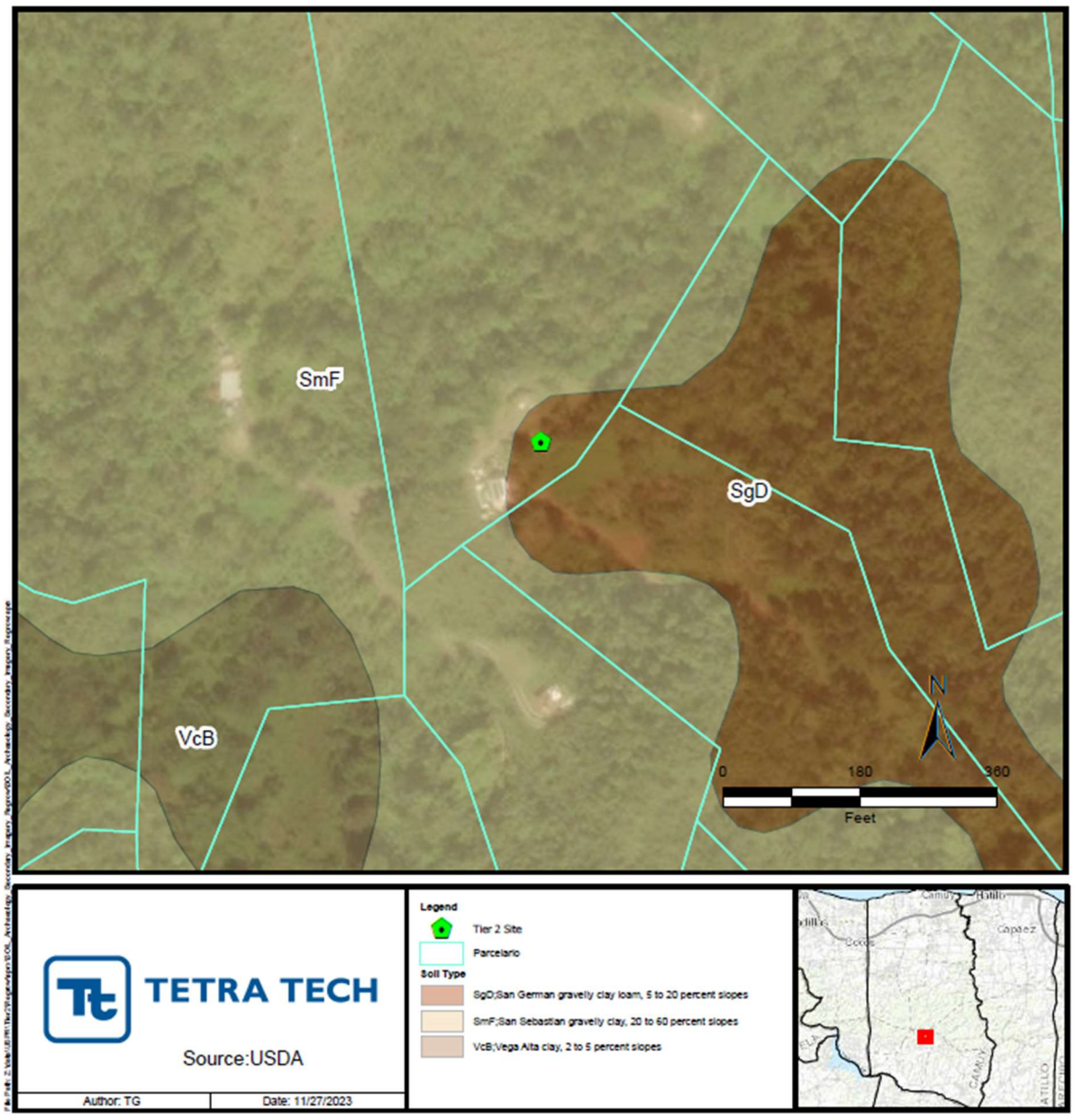
Project (Parcel) Location - Aerial Map



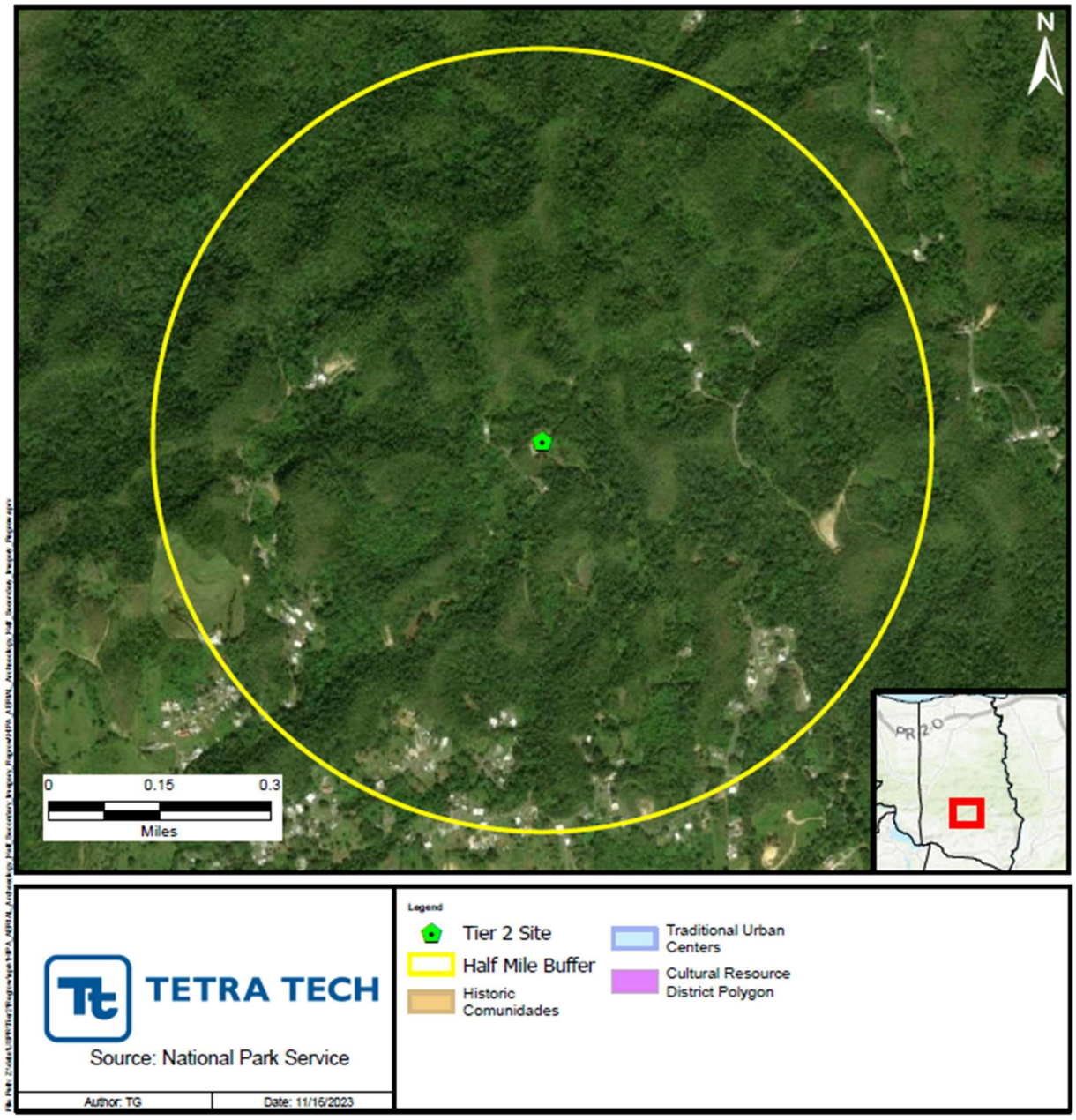
Project (Parcel) Location - USGS Topographic Map



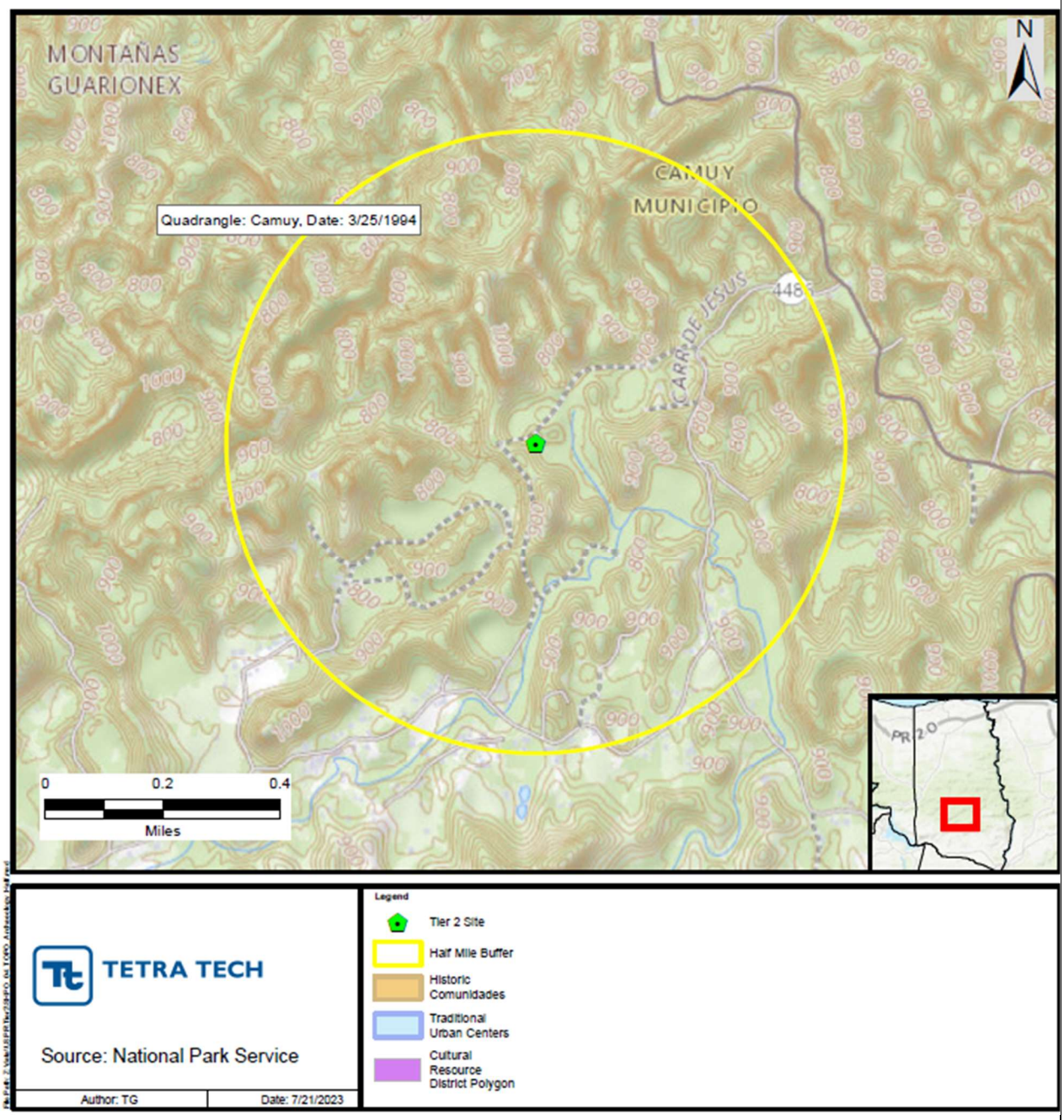
Project (Parcel) Location – Soils Map



Project (Parcel) Location with Previous Investigations - Aerial Map



Project (Parcel) Location with Previously Recorded Cultural Resources
USGS Topographic Map



Photograph Key

Photo #: 1 **Date:** 1/3/2024	**Description (include direction):** Scope of work 1: installation of a hydroponic system, view to the southwest.

Photo #: 2 **Date:** 1/3/2024	**Description (include direction):** Scope of work 1: installation of a hydroponic system, view to the southwest.

Photo #: 3 **Date:** 1/3/2024	**Description (include direction):** Scope of work 1: installation of a hydroponic system, view to the northeast.

Photo #: 4 **Date:** 1/3/2024	**Description (include direction):** Scope of work 2: installation of a solar system, view to the southeast.

Photo #: 5 **Date:** 1/3/2024	**Description (include direction):** Scope of work 2: installation of a solar system, view to the southwest.

Photo #: 6 **Date:** 1/3/2024	**Description (include direction):** Scope of work 2: installation of a solar system, view to the northwest.

Photo #: 7 **Date:** 1/3/2024	**Description (include direction):** Scope of work 2: Existing structure for the batteries of the solar system view to the northwest.