

Environmental Assessment for HUD-funded Proposals

*Recommended format per 24 CFR 58.36, revised March 2005
[Previously recommended EA formats are obsolete].*



Project Identification: **MIRASOL**

Preparer: **Eng. Fernando de León Iturriaga, PE**

Responsible Entity: **PUERTO RICO DEPARTMENT OF HOUSING-CDBG-DR
(PRDOH)**

Month/Year: **April / 2022**

Environmental Assessment

Responsible Entity: PUERTO RICO DEPARTMENT OF HOUSING (PRDOH)

[24 CFR 58.2(a)(7)]

Certifying Officer: Sally Z. Acevedo-Cosme

[24 CFR 58.2(a)(2)]

Pedro A. DeLeón Rodríguez

María T. Torres-Bregón

Ángel G. López-Guzmán

Ivelisse Lorenzo Torres

Project Name: Mirasol Apartments

Project Location: STATE ROAD PR-901, KM. 2.6, JUAN MARTÍN WARD,
YABUCOA, PUERTO RICO 00767

Estimated Total Project Cost: \$65,704,146.00

HUD CDBG-DR Funding: \$46,907,997.00

LIHTC Tax Credits: \$18,796,149.00

Grant Recipient:

[24 CFR 58.2(a)(5)]

PUERTO RICO HOUSING FINANCE AUTHORITY (PRHFA)

Recipient Address: 1903 AV. JESÚS T. PIÑERO, SAN JUAN, PUERTO RICO 00920

Project Representative: CARLOS O. GONZÁLEZ SÁNCHEZ

Telephone Number: (787) 345-6464

Conditions for Approval: (Included is a List all mitigation measures adopted by the responsible entity to eliminate or minimize adverse environmental impacts. These conditions must be included in project contracts and other relevant documents as requirements). [24 CFR 58.40(d), 40 CFR 1505.2(c)]

The following mitigation measures must be adopted throughout the construction:

1. Permits

- a. Evaluate and ensure expired or expiring permits are renewed prior to construction commencement. These include:
 - i. Construction Permit (2018-245021-PCOC-015044)
 - ii. General Consolidated Permit (CES, DS-1 & PFE)
 - iii. General Permit – National Pollutant Discharge Elimination System (NPDES) in compliance with EPA
 - iv. Incidental Permit (Permiso Incidental a una Obra Autorizada)
 - v. Urbanization Permit (2018-245021-PCU-004602)
 - vi. AAA Endorsed Plan Set (AAA-RE-18-77-0020), Project Endorsement (2018-245021-SRI-025348) & Point of Connection and Project Evaluation Letter (AAA-RE-18-77-0020)
 - vii. AEE Endorsed Plan Set (16-2-0139) & Point of Connection and Project Evaluation Letter (2018-230692-SRI-018562)
 - viii. ICPR Authorization and Highway and Transportation Authority Recommendations.

2. Compliance Measures

- a. Prepare and File to the Environmental Quality Board (DRNA) an emergency plan in compliance with the Regulations of Water Quality Standards in order to prevent and/or control diesel spills.
- b. The Storage, management and disposition of waste materials must be executed in compliance with the Regulation for the Management of Non-hazardous Solid Waste of the Environmental Quality Board (DRNA).
- c. Compliance with noise ordinance as established in the “Reglamento para el Control de la Contaminación por Ruido de la DRNA”.
- d. Implement and comply with a:
 - i. CES Plan
 - ii. Recycling Plan & Quarterly Recycling Report of the Generated Materials during the Construction Work Phase (if the Municipality is responsible for this work, Compromise Evidence from the Municipality must be submitted).
 - iii. Drawings with the location of the recycling area inside the Project must be submitted.
- e. Compliance with ICC-700 Bronze Certification as the pre-qualification requirements as a measure to obtain Green Building Certification.

- f. Compliance with ADS rules and regulations.
- g. The project must obtain the General Consolidated Permit from the DRNA.
- h. Comply with the Requirements of the concerning Agencies and with their recommendations (2018-245021-PCD-006147 and 2002-75-0745-JPU) emitted for the Project.
- i. The Project must follow the recommendations of the Forensic Engineering Analysis & the Soil Study completed for the Project.
- j. The Project must not discharge pollutants into waterbodies, nor will it generate hazardous waste or air emissions that exceed two (2) tons per year of criteria air pollutants, or five (5) tons of any combination of criteria pollutants, nor will it emit hazardous or toxic pollutants or objectionable odors into the air.
- k. The disposal or discharge of wastewater will be carried out through connections to an existing sanitary system.
- l. The Project must take the necessary measures to prevent residues of organic and inorganic substances such as: oils, fuels, or other chemical substances, from being washed away by runoff and gaining access to any waterbody or the rainwater system.
- m. If a surface or underground waterbody is discovered within the property object of development, be it perennial or intermittent, the Contractor or Construction Inspector should immediately inform the DNRA and other concerned agencies.
- n. The Project must comply with the provisions of Section 5.1.9.4 (Stormwater Management) of the Joint Regulation.
- o. If the Project has any runoff discharge to any waterbody during operation, it must consult the Federal Environmental Protection Agency to determine if such discharges require a "NPDES" permit according to Federal Code of Regulations Number 40, Section 122.26 (b) (14) (x).
- p. The diesel tanks for the generators must be in compliance, as required, with the Oil Spills Prevention and Preparedness Regulations at 40 CFR 112 Oil Pollution Prevention.
- q. The project must keep all public streets and freeways free of construction waste and debris at all times.
- r. Project must include a reforestation program using native species, which, in addition to helping to minimize erosion, benefits wildlife must be established. This measure is consistent with the Law to Encourage the Planting of Trees Whose

Fruits and / or Seeds Provide Food for Wild Bird Species of Puerto Rico (Law No. 97 of June 24, 1998).

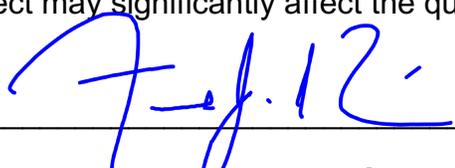
3. Demolition and Construction

- a. Contractor must detain all construction work if archaeological deposits and/or elements of historical value are encountered during any phase of the construction. Contractor must inform the ICPR and Contracting Officer within 24 hours of the finding.
- b. If a superficial or subterranean waterbody is discovered while construction work is taking place, it must be informed to the Department of Natural & Environmental Resources ('DRNA' or 'DNER').
- c. All pertaining permits must be obtained prior to construction commencement.

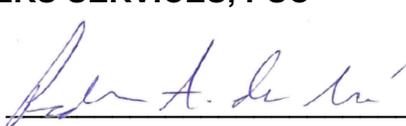
FINDING: [58.40(g)]

Finding of No Significant Impact
(The project will not result in a significant impact on the quality of the human environment)

Finding of Significant Impact
(The project may significantly affect the quality of the human environment)

Preparer Signature:  Date: 3/31/2022

Name/Title/Agency: **ENG. FERNANDO DE LEÓN, PE**
D/C ENGINEERS SERVICES, PSC

RE Approving Official Signature:  Date: 6/29/2022

Name/Title/Agency: Pedro A. de León Rodríguez, MSEM, Permits and Environmental Compliance Specialist

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

Description of the Proposal: Must include all contemplated actions which logically are either geographically or functionally a composite part of the project, regardless of the source of funding. [24 CFR 58.32, 40 CFR 1508.25]

General. Social interest rental project to serve low-income families in the Municipality of Yabucoa. The units will be developed under Section 42 of the Internal Revenue Code Program, also known as the Low-Income Housing Tax Credit Program in conjunction with the Community Development Block Grant – Disaster Relief program funds. The development and construction of MiraSol will have a direct and indirect economic impact in the Municipality, generating substantial local economic activity, including new income and jobs, and additional revenue for the local government. The proposed project is one that promotes an affordable, resistant, and resilient housing project. In addition, this Project represents a complement to the efforts of the state and local government, to provide families affected by Hurricanes Irma and María, and the recent earthquakes with a decent and affordable housing alternative, plus services for a better quality of life.

Units & Common Areas. MiraSol will consist of one hundred forty nine (149) single family units with three (3) bedrooms, two (2) bathrooms, kitchen area, living-room, water cistern and solar panels with battery backup. The proposed units will have an average gross living area of 1,422 square feet. Finishes for the typical unit includes terrazzo floor tiles, , ceramic wall tiles at bathrooms, PVC kitchen panels, interior wood doors and exterior aluminum doors. All the units and common areas will be equipped with energy star light fixtures and appliances such as stove/oven, and refrigerator. The units will also have smoke detectors, solar water heater, bathroom equipment and bathroom accessories. All units and common areas will be equipped with water sense plumbing fixtures for water conservation. The Project's amenities include perimeter fence, controlled gate/access, visitor parking spaces, multipurpose center, public restroom, administration facilities, central courtyard area and a playground area.

Accommodations & Special Needs (Accessibility Standards). In accordance with the Voluntary Compliance Agreement the project, twelve percent (12 %) of the units will be designed for mobility impairment, and three percent (3%) of the units for visual/hearing impaired. The residential development will comply with the accessibility requirements of the Fair Housing Act and wherever applicable 2010 ADA standards / Uniform Federal Accessibility Standard (UFAS).

Green Building Standard & Broadband Infrastructure. The Project is highlighted for being resilient and for the inclusion of green building features. The Project opted to pursue the ICC-700 certification as the Green Building Standard Compliance measure. The Project will be designed and built to achieve high performance in six key areas: Site Design, Resource Efficiency, Water Efficiency, Energy Efficiency, Indoor Environmental Quality, and Building Operation & Maintenance under the rigorous requirements of the ICC-700 National Green Building Standard™ (NGBS). Under the NGBS certification program the Project ensures the completed building will reduce its environmental impact

in all areas including green building practices for design, construction, verification, and operation which helps ensure that buildings designed to be sustainable and high performing are built and occupied in a sustainable method. In addition, the project plans and technical specifications incorporate broadband infrastructure. Broadband infrastructure will be offered via a commercial provider.

Existing Conditions and Trends: Must include a description of the existing conditions of the project area and its surroundings, and trends likely to continue in the absence of the project. [24 CFR 58.40(a)]

Development is to take place in a vacant land in the municipality of Yabucoa with a site area of 129,381.9108 square meters equivalent to 32.9183 cuerdas. The site is irregular, but with adequate width and depth relationship for its functional development. The property locates outside the flood zone and does not require environmental remediation. Its location provides direct vehicular, pedestrian and collective transportation access. The project site has access to State Roads PR-3, PR-53 and PR-901. Mayor infrastructures are available at the proposed site. The site vicinity has the typical and necessary government services available, including fire department, police department, postal service, garbage pick-up, among others.

Statutory Checklist

[24CFR §58.5]

A record of the determinations made regarding each listed statute, executive order or regulation. Provide appropriate source documentation. Note reviews or consultations completed as well as any applicable permits or approvals obtained or required. Note dates of contact or page references. Provide compliance or consistency documentation. Attach additional material as appropriate. Note conditions, attenuation or mitigation measures required.

Factors	Determination and Compliance Documentation
<p>Historic Preservation [36 CFR 800]</p>	<p>State Historic Preservation Office ('SHPO') Letter dated December 11, 2020 for the project indicates that the agency supports the project and that no historic properties will be affected within the area of potential effects.</p> <p>See Annex Q – SHPO Determination See Annex X.13 – ICPR Endorsement Letter</p>
<p>Floodplain Management [24 CFR 55, Executive Order 11988]</p>	<p>According to the Non-Flood Certification by Eng. Miguel A. Menar, PE and the FEMA's Flood Insurance Rate Map (No. 1815J) the project site is in <u>Zone X</u> and is outside of all and any flood zone within an 85 meters radius.</p> <p>According to the HH Study, once the recommendations of the storm water system are implemented the proposed development will comply with the requirements of the OGPe. The property in development has a steep topography, therefore, water ponding is not likely to occur. Flow mitigation structure is required.</p> <p>Floodplan Number: 7200C1815J Date: 11/18/2009</p> <p>See Annex P.1 – Non-Flood Certification See Annex P.2 – HH Study See Annex D – FEMA Map</p>
<p>Wetlands Protection [Executive Order 11990]</p>	<p>The project site is not located on any riparian or wetlands. As per Section 404 of the Clean Water Act a permit for the project won't be required since there is no discharge of dredger or fill material into wetlands.</p> <p>See Annex C – Wetlands Map</p>
<p>Coastal Zone Management Act [Sections 307(c), (d)]</p>	<p>The project location is within the coastal zone area as determined by the DNER. Coordination with the DNER and Coastal Zone Permitting will potentially be required.</p> <p>See Annex D – FEMA Map See Annex Y.5 – Coastal Zone Management Area Map See Annex P.1 – Non-Flood Certification See Annex P.2 – HH Study</p>

<p>Sole Source Aquifers [40 CFR 149]</p>	<p>Puerto Rico is included in a sole-source aquifer region designated as Region II of the USA EPA.</p> <p>The project is not to be connected to a potable water line that directly provides water from a designated sole-source aquifer nor is it located within a sole source aquifer watershed. This was confirmed with the EPA Sole Source Aquifers Map. <u>There are NO Sole Source Aquifers located in Puerto Rico (See Annex Z.4 – EPA Sole Source Aquifers Map).</u></p> <p>See Annex O.1 - Environmental Assessment Phase I Study See Annex Z.4 - EPA Sole Source Aquifers Map</p>
<p>Endangered Species Act [50 CFR 402]</p>	<p>The Department of Natural & Environmental Resources did not identify the project site location as a Wildlife Refuge. The letter from the DNER dated July 7, 2005 for this particular project, states that the DNER has no objection to the project, although the Project must comply with:</p> <ol style="list-style-type: none"> 1. Regulation of Planification Number 25 2. Permit for Erosion and Sedimentation Control from the Environmental Quality Board. 3. Comply with the Dispositions of the Regulation of Planification Number 3, Section 14. 4. Dedicate use a strip of land for public that is comprised from the center of the creek plus 5 additional meters of land in width measured from the border of said creek. 5. The prevailing slopes to remain shall be protected against erosional effects during an intensive rainfall event. <p>The U. S. Fish and Wildlife Service ('USFWS') Determination Letter states that <u>the proposed Project Site lies within the habitat range area of the Puerto Rican Boa.</u> The USFWS has developed recommendations to avoid or minimize possible effects against the endangered species during the project construction activities in areas where the Boa may be located. <u>These recommendations must be followed by the General Contractor.</u></p> <p>See Annex X.8 – DNER Letter See Annex X.9 – USFWS Determination Letter See Annex O.1 - Environmental Assessment Phase I Study</p>
<p>Wild and Scenic Rivers Act [Sections 7(b), (c)]</p>	<p>Puerto Rico has approximately 5,385 river miles. Only 8.9 miles of three rivers, which run through El Yunque National Rainforest, are designated as wild & scenic. The portions of these rivers that qualify under the Wild & Scenic Rivers Act are located more than 18 miles north of the project site. These Wild & Scenic Rivers are not in harm's way from this project.</p> <p>See Annex 0.1 - Environmental Assessment Phase I Study See Annex Z.3 – Distance From Mirasol to El Yunque Rivers (Río Mameyes, Río de La Mina & Río Icacos) (Source: Google Earth & U.S. Wild & Scenic Rivers Map)</p>

<p>Air Quality [Clean Air Act, Sections 176(c) and (d), and 40 CFR 6, 51, 93]</p>	<p>The EPA Green Book classified Yabucoa as being Unclassifiable/Attainment for SO₂.</p> <p>The General Consolidated Permit from the “Junta de Calidad Ambiental” is required. This permit is to be expected post-closing and prior to construction start.</p> <p>See Annex O.1 - Environmental Assessment Phase I Study See Annex X.6 – Environmental Determination</p>
<p>Farmland Protection Policy Act [7 CFR 658]</p>	<p>The proposed use will mostly be in harmony with the surrounding developed areas and will not impact agricultural projects. The project land lies within a mixed use and populated suburban area in the Juan Martín Ward in Yabucoa. Most of the site’s soils are <u>not</u> designated as 'Prime' for agricultural purposes and the lot is not considered agricultural land; however, a portion of the Project is within “Farmland of State-wide Importance” as Identified by the Department of Agriculture.</p> <p>A consultation will be held with the PRDA to obtain a clearance letter to move forward with construction.</p> <p>See Annex A – Project Narrative See Annex O.1 – Environmental Assessment Phase I Study See Annex Z.5 - USDA-NCRS Soils Farmland Classification</p>
<p>Environmental Justice [Executive Order 12898]</p>	<p>The proposed single-family residential housing development is meant to serve the pressing need of Yabucoa’s low-income population for affordable housing. The Municipality of Yabucoa provided complete support in the Municipality’s Endorsement Letter.</p> <p>The Phase I Environmental Study determined that the probability of the Site being contaminated is very low, that no substantial environmental issues were found and that no potential environmental impact issues to the residents of the Project were determined.</p> <p>See Annex O.1 – Phase I Environmental Site Assessment Report See Annex A – Project Narrative See Annex X.11 –Municipality Endorsement Letter</p>

HUD Environmental Standards Determination and Compliance Documentation

<p>Noise Abatement and Control [24 CFR 51 B]</p>	<p>The acceptability standards for noise abatement and control establishes a maximum noise level of 65 dB(A). The site acceptability standards established by the 24 CFR 51.104 for exterior of the MiraSol Project were deemed as unacceptable. The decibel results measured for the daytime period were 67.9 dB and 74.8 dB for the nighttime period. SE State Engineering PSC certified that for the Project to comply with the noise standards requirement, the project must complete the following items that will mitigate the excessive noise emissions:</p> <ol style="list-style-type: none"> 1. Distance between the housing units and the noise source should be a 91.131 meter minimum. 2. Aluminum Storm Windows must be installed at each unit. <p>See Annex O.3 – Noise Study</p>
<p>Toxic/Hazardous/Radioactive Materials, Contamination, Chemicals or Gases [24 CFR 58.5(i)(2)]</p>	<p>The Phase I Environmental Study determined that the Project will not significantly impact the environmental and that the probability of the site being contaminated is very low. No further investigation of the site was recommended.</p> <p>No standing surface water, pools or sumps containing liquids likely to be hazardous substances or petroleum products were observed during the site reconnaissance. No Toxic/Hazardous/Radioactive Materials, Contamination, Chemicals or Gases were observed or reported. No Hazardous Substances and Petroleum products in connection with the identified subject property uses were observed at the site. No above-ground storage tanks (AST) facility were identified at the subject property. No underground storage tanks (UST), vent pipes, fill pipes or access ways indicating underground storage tanks were identified at the subject property. No further investigation of the site was recommended in the Phase I Environmental Study.</p> <p>See Annex O.1 - Environmental Assessment Phase I Study</p>
<p>Siting of HUD-Assisted Projects near Hazardous Operations [24 CFR 51 C]</p>	<p>The proposed project is to be located in a vacant undeveloped commercial property within Yabucoa's semi-rural mixed-use area. Project is surrounded by commercial, residential, and mixed-use buildings that do not use above ground storage of explosive or flammable materials. No underground storage tanks (UST), vent pipes, fill pipes or access ways indicating underground storage tanks were identified at the subject property. The nearest above ground storage tank is located 0.25 miles from the project at Buckeye Caribbean Terminal, LLC which offers over 4 million barrels of storage for crude oil, fuel oil, and refined products.</p>

	<p>The OSHA recommended distance from property line that can be built upon to above ground storage tanks containing flammable liquid is 20 feet. The distance from the nearest above ground storage tank to the Project is 0.25 miles (1,320 ft.) which is in compliance with OSHA regulations.</p> <p>See Annex A – Project Narrative See Annex X.11 –Municipality Endorsement Letter See Annex O.5 – Undesirable Activities Buffer Zone Map</p>
<p>Airport Clear Zones and Accident Potential Zones [24 CFR 51 D]</p>	<p>The project site is 18.40 miles (97,152 feet) away from Roosevelt Roads Airport and 28.66 miles (151,324.8 feet) away from SJU International airport which happens to be a joint civil-military airport. The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport.</p> <p>The Determination of No Hazard to Air Navigation states that the Structure will not exceed obstruction standards and would not be a hazard to air navigation.</p> <p>See Annex X.10 –Determination of No Hazard to Air Navigation See Annex Z.1 - Distance from MiraSol to Roosevelt Roads Airport (Source: Google Earth) See Annex Z.2 - Distance from MiraSol to SJU Airport (Source: Google Earth)</p>

Environmental Assessment Checklist

[Environmental Review Guide HUD CPD 782, 24 CFR 58.40; Ref. 40 CFR 1508.8 & 1508.27]

An evaluation of the significance of the effects of the proposal on the character, features and resources of the project area. Enter relevant base data and verifiable source documentation will be entered to support the finding. The appropriate impact code will be entered from the following list to make a determination of impact. **Impact Codes:** (1) - No impact anticipated; (2) - Potentially beneficial; (3) - Potentially adverse; (4) - Requires mitigation; (5) - Requires project modification. Note names, dates of contact, telephone numbers and page references. Attach additional material as appropriate. Note conditions or mitigation measures required.

Land Development	Code	Source or Documentation
Conformance with Comprehensive Plans and Zoning	2	The property is in the following specified zone district NC (R-I zoning at the time of permitting). The use of the property is a permitted use under the applicable Zoning and Land Use laws and regulations, and the project does not constitute any zoning or land use violations. In addition, the Municipality of Yabucoa has eagerly endorsed the single-family housing development.
Compatibility and Urban Impact	2	The project lies within a vacant undeveloped commercial property and is surrounded by residential, commercial and mixed-use developments. Single and multi-family homes, commercial and institutional facilities are found throughout the immediate vicinity. The project also conforms to the best interests of a population that are in dire need of affordable housing and with the Municipality's plans to establish land uses. See Annex X.8 –Municipality Endorsement Letter
Slope	1	The property in development has a steep topography, therefore, water ponding is not likely to occur
Erosion	1	The contractor must provide erosion control by strictly adhering to the procedures and methods established in a CES plan. In order to mitigate adverse effect on erosion, a perimeter drain shall be installed along the footing to drain away from the units to a proper outfall in order to properly drain underground water. The prevailing slopes to remain shall be protected against erosional effects during an intensive rainfall event.
Soil Suitability	1	The Geotechnical Evaluation ('Soil Study') completed by Despiou Associates Consulting Geotechnical Engineers dated November 11, 2021 reveals that the soil has a surface layer consisting of silty clay and clayey silt with traces of clay and variable amounts of subangular gravel fragments. In addition, the site evaluation revealed that previous earthwork operations were performed at the site. The borings disclosed a surface layer ranging from 1.5 to 5 ft. Alluvial and residual material of silty clay soils, with variable amounts of subangular gravel fragments vary between 4.0 ft. to 15 ft. The weathered rock material consists of sandy silt layers with variable amounts of saprolitic material with completely weathered rock fragments, generally extending beneath the surface soils to about 1.5 to 8 ft. depth. For the proposed one-story residential units, the use of individual spread and/or combined footing can be used to support the new structure loads.

		<p>Earthwork must be completed in compliance with all the Engineering Recommendations stated at The Geotechnical Evaluation ('Soil Study') completed by Despiou Associates Consulting Geotechnical Engineers dated November 11, 2021.</p> <p>See Annex N.1 - Soil Study</p>
Hazards and Nuisances including Site Safety	1	<p>No standing surface water, pools or sumps containing liquids likely to be hazardous substances or petroleum products were observed during the site reconnaissance. No Toxic/Hazardous/Radioactive Materials, Contamination, Chemicals or Gases were observed or reported. No Hazardous Substances and Petroleum Products in Connection with the identified subject property uses were observed at the site. No above-ground storage tanks (AST) facility was identified at the subject property. No underground storage tanks (UST), vent pipes, fill pipes or access ways indicating underground storage tanks were identified at the subject property. The nearest above ground storage tank is located 0.25 miles from the project at Buckeye Caribbean Terminal, LLC. No further investigation of the site was recommended in the Phase I Environmental Study.</p>
Energy Consumption	1	<p>The design has been pre-qualified by the local permits' office as a Green Building with pursuit of the ICC-700 National Green Building Standard. Improvements to reduce energy consumption were considered as part of the scope of the project.</p> <p>The project has been endorsed by the AEE.</p>
Noise - Contribution to Community Noise Levels	4	<p>The acceptability standards for noise abatement and control establishes a maximum noise level of 65 dB(A). The site acceptability standards established by the 24 CFR 51.104 for exterior of the MiraSol Project were deemed as unacceptable. The decibel results measured for the daytime period were 67.9 dB and 74.8 dB for the nighttime period. SE State Engineering PSC certified that for the Project to comply with the noise standards requirement, the project must complete the following items that will mitigate the excessive noise emissions:</p> <ol style="list-style-type: none"> 1. Distance between the housing units and the noise source should be a 91.131 meter minimum. 2. Aluminum Storm Windows must be installed at each unit.
Air Quality Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels	1	<p>Given that the site lies within an already impacted environment, the proposed project won't have a significant impact on existing community air pollution levels. Furthermore, the project considers numerous energy savings measures that translate into less pollutants being emitted into the air. The EPA Green Book indicates Yabucoa as being Unclassifiable/Attainment for SO₂.</p> <p>The contractor must endeavor to minimize construction dust from becoming a nuisance to the neighborhood and environment through mitigation measures that include, but are not limited to, a CES plan that is to be developed and maintained throughout the duration of the construction of the project.</p>

Environmental Design Visual Quality - Coherence, Diversity, Compatible Use and Scale	2	<p>The environment surrounding the proposed project site serves the residential, commercial, and institutional needs of Yabucoa. Its architecture is of modern aesthetics.</p> <p>The height and scale of the proposed structures will not stand out within the area. The proposed building is in full compliance with the zoning requirements and interest of the Municipality's plans for this particular area. This new building will help to improve the suburban/residential fabric of the area. For specifics on design considerations that improve the urban fabric of Yabucoa please see the Project Plans and Municipality Letter.</p>
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Socioeconomic Code Source or Documentation

Demographic Character Changes	2	The project is to be built within a mixed-use and populated sector of Yabucoa. Additional housing will contribute to the Municipalities ongoing effort to attend the demand for affordable housing as well as to attract and maintain a steady population in this district.
Displacement	2	There will not be displacement of existing tenants nor adverse socioeconomic effects.
Employment and Income Patterns	2	<p>This new development will require continuous maintenance and upkeep. Hence, in order to operate efficiently, the project's administrative staff and maintenance personnel will require additional staff. This translates into the creation of new jobs.</p> <p>In addition, the new tenants will add to the market for the neighboring commercial facilities. Hence, potentially improving regional commerce.</p>

Community Facilities and Services

Code Source or Documentation

Educational Facilities	1	The Project is located nearby some public and private schools as well as universities such as the Ana G. Méndez University – Yabucoa Campus, University of Puerto Rico – Humacao & Interamerican University of Puerto Rico – Fajardo & Guayama Campus.
Commercial Facilities	2	There are numerous small and small-scale and mid-scale mixed-use Commercial and industrial facilities throughout Yabucoa, which will benefit from the new potential client base.
Health Care	1	Two hospitals (including Hospital Municipal de Yabucoa and Ryder Hospital), various medical offices and CDTs are found within a 2.5-mile radius of the site.
Social Services	2	The project intends to appease the current excess demand for affordable housing for the Families in Yabucoa. Qualified participants will receive the financial support for suitable housing within a planned community. The effort conforms to the best interest of the Municipality and its population.
Solid Waste	2	<p>Existing solid waste removal services are available to the existing surrounding commerce, neighborhood, and residential complexes.</p> <p>Recycling and Waste Management during construction will be implemented and enforced as per standards set by the Solid Waste Authority (Autoridad de Desperdicios Sólidos' - ADS). A recycling plan must be submitted by the contractor to the ADS for approval.</p>

Waste Water	1	<p>The project will be serviced by the existing aqueduct infrastructure provided from the local water and sewer service company known as 'La Autoridad de Acueductos y Alcantarillados' (aka AAA).</p> <p>The project was endorsed by the AAA and the Municipality.</p>
Storm Water	1	<p>The subject property is located in a Zone X, outside the 1% annual chance of flood area as per FEMA Emergency Flood Map No. 72000C1815J with an effective date as of November 18, 2019. The Zone X is area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. The Subject Site is assumed to be free of adverse floodable conditions that might affect its intended development. The lot is outside of all and any flood zone nearby, within a 100-mile radius.</p> <p>The excess runoff water would be managed through a storm sewer system.</p>
Water Supply	1	<p>The project will be serviced by the existing aqueduct infrastructure provided from the local water and sewer service company known as 'La Autoridad de Acueductos y Alcantarillados' (aka AAA).</p> <p>The project was endorsed by the AAA and the Municipality.</p>
Public Safety - Police	1	<p>A Police Station is located 2.5 miles from the project entrance at Calle Catalina Morales in Yabucoa.</p>
- Fire	1	<p>The nearest fire station is located 2.7 miles from the project entrance at Calle Catalina Morales in Yabucoa.</p> <p>The Project does not require a Fire Department Endorsement due to the type of project.</p>
- Emergency Medical	1	<p>Two hospitals (including Hospital Municipal de Yabucoa and Ryder Hospital), various medical offices and CDTs are found within a 2.5-mile radius of the site.</p>
Open Space and Recreational & Cultural Facilities	1	<p>MiraSol is to be built in a vacant undeveloped lot near the town center and in a mixed-use, suburban, residential and commercial area of the Yabucoa Municipality. The proposed project is to be located 2.5 miles away from the Town Center. Yabucoa has many public sports facilities, a skate park, beautiful beaches and local parks including Parque Aguacate, Reserva Natural Inés María Mendoza and Parque Limones. Yabucoa is also home to the beautiful El Cocal Beach. The Municipality is in the East Coast of Puerto Rico which has many other Municipalities that possess plenty entertainment centers such as Fajardo & Humacao.</p>
Transportation	2	<p>Yabucoa is served by the Yabucoa Municipal Trolley (local bus transit), the nearest Trolley stop is located at the "Terminal de Guaguas" in the Town Center of Yabucoa.</p>

Natural Features**Source or Documentation**

Water Resources	1	All potable water supply services will be provided by the Puerto Rico Aqueduct and Sewer Authority (aka AAA), the local water and sewer service company. The project has been endorsed by this agency.
Surface Water	1	The Site is located in flood zone X minimum or moderated risk. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100- year flood. Waterbodies in the vicinity include the Río Guayanés & The Caribbean Sea.
Unique Natural Features and Agricultural Lands	1	The site is within a relatively densely populated mixed use suburban/residential/commercial area with limited landscaping. There will be no impact on Natural Features and Agricultural Lands.
Vegetation and Wildlife	1	The site is within a relatively densely populated mixed use suburban/residential/commercial area with limited landscaping. There will be no impact on Vegetation and Wildlife.

Other Factors

Source or Documentation

<p>Flood Disaster Protection Act [Flood Insurance] [§58.6(a)]</p>	<p>1</p>	<p>According to the Non-Flood Certification by Eng. Miguel A. Menar, PE and the FEMA's Flood Insurance Rate Map (No. 1815J) the project site is in <u>Zone X</u> and is outside of all and any flood zone within an 85 meters radius.</p> <p>According to the HH Study, once the recommendations of the storm water system are implemented the proposed development will comply with the requirements of the OGPe. The property in development has a steep topography, therefore, water ponding is not likely to occur. Flow mitigation structure is required.</p> <p>Floodplan Number: 72000C1815J Date: 11/18/2009</p>
<p>Coastal Barrier Resources Act/ Coastal Barrier Improvement Act [§58.6(c)]</p>	<p>1</p>	<p>The project location is outside the coastal zone limits and/or is not expected to affect natural resources, land uses, or water uses in the Puerto Rico coastal zone. The Project is not located in a CBRS unit.</p> <p>There are no anticipated adverse effects due to the project's development.</p> <p>See Annex E – USFWS Coastal Barrier Map</p>
<p>Airport Runway Clear Zone or Clear Zone Disclosure [§58.6(d)]</p>	<p>1</p>	<p>The project site is 18.40 miles (97,152 feet) away from Roosevelt Roads Airport and 28.66 miles (151,324.8 feet) away from SJU International airport which happens to be a joint civil-military airport. The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport.</p> <p>The Determination of No Hazard to Air Navigation states that the proposed housing structures will not exceed the obstruction standards and would not be a hazard to air navigation.</p>
<p>Other Factors</p>		<p>N/A</p>

Summary of Findings and Conclusions

ALTERNATIVES TO THE PROPOSED ACTION

Alternatives and Project Modifications Considered [24 CFR 58.40(e), Ref. 40 CFR 1508.9]

(Identify other reasonable courses of action that were considered and not selected, such as other sites, design modifications, or other uses of the subject site. Describe the benefits and adverse impacts to the human environment of each alternative and the reasons for rejecting it.)

The Municipality is highly interested in residential developments for affordable housing within its urban limits. Given that the site area is densely populated, highly developed, its available infrastructure, its access to principal roads and highways, and its readily accessible location, and its nearby amenities it is perfectly suitable for the intended use.

Alternative:

Building fewer units would mean a reduction in the number of houses available for affordable housing. Noise, air pollution, pollution, traffic, demand for water and electricity would be decreased proportionally. However, this is not necessarily attractive given that a reduced density would be inconsistent with the municipality's interest in providing for the high demand for affordable housing.

No Action Alternative [24 CFR 58.40(e)]

(Discuss the benefits and adverse impacts to the human environment of not implementing the preferred alternative).

In the absence of the development, current economic trends suggest that the site would continue to deteriorate without any potential use in the near future (possibly decades). This option would ignore the need for affordable housing to low-income single-headed households that the Municipality and local population desperately need.

Mitigation Measures Recommended [24 CFR 58.40(d), 40 CFR 1508.20]

(Recommend feasible ways in which the proposal or its external factors should be modified in order to minimize adverse environmental impacts and restore or enhance environmental quality.)

The following mitigation measures must be adopted throughout the construction:

2. Permits

- a. Evaluate and ensure expired or expiring permits are renewed prior to construction commencement. These include:
 - i. Construction Permit (2018-245021-PCOC-015044)
 - ii. General Consolidated Permit (CES, DS-1 & PFE)
 - iii. General Permit – National Pollutant Discharge Elimination System (NPDES) in compliance with EPA
 - iv. Incidental Permit (Permiso Incidental a una Obra Autorizada)
 - v. Urbanization Permit (2018-245021-PCU-004602)
 - vi. AAA Endorsed Plan Set (AAA-RE-18-77-0020), Project Endorsement (2018-245021-SRI-025348) & Point of Connection and Project Evaluation Letter (AAA-RE-18-77-0020)
 - vii. AEE Endorsed Plan Set (16-2-0139) & Point of Connection and Project Evaluation Letter (2018-230692-SRI-018562)
 - viii. ICPR Endorsement and Highway and Transportation Authority Recommendations.

2. Compliance Measures

- a. Prepare and File to the Environmental Quality Board (DRNA) an emergency plan in compliance with the Regulations of Water Quality Standards in order to prevent and/or control diesel spills.
- b. The Storage, management and disposition of waste materials must be executed in compliance with the Regulation for the Management of Non-hazardous Solid Waste of the Environmental Quality Board.
- c. Compliance with noise ordinance as established in the “Reglamento para el Control de la Contaminación por Ruido de la DRNA”.
- d. Implement and comply with a:
 - i. CES Plan
 - ii. Recycling Plan & Quarterly Recycling Report of the Generated Materials during the Construction Work Phase (if the Municipality is responsible for this work, Compromise Evidence from the Municipality must be submitted).
 - iii. Drawings with the localization of the recycling area inside the Project must be submitted.
- e. Compliance with ICC-700 Bronze Certification as the pre-qualification requirements as a measure to obtain Green Building Certification.

- f. Compliance with ADS rules and regulations.
- g. The project must obtain the General Consolidated Permit from the DRNA.
- h. Comply with the Requirements of the concerning Agencies and with their recommendations (2018-245021-PCD-006147 and 2002-75-0745-JPU) emitted for the Project.
- i. The Project must follow the recommendations of the Forensic Engineering Analysis & the Soil Study completed for the Project.
- j. The Project must not discharge pollutants into waterbodies, nor will it generate hazardous waste or air emissions that exceed two (2) tons per year of criteria air pollutants, or five (5) tons of any combination of criteria pollutants, nor will it emit hazardous or toxic pollutants or objectionable odors into the air.
- k. The disposal or discharge of wastewater will be carried out through connections to an existing sanitary system.
- l. The Project must take the necessary measures to prevent residues of organic and inorganic substances such as: oils, fuels, or other chemical substances, from being washed away by runoff and gaining access to any waterbody or the rainwater system.
- m. If a surface or underground waterbody was discovered within the property object of development, be it perennial or intermittent, the contractor or construction inspector should immediately inform the DRNA and other concerned agencies.
- n. The Project must comply with the provisions of Section 5.1.9.4 (Stormwater Management) of the Joint Regulation.
- o. If the Project has any runoff discharge to any body of water during operation, it must consult the Federal Environmental Protection Agency to determine if such discharges require a "NPDES" permit according to Federal Code of Regulations Number 40, Section 122.26 (b) (14) (x).
- p. The diesel tanks for the generators must be in compliance, as required, with the Oil Spills Prevention and Preparedness Regulations at 40 CFR 112 Oil Pollution Prevention.
- q. The project must keep all public streets and freeways free of construction waste and debris at all times.
- r. Project must include a reforestation program using native species, which, in addition to helping to minimize erosion, benefits wildlife must be established. This measure is consistent with the Law to Encourage the Planting of Trees Whose

Fruits and / or Seeds Provide Food for Wild Bird Species of Puerto Rico (Law No. 97 of June 24, 1998).

3. Demolition and Construction

- a. Contractor must detain all construction work if archaeological deposits and/or elements of historical value are encountered during any phase of the construction. Contractor must inform the ICPR and Contracting Officer within 24 hours of the finding.
- b. If a superficial or subterranean body of water is discovered while construction work is taking place, it must be informed to the Department of Natural & Environmental Resources.
- c. All pertaining permits must be obtained prior to construction commencement.

Additional Studies Performed

(Attach studies or summaries)

No further investigations or studies of the site are recommended.

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

1. National Parks Services
 - a. <https://www.nps.gov/subjects/nlandmarks/index.htm>
2. FEMA Flood Map Service Center
 - a. <https://msc.fema.gov/portal/home>
3. The National Flood Insurance Program Community Status Book
 - a. <https://www.fema.gov/cis/PR.html>
4. Junta de Planificación de Puerto Rico
5. National Wetlands Inventory
 - a. <https://www.fws.gov/wetlands/data/mapper.html>
6. Puerto Rico Coastal Zone Management Program
 - a. <http://drna.pr.gov/historico/oficinas/arn/recursosvivos/costasreservasrefugios/pmzc/pmzc/pmzc2009/PMZCPR%20ingles%202009%20final.pdf>
7. Office for Coastal Zone Management
 - a. <https://coast.noaa.gov/czm/mystate/#puertorico>
8. United States Environmental Protection Agency
 - a. <https://www.epa.gov/dwssa>
 - b. <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b>
 - c. <https://www3.epa.gov/airquality/greenbook/tnc.html>
 - d. <https://www3.epa.gov/airquality/greenbook/anayopr.html>
9. National Wildlife Refuge System
 - a. <https://www.fws.gov/refuges/>
 - b. <https://www.fws.gov/refuges/refugeLocatorMaps/PuertoRico.html>
 - c. https://www.fws.gov/refuges/maps/NWRS_National_Map.pdf
10. USA National Wild and Scenic Rivers
 - a. www.rivers.gov
11. Federal Aviation Administration
 - a. https://www.faa.gov/airports/planning_capacity/npias/reports/media/NPIAS-Report-2019-2023-Appendix-B.pdf
12. Google Earth
 - a. <https://earth.google.com>
13. Google Maps
 - a. <https://maps.google.com>
14. USFWS Coastal Barrier Resources System
 - a. <https://www.fws.gov/cbra>
15. National Pollutant Discharge Elimination System (NPDES)
 - a. <https://www.epa.gov/npdes>
16. EPA, Air Quality – Puerto Rico
 - a. [36 pr so2 rd3-final.pdf \(epa.gov\)](https://www.epa.gov/air-quality/puerto-rico/36-pr-so2-rd3-final.pdf)
17. OSHA – Above Ground Storage Tanks Regulations
 - a. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.106>

Annexes:

- A. Project Narrative**
- B. USGS Topographic Quadrangle Map**
- C. Wetland Inventory Map**
- D. FEMA Firmette**
- E. Fish & Wildlife Services CBRS Map**
- F. Site Plan**
- G. Photos**
- H. As-Built Plans**
- I. ALTA Survey**
- J. Designer's Certification Application (Fill-in Form)**
- K. Zoning Certification**
- L. Fair Housing Act Checklist**
- M. Project Timeline**
- N. Studies**
 - 1. Soil Study**
 - 2. Archaeological Study**
- O. Environmental**
 - 1. Environmental Site Assessment Phase 1 Study**
 - 2. Asbestos Report (N/A)**
 - 3. Noise Study**
 - 4. Sole Source Aquifers Map**
 - 5. Nearby Hazardous Operations Map**
 - 6. Social Interest Housing Certification**
 - 7. Wild & Scenic Rivers Map**
 - 8. DRNA Habitat Categorization**
- P. HH Study**
 - 1. Non-Flood Certification**
 - 2. HH Study**
- Q. SHPO Determination Letter**
- R. Contracts**
 - 1. General Contractor Contract**
 - 2. Project Manager Contract**
 - 3. Architect Contract**
- S. Budget**
 - 1. General Contractor Proposal**
 - 2. Project Breakdown**
 - 3. Proposal Qualifications**
 - 4. Breakdown for Payment**
 - 5. Cash Flow**

6. HUD Form

T. Construction Drawings

- 1. Construction Plans**
- 2. Preliminary Project Schedule**
- 3. Technical Specifications**

U. Green Building Standards - Application Checklist

X. Permits & Endorsements

- 1. AAA – Recommendations, Endorsement, Point of Connection & Endorsed Drawings**
- 2. AEE – Recommendations, Endorsement, Point of Connection & Endorsed Drawings**
- 3. ACT Endorsement**
- 4. Fire Department Endorsement**
- 5. Ubication Consultation**
- 6. Environmental Recommendation**
- 7. FAA Letter of No Hazard to Air Navigation**
- 8. Municipality of San Juan Endorsement Letter**
- 9. Green Building Standards Checklist**
- 10. ICP Map, Recommendations & Endorsement**
- 11. JRT Endorsement**
- 12. JRT Endorsed Drawings**
- 13. Health Department Endorsement**
- 14. Notification of Approval of Construction Permit**
- 15. ADS Recommendation (Page 3)**

Y. PR Planning Board Flooding Determination (N/A)

Z. Additional Maps

- 1. Distance from MiraSol to Roosevelt Roads Airport (Source: Google Earth)**
- 2. Distance from MiraSol to SJU Airport (Source: Google Earth)**
- 3. Distance from MiraSol to El Yunque Rivers (Source: Google Earth)**
- 4. US Sole Source Aquifers Map**
- 5. Coastal Zone Management Area Map (Source: DRNA)**
- 6. USDSA-NCRS Soils Farmland Classification (Source - USDA-NCRS, Project Area Identified)**