INTRODUCTION
The VIRGIN ISLANDS WATER AND POWER AUTHORITY (VIWAPA) is proposing the burial of utility lines under USVI Route 663 between Queen Mary Highway (Centerline Road, USVI Highway 70) and the Melvin H. Evans Highway (USVI Highway 66). The purpose of the project is to improve the electrical power resilience on the island of St. Croix both for routine service provision and in the event of future catastrophic weather events. The project will serve a number of critical facilities including Central High School’s proposed new campus, Kings Hill Funeral Home and the Gregory E. Willocks Substation. The project will relocate four, 25kV primary distribution circuits from overhead to underground, significantly increasing the overall reliability of the power that is distributed from the Gregory E. Willocks Substation.

VIWAPA has been working to relocate transmission and distribution feeders in areas of essential services underground so that these critical services can be restored immediately after the occurrence of major storm events. Underground lines also provide improved reliability and reduce outage frequency caused by overhead obstructions and faults, ensuring that critical facilities can continue to provide essential services.

VIWAPA proposes the installation of an underground distribution lateral line with manholes, pad-mount transformers, and other underground devices to replace four (4) existing overhead distribution lines. One of the new distribution lines will be utilized to provide underground services to a church at the intersection of Queen Mary Highway (Centerline Road) and USVI Route 663, Central High School’s proposed new campus and Kings Hill Funeral Home. This project will also provide provisions for future feeders to the homes located on USVI Route 663 in Estate Clifton Hill and Estate Spanish Town. Being able to maintain, or quickly restore, power to these critical facilities is essential to the well-being of residents on St. Croix.

PROJECT LOCATION
The proposed underground project is located mid-island on St. Croix and runs north-to-south along USVI Route 663 between the Queen Mary (Centerline Road) and Melvin H. Evans highways. The underground conduits and components will be placed along USVI Route 663 and up the roadway to the proposed new Central High School expansion. The underground conduits will also allow the connection of the Kings Hill Funeral Home and a church at the intersection of Queen Mary Highway (Centerline Road) and USVI Route 663. Finally, the project will provide undergrounding of four, 25kV distribution circuits from the Gregory E. Willocks Substation.
Central High School is located on Tract 3 Upper Bethlehem in Estate Clifton Hill at Latitude 17.724999° and Longitude -64.778223°. The Gregory E. Willocks Substation is located on Parcels 1, 2, 4, 5, 7, 8 & 9 in Estate Spanish Town at Latitude 17.717619° and Longitude -64.775787°.

The proposed underground project will extend from Latitude 17.715753° and Longitude -64.775685° at the Gregory E. Willocks Substation to Latitude 17.726764° and Longitude -64.779506° at the Queen Mary Highway (Centerline Road); and spans approximately 3,696 feet between the Gregory Willocks Substation and the Queen Mary Highway (Centerline Road).

![Google Earth Map](image_url)  
*Figure 1. Location of the proposed Midland Underground Electrical project on the island of St. Croix, U.S. Virgin Islands. The prosed project route falls along the yellow line.*
Figure 2. The proposed location of the Midland Underground Electrical project in the Estate Clifton Hill / Spanish Town areas on the island of St. Croix, U.S. Virgin Islands.

Note: This project is outside of the Coastal Zone Management (CZM) first tier jurisdiction.
PROJECT DESCRIPTION

VIWAPA proposes the installation of an underground distribution lateral line with manholes, pad-mount transformers, switchgear, and other underground devices to replace the existing overhead distribution line feeding the Midland area. Funding for this project is provided in part by the Federal Emergency Management Agency (FEMA) and the Department of Housing & Urban Development Community Development Block Grant Program under the auspices of the Virgin Islands Housing Finance Authority.

This project will serve the following critical facilities:

- Central High School (proposed new campus)
- A church at the intersection of Queen Mary Highway (Centerline Road) and USVI Route 663
- Kings Hill Funeral Home
- Four (4) distribution circuits from Gregory E. Willocks Substation
- Residences located off the side streets of USVI Route 663; the proposed project will provide conduit stub out for future connections

An electrical manhole will be installed in the intersection of Queen Mary Highway (Centerline Road) and USVI Route 663. Electrical manholes will be placed at all roadway intersections along the route, at the connection to the substation, prior to the highway and then in the highway intersection. Connections to the buried lines will be made available to homes and businesses along USVI Route 663, and there will be
periodic communication manholes along the route. The conduit will cross below a culvert between manholes 6 and 7.

The main duct bank will consist of nine (9), 6-inch Gray Schedule 40 PVC conduits to be used for electrical and three (3), 4-inch Gray Schedule 40 PVC conduits to be used for communication lines. The conduits will be installed 30 inches below final grade and encased in 3,000 psi concrete on conduit saddles and back-filled. Underground electrical red warning tape (6 inches wide) will be installed along the trench route one (1) foot below final grade. Trench routes will be returned to pre-construction standards with that lane of road asphalt – e.g., asphalt, concrete or dirt; and any backfill with dirt will be pneumatically compacted to 95% density in layers not greater than 6 inches (caliche). Electrical manholes (MH 1 to MH 4) will be 4 feet in length by 4 feet wide and 4 feet high. Communication manholes will be 3 feet in length by 3 feet wide and 3 feet high. Each manhole will have a three-quarter inch by 10 feet ground rod in the floor with a four-inch stub-up in the floor. Manholes will be constructed 12” x 12” x 4” sumps for dewatering and the floor of manholes will have a 1-inch slope towards sumps. Standard heavy-duty type H-20 Highway loading manhole covers will be utilized and will be marked “ELECTRIC” or “COMMUNICATION” as required.

The trench width will vary depending on the number of conduits. It is anticipated that the project will take 6 months to complete.
Figure 4. The duct banks that will be installed along the proposed Midland Underground Electrical project route.
Figure 5. The culvert crossing for the proposed Midland Underground Electrical project route.
ENVIRONMENTAL IMPACTS

Climate/Weather

Once completed, the buried Midland electrical lines will not be affected by climate or weather. During construction, rainfall will affect trenching and line burial activities. Sedimentation and erosion controls will be implemented to ensure rainfall will not impact the nearby drainage way during installation.

Landform Geology, Soils and Historic Land Use

The utility lines are being buried under the existing USVI Route 663 and internal driveways within Central High School, Kings Hill Funeral Home, and the Gregory E. Willocks Substation. Minor earthwork will occur within maintained residential yards. All work is being done in areas that have already been disturbed.

Figure 6. The composition of soils within the proposed Midland Underground Electrical project. The prosed project route falls along the yellow line.
The most northern portion of the site is Arawak gravelly loam, 2 to 5 percent slopes, very stony (Arc), and then the conduits will pass through Sion clay, 2 to 5 percent slopes (SiB) and an area of Arawak gravelly loam, 12 to 20 percent slopes, very stony (ArD). The southern portion of the site is Hesselberg clay, 2 to 5 percent slopes (HeC).

Arawak soils can have restrictive features at ten to 20 inches (i.e., paralithic bedrock); therefore, rock may be encountered in the areas of Arawak soils. Hesselberg and Sion soils have restrictive layers more at than 80 inches.

**Drainage, Flooding and Erosion Control**

Measures to control sedimentation and erosion will be implemented during all phases of the proposed project to ensure that rainfall will not impact the nearby drainage way during installation. In addition, any materials that need to be stockpiled overnight will be properly stored so as not to be susceptible to run off.

Ben Keularts of the Division of Environmental Protection, under the Department of Planning and Natural Resources (DPNR) was contacted regarding the need for a Stormwater Pollution Prevention Plan for the proposed underground project. Mr. Keularts responded that since no more than 1 acre of land would be disturbed at any time, coverage under the General Territory Pollutant Discharge Elimination System (TPDES) Permit was not required.

**Drainage Patterns**

The proposed project will have no impact on existing drainage patterns once complete since the electrical lines will be installed under existing paved roadways and within maintained residential yards.

**Coastal Floodplain**

The majority of the proposed underground project route is within the FEMA Flood Zone X, where 100-year flooding is not expected. A small portion of the proposed route does fall within the FEMA Flood Zone A and is considered a Special Flood Hazard Area (SFHA). Sediment and erosion controls will be implemented in this area and any materials that need to be stockpiled overnight will be properly stored so as not to be susceptible to run off.
Figure 7. FEMA Flood Insurance Rate Map (FIRM) for proposed Midland Underground Electrical project area; panel 80 of 94. The proposed project route falls along the yellow line.

**Fresh Water Resources**

The proposed project will have no impact on freshwater resources as it involves the burial of electrical lines in previously disturbed areas. No freshwater ponds or streams occur within the project footprint and groundwater resources within the area are deeper than 80 inches; meaning below the depth of the proposed project.

**Oceanography**

The proposed project occurs well inland and will not be affected by sea storm events.
Marine Resources
The property is located entirely inland and will have no direct impact on the marine environment.

Terrestrial Resources
The proposed project will occur within existing paved roadways, and previously developed areas – i.e., maintained residential yards. No natural terrestrial resources or any native flora or fauna will be significantly impacted during the installation of the buried electrical lines. The electrical lines will be buried near large trees along the roadside; thus, some minor cutting of tree roots may occur. There may be impact to ground covers and residential lawns during the installation of the underground electrical service lines to individual residences. No endangered *Agave eggersiana* were seen along the roadside during the site surveys.

Relocating electrical lines underground will alleviate the need to trim large trees away from suspended, overhead lines and will prevent future damage to vegetation during storm events.

Wetlands
The project will have no impact on wetlands, as there are no wetlands in, or adjacent to, the proposed project route. The proposed project route is in an existing roadway and previously paved parking areas.
Rare and Endangered Species

No endangered, or threatened, species or endangered species habitat exist within proposed project route. According to the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) project tool no endangered species, critical habitat or migratory birds are expected to occur in the proposed project area.

There is an endangered ground lizard, *Ameiva polops*, on the island of St. Croix, but this lizard is only found on Protestant Cay and Ruth Cay. There are also three endangered plant species on St. Croix – i.e., *Agave eggersiana*, *Buxus vahlii* and *Catesbaea melanocarpa* – but they primarily occur in exposed, dry areas. There are three known populations of *B. vahlii* on St. Croix and all are well removed from the proposed project site. There is one known population of *C. melanocarpa* on St. Croix and it is also located outside the proposed project site.

Neither the endangered ground lizard nor any of the endangered plants species are found within the proposed project footprint.

Air Quality

All of St. Croix is designated Class II by the Environmental Protection Agency, in compliance with National Ambient Air Quality Standards. In Class II air quality regions open burning, visible air contaminants, particulate matter emissions, volatile petroleum products, sulfur compounds and internal combustion engine exhaust are all regulated (Virgin Islands Code Rules and Regulations). Trenchers will be used during project construction and will create combustion engine exhaust. Upon project completion, air quality will return to pre-construction conditions.
IMPACT ON MAN'S ENVIRONMENT

Land and Water Use Plans

The burial of electrical lines is in accordance with the laws and regulations of the U.S. Virgin Islands.

Visual Impacts

The relocation of overhead electrical lines underground will contribute to the visual improvement of St. Croix’s landscape.

Social Impacts and Economic Impacts

Providing more reliable and resilient power to critical infrastructure on St. Croix will benefit both residents and business on the island. Being able to maintain, or quickly restore, power to critical facilities like the Gregory E. Willocks Substation, Central High School is essential to the safety, as well as economic well-being, of residents on St. Croix.

Historical and Archaeological Resources

The proposed project involves the installation of underground electrical utility lines in existing roadways, which are located on lands that have been extensively altered by cutting or filling. An archeological Scope of Work (ASoW) was developed for the proposed project and has been approved by the USVI State Historic Preservation Office (SHPO). SHPO has low concerns about the proposed project disturbing or uncovering historic remains but recommends that project activities be monitored where the Queen Mary Highway (Centerline Road) meets the historic Kingshill Lutheran Church.

Waste Disposal and Accidental Spills

Equipment will be kept in good operational condition during the proposed project timeline and will not be fueled on site. Any excess excavated material and debris will be collected, taken off-site and properly disposed of.
**COASTAL CONSISTENCY**

The proposed Midland Underground Electrical project has a negligible potential of impacting environmental resources, or ambient water quality during construction. As necessary, sedimentation and erosion control measures will be implemented during construction to ensure that no environmental impacts occur. The proposed project occurs only within previously altered areas and archeological monitoring will be conducted to minimize impact historical or cultural resources. Project activities will stop if historic remains or resources are encountered, and SHPO will be contacted to determine the best course of action.

The Coastal Zone Management Act of 1972 requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water), or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program. The Midland Underground Electrical project, as proposed, will be undertaken in a manner consistent to the maximum extent practicable with the enforceable policies of the U.S. Virgin Islands’ Coastal Zone Management (CZM) Program. This federal consistency determination demonstrates the Midland Underground Electrical project’s compliance with the U.S. Virgin Islands’ CZM Program.

The following policies are set forth in the U.S. Virgin Islands Code Title 12, Conservation Chapter 21, Virgin Islands Coastal Zone Management [V.I. Code tit. 12, § 903(b)]. The proposed Midland Underground Electrical project meets each of the basic goals of the USVI for its coastal zone. Additional details are as follows:

**USVI Code Title Twelve Conservation, Chapter 21 § 903 (b)**

1. **Protect, maintain, preserve and, where feasible, enhance and restore, the overall quality of the environment in the coastal zone, the natural and man-made resources therein, and the scenic and historic resources of the coastal zone for the benefit of residents of and visitors of the United States Virgin Islands.**

   - The proposed Midland Underground Electrical project is designed to be within existing roadways and previously disturbed areas. The project will not impact any natural resources and will improve the visual landscape along USVI Route 663 by removing overhead electrical lines and poles.

2. **Promote economic development and growth in the coastal zone and consider the need for development of greater than territorial concern by managing: (1) the impacts of human activity and (2) the use and development of renewable and nonrenewable resources so as to maintain and enhance the long-term productivity of the coastal environment.**

   - The proposed project promotes the economic development and growth in the coastal zone by providing more reliable, resilient electrical transmission to critical island infrastructure. The improved resilience of electrical power on the island of St. Croix is beneficial for routine service provision and in the event of future catastrophic weather events.

3. **Assure priority for coastal-dependent development over other development in the coastal zone by reserving areas suitable for commercial uses including hotels and related facilities,**
industrial uses including port and marine facilities, and recreation uses.

- The proposed project involves the burial of electrical utility lines outside the coastal area and is therefore consistent with this policy.

(4) Assure the orderly, balanced utilization and conservation of the resources of the coastal zone, taking into account the social and economic needs of the residents of the United States Virgin Islands.

- The burial of the electrical lines will only occur in areas that have been previously altered and will improve the electrical power resilience both for routine service provision and in the event of future catastrophic weather events. The propose project will also service critical infrastructure and, therefore, will meet and protect the economic and social needs of the St. Croix residents.

5) Preserve, protect and maintain the trust lands and other submerged and filled lands of the United States Virgin Islands so as to promote the general welfare of the people of the United States Virgin Islands.

- The proposed project will not impact trust lands or other submerged or filled lands of the U.S. Virgin Islands.

(6) Preserve what has been a tradition and protect what has become a right of the public by insuring that the public, individually and collectively, has and shall continue to have the right to use and enjoy the shorelines and to maximize public access to and along the shorelines consistent with constitutionally-protected rights of private property owners.

- The proposed project will in no way affect public access to, or use of, the shoreline. The project is located well inland.

(7) Promote and provide affordable and diverse public recreational opportunities in the coastal zone for all residents of the United States Virgin Islands through acquisition, development and restoration of areas consistent with sound resource conservation principles.

- The proposed project will not affect public recreational opportunities in the coastal zone.

(8) Conserve ecologically significant resource areas for their contribution to marine productivity and value as wildlife habitats, and preserve the function and integrity of reefs, marine meadows, salt ponds, mangroves and other significant natural areas.

- The proposed project is designed so that it impacts only previously disturbed areas like paved roadways and maintained residential yards. The project will have no impact on natural resources and will best management practices (BMPs) to minimize areas of disturbance, thereby protecting adjacent habitats.

(9) Maintain or increase coastal water quality through control of erosion, sedimentation, runoff, siltation and sewage discharge.
- The proposed project will have no long-term change on sedimentation or erosion and will not result in the creation of wastewater. As necessary, the project will implement sedimentation and erosion control BMPs to prevent loss of sediment from the project site.

The proposed Midland Underground Electrical project, as designed, will maintain coastal water quality through control of erosion, sedimentation, runoff, and siltation. It is, therefore, consistent with the policy set forth in the U.S. Virgin Islands Code Title 12, Conservation Chapter 21, Virgin Islands Coastal Zone Management [V.I. Code tit. 12, § 903(b)].